EVALUATION OF THE SEMIPERMEABLE MEMBRANE DEVICE (SPMD) AS A PASSIVE IN SITU CONCENTRATOR OF MILITARY ORGANIC CHEMICALS IN WATER

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The data presented in this report demonstrate the utility of the SPMD technique for sequestering environmentally realistic concentrations of OC pesticide residues (i.e., 1 ng/L, 10 ng/L, and 100 ng/L) at water temperatures ranging from 10°C to 26°C. The data are indicative of concentration independent sampling rates for the 23 OC pesticides employed in this research. As predicted by both thermodynamic and kinetic considerations, the sampling rates for all 23 OC pesticides increased from 10°C to 26°C. For most of the 23 OC pesticides studied, a one (1) g triolein SPMD was demonstrated to passively sample over 50 L of water after 16 days exposure at 26°C. The sampling rate data presented in the report permit the use of an algorithm for estimating ambient waterborne concentrations of OC pesticides from their corresponding levels in the SPMD samples. Employing this algorithm to estimate the bioavailable (i.e., dissolved) portion of OC pesticides present in a wide array of aquatic systems also requires the determination of the concentration of the OCs present in the sample, knowledge of the length of exposure (in days) and the average temperature during deployment. The accuracy of such estimations can potentially be improved by including a permeation reference compound(s) to correct for biofouling and variations in aqueous flow rates. Such research is being planned at the ECRC.

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ABSTRACT

Worldwide, the Department of Defense (DOD) has nearly 1,900 installations on which are located about 17,000 identified sites that will require some level of remediation. Many of these sites potentially impact groundwater, wetlands, streams, and other aquatic ecosystems. The contaminants that may impact these aquatic resources range from explosives and petroleum related residues to pesticide waste. Indeed, many DOD waste sites involve the past production, use, and disposal of pesticides (e.g., Rocky Mountain Arsenal). Because of their widespread distribution, environmental persistence, and propensity to bioaccumulate, the organochlorine pesticides (OCs) represent a group of contaminants of special interest. In addition, many of the OCs are suspected "environmental hormones" and have been implicated in gender alteration in fish and wildlife and the increased incidence of cancer in humans. The semipermeable membrane device (SPMD) technology is particularly well suited for defining the presence of bioavailable organic contaminant residues. Because the uptake of hydrophobic contaminants by SPMDs is phenomologically similar to transport across biomembranes and concentration in organism lipids, the sequestration of organic contaminants by the SPMD mimics bioconcentration of contaminants by aquatic organisms. Consequently, the SPMD approach provides a means of defining exposure of aquatic organisms to organic contaminants and a method for estimating the ambient concentrations of bioavailable organic contaminants in a broad array of aquatic systems. Research was conducted to define the SPMD uptake kinetics of 23 OCs. Uptake studies were conducted at constant concentrations and in flow-through exposure systems. Water concentrations were 1, 10, and 100 ng/L (parts-per-trillion). The exposure temperatures were 10 °C, 18 °C, and 26 °C. Sampling rate data, expressed as liters of water extracted per day, were generated for individual OCs. This report summarizes the results of these research studies.

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INTRODUCTION

Knowledge of the identity and time-weighted average concentrations of bioavailable pollutants in environmental waters (i.e., exposure assessment) is a fundamental part of assessing their effects on aquatic life and ultimately humans. Unfortunately, these key data are often unavailable to investigators and regulators because of limitations in most currently employed analytical and biomonitoring approaches. These limitations include: 1) use of non-integrative sampling methods for monitoring hydrophobic pollutants in water may fail to detect episodic contamination events, 2) many analytical methods commonly used for the determination of trace-level nonpolar organic contaminants in water are problematic due to difficulties encountered in collecting and extracting large volumes ($\geq$ 100 L), and in compensating for losses of contaminants due to filtration, volatilization, and sorption on non-equilibrated surfaces, and 3) integrative biomonitors, such as caged fish and bivalves, cannot be used in highly toxic environments, may not concentrate all nonpolar contaminants due to their ability to actively depurate or metabolize certain classes of pollutants, and biomonitoring organisms may have seasonal, life stage, sex and species variations in the quantity and quality of their lipids.

Although improvements in traditional contaminant monitoring methods may partly address these problems, new approaches are required that combine the positive attributes of commonly used analytical chemistry (i.e., accurate and precise analyte concentrations for the moment of sampling) and biomonitoring (i.e., integration of bioavailable aqueous residues) techniques. Scientists at the U.S. Geological Survey's

Midwest Science Center (MSC) recently developed an *in situ* passive sampler of trace level waterborne organic contaminants. The sampler is called the semipermeable membrane device (SPMD), and consists of low density polyethylene (PE) layflat tubing containing a thin film of pure lipid (triolein). This device addresses a number of the identified limitations in analytical and biomonitoring techniques for aqueous contaminants, and is based on concepts similar to those of widely accepted and convenient passive air monitors.

The passive partitioning process mediating SPMD uptake of contaminants mimics the tendency of aquatic life to greatly bioconcentrate trace-level organic contaminants from water. At equilibrium, concentration factors of waterborne contaminants in SPMDs are approximately equal to their respective octanol-water partition coefficient (K_{ow}) values. These devices enable investigators to measure not only the presence but also the bioavailability of organic contaminants. The SPMDs have significant statistical advantages over traditional contaminant assessment techniques due to their reproducibility and ease of interpretation of the resultant data. Further, they provide a relative index of pollution severity, have the ability to sequester contaminants from episodic spills , concentrate pollutants often metabolized by aquatic organisms, and can be used in surface water, sediment, and groundwater environments.

The Department of Defense (DOD) has thousands of identified sites that will require some level of remedial action. Contaminants at these sites often include pesticide waste. Due to their toxicity and propensity to bioaccumulate, the organochlorine pesticides (OCs) are often implicated in adverse environmental effects. From the 1940s until the mid 1970s, OCs were used extensively to control a wide array

of agricultural and household pests (1). Because many OCs are atmospherically transported, areas remote from the site of application may be impacted by their use (2). The persistent and lipophilic nature of OCs leads to bioaccumulation in aquatic organisms such as fish (3) and whales (4), and ultimately, through the food chain to humans (5). Furthermore, OC residues from past insecticidal use have been implicated in the mortality of endangered species of bats (6) and reproductive problems of many raptors including bald eagles (7). Recent findings that many OCs (8) have endocrine-disrupting activity and that mixtures of commonly found OCs exhibit greatly enhanced hormonal activity (9) heighten concerns about the biological effects of these compounds.

The primary goal of this research was to generate SPMD calibration data for OCs. These key data are needed for the accurate use of SPMDs for the determination of the presence, magnitude, and significance of OC contamination on military lands. The uptake kinetics of SPMDs exposed to OC pesticides was determined under controlled laboratory conditions at three temperatures, 10 °C, 18 °C, 26 °C, and three concentrations; 1 ng/L, 10 ng/L, and 100 ng/L. Presented herein are the results of this research.

EXPERIMENTAL

Exposure System:

The constant concentration flow-through system had four 30 L glass exposure chambers. One liter of water at 10 °C, 18 °C, or 26 °C ± 1 °C was added to each chamber every 10 min. The exposures consisted of a control (0 ng/L), low (1 ng/L, medium (10 ng/L), and high (100 ng/L) concentrations. For the two initial SPMD uptake kinetic studies (10 °C and 26 °C), SPMD samples (n=3) were collected on days 2,4,8 and 16 post study initiation. In addition, water samples were collected for analysis on days 0, 4, 8, and 16.

In the 18 °C uptake kinetic study SPMD samples (n=3) were collected on days 2, 4, 8, 16, and 28. In addition, water samples were collected for analysis on days 0, 16, and 28.

Materials:

Low density PE layflat tubing was purchased from Brentwood Plastics, Inc., Brentwood, MO. The PE tubing was from lot No. 18387, a 2.54 cm wide, No. 940, untreated (pure PE; no slip additives, antioxidants, etc.) clear tubing. The wall thickness of this lot ranged from 84 to 89 μm. Triolein (1,2,3-tri-[cis-9-octadecenoyl]glycerol) was obtained from Sigma Chemical Co., St. Louis, MO, and was ≥ 95% pure. Florisil® (60-100 mesh) was obtained from Fisher Scientific Company, Pittsburgh, PA. The Florisil was heated at 475 °C for 8 hours and stored at 130 °C.

Organic solvents used were Optima® grade from Fisher Scientific Company. Analytical standard solutions were purchased from Supelco, Inc., Bellefonte, PA or CIL, Inc., Andover, MA or were prepared in-house from neat materials obtained from ChemService, West Chester, PA.

Sample Processing and Residue Enrichment:

The SPMD sample processing and residue enrichment procedures employed were similar to those previously described (10), with differences as follows: Prior to gel permeation chromatography (GPC), the eluates were filtered through glass-fiber filters, and reduced in volume (to about 0.8 mL) using high purity nitrogen. The samples were quantitatively transferred to 1 mL conical autoinjector vials using dichloromethane; a nonane keeper was added (about 0.1 mL), and the dichloromethane was removed under a stream of high purity nitrogen. Final volumes were adjusted to 0.95 mL, using nonane. The resulting sample solutions were fractionated by high performance GPC. The GPC instrumentation included the following modules: Perkin-Elmer series 410 solvent delivery system with a Perkin-Elmer ISS-200 autoinjector system (Perkin-Elmer Co., Norwalk, CT) an ISCO Foxy 200 fraction collector (ISCO, Inc., Lincoln, NE) and a Phenogel® GPC column (22.5 mm i.d. x 250 mm, 10 μm particles [10 nm pore size]) (Phenomonex, Inc., Torrance, CA).

The GPC mobile phase for samples from the three studies consisted of hexane/dichloromethane (80/20, V/V) delivered at a flow rate of 4 mL/min. Prior to sample chromatography, the GPC was calibrated by injecting benzene and monitoring

its retention. The collect cycle (typically 72-240 mL) was initiated at the beginning of the elution of benzene; all previous eluate (typically 0-72 mL) constituted the excluded (dump) fraction. The dump fraction contained co-dialyzed lipid components and polyethylene waxes, and the collect fraction contained all OC pesticides. For the 18 °C study, the GPC procedure was repeated for the control and low concentration (1 ng/L) exposure SPMDs using 100 % dichloromethane as the mobile phase. This additional treatment removed co-extracted materials that interfered in the analysis of the samples. Following enrichment by GPC, the resulting solutions from the 10 °C, 18 °C, and 26 °C exposures were reduced in volume by rotary evaporation and nitrogen blow-down.

The diluter water samples (4 L for the 1 ng/L exposure, 2 L for the 10 ng/L exposure, 1 L for the 100 ng/L exposure, and 4 L for the control exposure) were extracted three times with dichloromethane (100 mL/extraction), the extracts were combined, dried over anhydrous sodium sulfate, and reduced in volume by rotary evaporation to about 20 mL. Isooctane keeper (about 5 mL) was added to the samples and the volume was reduced to about 3 mL. The enriched extracts were applied to individual Florisil columns (5 g) and eluted with 60 mL of diethylether/petroleum ether (2:3, V/V). The eluates were reduced in volume by rotary evaporation and nitrogen blow-down.

Analysis:

The final solutions were analyzed for OC residues using gas chromatography - electron capture detection (GC-ECD). Sample analysis was performed with an HP

5890 capillary GC-ECD system from Hewlett Packard, Inc., Palo Alto, CA. Contaminant residues for which analyses were conducted are identified in Table 1. For the 10 °C and 26 °C exposure SPMD extracts, 1 μL (1.0 mL volume for controls, low and medium concentration exposure water samples, 5 mL for high concentration exposure water samples; 20 ng/mL aldrin added as instrumental internal standard) were analyzed using the following conditions: the ECD was maintained at 330 °C and the OV-17 column (25 m x 0.25 mm i.d. x 0.25 μm film thickness, J&W Scientific, Folsom, CA) oven was programmed at 10 °C/min from 60 to 140 °C, then at 2 °C/min to 230 °C, followed by 10 °C/min to 280 °C, and held at 280 °C for 5 min. The SPMD sample extracts (control and 1 ng/L SPMDs, 1 mL volume; 10 ng/L SPMDs, 5 mL volume; 100 ng/L SPMDs, 10 mL volume; 20 ng/mL aldrin added as instrumental internal standard) were analyzed using the GC-ECD conditions above. For the 18 °C exposure SPMD extracts, 1 μL (1.0 mL volume for control, low and medium concentration exposure water samples, 5 mL for high concentration exposure water sample, 50 ng octachloronaphthalene added as instrumental internal standard) was analyzed for all analytes. The ECD was maintained at 330 °C and the column (OV-17, 25 m x 0.25 mm i.d. x 0.25 μm film thickness, J & W Scientific, Folsom, CA) oven was programmed at 10 °C/min from 60 to 140 °C, then at 2 °C/min to 240 °C, followed by 10 °C/min to 310 °C, and held at 310 °C for 5 min. The SPMD sample extracts (control and 1 ng/L SPMDs, 1 mL volume; 10 ng/L SPMDs, 5 mL volume; 100 ng/L SPMDs, 10 mL volume; 50 ng/mL octachloronaphthalene added as instrumental internal standard) were analyzed using the GC-ECD conditions above. The OC residues were quantitated using five levels of OC pesticide standards spanning a 16-fold (10 °C and 26 °C) and 32-fold (18 °C) range in concentration for

each compound determined.

Quality Control:

The method detection limit (MDL) for analysis of SPMD samples was determined for each OC by measuring the values of coincident GC-ECD peaks for each compound in control (0 ng/L) SPMD samples taken through the entire processing and analysis procedure. For individual OC components having no coincident GC-ECD peak, the standard deviation around the mean value (n = 5) of the lowest calibration standard was used to calculate the MDLs and MQLs. The MDL was defined as the mean plus three standard deviations of values so determined (11). The MQL was defined as the mean plus 10 standard deviations of values so determined (11). The MDLs and MQLs for the SPMD samples for the 10 °C study are presented in Tables 2 through 5; for the 18 °C study in Tables 6 through 10; and for the 26 °C study in Tables 11 through 14. The data used to generate the MDL and MQL values for the SPMD samples are given in the Quality Control Section, Tables 1 through 17.

A similar procedure was followed for defining the MDLs and MQLs for the OCs in the exposure water. For this exercise, control water samples were processed and analyzed exactly like exposure water samples. The MDLs and MQLs for the water samples for the 10 °C, 18 °C, and 26 °C exposures are presented in Tables 15, 16, and 17, respectively. The data used to generate the MDL and MQL values for the exposure water samples are presented in the Quality Control Section, Tables 18 through 20.

Reagent blanks, consisting of the dialysis and fractionation solvents, were processed and analyzed with each water sample and SPMD sample set. Samples of control exposure water and freshly prepared SPMDs were fortified with OC pesticides and carried through the entire sample processing and analysis sequence.

RESULTS AND DISCUSSION

The results of the analysis of reagent blank samples are given in the Quality Control Section in Tables 21 through 29. The recoveries of OC pesticides from fortified control water samples are presented in the Quality Control Section in Table 30 (10 °C), 31 (18 °C), and 32 (26 °C). The recovery of the individual OCs averaged about 80% across the three exposures. The recoveries of the OC pesticides from the fortified SPMDs are presented in the Quality Control Section in Tables 33 (10 °C and 26 °C exposures) and 34 (18 °C exposure). The average recovery through the complete sample processing and analysis sequence, for the individual OC pesticides used in the three exposures, was 72% with the range being 50% to 110%. Moreover, precision of the analysis of these spike samples was very good. As given in Tables 33 and 34 in the Quality Control Section, the CVs for replicate sample analysis (n = 3 for 10 °C and 26 °C studies, Table 33) ranged from a low of 4% to a high of 22 % with all but four analytes having CVs of 13% or less, and for the 18 °C study (n = 5, Table 34) the range was 4% to 27% with all but two analytes having a CV of 13% or less.

The measured water concentrations of the OC pesticides in the constant concentration flow-through diluter system for the 10 °C, 18 °C, and 26 °C exposures

are presented in Tables 18-20, Tables 21-24 and Tables 25-27, respectively. With the exception of delta-BHC in the low and medium concentration exposures (10 °C and 26 °C), and dieldrin, dacthal and endrin at all concentrations in the 18 °C exposure, the waterborne concentrations of the OCs remained essentially constant for the entire exposure period. In the case of the three analytes mentioned in the 18 °C exposure, no clear explanation is available for their apparent absence. An examination of the data in Tables 35-43 in the Quality Control Section reveal that all analytes were present in the diluter stocks at constant concentrations throughout all three exposure studies and were present in the SPMD samples. Thus, for these three analytes in the 18 °C exposure, the nominal water concentrations were employed in determining the SPMD sampling rates.

The uptake kinetics of OC pesticides from 1 ng/L, 10 ng/L and 100 ng/L waterborne exposures by SPMDs during the 10 °C study are given in Tables 28-39. The calculated concentration factors and sampling rate (R_s) data are given in Tables 28A-39A. The sampling rate data are similar for the 10 and 100 ng/L concentrations, (i.e., generally well within a factor of two). An examination of the concentration factors and R_s values from all three 1 ng/L exposures (10 °C, 18 °C, 26 °C), studies showed that they were more variable than in the 10 ng/L and 100 ng/L treatments. This arose from chromatographic interferences in the analysis of the enriched samples which resulted in many analytes being unquantifiable. Because many of the 1 ng/L R_s values are based on concentration data that are less than MQLs, this data set is presented for information purposes only. However, sufficient acceptable data was generated from the 10 °C treatment to demonstrate that the SPMD technique can be used at relatively

low temperatures.

A similar compilation of the data from the 18 °C uptake kinetics study is presented in Tables 40-54 and 40A-54A, respectively. Comparison of the sampling rate data in Tables 40A-54A (18 °C) to Tables 28A-39A (10 °C) failed to show a definitive temperature effect on sampling rate.

The corresponding data for the 26 °C exposure are presented in Tables 55-66 and 55A-66A, respectively. Similar to the 10 °C and 18 °C exposures, sampling rates appeared to be independent of aqueous concentrations (i.e., the daily volume of water cleared of a chemical by an SPMD was constant) as well. However, sampling rates at 26 °C were generally significantly greater than those observed for the 10 °C and 18 °C treatments. In light of the increased molecular motions of polymer chains, and enhanced molecular diffusion rates in both the polymer and the aqueous diffusion layer, higher sampling rates at 26 °C were expected. Since diffusion rates have an exponential dependence on temperature

$$D = D_o \exp(-E_a/RT) \quad (1)$$

the observed rise in sampling rate with increasing temperature is entirely consistent. The role of diffusivity in SPMD sampling rate is shown by

$$R_s = DK_{mw}A/l \quad (2)$$

where K_{mw} is the membrane-water partition coefficient and A is the membrane surface area and l is membrane thickness. While there was considerable variation in sampling rate among individual OC pesticides, there appeared to be no significant increase in R_s values at 18 °C (i.e., 10 °C → 18 °C). However, without exception the R_s values for all OC pesticides were greater at 26 °C than at 10 °C. This temperature effect is

dissimilar to that observed for the priority pollutant polyaromatic hydrocarbons (PAHs, unpublished data, MSC), whose R_s values changed little with increasing temperature (10 °C → 26 °C). In the case of OCs, it appears that the rule of thumb that diffusion rates (equation 1) as well as the rate of reactions, generally double for each 10 °K rise in temperature can be applied. For example, considering the R_s values for HCB from the 10 ng/L treatment yields a theoretical enhancement of the sampling rate from 10 °C to 18 °C to be 3.6 L/d to 5.8 L/d versus the observed 4.0 L/d. Increasing the exposure temperature from 10 °C to 26 °C should have resulted in an increase from 3.6 L/d to about 9.3 L/d versus the 11 L/d observed. A similar treatment for the 100 ng/L values yields 3.4 L/d versus 3.0 L/d, and 5.4 L/d versus the observed 6.3 L/d. For dieldrin this treatment yields 2.9 L/d versus 2.9 L/d observed and 4.6 L/d versus 6.7 L/d observed for the 10 ng/L exposure, and 2.2 L/d versus 3.1 L/d observed and 3.5 L/d versus 4.9 L/d observed for the 100 ng/L exposure. While such a simplified approach can not be expected to be perfectly accurate, the overall trend appears to follow theory.

For many organic compounds, the permeability of PE is known to vary with temperature in accordance with an Arrhenius relationship, i.e., plots of 1/K versus ln P, or in the present case ln R_s would be linear. Figures 1-4 show standard and Arrhenius plots for selected OCs. In general, the Arrhenius treatment appears to provide a better fit for the OC data.

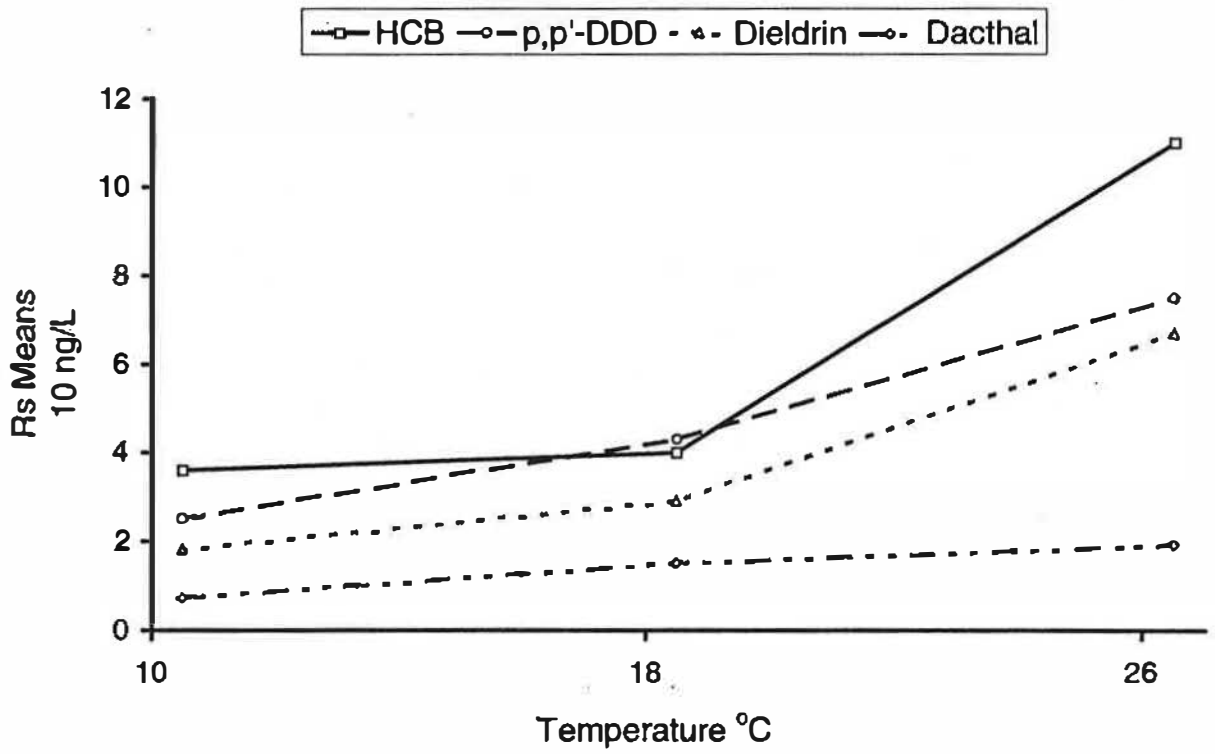

Figure 1. Effect of water temperature on sampling rates (Rs, normalized to 1 g triolein) of selected OC pesticides (10 ng/L nominal water concentration).

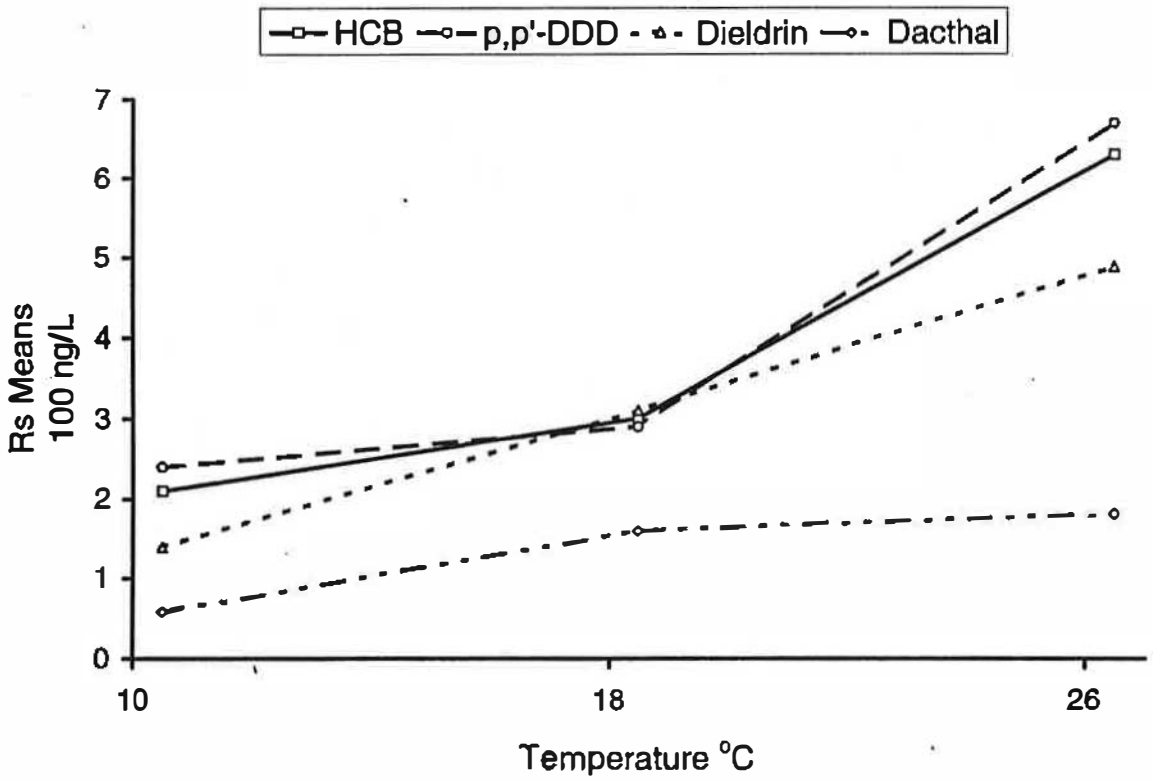

Figure 2. Effect of water temperature on sampling rates (Rs, normalized to 1 g triolein) of selected OC pesticides (100 ng/L nominal water concentration).

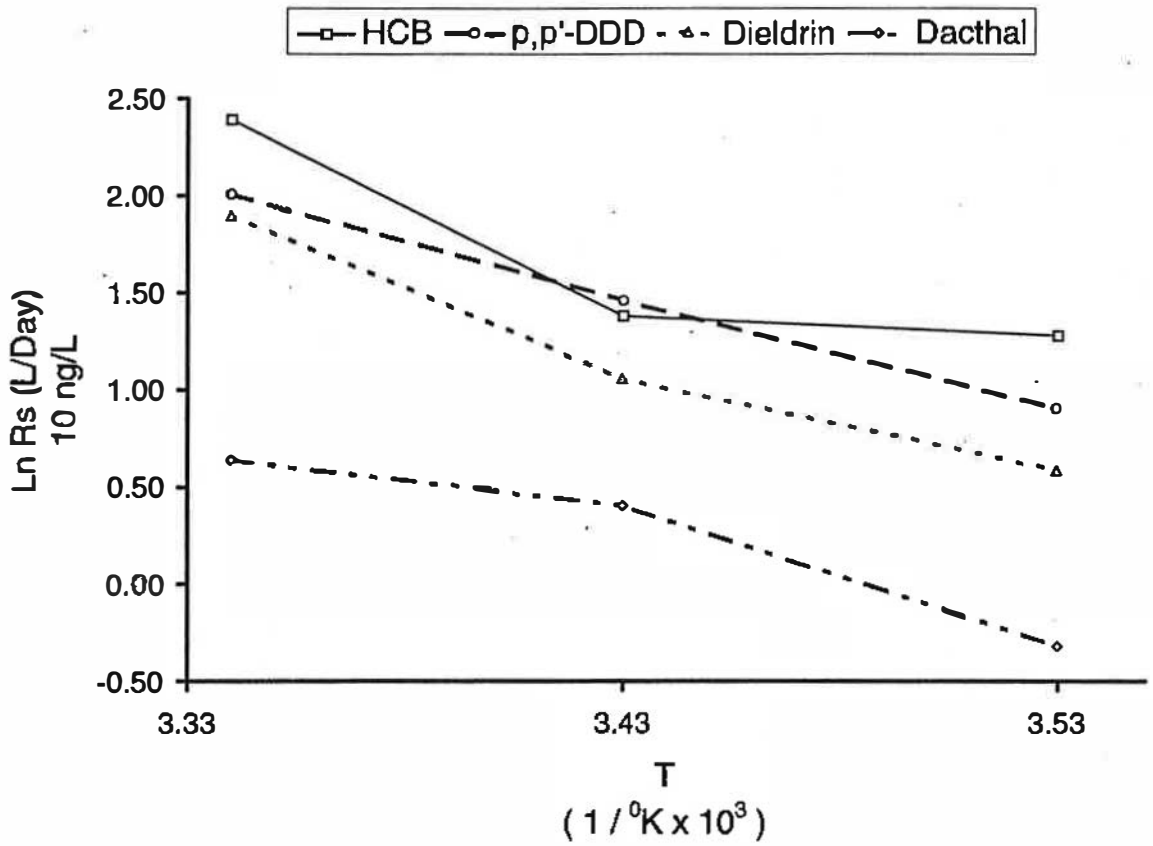

Figure 3. Arrhenius plot of the effect of water temperature on SPMD sampling rates. (Rs normalized to 1 g triolein) for selected OC pesticides. Mean values (days 2-16) are from flow through exposure (10 ng/l nominal water concentration).

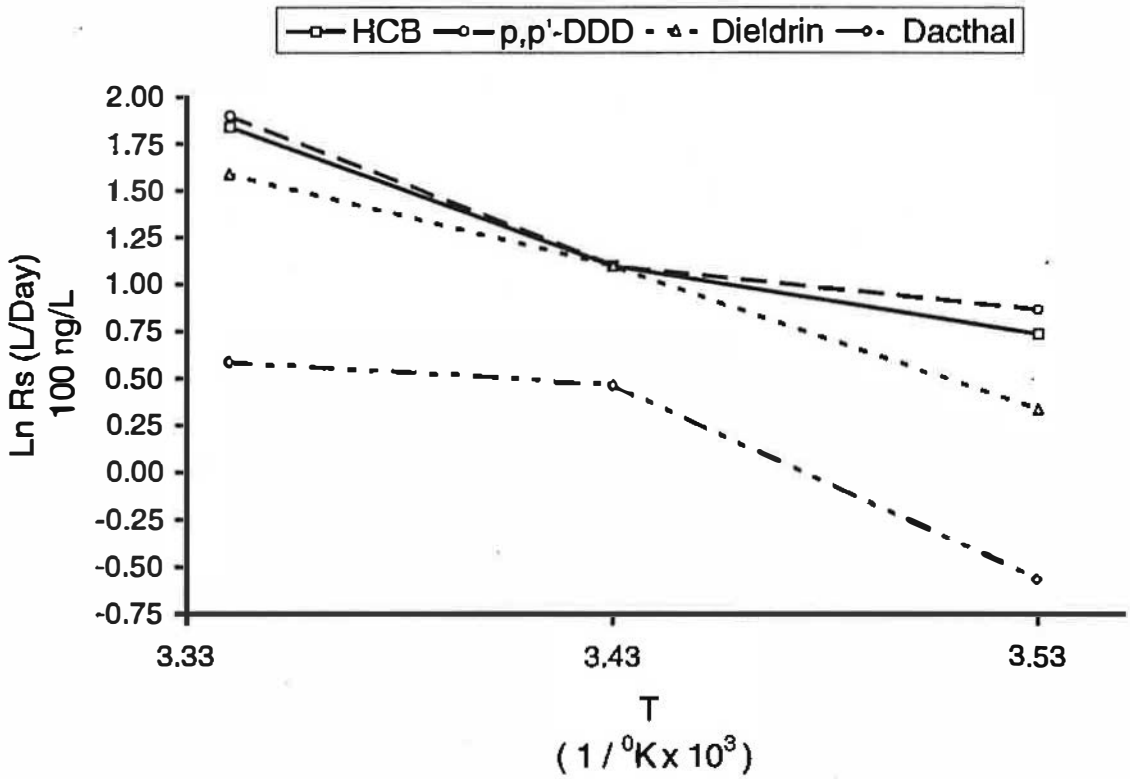

Figure 4. Arrhenius plot of the effect of water temperature on SPMD sampling rates. (Rs normalized to 1 g triolein) for selected OC pesticides. Mean values (days 2-16) are from flow through exposure (100 ng/l nominal water concentration).

The K_{ow} or K_{Lw} and K_{mw} (where K_{Lw} the lipid-water partition coefficient) of a

compound can be viewed as the driving force for SPMD uptake, whereas the size, molecular weight, and polarity of the compound affect resistance to mass transfer. Hildebrand solubility parameters given by

$$\delta = (\Delta E_v/v)^{1/2} \qquad (3)$$

are widely used to estimate the solubility of organic solutes in polymers (12) and are a measure of the strength of attraction of molecules (cohesive energy density) and compounds or compounds and polymers. Identical or close Hildebrand values of solutes and polymers are indicative of maximum mutual solubility. Unless the membrane plays no role in the uptake (diffusion layer control), contaminants having solubility parameter values close or identical to PE should have maximal uptake rates as there should be minimal resistance to mass transfer through the polymer. The solubility parameters for different types of PE range from about 7.7 to 8.8 $(cal/cm^3)^{1/2}$. Aroclor® 1248, a complex mixture of polychlorinated biphenyls (PCBs), has a Hildebrand value of 8.8, which is within the range of low density PE (13). PCB congeners have been shown to have high SPMD sampling rates (unpublished data, MSC). Unfortunately, corresponding Hildebrand values for the OC pesticides are currently unavailable. However, based on the physicochemical similarities of OCs to PCBs, it is anticipated that Hildebrand values for OCs will be very close to that of low density PE.

The effective size of a solute and the size of the available transport corridors (i.e., transient cavities formed by the thermal motions of the polymer chains) are important parameters in the rate of mass transfer through nonporous membranes such as the PE used for SPMDs. Because the transport corridors in PE are small (generally

$\leq$ 10 Å in cross-section) and transient in nature, minimal molecular volume is an important factor in membrane mass transfer rates, as it relates to the number of polymer cavities large enough to accommodate solute molecules. As the molecular size increases and ultimately approaches and exceeds the size of the average membrane transport corridor, the resistance to mass transfer should rise exponentially, with a concomitant decline in sampling rate. In addition, as the solute molecule becomes large, increased matrix-solute interactions are often possible, especially with the glassy or the so-called "crystalline" regions of the PE. These crystalline regions represent about 50% of the low density PE volume. Solute-matrix interactions in these regions may be closer to an adsorption mechanism, with a concomitant increase in impedance to mass transfer resulting from high activation energies required for desorption. Consequently, variable SPMD R_s values for various waterborne solutes are expected based on their K_{mw} and K_{ow} values and their molecular size, shape, rotational, and conformational freedom.

Estimation of molecular cross sectional diameters (breadth) of test OCs showed that only methoxychlor, HCB, p,p'-DDD, heptachlor epoxide, and heptachlor had breadths approaching or exceeding the 10 Å maximum diameter of the membrane transport corridors. However, examination of mean R_s values in Tables 68 and 69 show no apparent size mediated reduction in sampling rates of the OCs with the possible exception of methoxychlor.

The aqueous diffusional layer and periphytic growths may also affect or control SPMD sampling rates. The total resistance (r_{tot}) to an analyte's uptake by an SPMD can be given by

$$r = l_m/D_mK_{mw}+l_p/D_pK_{pw}+l_{aq}/D_{aq} \quad (4)$$

where m denotes the membrane, p denotes the periphytic layer, w denotes water, aq denotes the aqueous diffusional layer, l is the thickness, D is diffusivity and K is the equilibrium partition coefficient. This equation illustrates the inverse dependence of permeability (P = DK) or diffusion on membrane or layer thickness which in turn is related to R_s values by

$$R_s = DKA/l \text{ (membrane and periphytum layers)} \quad (5)$$

$$R_s = DA/l \text{ (aqueous diffusion layer)} \quad (6)$$

Since SPMDs were treated for biofouling in these experiments the rate of biofouling (at least for the first 16 days) was assumed to be minimal, i.e., < 20% of overall impedance of OC uptake rates. Depending on the turbulence or water velocity the aqueous diffusion layer surrounding an SPMD can vary from about 2 μm to 400 μm thick. Thus, the thickness of aqueous diffusional layers in stagnant systems can exceed the thickness of the SPMD membrane (≈ 85 μm). Also, further examination of equation 4 shows that increasing K_{mw} values reduces mass transfer resistance in the nonpolar PE membrane, leading to the possibility of diffusion layer control of SPMD uptake.

Under the experimental conditions of these exposures, we estimate the aqueous diffusion layer to be < 100 μm, which still may result in diffusion layer control of uptake rates for some of the OCs. For a high free-volume polymer (silicone) and for some organisms (14) it has been shown that the polymer or biomembrane controls uptake of chemicals having K_{mw} values < 10^4 but rate control switches to the diffusion layer for chemicals having K_{mw} values > 10^4. When the diffusion layer controls uptakes, a plot of

K_{mw} values versus R_s values should be a straight line not quite parallel to the X-axis, because of slight downward slope with increasing K_{mw} values. Since the low density PE used in SPMDs has much less free volume than silicone and is much thicker than biomembranes, the above scenario may not apply to SPMDs. Unfortunately definitive determination of the rate-limiting step in OC uptake is not possible without tests with different SPMD membrane thickness or different aqueous flow rates (i.e., linear velocities).

Table 67 presents a comparison of the log K_{ow}s of the OC pesticides and their respective sampling rates. In the absence of molecular size and solubility limitations, and diffusion layer control, the sampling rate of OCs are expected to increase with increasing K_{ow}. An examination of the data in table 67 suggests that this is generally true.

The capacity of the SPMD to concentrate chemicals is largely dependent on the solute's K_{Lw}. Because K_{Lw}s are very nearly identical to K_{ow}s for many chemicals (15), the log K_{ow} is a convenient means of estimating a chemical's potential for being concentrated by the SPMD. With knowledge of a compound's K_{ow} and R_s values, the time required to reach equilibrium can be derived from

$$t_{½u} = -\ln 0.5\ (K_{ow}V_L/R_s) \quad (7)$$

where $t_{½u}$ is the halftime to equilibrium, and V_L is the volume of SPMD lipid. Since SPMD uptake has been found to be a first-order process, then about four $t_{½u}$s are required to reach >90% of equilibrium. The above equation can also be used to estimate the maximal exposure time that R_s values will be constant, i.e., the period of linear uptake by an SPMD, and the relationship applies regardless of the source of rate

control.

The mean sampling rates (i.e., days 2-16) for individual analytes in the 10 ng/L and 100 ng/L exposures versus the three exposure temperatures are summarized in Tables 68 and 69. The R_s values for the OC pesticides ranged from a low of less than the MQL (α-BHC and lindane) to a high of 13 L/d (normalized to 1 g of triolein) for pentachloroanisole and p,p'-DDE. For some of the low K_{ow} analytes present in the OC test mixture, the R_s values reached a maxima at the day 2 and 4 sampling periods. This is because equilibrium was approached (see equation 7). Thus, falling R_s values of these analytes (i.e., $K_{ow} < 10^4$) after day 4 shown in the data tables are a result of the calculation procedures. This is particularly evident with lindane. With the exception of dieldrin and heptachlor expoxide, the BHC components have the lowest reported K_{ow} values and are some of the smallest molecules among the OC pesticides (i.e., potentially highest fugacities) and thus would be expected to approach equilibrium during the exposures.

To determine the magnitude of the effects of SPMD membrane biofouling and differences in current flow or turbulence (compounds whose uptake is controlled by the diffusion layer), Huckins, et al. (16) proposed the use of permeability reference compounds (PRC) for field-deployed SPMDs. A PRC is a noninterfering (analytically) compound, such as a deuterated polycyclic aromatic hydrocarbon, with a moderate-to-fairly high SPMD fugacity (escaping tendency) added to SPMD lipid prior to deployment. It is used to correct for membrane fouling impedance or differences in diffusional layer thickness. This approach is based on the principle that the SPMD uptake rate of a chemical is proportional to its rate of loss. Thus, changes in the loss

rate of a PRC relative to that observed during calibration studies can be used to adjust SPMD sampling rates to the environmental conditions of the exposure. A report (17) demonstrating the feasibility of the PRC approach is now available. However, the most appropriate PRCs for environmental sampling of OCs have not been selected.

The accuracy of SPMD-based estimates (without PRCs) of ambient waterborne bioavailable concentrations of OCs, using the R_s values given in this report, is expected to be well within an order of magnitude. However, with the use of suitable PRCs, the accuracy of SPMD-derived water concentration estimates is expected to improve significantly to within two fold. The level of accuracy required by SPMD users will dictate the need for additional research on PRCs.

Recently, Huckins, et al. (18) delineated several algorithms for estimating ambient waterborne concentrations of analytes from their concentrations in SPMD triolein. The model development is briefly summarized in the following discussion. Depending on exposure duration, physicochemical properties of the analyte, temperature of the exposure medium, extent of membrane biofouling, and potentially diffusional layer thickness, the concentration of residues sequestered in SPMDs is represented by linear, curvelinear, and asymptotic regions of the overall uptake curve. This curve can be described by

$$C_L = C_w K_{Lw}(1-\exp[-k_u t]) \quad (8)$$

where C_L and C_w are analyte concentrations in the triolein and water, K_{Lw} is the equilibrium lipid/water partition coefficient (approximated by the K_{ow}), and k_u is the overall uptake rate constant. The capacity of the SPMD to sequester an analyte is set by the magnitude of the K_{Lw} value and k_u is $k_o A K_{mL}/V_L$ where k_o is the mass transfer

coefficient of an analyte into the SPMD triolein, A is the membrane surface area, K_{mL} is the membrane/lipid partition coefficient, and V_L is the lipid volume. Use of equation 8 to predict C_w requires multiple determinations of C_L through time.

Assuming equilibrium between the SPMD lipid and exposure water is not approached for a particular analyte, then for a constant temperature

$$C_L = C_w K_{mw} k_o A t / V_L \quad (9)$$

Here the group $K_{mw}k_oA$ is the effective daily sampling rate (R_s) of the SPMD for a particular analyte, i.e., L/d. The use of equation 9 to estimate analyte C_w requires that the SPMD is in the linear sampling phase or that the average sampling rate during the exposure interval be known. When C_L/C_w is approximately equal to K_{Lw}, the exponential term in equation 8 becomes negligible and then

$$C_L = C_w K_{Lw} \quad (10)$$

This is the region in which C_L reached equilibrium with C_w. If K_{Lw} is known, the water concentration C_w can be determined from C_L.

The R_s values derived from the current research are given per gram of SPMD and lipid. Assuming that the analyte uptake is in the linear phase, and substituting R_s for $k_oK_{mw}A$ in equation 9 gives

$$C_L = C_w R_s t / V_L \quad (11)$$

Rearranging equation 11 results in

$$C_w = C_L V_L / R_s t \quad (12)$$

which can be rewritten as

$$C_w = C_{SPMD} M_{SPMD} / R_s t \quad (13)$$

where C_{SPMD} is the concentration of the individual analyte in the SPMD and M_{SPMD} is the

mass of the SPMD. This procedure was applied to estimations of bioavailable contaminants in the waters of Canal Creek, Aberdeen Proving Ground (17).

CONCLUSION

The kinetic studies relating the uptake of 23 OC pesticides by SPMDs at three concentrations (1 ng/L, 10 ng/L, and 100 ng/L) and three temperatures (10 °C, 18 °C, and 26 °C) were completed. Concentration factors and sampling rates, R_s values, for the 23 OC pesticides based on per gram of lipid and per gram of SPMD, were calculated. The uptake of the OC pesticides by the SPMDs (i.e., R_s) was demonstrated to increase with increasing temperature and appeared to follow an Arrhenius relationship. As predicted by theory, the R_s values generally rose with increasing analyte K_{ow}s. This phenomenon is similar to that observed for the bioconcentration of contaminants by biota. Thus, the SPMD appears to mimic the bioconcentration process.

An algorithm for estimating ambient waterborne bioavailable concentration of contaminants has been developed. Future research designed to increase the accuracy of estimations of ambient water concentrations of contaminants will involve the development and validation of permeation reference compound(s) to correct for biofouling and potential diffusion layer control.

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TABLES

Table 1. Organochlorine Pesticides Used in SPMD Kinetic Studies

Compounds in order of GC elution

HCB
pentachloroanisole
alpha-BHC
lindane
beta-BHC
heptachlor
aldrin*
dacthal
oxychlordane
heptachlor expoxide
trans-chlordane
trans-nonachlor
cis-chlordane
o,p'-DDE
p,p'-DDE
dieldrin
o,p'-DDD
endrin
cis-nonachlor
o,p'-DDT
p,p'-DDD
p,p'-DDT
mirex
p,p'-methoxychlor

* Compound not used in 10 °C and 26 °C studies.

10 °C OC DILUTER STUDY

Table 2. Day 2 OC MDLs and MQLs for SPMD Samples

OCs	ng / SPMD [2]		
	Mean [3]	MDL [5]	MQL [6]
HCB	7.6	26.	68.
pentachloranisole	2.2	4.6	10.
alpha-BHC	5.8	11.	24.
lindane	0.11 [4]	0.12	0.16
beta-BHC	0.17 [4]	0.20	0.27
heptachlor	0.62	2.2	5.7
aldrin [1]	--------	--------	--------
dacthal	0.098 [4]	0.11	0.13
oxychlordane	0.53	1.8	4.7
heptachlor epoxide	0.096 [4]	0.11	0.14
trans-chlordane	1.9	3.2	6.3
trans-nonachlor	1.2	2.9	6.7
cis-chlordane	0.71	2.5	6.8
o,p'-DDE	0.30	1.1	3.1
p,p'-DDE	1.8	3.2	6.0
dieldrin	0.096 [4]	0.11	0.13
o,p'-DDD	0.18 [4]	0.22	0.31
endrin	2.0	2.9	5.0
cis-nonachlor	1.0	1.2	1.7
o,p'-DDT	0.88	2.9	7.5
p,p'-DDD	0.22 [4]	0.29	0.44
p,p'-DDT	0.19 [4]	0.27	0.46
mirex	2.3	4.6	10.
p,p'-methoxychlor	2.9	10.	28.

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*

[3] *Value used is mean of QC Table 5.*

[4] *Average instrumental background. See QC Table 2.*

[5] *Method Detection Limit, the mean + 3 times standard deviation.*

[6] *Method Quantitation Limit, the mean + 10 times standard deviation.*

10 °C OC DILUTER STUDY

Table 3. Day 4 OC MDLs and MQLs for SPMD Samples

OCs	ng / SPMD [2]		
	Mean [3]	MDL [5]	MQL [6]
HCB	13.	18.	28.
pentachloranisole	2.5	4.8	10.
alpha-BHC	3.5	8.3	20.
lindane	0.28	1.2	3.3
beta-BHC	0.48	2.1	5.9
heptachlor	1.1	3.8	10.
aldrin [1]	--------	--------	--------
dacthal	1.5	3.9	9.5
oxychlordane	2.5	6.4	16.
heptachlor epoxide	0.096 [4]	0.11	0.14
trans-chlordane	2.9	3.9	6.1
trans-nonachlor	2.4	3.0	4.5
cis-chlordane	1.6	3.2	6.9
o,p'-DDE	2.0	7.1	19.
p,p'-DDE	3.3	8.1	19.
dieldrin	0.67	2.2	5.9
o,p'-DDD	0.18 [4]	0.22	0.31
endrin	2.5	5.8	14.
cis-nonachlor	1.7	3.4	7.3
o,p'-DDT	0.73	3.5	10.
p,p'-DDD	0.22 [4]	0.29	0.44
p,p'-DDT	0.19 [4]	0.27	0.46
mirex	3.1	7.0	16.
p,p'-methoxychlor	12.	51.	140.

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*
[3] *Value used is mean of QC Table 6.*
[4] *Average instrumental background. See QC Table 2.*
[5] *Method Detection Limit, the mean + 3 times standard deviation.*
[6] *Method Quantitation Limit, the mean + 10 times standard deviation.*

10 °C OC DILUTER STUDY

Table 4. Day 8 OC MDLs and MQLs for SPMD Samples

OCs	ng / SPMD [2]		
	Mean [3]	MDL [5]	MQL [6]
HCB	20.	25.	35.
pentachloransole	7.4	12.	21.
alpha-BHC	12.	22.	46.
lindane	0.11 [4]	0.12	0.16
beta-BHC	0.17 [4]	0.20	0.27
heptachlor	2.9	5.5	11.
aldrin [1]	--------	--------	--------
dacthal	0.098 [4]	0.11	0.13
oxychlordane	3.6	6.0	12.
heptachlor epoxide	0.096 [4]	0.11	0.14
trans-chlordane	5.1	12.	28.
trans-nonachlor	4.2	11.	26.
cis-chlordane	2.5	9.4	26.
o,p'-DDE	4.2	16.	44.
p,p'-DDE	3.4	8.5	20.
dieldrin	0.70	3.7	11.
o,p'-DDD	1.4	7.7	22.
endrin	1.6	5.8	16.
cis-nonachlor	2.2	3.6	6.8
o,p'-DDT	4.2	7.5	15.
p,p'-DDD	0.22 [4]	0.29	0.44
p,p'-DDT	0.59	2.7	7.6
mirex	6.5	9.4	16.
p,p'-methoxychlor	2.2	12.	34.

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*
[3] *Value used is mean of QC Table 7.*
[4] *Average instrumental background. See QC Table 2.*
[5] *Method Detection Limit, the mean + 3 times standard deviation.*
[6] *Method Quantitation Limit, the mean + 10 times standard deviation.*

10 °C OC DILUTER STUDY

Table 5. Day 16 OC MDLs and MQLs for SPMD Samples

OCs	ng / SPMD [2]		
	Mean [3]	MDL [5]	MQL [6]
HCB	21.	51.	120.
pentachloranisole	8.4	21.	49.
alpha-BHC	6.5	19.	48.
lindane	0.77	4.1	12.
beta-BHC	0.17 [4]	0.20	0.27
heptachlor	6.6	6.6	6.7
aldrin [1]	-------	-------	-------
dacthal	1.6	9.7	29.
oxychlordane	11.	30.	73.
heptachlor epoxide	0.83	4.7	14.
trans-chlordane	8.8	20.	47.
trans-nonachlor	7.8	19.	46.
cis-chlordane	5.8	14.	33.
o,p'-DDE	9.4	24.	56.
p,p'-DDE	5.8	14.	34.
dieldrin	1.5	6.3	18.
o,p'-DDD	4.3	16.	42.
endrin	1.4	5.3	14.
cis-nonachlor	3.8	8.9	21.
o,p'-DDT	8.7	23.	56.
p,p'-DDD	0.22 [4]	0.29	0.44
p,p'-DDT	4.2	7.5	15.
mirex	14.	33.	77.
p,p'-methoxychlor	11.	56.	160.

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*
[3] *Value used is mean of QC Table 8.*
[4] *Average instrumental background. See QC Table 2.*
[5] *Method Detection Limit, the mean + 3 times standard deviation.*
[6] *Method Quantitation Limit, the mean + 10 times standard deviation.*

18 °C OC DILUTER STUDY

Table 6. Day 2 OC MDLs and MQLs for SPMD Samples

OCs	ng / SPMD [1]		
	Mean [2]	MDL [4]	MQL [5]
HCB	2.0	2.8	4.6
pentachloranisole	1.9	2.4	3.4
alpha-BHC	0.33	1.6	4.4
lindane	0.88	3.1	8.2
beta-BHC	18.	33.	68.
heptachlor	0.065 [3]	0.068	0.074
aldrin	1.4	2.5	4.9
dacthal	1.6	3.3	7.1
oxychlordane	2.0	3.3	6.4
heptachlor epoxide	1.1	1.9	3.9
trans-chlordane	2.2	3.4	6.2
trans-nonachlor	2.0	3.1	5.6
cis-chlordane	2.3	2.9	4.4
o,p'-DDE	3.9	5.8	10.
p,p'-DDE	3.6	7.5	17.
dieldrin	2.0	4.2	9.4
o,p'-DDD	1.4	3.4	8.1
endrin	5.8	7.2	11.
cis-nonachlor	3.0	4.0	6.2
o,p'-DDT	2.9	3.4	4.4
p,p'-DDD	0.75	4.1	12.
p,p'-DDT	6.2	9.5	17.
mirex	3.6	6.9	15.
p,p'-methoxychlor	5.6	7.9	13.

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*

[2] *Value used is mean of QC Table 9.*

[3] *Average instrumental background. See QC Table 4.*

[4] *Method Detection Limit, the mean + 3 times standard deviation.*

[5] *Method Quantitation Limit, the mean + 10 times standard deviation.*

18 °C OC DILUTER STUDY

Table 7. Day 4 OC MDLs and MQLs for SPMD Samples

OCs	ng / SPMD [1]		
	Mean [2]	MDL [3]	MQL [4]
HCB	3.7	5.9	11.
pentachloranisole	3.1	4.0	6.2
alpha-BHC	1.5	2.3	4.0
lindane	0.93	2.4	5.9
beta-BHC	18.	27.	47.
heptachlor	0.35	1.9	5.4
aldrin	2.6	2.9	3.6
dacthal	0.57	2.1	5.6
oxychlordane	3.5	4.0	5.0
heptachlor epoxide	1.5	2.1	3.5
trans-chlordane	3.4	4.8	8.0
trans-nonachlor	3.3	4.2	6.2
cis-chlordane	2.3	2.8	3.8
o,p'-DDE	5.4	7.2	12.
p,p'-DDE	5.8	6.9	9.4
dieldrin	2.6	3.4	5.2
o,p'-DDD	2.2	5.2	12.
endrin	5.8	6.1	6.8
cis-nonachlor	3.0	4.4	7.6
o,p'-DDT	3.6	5.5	10.
p,p'-DDD	1.2	1.7	3.0
p,p'-DDT	6.6	8.1	12.
mirex	6.5	8.6	13.
p,p'-methoxychlor	2.6	8.9	24.

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*

[2] *Value used is mean of QC Table 10.*

[3] *Method Detection Limit, the mean + 3 times standard deviation.*

[4] *Method Quantitation Limit, the mean + 10 times standard deviation.*

18 °C OC DILUTER STUDY

Table 8. Day 8 OC MDLs and MQLs for SPMD Samples

OCs	ng / SPMD [1]		
	Mean [2]	MDL [4]	MQL [5]
HCB	3.9	7.2	15.
pentachloranisole	3.3	5.3	10.
alpha-BHC	1.4	2.2	3.9
lindane	0.39	1.2	3.1
beta-BHC	15.	25.	47.
heptachlor	0.065 [3]	0.068	0.074
aldrin	3.3	6.3	13.
dacthal	0.37	1.2	3.1
oxychlordane	3.5	6.1	12.
heptachlor epoxide	1.4	2.3	4.3
trans-chlordane	3.7	7.0	15.
trans-nonachlor	3.7	7.3	16.
cis-chlordane	2.6	5.2	11.
o,p'-DDE	5.7	10.	21.
p,p'-DDE	6.3	9.9	18.
dieldrin	2.6	4.5	8.8
o,p'-DDD	2.1	5.0	12.
endrin	6.5	8.2	12.
cis-nonachlor	2.2	5.8	14.
o,p'-DDT	3.9	8.1	18.
p,p'-DDD	1.1	3.9	11.
p,p'-DDT	6.4	10.	18.
mirex	7.2	13.	26.
p,p'-methoxychlor	1.5	8.1	24.

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*

[2] *Value used is mean of QC Table 11.*

[3] *Average instrumental background. See QC Table 4.*

[4] *Method Detection Limit, the mean + 3 times standard deviation.*

[5] *Method Quantitation Limit, the mean + 10 times standard deviation.*

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Table 9. Day 16 OC MDLs and MQLs for SPMD Samples

OCs	ng / SPMD [1]		
	Mean [2]	MDL [4]	MQL [5]
HCB	6.1	12.	24.
pentachloranisole	6.6	10.	19.
alpha-BHC	2.8	4.1	7.0
lindane	0.86	2.0	4.8
beta-BHC	24.	37.	68.
heptachlor	0.065 [3]	0.068	0.074
aldrin	6.4	11.	20.
dacthal	0.81	2.9	7.8
oxychlordane	10.	18.	35.
heptachlor epoxide	2.7	4.1	7.4
trans-chlordane	9.5	19.	40.
trans-nonachlor	10.	21.	45.
cis-chlordane	6.5	11.	23.
o,p'-DDE	13.	26.	57.
p,p'-DDE	11.	20.	42.
dieldrin	4.4	6.7	12.
o,p'-DDD	4.6	6.8	12.
endrin	8.4	12.	20.
cis-nonachlor	4.8	5.3	6.3
o,p'-DDT	7.4	14.	29.
p,p'-DDD	3.8	5.6	9.9
p,p'-DDT	11.	19.	37.
mirex	14.	25.	49.
p,p'-methoxychlor	2.7	9.0	24.

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*
[2] *Value used is mean of QC Table 12.*
[3] *Average instrumental background. See QC Table 4.*
[4] *Method Detection Limit, the mean + 3 times standard deviation.*
[5] *Method Quantitation Limit, the mean + 10 times standard deviation.*

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Table 10. Day 28 OC MDLs and MQLs for SPMD Samples

OCs	ng / SPMD [1]		
	Mean [2]	MDL [4]	MQL [5]
HCB	8.8	12.	20.
pentachloranisole	8.0	9.4	13.
alpha-BHC	3.8	8.9	21.
lindane	1.3	5.8	16.
beta-BHC	29.	45.	82.
heptachlor	0.065 [3]	0.068	0.074
aldrin	6.9	12.	24.
dacthal	0.69	2.3	6.0
oxychlordane	14.	17.	24.
heptachlor epoxide	3.7	4.4	6.0
trans-chlordane	14.	18.	26.
trans-nonachlor	15.	18.	25.
cis-chlordane	10.	12.	18.
o,p'-DDE	19.	27.	45.
p,p'-DDE	14.	18.	26.
dieldrin	5.3	5.6	6.3
o,p'-DDD	6.0	7.7	12.
endrin	10.	13.	20.
cis-nonachlor	6.7	10.	18.
o,p'-DDT	10.	15.	26.
p,p'-DDD	5.2	6.6	9.7
p,p'-DDT	15.	19.	27.
mirex	19.	27.	44.
p,p'-methoxychlor	4.4	16.	43.

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*
[2] *Value used is mean of QC Table 13.*
[3] *Average instrumental background. See QC Table 4.*
[4] *Method Detection Limit, the mean + 3 times standard deviation.*
[5] *Method Quantitation Limit, the mean + 10 times standard deviation.*

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Table 11. Day 2 OC MDLs and MQLs for SPMD Samples

OCs	ng / SPMD [2]		
	Mean [3]	MDL [5]	MQL [6]
HCB	9.1	11.	17.
pentachloranisole	1.3	3.4	8.3
alpha-BHC	1.7	2.8	5.3
lindane	0.11 [4]	0.12	0.16
beta-BHC	0.17 [4]	0.20	0.27
heptachlor	2.1	3.1	5.3
aldrin [1]	----	----	-----
dacthal	1.4	5.3	14.
oxychlordane	3.0	7.5	18.
heptachlor epoxide	0.25	1.0	2.9
trans-chlordane	3.8	8.3	19.
trans-nonachlor	2.7	7.2	18.
cis-chlordane	1.4	4.0	9.9
o,p'-DDE	0.96	5.2	15.
p,p'-DDE	1.7	3.1	6.4
dieldrin	0.90	3.0	7.9
o,p'-DDD	0.18 [4]	0.22	0.31
endrin	0.35	1.6	4.4
cis-nonachlor	1.5	2.0	3.0
o,p'-DDT	0.93	4.8	14.
p,p'-DDD	0.22 [4]	0.29	0.44
p,p'-DDT	1.8	6.0	16.
mirex	2.6	4.6	9.1
p,p'-methoxychlor	8.7	13.	23.

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*
[3] *Value used is mean of QC Table 14.*
[4] *Average instrumental background. See QC Table 2.*
[5] *Method Detection Limit, the mean + 3 times standard deviation.*
[6] *Method Quantitation Limit, the mean + 10 times standard deviation.*

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Table 12. Day 4 OC MDLs and MQLs for SPMD Samples

OCs	ng / SPMD [2]		
	Mean [3]	MDL [5]	MQL [6]
HCB	14.	25.	51.
pentachloranisole	4.6	12.	29.
alpha-BHC	5.2	16.	41.
lindane	0.61	3.2	9.2
beta-BHC	0.17 [4]	0.20	0.27
heptachlor	2.9	5.0	10.
aldrin [1]	-----	-----	-----
dacthal	2.2	3.3	5.8
oxychlordane	5.4	8.3	15.
heptachlor epoxide	0.10 [4]	0.11	0.14
trans-chlordane	5.4	9.9	20.
trans-nonachlor	4.1	8.9	20.
cis-chlordane	3.2	5.0	9.2
o,p'-DDE	4.4	7.7	15.
p,p'-DDE	3.5	5.5	10.
dieldrin	2.0	2.5	3.5
o,p'-DDD	0.18 [4]	0.22	0.31
endrin	0.84	2.7	7.1
cis-nonachlor	2.5	4.6	9.5
o,p'-DDT	4.5	9.9	23.
p,p'-DDD	0.22 [4]	0.29	0.44
p,p'-DDT	3.8	7.7	17.
mirex	5.8	14.	32.
p,p'-methoxychlor	6.6	11.	23.

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*

[3] *Value used is mean of QC Table 15.*

[4] *Average instrumental background. See QC Table 2.*

[5] *Method Detection Limit, the mean + 3 times standard deviation.*

[6] *Method Quantitation Limit, the mean + 10 times standard deviation.*

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Table 13. Day 8 OC MDLs and MQLs for SPMD Samples

OCs	ng / SPMD [2]		
	Mean [3]	MDL [5]	MQL [6]
HCB	8.3	9.4	12.
pentachloransole	1.9	2.5	3.9
alpha-BHC	1.7	2.2	3.4
lindane	0.24	0.93	2.5
beta-BHC	0.81	2.4	6.1
heptachlor	1.6	3.0	6.3
aldrin [1]	-----	-----	-----
dacthal	0.38	1.3	3.4
oxychlordane	3.9	6.5	12.
heptachlor epoxide	0.10 [4]	0.11	0.14
trans-chlordane	6.3	9.0	15.
trans-nonachlor	4.0	6.8	13.
cis-chlordane	2.3	4.0	7.8
o,p'-DDE	3.7	5.7	11.
p,p'-DDE	6.0	9.3	17.
dieldrin	2.7	4.0	6.9
o,p'-DDD	0.54	1.5	3.7
endrin	1.8	4.2	9.7
cis-nonachlor	5.7	11.	25.
o,p'-DDT	5.4	9.6	19.
p,p'-DDD	0.22 [4]	0.29	0.44
p,p'-DDT	4.5	6.7	12.
mirex	8.3	22.	55.
p,p'-methoxychlor	2.4	4.9	11.

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*
[3] *Value used is mean of QC Table 16.*
[4] *Average instrumental background. See QC Table 2.*
[5] *Method Detection Limit, the mean + 3 times standard deviation.*
[6] *Method Quantitation Limit, the mean + 10 times standard deviation.*

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Table 14. Day 16 OC MDLs and MQLs for SPMD Samples

OCs	ng / SPMD [2]		
	Mean [3]	MDL [5]	MQL [6]
HCB	9.1	12.	20.
pentachloranisole	3.7	5.3	8.9
alpha-BHC	2.0	2.5	3.7
lindane	0.11 [4]	0.12	0.16
beta-BHC	0.63	0.88	1.5
heptachlor	2.9	4.6	8.5
aldrin [1]	-----	-----	-----
dacthal	0.28	0.76	1.9
oxychlordane	6.6	11.	20.
heptachlor epoxide	0.10 [4]	0.11	0.14
trans-chlordane	9.4	12.	19.
trans-nonachlor	7.8	13.	25.
cis-chlordane	4.7	7.7	15.
o,p'-DDE	7.5	13.	27.
p,p'-DDE	11.	16.	27.
dieldrin	4.6	6.3	10.
o,p'-DDD	1.4	2.5	5.2
endrin	6.1	10.	20.
cis-nonachlor	7.9	9.7	14.
o,p'-DDT	11.	20.	40.
p,p'-DDD	0.41	0.69	1.3
p,p'-DDT	6.9	9.5	15.
mirex	10.	14.	23.
p,p'-methoxychlor	4.1	5.6	9.1

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*

[3] *Value used is mean of QC Table 17.*

[4] *Average instrumental background. See QC Table 2.*

[5] *Method Detection Limit, the mean + 3 times standard deviation.*

[6] *Method Quantitation Limit, the mean + 10 times standard deviation.*

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Table 15. OC MDLs and MQLs for Water Samples

OCs	ng / L [2]		
	Mean [3]	MDL [5]	MQL [6]
HCB	0.084	0.22	0.52
pentachloranisole	0.19	0.61	1.6
alpha-BHC	0.24	0.39	0.74
lindane	0.028 [4]	0.031	0.039
beta-BHC	0.043 [4]	0.051	0.068
heptachlor	0.060	0.27	0.75
aldrin [1]	----	--------	--------
dacthal	0.19	0.31	0.59
oxychlordane	0.19	0.55	1.4
heptachlor epoxide	0.093	0.45	1.3
trans-chlordane	0.019 [4]	0.021	0.026
trans-nonachlor	0.019 [4]	0.022	0.029
cis-chlordane	0.11	0.35	0.92
o,p'-DDE	0.14	0.40	1.0
p,p'-DDE	0.40	0.70	1.4
dieldrin	0.096	0.46	1.3
o,p'-DDD	0.045 [4]	0.055	0.078
endrin	0.030 [4]	0.035	0.045
cis-nonachlor	0.019 [4]	0.022	0.029
o,p'-DDT	0.12	0.45	1.2
p,p'-DDD	0.055 [4]	0.072	0.11
p,p'-DDT	0.048 [4]	0.068	0.12
mirex	0.018 [4]	0.022	0.030
p,p'-methoxychlor	0.094	0.20	0.43

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *Sample = 4 L of control chamber water.*
[3] *Value used is mean of control water in QC Table 18.*
[4] *Average instrumental background. See QC Table 2.*
[5] *Method Detection Limit, the mean + 3 times standard deviation.*
[6] *Method Quantitation Limit, the mean + 10 times standard deviation.*

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Table 16. OC MDLs and MQLs for Water Samples

OCs	ng / L [1]		
	Mean [2]	MDL [4]	MQL [5]
HCB	0.010 [3]	0.010	0.011
pentachloranisole	0.027	0.10	0.28
alpha-BHC	0.033	0.072	0.16
lindane	0.025	0.038	0.068
beta-BHC	0.085	0.12	0.19
heptachlor	0.015 [3]	0.016	0.017
aldrin	0.010 [3]	0.010	0.012
dacthal	0.023 [3]	0.025	0.028
oxychlordane	0.042	0.090	0.20
heptachlor epoxide	0.040	0.11	0.27
trans-chlordane	0.044	0.10	0.24
trans-nonachlor	0.041	0.074	0.15
cis-chlordane	0.087	0.13	0.22
o,p'-DDE	0.047	0.13	0.34
p,p'-DDE	0.027 [3]	0.028	0.030
dieldrin	0.023 [3]	0.025	0.031
o,p'-DDD	0.030 [3]	0.032	0.038
endrin	0.18	0.18	0.18
cis-nonachlor	0.048	0.14	0.37
o,p'-DDT	0.028 [3]	0.031	0.037
p,p'-DDD	0.033 [3]	0.035	0.041
p,p'-DDT	0.14	0.28	0.60
mirex	0.015 [3]	0.016	0.018
p,p'-methoxychlor	0.068 [3]	0.076	0.10

[1] *Sample = 4 L of control chamber water.*
[2] *Value used is mean of control water in QC Table 19.*
[3] *Average instrumental background. See QC Table 4.*
[4] *Method Detection Limit, the mean + 3 times standard deviation.*
[5] *Method Quantitation Limit, the mean + 10 times standard deviation.*

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Table 17. OC MDLs and MQLs for Water Samples

OCs	ng / L [2]		
	Mean [3]	MDL [5]	MQL [6]
HCB	0.073	0.14	0.28
pentachloranisole	0.13	0.21	0.41
alpha-BHC	0.030 [3]	0.031	0.033 [4]
lindane	0.028 [3]	0.029	0.030 [4]
beta-BHC	0.043 [3]	0.045	0.048 [4]
heptachlor	0.020 [3]	0.023	0.031
aldrin [1]	----	----	----
dacthal	0.70	0.91	1.4
oxychlordane	0.57	0.63	0.78
heptachlor epoxide	0.33	0.54	1.0
trans-chlordane	0.54	0.71 [4]	1.1 [4]
trans-nonachlor	0.52	0.67 [4]	1.0 [4]
cis-chlordane	0.15	0.23	0.43
o,p'-DDE	0.16	0.35	0.80
p,p'-DDE	0.63	0.74	0.98
dieldrin	0.39	0.43	0.53
o,p'-DDD	0.34	0.73 [4]	1.6 [4]
endrin	0.39	0.65 [4]	1.2 [4]
cis-nonachlor	0.37	0.52 [4]	0.86 [4]
o,p'-DDT	0.37	0.65	1.3
p,p'-DDD	0.11	0.33 [4]	0.85 [4]
p,p'-DDT	0.048 [3]	0.059 [4]	0.083 [4]
mirex	0.15	0.21 [4]	0.36 [4]
p,p'-methoxychlor	0.088 [3]	0.11	0.16

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *Sample = 4 L of control chamber water.*
[3] *Value used is mean of control water in QC Table 20.*
[4] *Average instrumental background. See QC Table 2.*
[5] *Method Detection Limit, the mean + 3 times standard deviation.*
[6] *Method Quantitation Limit, the mean + 10 times standard deviation.*

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Table 18. Concentration of OCs in 1.0 ng/L Exposure Water

OCs	ng / L [2]						
	Nominal Concentration	Day 0 [3]	Day 8 [3]	Day 16 [3]	Study Conc. [3]	Study SD	Study CV
HCB	1.0	0.41	0.29	0.37	0.36	0.061	17
pentachloranisole	1.0	0.81	0.52 [4]	0.64 [4]	0.81	------	----
alpha-BHC	1.0	0.56	0.61	0.32	0.50	0.16	32
lindane	1.0	0.77	0.65	0.54	0.65	0.12	18
beta-BHC	1.0	1.1	0.92	0.92	0.98	0.10	10
heptachlor	1.0	0.58	0.36 [4]	0.32 [4]	0.58	------	----
aldrin [1]	1.0	------	------	------	------	------	----
dacthal	1.0	1.1	0.77	0.82	0.90	0.18	20
oxychlordane	1.0	0.96	0.51 [4]	0.57 [4]	0.96	------	----
heptachlor epoxide	1.0	1.1	0.89	0.83	0.94	0.14	15
trans-chlordane	1.0	1.2	0.81	0.97	0.99	0.20	20
trans-nonachlor	1.0	1.0	0.70	0.75	0.82	0.16	20
cis-chlordane	1.0	0.91	0.69	0.74	0.78	0.12	15
o,p'-DDE	1.0	0.84	0.78	0.78	0.80	0.035	4
p,p'-DDE	1.0	------	0.53	0.88	0.71	------	------
dieldrin	1.0	1.9	1.1	1.5	1.5	0.40	27
o,p'-DDD	1.0	1.1	0.52	0.78	0.80	0.29	36
endrin	1.0	2.0	0.99	1.3	1.4	0.52	37
cis-nonachlor	1.0	1.1	0.81	0.92	0.94	0.15	16
o,p'-DDT	1.0	0.80	0.74	1.2	0.91	0.25	27
p,p'-DDD	1.0	1.2	0.75	1.0	0.98	0.23	23
p,p'-DDT	1.0	0.74	0.63	0.69	0.69	0.055	8
mirex	1.0	0.59	0.44	0.47	0.50	0.079	16
p,p'-methoxychlor	1.0	2.2	0.78	0.83	1.3	0.81	62

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *Sample is 4 L of 1.0 ng/L concentration test chamber water.*

[3] *Values have been corrected for background (QC Table 18) and spike recovery (study concentration, QC Table 30).*

[4] *Value between control water MDL and MQL (QC Table 18). These values are presented for information purposes only.*

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Table 19. Concentration of OCs in 10 ng/L Exposure Water

OCs	ng / L [2]							
	Nominal Concentration	Day 0 [3]	Day 8 Rep A [3]	Day 8 Rep B [3]	Day 16 [3]	Study Mean [3]	Study SD	Study CV
HCB	10	6.7	5.1	5.5	5.4	5.7	0.71	12
pentachloranisole	10	11.	10.	10.	9.0	10.	0.83	8
alpha-BHC	10	3.4	4.2	4.4	4.1	4.0	0.44	11
lindane	10	5.5	6.1	6.1	5.5	5.8	0.33	6
beta-BHC	10	13.	12.	12.	12.	12.	0.50	4
heptachlor	10	6.0	4.1	3.8	4.9	4.7	0.99	21
aldrin [1]	10	------	------	------	------	------	------	------
dacthal	10	14.	12.	13.	12.	13.	0.96	7
oxychlordane	10	11.	8.8	9.4	8.2	9.4	1.19	13
heptachlor epoxide	10	13.	12.	12.	11.	12.	0.82	7
trans-chlordane	10	10.	9.8	9.3	8.7	9.5	0.58	6
trans-nonachlor	10	8.7	8.7	8.1	7.6	8.3	0.54	7
cis-chlordane	10	12.	12.	11.	10.1	11.	0.93	8
o,p'-DDE	10	10.	11.	10.	9.7	10.	0.56	6
p,p'-DDE	10	11.	11.	11.	11.	11.	0.00	0
dieldrin	10	14.	14.	14.	14.	14.	0.00	0
o,p'-DDD	10	11.	10.	10.	9.7	10.	0.57	6
endrin	10	11.	14.	13.	13.	13.	1.3	10
cis-nonachlor	10	9.9	11.	10.	9.9	10.	0.54	5
o,p'-DDT	10	9.5	10.	11.	10.	10.	0.63	6
p,p'-DDD	10	11.	11.	11.	11.	11.	0.00	0
p,p'-DDT	10	6.0	7.1	7.1	7.1	6.8	0.55	8
mirex	10	5.8	5.8	5.9	5.5	5.8	0.16	3
p,p'-methoxychlor	10	12.	11.	11.	11.	11.	0.50	5

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *Sample is 2 L of 10 ng/L concentration exposure water.*

[3] *Values have been corrected for background (QC Table 18) and spike recovery (study concentration, QC Table 30).*

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Table 20. Concentration of OCs in 100 ng/L Exposure Water

OCs	ng / L [2]		
	Study Mean [3]	Study SD	Study CV
HCB	59	5.7	10
pentachloranisole	97	3.4	4
alpha-BHC	110	0.0	0
lindane	110	4.5	4
beta-BHC	120	4.5	4
heptachlor	47	3.0	6
aldrin [1]	------	-------	---
dacthal	110	0.0	0
oxychlordane	74	4.9	7
heptachlor epoxide	110	0.0	0
trans-chlordane	82	5.6	7
trans-nonachlor	68	3.2	5
cis-chlordane	85	2.6	3
o,p'-DDE	85	3.0	4
p,p'-DDE	78	4.8	6
dieldrin	120	23.	19
o,p'-DDD	94	6.4	7
endrin	110	11.8	11
cis-nonachlor	94	2.6	3
o,p'-DDT	78	4.9	6
p,p'-DDD	110	0.0	0
p,p'-DDT	78	2.3	3
mirex	61	2.8	5
p,p'-methoxychlor	95	9.7	10

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *Sample is 1 L of 100 ng/L concentration exposure water.*
[3] *Values have been corrected for background (QC Table 18) and spike recovery (study concentration, QC Table 30).*

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Table 21. Concentration of OCs in 1.0 ng/L Exposure Water

OCs	ng / L [1]						
	Nominal Concentration	Day 0 [2]	Day 16 [2]	Day 28 [2]	Study Mean [2]	Study SD	Study CV
HCB	1.0	0.84	1.2	1.3	1.1	0.24	22
pentachloranisole	1.0	0.99	1.5	1.5	1.3	0.29	22
alpha-BHC	1.0	1.0	1.5	1.6	1.4	0.32	23
lindane	1.0	1.3	1.8	1.8	1.6	0.29	18
beta-BHC	1.0	1.0	1.3	1.4	1.2	0.21	18
heptachlor	1.0	1.4	1.8	1.8	1.7	0.23	14
aldrin	1.0	0.96	1.6	3.2	1.9	1.2	63
dacthal	1.0	1.0 [3]	1.0 [3]	1.0 [3]	1.0 [3]	----	----
oxychlordane	1.0	1.2	1.5	1.7	1.5	0.25	17
heptachlor epoxide	1.0	1.5	2.0	2.1	1.9	0.32	17
trans-chlordane	1.0	1.3	1.6	1.8	1.6	0.25	16
trans-nonachlor	1.0	1.4	1.8	1.9	1.7	0.26	15
cis-chlordane	1.0	1.6	2.1	2.3	2.0	0.36	18
o,p'-DDE	1.0	1.1	1.4	1.5	1.3	0.21	16
p,p'-DDE	1.0	1.3	1.4	1.6	1.4	0.15	11
dieldrin	1.0	1.0 [3]	1.0 [3]	1.0 [3]	1.0 [3]	----	----
o,p'-DDD	1.0	1.3	1.7	1.7	1.6	0.23	14
endrin	1.0	1.0 [3]	1.0 [3]	1.0 [3]	1.0 [3]	----	----
cis-nonachlor	1.0	1.6	2.0	2.0	1.9	0.23	12
o,p'-DDT	1.0	1.1	1.5	1.5	1.4	0.23	16
p,p'-DDD	1.0	1.6	1.9	1.9	1.8	0.17	9
p,p'-DDT	1.0	1.5	1.9	1.9	1.8	0.23	13
mirex	1.0	0.86	1.7	1.6	1.4	0.46	33
p,p'-methoxychlor	1.0	8.2	9.7	3.1	7.0	3.4	49

[1] *Sample is 4 L of 1.0 ng/L concentration test chamber water.*

[2] *Values have been corrected for background (Table 21) and spike recovery (1 ng/L, QC Table 31).*

[3] *Value used is nominal water concentration.*

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Table 22. Concentration of OCs in 10 ng/L Exposure Water

OCs	ng / L [1]						
	Nominal Concentration	Day 0 [2]	Day 16 [2]	Day 28 [2]	Study Mean [2]	Study SD	Study CV
HCB	10	3.1	6.9	5.9	5.3	2.0	38
pentachloranisole	10	4.5	8.6	6.8	6.6	2.1	32
alpha-BHC	10	9.6	11.	8.4	9.7	1.3	13
lindane	10	9.6	10.	8.9	9.5	0.56	6
beta-BHC	10	7.8	9.9	9.6	9.1	1.1	12
heptachlor	10	9.4	10.	10.	9.8	0.35	4
aldrin	10	6.1	8.6	7.5	7.4	1.3	18
dacthal	10	10. [3]	10. [3]	10. [3]	10. [3]	----	----
oxychlordane	10	8.3	9.2	9.1	8.9	0.49	6
heptachlor epoxide	10	10.	11.	10.	10.	0.58	6
trans-chlordane	10	8.1	9.1	9.1	8.8	0.58	7
trans-nonachlor	10	8.3	8.8	9.4	8.8	0.55	6
cis-chlordane	10	8.1	8.4	8.8	8.4	0.35	4
o,p'-DDE	10	7.6	8.4	9.	8.3	0.70	8
p,p'-DDE	10	8.3	9.4	9.6	9.1	0.70	8
dieldrin	10	10. [3]	10. [3]	10. [3]	10. [3]	----	----
o,p'-DDD	10	9.0	8.8	9.3	9.	0.25	3
endrin	10	10. [3]	10. [3]	10. [3]	10. [3]	----	----
cis-nonachlor	10	10.	10.	12.	11.	1.2	11
o,p'-DDT	10	7.8	8.2	9.3	8.4	0.78	9
p,p'-DDD	10	9.0	8.8	9.	8.9	0.12	1
p,p'-DDT	10	9.8	9.4	12.	10.	1.4	14
mirex	10	6.3	7.2	7.4	7.	0.59	8
p,p'-methoxychlor	10	15.	13.	15.	14.	1.2	9

[1] *Sample is 2 L of 10 ng/L concentration exposure water.*

[2] *Values have been corrected for background (Table 16) and spike recovery (10 ng/L, QC Table 31).*

[3] *Value used is nominal water concentration.*

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Table 23. Concentration of OCs in Day 0, 100 ng/L Exposure Water

OCs	ng / L [1]				
		Raw Data		Corrected Values [3]	
	Nominal Concentration	Rep A Day 0	Rep B Day 0	Rep A Day 0	Rep B Day 0
HCB	100	12	42	20	69
pentachloranisole	100	17	56	26	86
alpha-BHC	100	44	86	76	150
lindane	100	60	100	92	150
beta-BHC	100	38	70	38	70
heptachlor	100	40	49	100	120
aldrin	100	17	31	35	65
dacthal	100	<MDL [2]	<MDL [2]	100 [4]	100 [4]
oxychlordane	100	39	70	46	82
heptachlor epoxide	100	53	88	78	130
trans-chlordane	100	35	56	55	87
trans-nonachlor	100	34	55	53	86
cis-chlordane	100	34	55	58	95
o,p'-DDE	100	35	52	53	79
p,p'-DDE	100	41	56	60	82
dieldrin	100	<MDL [2]	<MDL [2]	100 [4]	100 [4]
o,p'-DDD	100	52	81	64	100
endrin	100	<MDL [2]	<MDL [2]	100 [4]	100 [4]
cis-nonachlor	100	47	72	69	110
o,p'-DDT	100	41	64	53	82
p,p'-DDD	100	65	93	88	130
p,p'-DDT	100	58	88	70	110
mirex	100	34	44	48	62
p,p'-methoxychlor	100	79	120	79	120

[1] *Sample is 1 L of 100 ng/L concentration exposure water.*
[2] *Value below control water MDL (Table 16).*
[3] *Values have been corrected for background (Table 16) and spike recovery (Day 0, 100 ng/L, QC Table 31).*
[4] *Value used is nominal water concentration.*

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Table 24. Concentration of OCs in Day 16 and 28, 100 ng/L Exposure Water

OCs	ng / L [1]					
	Raw Data			Corrected Values [3]		
	Rep A Day 16	Rep B Day 16	Rep A Day 28	Rep A Day 16 [3]	Rep B Day 16 [3]	Rep A Day 28 [3]
HCB	52	51	49	95	93	89
pentachloranisole	67	67	64	120	120	110
alpha-BHC	89	88	89	170	170	171
lindane	100	100	100	170	170	170
beta-BHC	84	80	83	84	80	83
heptachlor	52	51	52	150	150	150
aldrin	39	38	38	80	78	78
dacthal	<MDL [2]	<MDL [2]	<MDL [2]	100 [4]	100 [4]	100 [4]
oxychlordane	79	77	78	110	110	110
heptachlor epoxide	92	92	93	150	150	150
trans-chlordane	64	61	65	100	100	110
trans-nonachlor	65	60	65	110	100	110
cis-chlordane	61	59	61	110	110	110
o,p'-DDE	62	58	62	110	98	110
p,p'-DDE	65	60	63	110	100	110
dieldrin	<MDL [2]	<MDL [2]	<MDL [2]	100 [4]	100 [4]	100 [4]
o,p'-DDD	89	84	90	120	110	120
endrin	<MDL [2]	<MDL [2]	<MDL [2]	100 [4]	100 [4]	100 [4]
cis-nonachlor	84	76	85	140	120	140
o,p'-DDT	72	64	72	100	91	100
p,p'-DDD	100	95	100	140	140	140
p,p'-DDT	90	81	93	120	110	130
mirex	68	52	54	100	76	80
p,p'-methoxychlor	110	110	110	120	120	120

[1] *Sample is 1 L of 100 ng/L concentration exposure water.*

[2] *Value below control water MDL (Table 16).*

[3] *Values have been corrected for background (Table 16) and spike recovery (Day 16, 100 ng/L, QC Table 31).*

[4] *Value used is nominal water concentration.*

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Table 24A. Concentration of OCs in 100 ng/L Exposure Water

OCs	ng / L [1]		
	Study Mean [2]	Study SD	Study CV
HCB	73	31.	42
pentachloranisole	92	40.	43
alpha-BHC	150	41.	27
lindane	150	34.	23
beta-BHC	71	19.	27
heptachlor	130	23.	18
aldrin	67	19.	28
dacthal	100 [3]	----	----
oxychlordane	92	28.	30
heptachlor epoxide	130	31.	24
trans-chlordane	90	21.	23
trans-nonachlor	92	24.	26
cis-chlordane	97	23.	24
o,p'-DDE	90	24.	27
p,p'-DDE	92	21.	23
dieldrin	100 [3]	----	----
o,p'-DDD	100	23.	23
endrin	100 [3]	----	----
cis-nonachlor	120	29.	24
o,p'-DDT	85	19.	22
p,p'-DDD	130	23.	18
p,p'-DDT	110	23.	21
mirex	73	20.	27
p,p'-methoxychlor	110	18.	16

[1] *Sample is 1 L of 100 ng/L concentration exposure water.*

[2] *Value have been corrected for background (Table 16) and spike recovery (Day 16, 100 ng/L, QC Table 31).*

[3] *Value used is nominal water concentration.*

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Table 25. Concentration of OCs in 1.0 ng/L Exposure Water

OCs	ng / L [2]			
	Nominal Concentration	Day 0 [3]	Day 16 [3]	Study Conc.
HCB	1.0	0.56	0.49	0.53
pentachloranisole	1.0	0.84	0.84	0.84
alpha-BHC	1.0	0.55	0.58	0.57
lindane	1.0	0.63	0.63	0.63
beta-BHC	1.0	1.6	1.4	1.5
heptachlor	1.0	0.50	0.59	0.55
aldrin [1]	1.0	-----	-----	-----
dacthal	1.0	1.8	1.7	1.8
oxychlordane	1.0	1.1	1.2	1.2
heptachlor epoxide	1.0	1.5	1.4	1.5
trans-chlordane	1.0	1.3	1.1	1.2
trans-nonachlor	1.0	1.2	1.1	1.2
cis-chlordane	1.0	1.1	1.1	1.1
o,p'-DDE	1.0	0.90	0.88	0.89
p,p'-DDE	1.0	1.4	1.2	1.3
dieldrin	1.0	1.4	1.2	1.3
o,p'-DDD	1.0	1.3	1.2	1.3
endrin	1.0	1.8	1.6	1.7
cis-nonachlor	1.0	1.3	1.3	1.3
o,p'-DDT	1.0	1.5	1.1	1.3
p,p'-DDD	1.0	1.4	1.4	1.4
p,p'-DDT	1.0	1.1	1.2	1.2
mirex	1.0	0.56	0.59	0.58
p,p'-methoxychlor	1.0	1.4	1.4	1.4

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *Sample is 4 L of 1.0 ng/L concentration test chamber water.*
[3] *Values have been corrected for background (Table 17) and spike recovery (study concentration, QC Table 32).*

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Table 26. Concentration of OCs in 10 ng/L Exposure Water

OCs	ng / L [2]			
	Nominal Concentration	Day 0 [3]	Day 16 [3]	Study Mean [3]
HCB	10	2.	2.6	2.3
pentachloranisole	10	4.1	5.1	4.6
alpha-BHC	10	3.3	3.1	3.2
lindane	10	5.5	5.5	5.5
beta-BHC	10	11.	13.	12.
heptachlor	10	2.6	3.3	3.0
aldrin [1]	10	-----	-----	-----
dacthal	10	10.	11.	11.
oxychlordane	10	5.	5.	5.0
heptachlor epoxide	10	8.7	9.7	9.2
trans-chlordane	10	5.5	6.	5.8
trans-nonachlor	10	4.5	5.5	5.0
cis-chlordane	10	6.9	7.9	7.4
o,p'-DDE	10	4.5	5.3	4.9
p,p'-DDE	10	4.9	6.9	5.9
dieldrin	10	8.7	9.7	9.2
o,p'-DDD	10	8.2	8.7	8.5
endrin	10	9.5	11.	10.
cis-nonachlor	10	7.1	8.1	7.6
o,p'-DDT	10	6.6	6.6	6.6
p,p'-DDD	10	8.4	8.4	8.4
p,p'-DDT	10	6.0	6.5	6.3
mirex	10	2.3	4.5	3.4
p,p'-methoxychlor	10	11.	14.	13.

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *Sample is 2 L of 10 ng/L concentration exposure water.*

[3] *Values have been corrected for background (Table 17) and spike recovery (study concentration, QC Table 32).*

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Table 27. Concentration of OCs in 100 ng/L Exposure Water

OCs	ng / L [2]					
	Nominal Concentration	Rep A Day 0 [3]	Rep B Day 0 [3]	Rep A Day 16 [3]	Rep B Day 16 [3]	Study Mean [3]
HCB	100	38	38	41	43	40
pentachloranisole	100	67	67	77	82	73
alpha-BHC	100	110	110	120	120	110
lindane	100	100	100	110	110	100
beta-BHC	100	110	120	130	130	120
heptachlor	100	34	34	41	40	37
aldrin [1]	100	-----	-----	-----	-----	-----
dacthal	100	119	119	119	119	120
oxychlordane	100	64	63	73	69	67
heptachlor epoxide	100	96	97	110	100	100
trans-chlordane	100	64	66	79	75	71
trans-nonachlor	100	56	57	72	66	63
cis-chlordane	100	74	75	90	86	81
o,p'-DDE	100	56	57	74	70	64
p,p'-DDE	100	49	52	70	63	59
dieldrin	100	92	97	101	100	97
o,p'-DDD	100	88	92	110	99	97
endrin	100	89	96	99	98	95
cis-nonachlor	100	78	81	100	94	88
o,p'-DDT	100	62	66	81	73	70
p,p'-DDD	100	84	88	110	97	95
p,p'-DDT	100	62	63	82	74	70
mirex	100	33	37	62	42	44
p,p'-methoxychlor	100	90	93	100	100	96

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *Sample is 1 L of 100 ng/L concentration exposure water.*

[3] *Values have been corrected for background (Table 17) and spike recovery (study concentration, QC Table 32).*

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Table 28. Day 2, OC Concentrations in 1.0 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [7] Mean	Corrected [8] Mean
HCB	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
pentachloranisole	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
alpha-BHC	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
lindane	0.74	1.1	0.45	0.76	0.33	43	0.31	0.54
beta-BHC	2.4	1.3	0.73	1.5	0.85	57	0.60	0.95
heptachlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
aldrin [1]	----	----	----	----	----	----	----	----
dacthal	2.3	0.80	0.31	1.1	1.0	91	0.44	0.49
oxychlordane	2.4 [5]	2.1 [5]	<MDL [4]	2.3 [5]	----	----	0.93 [5]	1.1 [5]
heptachlor epoxide	3.2	0.39	0.17	1.3	1.7	130	0.52	1.2
trans-chlordane	2.4 [5]	4.2 [5]	1.9 [5]	2.8 [5]	----	----	1.1 [5]	1.5 [5]
trans-nonachlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
cis-chlordane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
o,p'-DDE	1.8 [5]	2.1 [5]	1.3 [5]	1.7 [5]	----	----	0.69 [5]	0.92 [5]
p,p'-DDE	<MDL [4]	3.2 [5]	2.0 [5]	2.6 [5]	----	----	1.0 [5]	2.0 [5]
dieldrin	2.3	2.6	1.9	2.3	0.35	15	0.93	1.2
o,p'-DDD	0.44	0.61	0.58	0.54	0.091	17	0.22	0.28
endrin	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
cis-nonachlor	0.90	1.6	0.30 [5]	1.3 [6]	----	----	0.52 [6]	0.68 [6]
o,p'-DDT	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
p,p'-DDD	0.88	0.64	0.36	0.63	0.26	41	0.25	0.32
p,p'-DDT	1.0	2.9	1.4	1.8	1.0	56	0.73	0.96
mirex	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
p,p'-methoxychlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have been background corrected using means of Day 2 Control SPMDs (Table 2).*
[4] *Value below Day 2 control SPMD MDL (Table 2).*
[5] *Value between Day 2 control SPMD MDL and MQL (Table 2). These values are presented for information purposes only.*
[6] *Value based on n=2.*
[7] *Values have not been corrected for SPMD spike recovery.*
[8] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 28A. Day 2 Concentration Factors and SPMD Sampling Rates in 1.0 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,9]		
	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day
HCB	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
pentachloroanisole	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
alpha-BHC	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
lindane	480	1.3	0.24	830	2.3	0.42
beta-BHC	610	1.7	0.31	970	2.7	0.49
heptachlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
aldrin [1]	--------	--------	--------	--------	--------	--------
dacthal	490	1.3	0.24	540	1.4	0.26
oxychlordane	1,000 [5]	2.6 [5]	0.48 [5]	1,100 [5]	3.1 [5]	0.57 [5]
heptachlor epoxide	550	1.5	0.27	1,300	3.3	0.60
trans-chlordane	1,100 [5]	3.1 [5]	0.57 [5]	1,500 [5]	4.4 [5]	0.81 [5]
trans-nonachlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
cis-chlordane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
o,p'-DDE	860 [5]	2.3 [5]	0.42 [5]	1,200 [5]	3.1 [5]	0.57 [5]
p,p'-DDE	1,400 [5]	4.0 [5]	0.73 [5]	2,800 [5]	8.2 [5]	1.5 [5]
dieldrin	620	1.7	0.31	800	2.2	0.40
o,p'-DDD	280	0.75	0.14	350	0.96	0.18
endrin	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
cis-nonachlor	550 [6]	1.5 [6]	0.27 [6]	720 [6]	1.9 [6]	0.35 [6]
o,p'-DDT	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
p,p'-DDD	260	0.70	0.13	330	0.91	0.17
p,p'-DDT	1,100	2.9	0.53	1,400	3.8	0.70
mirex	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
p,p'-methoxychlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value below Day 2 control SPMD MDL (Table 2).*
[5] *Value between Day 2 control SPMD MDL and MQL (Table 2). These values are presented for information purposes only.*
[6] *Value based on n=2.*
[7] *SPMD sampling rate normalized to 1 g triolein.*
[8] *SPMD sampling rate normalized to 1 g SPMD.*
[9] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 29. Day 4, OC Concentrations in 1.0 ng/L SPMDs

OCs	ng / SPMD [2, 3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [8] Mean	Corrected [9] Mean
HCB	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
pentachloranisole	2.5 [5]	<MDL [4]	<MDL [4]	---- [5]	----	----	1.0 [5]	1.8 [5]
alpha-BHC	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
lindane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
beta-BHC	<MDL [4]	1.9 [5]	<MDL [4]	-------- [5]	----	----	0.77 [5]	1.2 [5]
heptachlor	<MDL [4]	2.7 [5]	<MDL [4]	---- [5]	----	----	1.1 [5]	1.5 [5]
aldrin [1]	--------	----	----	--------	----	----	--------	----
dacthal	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
oxychlordane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
heptachlor epoxide	<MDL [4]	0.67	0.054	0.36 [6]	----	----	0.15 [6]	0.33 [6]
trans-chlordane	3.1 [5]	6.5	<MDL [4]	-------- [7]	----	----	2.6 [7]	3.7 [7]
trans-nonachlor	1.5 [5]	3.5	<MDL [4]	-------- [7]	----	----	1.4 [7]	1.9 [7]
cis-chlordane	2.1 [5]	3.6 [5]	<MDL [4]	2.9 [5]	----	----	1.2 [5]	1.8 [5]
o,p'-DDE	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
p,p'-DDE	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
dieldrin	3.8 [5]	7.2	<MDL [4]	-------- [7]	----	----	2.9 [7]	3.7 [7]
o,p'-DDD	<MDL [4]	4.1	0.040 [5]	-------- [7]	----	----	1.7 [7]	2.2 [7]
endrin	<MDL [4]	4.4 [5]	<MDL [4]	-------- [5]	----	----	1.8 [5]	2.6 [5]
cis-nonachlor	2.7 [5]	5.1 [5]	<MDL [4]	3.9 [5]	----	----	1.6 [5]	2.1 [5]
o,p'-DDT	3.7 [5]	6.1 [5]	<MDL [4]	4.9 [5]	----	----	2.0 [5]	2.2 [5]
p,p'-DDD	3.3	2.2	0.18 [5]	2.8 [6]	----	----	1.1 [6]	1.4 [6]
p,p'-DDT	4.3	6.6	0.81	3.9	2.9	74	1.6	2.1
mirex	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
p,p'-methoxychlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[3] *Values have been background corrected using means of Day 4 Control SPMDs (Table 3).*

[4] *Value below Day 4 control SPMD MDL (Table 3).*

[5] *Value between Day 4 control SPMD MDL and MQL (Table 3). These values are presented for information purposes only.*

[6] *Value based on n=2.*

[7] *Value based on n=1.*

[8] *Values have not been corrected for SPMD spike recovery.*

[9] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 29A. Day 4 Concentration Factors and SPMD Sampling Rates in 1.0 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,10]		
	Concentration Factor SPMD/Water	SPMD-Rs [8] L/Day	SPMD-Rs [9] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [8] L/Day	SPMD-Rs [9] L/Day
HCB	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
pentachloranisole	1,200 [5]	1.7 [5]	0.31 [5]	2,200 [5]	3.0 [5]	0.55 [5]
alpha-BHC	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
lindane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
beta-BHC	790 [5]	1.1 [5]	0.20 [5]	1,200 [5]	1.7 [5]	0.31 [5]
heptachlor	1,900 [5]	2.6 [5]	0.48 [5]	2,600 [5]	3.5 [5]	0.64 [5]
aldrin [1]	------	------	------	------	------	------
dacthal	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
oxychlordane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
heptachlor epoxide	160 [6]	0.21 [6]	0.039 [6]	350 [6]	0.47 [6]	0.086 [6]
trans-chlordane	2,600 [7]	3.6 [7]	0.66 [7]	3,700 [7]	5.1 [7]	0.93 [7]
trans-nonachlor	1,700 [7]	2.3 [7]	0.42 [7]	2,300 [7]	3.1 [7]	0.57 [7]
cis-chlordane	1,500 [5]	2.0 [5]	0.37 [5]	2,300 [5]	2.9 [5]	0.53 [5]
o,p'-DDE	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
p,p'-DDE	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
dieldrin	1,900 [7]	2.6 [7]	0.48 [7]	2,500 [7]	3.3 [7]	0.60 [7]
o,p'-DDD	2,100 [7]	2.8 [7]	0.51 [7]	2,800 [7]	3.6 [7]	0.66 [7]
endrin	1,300 [5]	1.7 [5]	0.31 [5]	1,900 [5]	2.4 [5]	0.44 [5]
cis-nonachlor	1,700 [5]	2.3 [5]	0.42 [5]	2,200 [5]	3.0 [5]	0.55 [5]
o,p'-DDT	2,200 [5]	3.0 [5]	0.55 [5]	2,400 [5]	3.3 [5]	0.60 [5]
p,p'-DDD	1,100 [6]	1.6 [6]	0.29 [6]	1,400 [6]	2.1 [6]	0.38 [6]
p,p'-DDT	2,300	3.1	0.57	3,000	4.1	0.75
mirex	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
p,p'-methoxychlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value below Day 4 control SPMD MDL (Table 3).*
[5] *Value between Day 4 control SPMD MDL and MQL (Table 3). These values are presented for information purposes only.*
[6] *Value based on n=2.*
[7] *Value based on n=1.*
[8] *SPMD sampling rate normalized to 1 g triolein.*
[9] *SPMD sampling rate normalized to 1 g SPMD.*
[10] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 30. Day 8, OC Concentrations in 1.0 ng/L SPMDs

OCs	ng / SPMD [2, 3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [8] Mean	Corrected [9] Mean
HCB	6.0 [4]	<MDL [5]	<MDL [5]	------ [4]	------	------	2.4 [4]	2.9 [4]
pentachloranisole	9.6 [4]	9.6 [4]	<MDL [5]	9.6 [4]	------	------	3.9 [4]	6.8 [4]
alpha-BHC	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	------	------	<MDL [5]	<MDL [5]
lindane	<MDL [5]	<MDL [5]	0.89	------ [6]	------	------	0.36 [6]	0.63 [6]
beta-BHC	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	------	------	<MDL [5]	<MDL [5]
heptachlor	9.1	7.1 [4]	3.4 [4]	------ [6]	------	------	3.7 [6]	5.0 [6]
aldrin [1]	------	------	------	------	------	------	------	------
dacthal	8.5	5.0	2.3	5.3	3.1	59	2.1	2.3
oxychlordane	20.	15.	5.7 [4]	18. [7]	------	------	7.3 [7]	8.8 [7]
heptachlor epoxide	4.7	3.4	1.2	3.1	1.8	58	1.3	2.9
trans-chlordane	12. [4]	15. [4]	8.9 [4]	12. [4]	------	------	4.8 [4]	6.8 [4]
trans-nonachlor	7.8 [4]	11. [4]	<MDL [5]	9.4 [4]	------	------	3.8 [4]	5.1 [4]
cis-chlordane	11. [4]	12. [4]	<MDL [5]	12. [4]	------	------	4.8 [4]	7.1 [4]
o,p'-DDE	<MDL [5]	13. [4]	<MDL [5]	------ [4]	------	------	5.2 [4]	6.9 [4]
p,p'-DDE	8.6 [4]	7.6 [4]	<MDL [5]	8.1 [4]	------	------	3.3 [4]	6.7 [4]
dieldrin	14.	9.3 [4]	6.2 [4]	------ [6]	------	------	5.6 [6]	7.2 [6]
o,p'-DDD	11. [4]	7.9 [4]	<MDL [5]	9.5 [4]	------	------	3.8 [4]	4.9 [4]
endrin	13. [4]	7.9 [4]	5.7 [4]	8.9 [4]	------	------	3.6 [4]	5.1 [4]
cis-nonachlor	13.	9.8	6.3	9.7	3.4	35	3.9	5.1
o,p'-DDT	15.	11.	6.8 [4]	13. [7]	------	------	5.2 [7]	5.8 [7]
p,p'-DDD	14.	11.	6.7	11.	3.7	33	4.4	5.7
p,p'-DDT	15.	13.	6.7 [4]	14. [7]	------	------	5.6 [7]	7.4 [7]
mirex	8.5 [4]	6.5 [4]	<MDL [5]	7.5 [4]	------	------	3.0 [4]	4.7 [4]
p,p'-methoxychlor	23. [4]	15. [4]	<MDL [5]	19. [4]	------	------	7.7 [4]	8.2 [4]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have been background corrected using means of Day 8 Control SPMDs (Table 19).*
[4] *Value between Day 8 control SPMD MDL and MQL (Table 4). These values are presented for information purposes only.*
[5] *Value below Day 8 control SPMD MDL (Table 4).*
[6] *Value based on n=1.*
[7] *Value based on n=2.*
[8] *Values have not been corrected for SPMD spike recovery.*
[9] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 30A. Day 8 Concentration Factors and SPMD Sampling Rates in 1.0 ng/L SPMDs

OCs	Uncorrected [2, 3]			Corrected [2, 10]		
	Concentration Factor SPMD/Water	SPMD-Rs [8] L/Day	SPMD-Rs [9] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [8] L/Day	SPMD-Rs [9] L/Day
HCB	6,700 [4]	4.6 [4]	0.84 [4]	8,100 [4]	5.6 [4]	1.0 [4]
pentachloranisole	4,800 [4]	3.3 [4]	0.60 [4]	8,400 [4]	5.8 [4]	1.1 [4]
alpha-BHC	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]
lindane	550 [6]	0.38 [6]	0.070 [6]	970 [6]	0.67 [6]	0.12 [6]
beta-BHC	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]
heptachlor	6,400 [6]	4.3 [6]	0.79 [6]	8,600 [6]	5.8 [6]	1.1 [6]
aldrin [1]	-------	-------	-------	-------	-------	-------
dacthal	2,300	1.6	0.29	2,600	1.8	0.33
oxychlordane	8,000 [7]	5.2 [7]	1.0 [7]	9,000 [7]	6.3 [7]	1.2 [7]
heptachlor epoxide	1,400	0.91	0.17	3,100	2.0	0.37
trans-chlordane	4,800 [4]	3.3 [4]	0.60 [4]	6,900 [4]	4.6 [4]	0.84 [4]
trans-nonachlor	4,600 [4]	3.2 [4]	0.59 [4]	6,200 [4]	4.3 [4]	0.79 [4]
cis-chlordane	6,200 [4]	4.2 [4]	0.77 [4]	9,100 [4]	6.2 [4]	1.1 [4]
o,p'-DDE	6,500 [4]	4.5 [4]	0.82 [4]	8,600 [4]	6.0 [4]	1.1 [4]
p,p'-DDE	4,600 [4]	3.1 [4]	0.57 [4]	9,400 [4]	6.3 [4]	1.2 [4]
dieldrin	3,700 [6]	2.6 [6]	0.48 [6]	4,800 [6]	3.3 [6]	0.60 [6]
o,p'-DDD	4,800 [4]	3.3 [4]	0.60 [4]	6,100 [4]	4.2 [4]	0.77 [4]
endrin	2,600 [4]	1.7 [4]	0.31 [4]	3,600 [4]	2.4 [4]	0.44 [4]
cis-nonachlor	4,100	2.8	0.51	5,400	3.6	0.66
o,p'-DDT	5,700 [7]	3.9 [7]	0.71 [7]	6,400 [7]	4.3 [7]	0.79 [7]
p,p'-DDD	4,500	3.1	0.57	5,800	4.0	0.73
p,p'-DDT	8,100 [7]	5.6 [7]	1.0 [7]	11,000 [7]	7.4 [7]	1.4 [7]
mirex	6,000 [4]	4.1 [4]	0.75 [4]	9,400 [4]	6.4 [4]	1.2 [4]
p,p'-methoxychlor	5,900 [4]	4.0 [4]	0.73 [4]	6,300 [4]	4.3 [4]	0.79 [4]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value between Day 8 control SPMD MDL and MQL (Table 4). These values are presented for information purposes only.*
[5] *Value below Day 8 control SPMD MDL (Table 4).*
[6] *Value based on n=1.*
[7] *Value based on n=2.*
[8] *SPMD sampling rate normalized to 1 g triolein.*
[9] *SPMD sampling rate normalized to 1 g SPMD.*
[10] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 31. Day 16, OC Concentrations in 1.0 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [6] Mean	Corrected [7] Mean
HCB	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	--------	--------	<MDL [4]	<MDL [4]
pentachloranisole	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	--------	--------	<MDL [4]	<MDL [4]
alpha-BHC	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	--------	--------	<MDL [4]	<MDL [4]
lindane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	--------	--------	<MDL [4]	<MDL [4]
beta-BHC	2.5	1.5	3.2	2.4	0.85	35	0.97	1.5
heptachlor	7.4	4.4	9.4	7.1	2.52	35	2.9	3.9
aldrin [1]	--------	--------	--------	--------	--------	--------	--------	--------
dacthal	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	--------	--------	<MDL [4]	<MDL [4]
oxychlordane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	--------	--------	<MDL [4]	<MDL [4]
heptachlor epoxide	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	--------	--------	<MDL [4]	<MDL [4]
trans-chlordane	18. [5]	15. [5]	23. [5]	19. [5]	--------	--------	7.7 [5]	11. [5]
trans-nonachlor	15. [5]	12. [5]	18. [5]	15. [5]	--------	--------	6.0 [5]	8.0 [5]
cis-chlordane	15. [5]	11. [5]	20. [5]	15. [5]	--------	--------	6.0 [5]	8.8 [5]
o,p'-DDE	17. [5]	<MDL [4]	21. [5]	19. [5]	--------	--------	7.7 [5]	10. [5]
p,p'-DDE	22. [5]	19. [5]	28. [5]	23. [5]	--------	--------	9.3 [5]	19. [5]
dieldrin	14. [5]	12. [5]	16. [5]	14. [5]	--------	--------	5.6 [5]	7.2 [5]
o,p'-DDD	13. [5]	<MDL [4]	13. [5]	13. [5]	--------	--------	5.2 [5]	6.7 [5]
endrin	19.	15.	18.	17.	2.1	12	6.9	9.9
cis-nonachlor	26.	17.	26.	23.	5.2	23	9.3	12.
o,p'-DDT	18. [5]	<MDL [4]	23. [5]	21. [5]	--------	--------	8.5 [5]	9.4 [5]
p,p'-DDD	14.	13.	16.	14.	1.5	11	5.6	7.3
p,p'-DDT	18.	16.	20.	18.	2.0	11	7.3	9.6
mirex	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	--------	--------	<MDL [4]	<MDL [4]
p,p'-methoxychlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	--------	--------	<MDL [4]	<MDL [4]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have been background corrected using means of Day 16 Control SPMDs (Table 5).*
[4] *Value below Day 16 control SPMD MDL (Table 5).*
[5] *Value between Day 16 control SPMD MDL and MQL (Table 5). These values are presented for information purposes only.*
[6] *Values have not been corrected for SPMD spike recovery.*
[7] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 31A. Day 16 Concentration Factors and SPMD Sampling Rates in 1.0 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,8]		
	Concentration Factor SPMD/Water	SPMD-Rs [6] L/Day	SPMD-Rs [7] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [6] L/Day	SPMD-Rs [7] L/Day
HCB	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
pentachloranisole	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
alpha-BHC	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
lindane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
beta-BHC	990	0.34	0.062	1,500	0.53	0.098
heptachlor	5,000	1.7	0.31	6,700	2.3	0.42
aldrin [1]	--------	--------	--------	--------	--------	--------
dacthal	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
oxychlordane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
heptachlor epoxide	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
trans-chlordane	7,800 [5]	2.6 [5]	0.48 [5]	11,000 [5]	3.7 [5]	0.68 [5]
trans-nonachlor	7,300 [5]	2.5 [5]	0.46 [5]	10,000 [5]	3.3 [5]	0.60 [5]
cis-chlordane	7,700 [5]	2.6 [5]	0.48 [5]	11,000 [5]	3.8 [5]	0.70 [5]
o,p'-DDE	9,600 [5]	3.3 [5]	0.60 [5]	13,000 [5]	4.4 [5]	0.81 [5]
p,p'-DDE	13,000 [5]	4.5 [5]	0.82 [5]	27,000 [5]	9.2 [5]	1.7 [5]
dieldrin	3,700 [5]	1.3 [5]	0.24 [5]	4,800 [5]	1.7 [5]	0.31 [5]
o,p'-DDD	6,500 [5]	2.2 [5]	0.40 [5]	8,400 [5]	2.8 [5]	0.51 [5]
endrin	4,900	1.7	0.31	7,100	2.4	0.44
cis-nonachlor	10,000	3.4	0.62	13,000	4.4	0.81
o,p'-DDT	9,300 [5]	3.2 [5]	0.59 [5]	10,000 [5]	3.6 [5]	0.66 [5]
p,p'-DDD	5,700	2.0	0.37	7,400	2.6	0.48
p,p'-DDT	11,000	3.6	0.66	14,000	4.7	0.86
mirex	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
p,p'-methoxychlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value below Day 16 control SPMD MDL (Table 5).*
[5] *Value between Day 16 control SPMD MDL and MQL (Table 5). These values are presented for information purposes only.*
[6] *SPMD sampling rate normalized to 1 g triolein.*
[7] *SPMD sampling rate normalized to 1 g SPMD.*
[8] *Values have been corrected for SPMD spike recovery (QC Table 33).*

10 °C OC DILUTER STUDY

Table 32. Day 2, OC Concentrations in 10 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [8] Mean	Corrected [9] Mean
HCB	24. [4]	<MDL [5]	<MDL [5]	---- [4]	----	----	9.7 [4]	12. [4]
pentachloranisole	18.	5.1 [4]	17.	18. [5]	-------	----	7.3 [6]	13. [6]
alpha-BHC	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	-------	----	<MDL [5]	<MDL [5]
lindane	1.6	<MDL [5]	<MDL [5]	---- [7]	----	-------	0.65 [7]	1.1 [7]
beta-BHC	5.6	<MDL [5]	<MDL [5]	------- [7]	----	----	2.3 [7]	3.7 [7]
heptachlor	14.	2.4 [4]	10.	12. [6]	----	----	4.8 [6]	6.5 [6]
aldrin [1]	----	----	----	-------	----	----	-------	----
dacthal	9.9	3.5	13.	8.8	4.8	55	3.5	3.9
oxychlordane	22.	6.4	15.	14.	7.8	56	5.6	6.7
heptachlor epoxide	4.7	0.48	<MDL [5]	2.6 [6]	-------	-------	1.0 [6]	2.2 [6]
trans-chlordane	24.	6.3	15.	15.	8.9	59	6.0	8.5
trans-nonachlor	22.	5.9	15.	14.	8.1	58	5.6	7.5
cis-chlordane	22.	5.9 [4]	15.	19. [6]	----	----	7.7 [6]	11. [6]
o,p'-DDE	21.	5.1	15.	14.	8.0	57	5.6	7.5
p,p'-DDE	25.	8.1	10.	14.	9.3	66	5.6	11.
dieldrin	25.	7.0	16.	16.	9.0	56	6.5	8.3
o,p'-DDD	9.4	5.1	<MDL [5]	7.3 [6]	-------	----	2.9 [6]	3.7 [6]
endrin	28.	10.	13.	17.	9.6	56	6.9	9.9
cis-nonachlor	27.	6.6	14.	16.	10.	63	6.5	8.4
o,p'-DDT	21.	4.3 [4]	<MDL [5]	---- [7]	-------	-------	8.5 [7]	9.4 [7]
p,p'-DDD	12.	2.1	<MDL [5]	7.1 [6]	----	----	2.9 [6]	3.8 [6]
p,p'-DDT	23.	6.1	<MDL [5]	15. [6]	----	-------	6.0 [6]	7.9 [6]
mirex	13.	2.7 [4]	6.9 [4]	---- [7]	----	----	5.2 [7]	8.1 [7]
p,p'-methoxychlor	68.	<MDL [5]	<MDL [5]	---- [7]	----	-------	27. [7]	29. [7]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have been background corrected using means of Day 2 Control SPMDs (Table 2).*
[4] *Value between Day 2 control SPMD MDL and MQL (Table 2). These values are presented for information purposes only.*
[5] *Value below Day 2 control SPMD MDL (Table 2).*
[6] *Value based on n=2.*
[7] *Value based on n=1.*
[8] *Values have not been corrected for SPMD spike recovery.*
[9] *Values have been corrected for SPMD spike recovery (QC Table 33).*

10 °C OC DILUTER STUDY

Table 32A. Day 2 Concentration Factors and SPMD Sampling Rates in 10 ng/L SPMDs

OCs	Uncorrected [2, 3]			Corrected [2, 10]		
	Concentration Factor SPMD/Water	SPMD-Rs [8] L/Day	SPMD-Rs [9] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [8] L/Day	SPMD-Rs [9] L/Day
HCB	27,000 [4]	4.6 [4]	0.84 [4]	33,000 [4]	5.6 [4]	1.0 [4]
pentachloranisole	9,000 [5]	2.0 [5]	0.37 [5]	16,000 [5]	3.5 [5]	0.64 [5]
alpha-BHC	<MDL [6]	<MDL [6]	<MDL [6]	<MDL [6]	<MDL [6]	<MDL [6]
lindane	1,000 [7]	0.30 [7]	0.055 [7]	1,700 [7]	0.53 [7]	0.097 [7]
beta-BHC	2,300 [7]	0.51 [7]	0.093 [7]	3,800 [7]	0.81 [7]	0.15 [7]
heptachlor	8,300 [5]	2.8 [5]	0.51 [5]	11,000 [5]	3.8 [5]	0.70 [5]
aldrin [1]	------	------	------	------	------	------
dacthal	3,900	0.74	0.14	4,300	0.82	0.15
oxychlordane	5,800	1.6	0.29	7,000	1.9	0.35
heptachlor epoxide	1,100 [5]	0.24 [5]	0.044 [5]	2,300 [5]	0.53 [5]	0.10 [5]
trans-chlordane	6,100	1.7	0.31	8,600	2.4	0.44
trans-nonachlor	6,800	1.9	0.35	9,100	2.5	0.46
cis-chlordane	10,000 [5]	1.9 [5]	0.35 [5]	14,000 [5]	2.8 [5]	0.51 [5]
o,p'-DDE	7,000	1.5	0.27	9,400	2.0	0.37
p,p'-DDE	7,900	1.4	0.26	15,000	2.9	0.53
dieldrin	4,300	1.3	0.24	5,500	1.7	0.31
o,p'-DDD	3,600 [5]	0.80 [5]	0.15 [5]	4,600 [5]	1.0 [5]	0.18 [5]
endrin	4,900	1.4	0.26	7,100	2.0	0.37
cis-nonachlor	6,900	1.8	0.33	8,900	2.3	0.42
o,p'-DDT	9,300 [7]	2.3 [7]	0.42 [7]	10,000 [7]	2.6 [7]	0.48 [7]
p,p'-DDD	3,000 [5]	0.71 [5]	0.13 [5]	3,900 [5]	0.92 [5]	0.17 [5]
p,p'-DDT	8,700 [5]	2.4 [5]	0.44 [5]	11,000 [5]	3.2 [5]	0.59 [5]
mirex	10,000 [7]	2.5 [7]	0.46 [7]	16,000 [7]	3.9 [7]	0.71 [7]
p,p'-methoxychlor	21,000 [7]	6.8 [7]	1.2 [7]	22,000 [7]	7.2 [7]	1.3 [7]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value between Day 2 control SPMD MDL and MQL (Table 2). These values are presented for information purposes only.*
[5] *Value based on n=2.*
[6] *Value below Day 2 control SPMD MDL (Table 2).*
[7] *Value based on n=1.*
[8] *SPMD sampling rate normalized to 1 g triolein.*
[9] *SPMD sampling rate normalized to 1 g SPMD.*
[10] *Values have been corrected for SPMD spike recovery (QC Table 33).*

10 °C OC DILUTER STUDY

Table 33. Day 4, OC Concentrations in 10 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [7] Mean	Corrected [9] Mean
HCB	39.	37	29.	35	5.3	15	14.	17.
pentachloranisole	54.	54	46.	51	4.6	9	21.	37.
alpha-BHC	<MDL [4]	<MDL [4]	6.5 [5]	-------- [5]	------	——	2.6 [5]	5.5 [5]
lindane	6.8	<MDL [4]	<MDL [4]	—— [5]	——	——	2.7 [5]	4.7 [5]
beta-BHC	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	------	-------	<MDL [4]	<MDL [4]
heptachlor	40.	37	30.	36	5.1	14	15.	20.
aldrin [1]	——	——	——	-------	------	——	——	——
dacthal	22.	21	24.	22	1.5	7	8.9	10.
oxychlordane	58.	50	48.	52	5.3	10	21.	25.
heptachlor epoxide	18.	<MDL [4]	16.	17 [7]	——	------	6.9 [7]	15. [7]
trans-chlordane	57.	45	37.	46	10.	22	19.	27.
trans-nonachlor	54.	44	36.	45	9.0	20	18.	24.
cis-chlordane	56.	50	42.	49	7.0	14	20.	29.
o,p'-DDE	56.	52	39.	49	8.9	18	20.	27.
p,p'-DDE	42.	33	24.	33	9.0	27	13.	27.
dieldrin	59.	43	42.	48	10.	21	19.	24.
o,p'-DDD	46.	40	38.	41	4.2	10	17.	22.
endrin	50.	42	48.	47	4.2	9	19.	27.
cis-nonachlor	49.	44	39.	44	5.0	11	18.	23.
o,p'-DDT	71.	53	44.	56	14.	25	23.	26.
p,p'-DDD	61.	50	40.	50	11.	22	20.	26.
p,p'-DDT	41.	40	34.	38	3.8	10	15.	20.
mirex	33.	33	23.	30	5.8	19	12.	19.
p,p'-methoxychlor	49. [5]	52 [5]	50. [5]	50 [5]	——	——	20. [5]	21. [5]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[3] *Values have been background corrected using means of Day 4 Control SPMDs (Table 3).*

[4] *Value below Day 4 control SPMD MDL (Table 3).*

[5] *Value between Day 4 control SPMD MDL and MQL (Table 3). These values are presented for information purposes only.*

[6] *Value based on n=1.*

[7] *Value based on n=2.*

[8] *Values have not been corrected for SPMD spike recovery.*

[9] *Values have been corrected for SPMD spike recovery (QC Table 33).*

10 °C OC DILUTER STUDY

Table 33A. Day 4 Concentration Factors and SPMD Sampling Rates in 10 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,10]		
	Concentration Factor SPMD/Water	SPMD-Rs [8] L/Day	SPMD-Rs [9] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [8] L/Day	SPMD-Rs [9] L/Day
HCB	2,500	3.4	0.62	3,000	4.1	0.75
pentachloranisole	2,100	2.8	0.51	3,700	4.9	0.90
alpha-BHC	650 [4]	0.89 [4]	0.16 [4]	1,400 [4]	1.9 [4]	0.35 [4]
lindane	470 [5]	0.64 [5]	0.12 [5]	810 [5]	1.1 [5]	0.20 [5]
beta-BHC	<MDL [6]	<MDL [6]	<MDL [6]	<MDL [6]	<MDL [6]	<MDL [6]
heptachlor	3,200	4.2	0.77	4,300	5.7	1.00
aldrin [1]	------	-------	----	----	----	-------
dacthal	680	0.93	0.17	770	1.0	0.18
oxychlordane	2,200	3.0	0.55	2,700	3.6	0.66
heptachlor epoxide	580 [7]	0.78 [7]	0.14 [7]	1,300 [7]	1.7 [7]	0.31 [7]
trans-chlordane	2,000	2.7	0.49	2,800	3.8	0.70
trans-nonachlor	2,200	3.0	0.55	2,900	4.0	0.73
cis-chlordane	1,800	2.5	0.46	2,600	3.7	0.68
o,p'-DDE	2,000	2.7	0.49	2,700	3.6	0.66
p,p'-DDE	1,200	1.7	0.31	2,500	3.5	0.64
dieldrin	1,400	1.9	0.35	1,700	2.4	0.44
o,p'-DDD	1,700	2.3	0.42	2,200	2.9	0.53
endrin	1,500	2.0	0.37	2,100	2.9	0.53
cis-nonachlor	1,800	2.4	0.44	2,300	3.1	0.57
o,p'-DDT	2,300	3.1	0.57	2,600	3.4	0.62
p,p'-DDD	1,800	2.5	0.46	2,400	3.2	0.59
p,p'-DDT	2,200	3.1	0.57	2,900	4.1	0.75
mirex	2,100	2.8	0.51	3,300	4.4	0.81
p,p'-methoxychlor	1,800 [4]	2.5 [4]	0.46 [4]	1,900 [4]	2.7 [4]	0.49 [4]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value between Day 4 control SPMD MDL and MQL (Table 3). These values are presented for information purposes only.*
[5] *Value based on n=1.*
[6] *Value below Day 4 control SPMD MDL (Table 3).*
[7] *Value based on n=2.*
[8] *SPMD sampling rate normalized to 1 g triolein.*
[9] *SPMD sampling rate normalized to 1 g SPMD.*
[10] *Values have been corrected for SPMD spike recovery (QC Table 33).*

10 °C OC DILUTER STUDY

Table 34. Day 8, OC Concentrations in 10 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [8] Mean	Corrected [9] Mean
HCB	39	49.	64.	51.	13.	25	21.	26.
pentachloranisole	71	78.	100.	83.	15.	18	33.	58.
alpha-BHC	<MDL [4]	19.	6.0 [5]	---- [6]	-------	----	7.7 [6]	16. [6]
lindane	<MDL [4]	4.1	6.3	5.2 [7]	-------	-------	2.1 [7]	3.7 [7]
beta-BHC	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
heptachlor	46	47.	75.	56.	16.	29	23.	31.
aldrin [1]	----	----	-------	-------	-------	-------	----	-------
dacthal	20	27.	24.	24.	3.5	15	9.7	11.
oxychlordane	74	83.	120.	92.	24.	26	37.	45.
heptachlor epoxide	46	24.	25.	32.	12.	38	13.	29.
trans-chlordane	68	59.	83.	70.	12.	17	28.	39.
trans-nonachlor	65	59.	80.	68.	11.	16	27.	36.
cis-chlordane	74	74.	94.	81.	12.	15	33.	49.
o,p'-DDE	74	82.	110.	89.	19.	21	36.	48.
p,p'-DDE	44	45.	70.	53.	15.	28	21.	43.
dieldrin	57	55.	62.	58.	3.6	6	23.	29.
o,p'-DDD	67	70.	76.	71.	4.6	6	29.	37.
endrin	55	62.	65.	61.	5.1	8	25.	36.
cis-nonachlor	69	63.	82.	71.	9.7	14	29.	38.
o,p'-DDT	74	76.	120.	90.	26.	29	36.	40.
p,p'-DDD	73	72.	91.	79.	11.	14	32.	42.
p,p'-DDT	53	57.	74.	61.	11.	18	25.	33.
mirex	40	34.	76.	50.	23.	46	20.	31.
p,p'-methoxychlor	63	79.	98.	80.	18.	23	32.	34.

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have been background corrected using means of Day 8 Control SPMDs (Table 4).*
[4] *Value below Day 8 control SPMD MDL (Table 4).*
[5] *Value between Day 8 control SPMD MDL and MQL (Table 4). These values are presented for information purposes only.*
[6] *Value based on n=1.*
[7] *Value based on n=2.*
[8] *Values have not been corrected for SPMD spike recovery.*
[9] *Values have been corrected for SPMD spike recovery (QC Table 33).*

10 °C OC DILUTER STUDY

Table 34A. Day 8 Concentration Factors and SPMD Sampling Rates in 10 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,9]		
	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day
HCB	3,700	2.5	0.46	4,600	3.0	0.55
pentachloranisole	3,300	2.3	0.42	5,800	4.0	0.73
alpha-BHC	1,900 [4]	1.3 [4]	0.24 [4]	4,000 [4]	2.8 [4]	0.51 [4]
lindane	360 [5]	0.25 [5]	0.046 [5]	640 [5]	0.44 [5]	0.081 [5]
beta-BHC	<MDL [6]	<MDL [6]	<MDL [6]	<MDL [6]	<MDL [6]	<MDL [6]
heptachlor	4,900	3.3	0.60	6,600	4.5	0.82
aldrin [1]	-------	-------	-------	-------	-------	-------
dacthal	750	0.51	0.093	850	0.57	0.10
oxychlordane	3,900	2.7	0.49	4,800	3.3	0.60
heptachlor epoxide	1,100	0.73	0.13	2,400	1.6	0.29
trans-chlordane	2,900	2.0	0.37	4,100	2.8	0.51
trans-nonachlor	3,300	2.3	0.42	4,300	3.1	0.57
cis-chlordane	3,000	2.0	0.37	4,500	2.9	0.5[illegible]
o,p'-DDE	3,600	2.4	0.44	4,800	3.2	0.59
p,p'-DDE	1,900	1.3	0.24	3,900	2.7	0.49
dieldrin	1,600	1.1	0.20	2,100	1.4	0.26
o,p'-DDD	2,900	2.0	0.37	3,700	2.6	0.48
endrin	1,900	1.3	0.24	2,800	1.9	0.35
cis-nonachlor	2,900	2.0	0.37	3,800	2.6	0.48
o,p'-DDT	3,600	2.5	0.46	4,000	2.8	0.51
p,p'-DDD	2,900	2.0	0.37	3,800	2.6	0.48
p,p'-DDT	3,700	2.5	0.46	4,900	3.3	0.60
mirex	3,400	2.4	0.44	5,300	3.8	0.70
p,p'-methoxychlor	2,900	2.0	0.37	3,100	2.1	0.38

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value based on n=1.*
[5] *Value based on n=2.*
[6] *Value below Day 8 control SPMD MDL (Table 4).*
[7] *SPMD sampling rate normalized to 1 g triolein.*
[8] *SPMD sampling rate normalized to 1 g SPMD.*
[9] *Values have been corrected for SPMD spike recovery (QC Table 33).*

10 °C OC DILUTER STUDY

Table 35. Day 16, OC Concentrations in 10 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [8] Mean	Corrected [9] Mean
HCB	130	72. [5]	89. [5]	—— [6]	——	——	52. [6]	63. [6]
pentachloranisole	210	130.	160.	170	40.	24	69.	120.
alpha-BHC	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	——	——	<MDL [4]	<MDL [4]
lindane	11	6.9 [5]	10. [5]	—— [6]	——	——	4.4 [6]	7.7 [6]
beta-BHC	16	<MDL [4]	9.7	13 [7]	——	——	5.2 [7]	8.3 [7]
heptachlor	130	84.	110.	110	23.	21	44.	59.
aldrin [1]	——	——	——	——	——	——	——	——
dacthal	47	34.	49.	43	8.1	19	17.	19.
oxychlordane	220	130.	170.	170	45.	26	69.	83.
heptachlor epoxide	120	46.	71.	79	38.	48	32.	71.
trans-chlordane	200	120.	140.	150	42.	28	60.	85.
trans-nonachlor	190	120.	130.	150	38.	25	60.	80.
cis-chlordane	220	130.	150.	170	47.	28	69.	100.
o,p'-DDE	230	150.	160.	180	44.	24	73.	97.
p,p'-DDE	130	88.	100.	110	22.	20	44.	90.
dieldrin	190	91.	150.	140	50.	36	56.	72.
o,p'-DDD	260	160.	180.	200	53.	27	81.	100.
endrin	180	93.	140.	140	44.	31	56.	80.
cis-nonachlor	210	110.	150.	160	50.	31	65.	84.
o,p'-DDT	220	140.	180.	180	40.	22	73.	81.
p,p'-DDD	270	140.	190.	200	66.	33	81.	110.
p,p'-DDT	150	110.	140.	130	21.	16	52.	68.
mirex	130	64.	78.	91	35.	38	37.	58.
p,p'-methoxychlor	160	110. [5]	170.	170 [7]	——	——	69. [7]	73. [7]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have been background corrected using means of Day 16 Control SPMDs (Table 5).*
[4] *Value below Day 16 control SPMD MDL (Table 5).*
[5] *Value between Day 16 control SPMD MDL and MQL (Table 5). These values are presented for information purposes only.*
[6] *Value based on n=1.*
[7] *Value based on n=2.*
[8] *Values have not been corrected for SPMD spike recovery.*
[9] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 35A. Day 16 Concentration Factors and SPMD Sampling Rates in 10 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,9]		
	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day
HCB	9,100 [4]	3.1 [4]	0.57 [4]	11,000 [4]	3.8 [4]	0.70 [4]
pentachloranisole	6,900	2.3	0.42	12,000	4.0	0.73
alpha-BHC	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]
lindane	760 [4]	0.26 [4]	0.048 [4]	1,300 [4]	0.46 [4]	0.084 [4]
beta-BHC	430 [6]	0.15 [6]	0.027 [6]	690 [6]	0.24 [6]	0.044 [6]
heptachlor	9,400	3.2	0.59	13,000	4.3	0.79
aldrin [1]	----	----	----	----	----	----
dacthal	1,300	0.45	0.082	1,500	0.50	0.092
oxychlordane	7,300	2.5	0.46	8,800	3.0	0.55
heptachlor epoxide	2,700	0.91	0.17	5,900	2.0	0.37
trans-chlordane	6,300	2.2	0.40	8,900	3.1	0.57
trans-nonachlor	7,200	2.5	0.46	9,600	3.3	0.60
cis-chlordane	6,300	2.1	0.38	9,100	3.1	0.57
o,p'-DDE	7,300	2.5	0.46	9,700	3.3	0.60
p,p'-DDE	4,000	1.4	0.26	8,200	2.9	0.53
dieldrin	4,000	1.4	0.26	5,100	1.8	0.33
o,p'-DDD	8,100	2.8	0.51	10,000	3.6	0.66
endrin	4,300	1.5	0.27	6,200	2.1	0.38
cis-nonachlor	6,500	2.2	0.40	8,400	2.9	0.53
o,p'-DDT	7,300	2.5	0.46	8,100	2.8	0.51
p,p'-DDD	7,400	2.5	0.46	10,000	3.2	0.59
p,p'-DDT	7,600	2.6	0.48	10,000	3.4	0.62
mirex	6,400	2.2	0.40	10,000	3.4	0.62
p,p'-methoxychlor	6,300 [6]	2.1 [6]	0.38 [6]	6,600 [6]	2.2 [6]	0.40 [6]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value based on n=1.*
[5] *Value below Day 16 control SPMD MDL (Table 5).*
[6] *Value based on n=2.*
[7] *SPMD sampling rate normalized to 1 g triolein.*
[8] *SPMD sampling rate normalized to 1 g SPMD.*
[9] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 36. Day 2, OC Concentrations in 100 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [7] Mean	Corrected [8] Mean
HCB	120	92	92	100	16.	16	40	49
pentachloranisole	170	140	150	150	15.	10	60	110
alpha-BHC	<MDL [4]	<MDL [4]	44	-------- [5]	--------	--------	18 [5]	38 [5]
lindane	<MDL [4]	<MDL [4]	40	-------- [5]	--------	--------	16 [5]	28 [5]
beta-BHC	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	--------	--------	<MDL [4]	<MDL [4]
heptachlor	87	93	99	93	6.0	6	38	51
aldrin [1]	--------	--------	--------	--------	--------	--------	--------	--------
dacthal	78	76	100	85	13.	15	34	38
oxychlordane	150	130	140	140	10.	7	56	67
heptachlor epoxide	68	34	46	49	17.	35	20	44
trans-chlordane	150	120	130	130	15.	12	52	73
trans-nonachlor	150	120	130	130	15.	12	52	69
cis-chlordane	150	120	140	140	15.	11	56	82
o,p'-DDE	180	130	140	150	26.	17	60	80
p,p'-DDE	94	70	75	80	13.	16	32	65
dieldrin	140	120	140	130	12.	9	52	67
o,p'-DDD	200	140	160	170	31.	18	69	88
endrin	110	130	150	130	20.	15	52	74
cis-nonachlor	150	130	150	140	12.	9	56	73
o,p'-DDT	89	140	150	130	33.	25	52	58
p,p'-DDD	200	180	200	190	12.	6	77	100
p,p'-DDT	86	140	140	120	31.	26	48	63
mirex	120	98	110	110	11.	10	44	69
p,p'-methoxychlor	<MDL [4]	130	150	140 [6]	--------	--------	56 [6]	60 [6]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.46g).*
[3] *Values have been background corrected using means of Day 2 Control SPMDs (Table 2).*
[4] *Value below Day 2 control SPMD MDL (Table 2).*
[5] *Value based on n=1.*
[6] *Value based on n=2.*
[7] *Values have not been corrected for SPMD spike recovery.*
[8] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 36A. Day 2 Concentration Factors and SPMD Sampling Rates in 100 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,9]		
	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day
HCB	680	1.9	0.35	830	2.3	0.42
pentachloranisole	620	1.7	0.31	1,100	3.0	0.55
alpha-BHC	160 [4]	0.44 [4]	0.081 [4]	350 [4]	0.94 [4]	0.17 [4]
lindane	150 [4]	0.40 [4]	0.073 [4]	250 [4]	0.70 [4]	0.13 [4]
beta-BHC	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]
heptachlor	810	2.2	0.40	1,100	3.0	0.55
aldrin [1]	------	-------	------	-------	-------	------
dacthal	310	0.85	0.16	350	0.94	0.17
oxychlordane	760	2.1	0.38	910	2.5	0.46
heptachlor epoxide	180	0.49	0.090	400	1.1	0.20
trans-chlordane	630	1.7	0.31	890	2.4	0.44
trans-nonachlor	760	2.1	0.38	1,000	2.8	0.51
cis-chlordane	660	1.8	0.33	960	2.6	0.48
o,p'-DDE	710	1.9	0.35	940	2.5	0.46
p,p'-DDE	410	1.1	0.20	830	2.2	0.40
dieldrin	430	1.2	0.22	560	1.5	0.27
o,p'-DDD	730	2.0	0.37	940	2.6	0.48
endrin	470	1.3	0.24	670	1.9	0.35
cis-nonachlor	600	1.6	0.29	780	2.1	0.38
o,p'-DDT	670	1.8	0.33	740	2.0	0.37
p,p'-DDD	700	1.9	0.35	900	2.5	0.46
p,p'-DDT	620	1.7	0.31	810	2.2	0.40
mirex	720	2.0	0.37	1,100	3.1	0.57
p,p'-methoxychlor	590 [6]	1.6	0.29	630	1.7	0.31

[1] *Aldrin wss not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value based on n=1.*
[5] *Value below Day 2 control SPMD MDL (Table 2).*
[6] *Value based on n=2.*
[7] *SPMD sampling rate normalized to 1 g triolein.*
[8] *SPMD sampling rate normalized to 1 g SPMD.*
[9] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 37. Day 4, OC Concentrations in 100 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [7] Mean	Corrected [8] Mean
HCB	210	170	190	190	20	11	77	94
pentachloranisole	330	280	320	310	26	8	130	230
alpha-BHC	67	41	46	51	14	27	21	45
lindane	<MDL [4]	<MDL [4]	41	------ [5]	-------	———	17 [5]	30 [5]
beta-BHC	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	-------	-------	<MDL [4]	<MDL [4]
heptachlor	140	160	200	170	31	18	69	93
aldrin [1]	———	-------	-------	———	———	———	-------	———
dacthal	150	99	110	120	27	23	48	53
oxychlordane	290	230	270	260	31	12	100	120
heptachlor epoxide	140	90	88	110	29	26	44	98
trans-chlordane	270	210	240	240	30	13	97	140
trans-nonachlor	260	210	240	240	25	10	97	130
cis-chlordane	280	230	270	260	26	10	100	150
o,p'-DDE	320	260	290	290	30	10	120	160
p,p'-DDE	160	130	150	150	15	10	60	120
dieldrin	270	210	240	240	30	13	97	120
o,p'-DDD	360	300	350	340	32	9	140	180
endrin	250	230	260	250	15	6	100	140
cis-nonachlor	300	240	280	270	31	11	110	140
o,p'-DDT	130	260	300	230	89	39	93	100
p,p'-DDD	380	330	400	370	36	10	150	190
p,p'-DDT	92	250	300	210	110	52	85	110
mirex	240	190	210	210	25	12	85	130
p,p'-methoxychlor	<MDL [4]	230	270	250 [6]	———	———	100 [6]	110 [6]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*
[3] *Values have been background corrected using means of Day 4 Control SPMDs (Table 3).*
[4] *Value below Day 4 control SPMD MDL (Table 3).*
[5] *Value based on n=1.*
[6] *Value based on n=2.*
[7] *Values have not been corrected for SPMD spike recovery.*
[8] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 37A. Day 4 Concentration Factors and SPMD Sampling Rates in 100 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,9]		
	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day
HCB	1,300	1.8	0.33	1,600	2.2	0.40
pentachloranisole	1,300	1.8	0.33	2,400	3.2	0.59
alpha-BHC	190	0.26	0.048	410	0.55	0.10
lindane	150 [4]	0.21 [4]	0.038 [4]	270 [4]	0.37 [4]	0.068 [4]
beta-BHC	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]
heptachlor	1,500	2.0	0.37	2,000	2.7	0.49
aldrin [1]	------	-------	-------	-------	-------	------
dacthal	440	0.60	0.11	480	0.67	0.12
oxychlordane	1,400	1.9	0.35	1,600	2.3	0.42
heptachlor epoxide	400	0.55	0.10	890	1.2	0.22
trans-chlordane	1,200	1.6	0.29	1,700	2.3	0.42
trans-nonachlor	1,400	1.9	0.35	1,900	2.5	0.46
cis-chlordane	1,200	1.7	0.31	1,800	2.5	0.46
o,p'-DDE	1,400	1.9	0.35	1,900	2.5	0.46
p,p'-DDE	770	1.1	0.2	1,500	2.2	0.40
dieldrin	800	1.1	0.2	1,000	1.4	0.26
o,p'-DDD	1,500	2.0	0.37	1,900	2.6	0.48
endrin	910	1.3	0.24	1,300	1.9	0.35
cis-nonachlor	1,200	1.6	0.29	1,500	2.1	0.38
o,p'-DDT	1,200	1.6	0.29	1,300	1.8	0.33
p,p'-DDD	1,400	1.9	0.35	1,700	2.5	0.46
p,p'-DDT	1,100	1.5	0.27	1,400	2.0	0.37
mirex	1,400	1.9	0.35	2,100	3.0	0.55
p,p'-methoxychlor	1,100 [6]	1.4 [6]	0.26 [6]	1,200 [6]	1.5 [6]	0.27 [6]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value based on n=1.*
[5] *Value below Day 4 control SPMD MDL (Table 3).*
[6] *Value based on n=2.*
[7] *SPMD sampling rate normalized to 1 g triolein.*
[8] *SPMD sampling rate normalized to 1 g SPMD.*
[9] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 38. Day 8, OC Concentrations in 100 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [6] Mean	Corrected [7] Mean
HCB	400	290	400	360	64.	18	150.	180.
pentachloranisole	630	480	620	580	84.	14	230.	400.
alpha-BHC	75	62	60	66	8.1	12	27.	57.
lindane	50	39	40	43	6.1	14	17.	30.
beta-BHC	16	11	<MDL [4]	14 [5]	——	——	5.6 [5]	8.9 [5]
heptachlor	450	310	380	380	70.	18	150.	200.
aldrin [1]	--------	——	——	--------	--------	--------	-- ——	--------
dacthal	140	99	160	130	31.	24	52.	58.
oxychlordane	630	440	540	540	95.	18	220.	270.
heptachlor epoxide	320	210	230	250	59.	24	100.	220.
trans-chlordane	700	480	490	560	120.	21	230.	320.
trans-nonachlor	700	470	480	550	130.	24	220.	290.
cis-chlordane	710	490	540	580	120.	21	230.	340.
o,p'-DDE	650	450	570	560	100.	18	230.	310.
p,p'-DDE	640	450	300	460	170.	37	190.	390.
dieldrin	570	410	420	470	90.	19	190.	240.
o,p'-DDD	840	590	620	680	140.	21	270.	350.
endrin	1,100	810	450	790	330.	42	320.	460.
cis-nonachlor	780	550	540	620	140.	23	250.	320.
o,p'-DDT	760	480	630	620	140.	23	250.	280.
p,p'-DDD	860	610	720	730	130.	18	290.	380.
p,p'-DDT	660	350	620	540	170.	31	220.	290.
mirex	550	380	430	450	87.	19	180.	280.
p,p'-methoxychlor	540	270	550	450	160.	36	180.	190.

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*
[3] *Values have been background corrected using means of Day 8 Control SPMDs (Table 4).*
[4] *Value below Day 8 control SPMD MDL (Table 4).*
[5] *Value based on n=2.*
[6] *Values have not been corrected for SPMD spike recovery.*
[7] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 38A. Day 8 Concentration Factors and SPMD Sampling Rates in 100 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,7]		
	Concentration Factor SPMD/Water	SPMD-Rs [5] L/Day	SPMD-Rs [6] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [5] L/Day	SPMD-Rs [6] L/Day
HCB	2,500	1.7	0.31	3,100	2.1	0.38
pentachloranisole	2,400	1.6	0.29	4,100	2.8	0.51
alpha-BHC	250	0.17	0.031	520	0.36	0.066
lindane	150	0.11	0.020	270	0.19	0.035
beta-BHC	47 [4]	0.032 [4]	0.0059 [4]	74 [4]	0.051 [4]	0.0093 [4]
heptachlor	3,200	2.2	0.40	4,300	3.0	0.55
aldrin [1]	--------	--------	--------	--------	--------	--------
dacthal	470	0.33	0.060	530	0.37	0.068
oxychlordane	3,000	2.0	0.37	3,600	2.4	0.44
heptachlor epoxide	910	0.63	0.12	2,000	1.4	0.26
trans-chlordane	2,800	1.9	0.35	3,900	2.7	0.49
trans-nonachlor	3,200	2.2	0.40	4,300	2.9	0.53
cis-chlordane	2,700	1.9	0.35	4,000	2.8	0.51
o,p'-DDE	2,700	1.8	0.33	3,600	2.4	0.44
p,p'-DDE	2,400	1.6	0.29	5,000	3.3	0.60
dieldrin	1,600	1.1	0.20	2,000	1.4	0.26
o,p'-DDD	2,900	2.0	0.37	3,700	2.6	0.48
endrin	2,900	2.0	0.37	4,200	2.9	0.53
cis-nonachlor	2,700	1.8	0.33	3,400	2.3	0.42
o,p'-DDT	3,200	2.2	0.40	3,600	2.4	0.44
p,p'-DDD	2,600	1.8	0.33	3,500	2.3	0.42
p,p'-DDT	2,800	1.9	0.35	3,700	2.5	0.46
mirex	3,000	2.0	0.37	4,600	3.1	0.57
p,p'-methoxychlor	1,900	1.3	0.24	2,000	1.4	0.26

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value based on n=2.*
[5] *SPMD sampling rate normalized to 1 g triolein.*
[6] *SPMD sampling rate normalized to 1 g SPMD.*
[7] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 39. Day 16, OC Concentrations in 100 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	% CV	Uncorrected [6] Mean	Corrected [7] Mean
HCB	960	470	490	640	280	44	260	320
pentachloranisole	1,600	810	790	1,100	460	42	440	770
alpha-BHC	130	110	110	120	12	10	48	100
lindane	66	78	44	63	17	27	25	44
beta-BHC	<MDL [4]	38	14	26 [5]	--------	--------	10 [5]	16 [5]
heptachlor	600	560	520	560	40	7	230	310
aldrin [1]	--------	--------	--------	--------	--------	--------	--------	--------
dacthal	300	230	120	220	91	41	89	99
oxychlordane	1,300	810	770	960	300	31	390	470
heptachlor epoxide	580	480	340	470	120	26	190	420
trans-chlordane	1,200	900	870	990	180	18	400	560
trans-nonachlor	1,200	870	870	980	190	19	400	530
cis-chlordane	1,300	940	860	1,000	230	23	400	590
o,p'-DDE	1,400	770	810	990	350	35	400	530
p,p'-DDE	720	770	840	780	60	8	310	630
dieldrin	940	870	620	810	170	21	330	420
o,p'-DDD	1,900	990	1,000	1,300	520	40	520	670
endrin	840	1,600	1,200	1,200	380	32	480	690
cis-nonachlor	1,300	1,000	940	1,100	190	17	440	570
o,p'-DDT	750	920	850	840	85	10	340	380
p,p'-DDD	1,800	1,200	1,100	1,400	380	27	560	730
p,p'-DDT	590	850	670	700	130	19	280	370
mirex	850	640	740	740	110	15	300	470
p,p'-methoxychlor	420	910	410	580	290	50	230	240

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*
[3] *Values have been background corrected using means of Day 16 Control SPMDs (Table 5).*
[4] *Value below Day 16 control SPMD MDL (Table 5).*
[5] *Value based on n=2.*
[6] *Values have not been corrected for SPMD spike recovery.*
[7] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 39A. Day 16 Concentration Factors and SPMD Sampling Rates in 100 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,7]		
	Concentration Factor SPMD/Water	SPMD-Rs [5] L/Day	SPMD-Rs [6] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [5] L/Day	SPMD-Rs [6] L/Day
HCB	4,400	1.5	0.27	5,400	1.8	0.33
pentachloranisole	4,500	1.6	0.29	7,900	2.8	0.51
alpha-BHC	440	0.15	0.027	910	0.32	0.059
lindane	230	0.079	0.014	400	0.14	0.026
beta-BHC	83 [4]	0.030 [4]	0.0055 [4]	130 [4]	0.048 [4]	0.0088 [4]
heptachlor	4,900	1.6	0.29	6,600	2.2	0.40
aldrin [1]	--	--------	--	--------	--------	--
dacthal	810	0.28	0.051	900	0.31	0.057
oxychlordane	5,300	1.8	0.33	6,400	2.2	0.40
heptachlor epoxide	1,700	0.59	0.11	3,800	1.3	0.24
trans-chlordane	4,900	1.7	0.31	6,800	2.4	0.44
trans-nonachlor	5,900	2.0	0.37	7,800	2.7	0.49
cis-chlordane	4,700	1.6	0.29	6,900	2.4	0.44
o,p'-DDE	4,700	1.6	0.29	6,200	2.1	0.38
p,p'-DDE	4,000	1.4	0.26	8,100	2.9	0.53
dieldrin	2,800	0.93	0.17	3,500	1.2	0.22
o,p'-DDD	5,500	1.9	0.35	7,100	2.4	0.44
endrin	4,400	1.5	0.27	6,300	2.1	0.38
cis-nonachlor	4,700	1.6	0.29	6,100	2.1	0.38
o,p'-DDT	4,400	1.5	0.27	4,900	1.7	0.31
p,p'-DDD	5,100	1.8	0.33	6,600	2.3	0.42
p,p'-DDT	3,600	1.2	0.22	4,700	1.6	0.29
mirex	4,900	1.7	0.31	7,700	2.7	0.49
p,p'-methoxychlor	2,400	0.84	0.15	2,500	0.89	0.16

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value based on n=2.*
[5] *SPMD sampling rate normalized to 1 g triolein.*
[6] *SPMD sampling rate normalized to 1 g SPMD.*
[7] *Values have been corrected for SPMD spike recovery (QC Table 33).*

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Table 40. Day 2, OC Concentrations in 1.0 ng/L SPMDs

OCs	ng / SPMD [1,2]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	% CV	Uncorrected [7] Mean	Corrected [8] Mean
HCB	0.90 [3]	1.6 [3]	2.3 [3]	1.6 [3]	----	----	0.65 [3]	0.86 [3]
pentachloranisole	1.2 [3]	1.8	2.3	2.1 [5]	----	----	0.85 [5]	1.1 [5]
alpha-BHC	1.4 [3]	<MDL [4]	1.5 [3]	1.5 [3]	—	----	0.60 [3]	1.0 [3]
lindane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
beta-BHC	<MDL [4]	22. [3]	<MDL [4]	— [3]	—	----	8.9 [3]	10. [3]
heptachlor	0.68	0.34	<MDL [4]	0.51 [5]	—	—	0.21 [5]	0.42 [5]
aldrin	<MDL [4]	1.2 [3]	2.6 [3]	1.9 [3]	—	—	0.77 [3]	1.2 [3]
dacthal	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
oxychlordane	<MDL [4]	<MDL [4]	2.0 [3]	---- [3]	----	—	0.81 [3]	0.81 [3]
heptachlor epoxide	1.6 [3]	1.7 [3]	1.9 [3]	1.7 [3]	----	----	0.69 [3]	0.78 [3]
trans-chlordane	1.5 [3]	<MDL [4]	2.0 [3]	1.8 [3]	—	----	0.73 [3]	0.85 [3]
trans-nonachlor	1.4 [3]	1.2 [3]	2.0 [3]	1.5 [3]	----	—	0.60 [3]	0.68 [3]
cis-chlordane	<MDL [4]	<MDL [4]	1.1 [3]	— [3]	----	----	0.44 [3]	0.50 [3]
o,p'-DDE	<MDL [4]	<MDL [4]	2.2 [3]	---- [3]	----	—	0.89 [3]	1.2 [3]
p,p'-DDE	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	—	<MDL [4]	<MDL [4]
dieldrin	2.4 [3]	2.3 [3]	2.4 [3]	2.4 [3]	----	—	0.97 [3]	1.4 [3]
o,p'-DDD	2.3 [3]	2.4 [3]	2.6 [3]	2.4 [3]	—	—	0.97 [3]	1.2 [3]
endrin	<MDL [4]	1.8 [3]	<MDL [4]	— [3]	----	—	0.73 [3]	0.96 [3]
cis-nonachlor	<MDL [4]	<MDL [4]	1.2 [3]	---- [3]	----	----	0.48 [3]	0.68 [3]
o,p'-DDT	0.60 [3]	1.8	1.2 [3]	---- [6]	----	----	0.73 [6]	1.2 [6]
p,p'-DDD	5.0 [3]	4.7 [3]	4.8 [3]	4.8 [3]	—	—	1.9 [3]	2.6 [3]
p,p'-DDT	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	—	—	<MDL [4]	<MDL [4]
mirex	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	—	----	<MDL [4]	<MDL [4]
p,p'-methoxychlor	2.6 [3]	2.5 [3]	<MDL [4]	2.6 [3]	----	—	1.0 [3]	2.0 [3]

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have been background corrected using means of Day 2 Control SPMDs (Table 6).*
[3] *Value between Day 2 control SPMD MDL and MQL (Table 6). These values are presented for information purposes only.*
[4] *Value below Day 2 control SPMD MDL (Table 6).*
[5] *Value based on n=2.*
[6] *Value based on n=1.*
[7] *Values have not been corrected for SPMD spike recovery.*
[8] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 40A. Day 2 Concentration Factors and SPMD Sampling Rates in 1.0 ng/L SPMDs

OCs	Uncorrected [1,2]			Corrected [1,9]		
	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day
HCB	590 [3]	1.6 [3]	0.29 [3]	780 [3]	2.1 [3]	0.38 [3]
pentachloranisole	650 [4]	1.8 [4]	0.33 [4]	850 [4]	2.4 [4]	0.44 [4]
alpha-BHC	430 [3]	1.2 [3]	0.22 [3]	710 [3]	2.0 [3]	0.37 [3]
lindane	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]
beta-BHC	7,000 [3]	20. [3]	3.7 [3]	8,300 [3]	23. [3]	4.2 [3]
heptachlor	120 [4]	0.33 [4]	0.060 [4]	250 [4]	0.66 [4]	0.12 [4]
aldrin	410 [3]	1.1 [3]	0.20 [3]	630 [3]	1.7 [3]	0.31 [3]
dacthal	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]
oxychlordane	540 [3]	1.5 [3]	0.27 [3]	540 [3]	1.5 [3]	0.27 [3]
heptachlor epoxide	360 [3]	0.98 [3]	0.18 [3]	410 [3]	1.1 [3]	0.20 [3]
trans-chlordane	500 [3]	1.2 [3]	0.22 [3]	530 [3]	1.4 [3]	0.26 [3]
trans-nonachlor	350 [3]	0.97 [3]	0.18 [3]	400 [3]	1.1 [3]	0.20 [3]
cis-chlordane	220 [3]	0.61 [3]	0.11 [3]	250 [3]	0.69 [3]	0.13 [3]
o,p'-DDE	680 [3]	1.9 [3]	0.35 [3]	920 [3]	2.5 [3]	0.46 [3]
p,p'-DDE	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]
dieldrin	970 [3]	2.6 [3]	0.48 [3]	1,400 [3]	3.7 [3]	0.68 [3]
o,p'-DDD	610 [3]	1.7 [3]	0.31 [3]	750 [3]	2.0 [3]	0.37 [3]
endrin	730 [3]	2.0 [3]	0.37 [3]	960 [3]	2.6 [3]	0.48 [3]
cis-nonachlor	250 [3]	0.69 [3]	0.13 [3]	360 [3]	0.97 [3]	0.18 [3]
o,p'-DDT	520 [6]	1.4 [6]	0.26 [6]	860 [6]	2.4 [6]	0.44 [6]
p,p'-DDD	1,100 [3]	2.9 [3]	0.53 [3]	1,400 [3]	4.0 [3]	0.73 [3]
p,p'-DDT	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]
mirex	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]
p,p'-methoxychlor	140 [3]	0.41 [3]	0.075 [3]	290 [3]	0.82 [3]	0.15 [3]

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have not been corrected for SPMD spike recovery.*
[3] *Value between Day 2 control SPMD MDL and MQL (Table 6). These values are presented for information purposes only.*
[4] *Value based on n=2.*
[5] *Value below Day 2 control SPMD MDL (Table 6).*
[6] *Value based on n=1.*
[7] *SPMD sampling rate normalized to 1 g triolein.*
[8] *SPMD sampling rate normalized to 1 g SPMD.*

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Table 41. Day 4, OC Concentrations in 1.0 ng/L SPMDs

OCs	ng / SPMD [1,2]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [6] Mean	Corrected [7] Mean
HCB	2.8 [3]	2.2 [3]	2.4 [3]	2.5 [3]	----	----	1.0 [3]	1.3 [3]
pentachloranisole	3.8	3.6	3.9	3.8	0.15	4	1.5	2.0
alpha-BHC	1.1 [3]	1.2 [3]	0.90 [3]	1.1 [3]	----	----	0.44 [3]	0.73 [3]
lindane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
beta-BHC	28. [3]	13. [3]	9.0 [3]	17. [3]	----	----	6.9 [3]	7.9 [3]
heptachlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
aldrin	2.5	2.1	2.4	2.3	0.21	9	0.93	1.4
dacthal	3.1 [3]	2.9 [3]	2.8 [3]	3.0 [3]	----	----	1.2 [3]	1.6 [3]
oxychlordane	3.9	4.2	5.2	4.4	0.68	15	1.8	1.8
heptachlor epoxide	2.9	2.7	2.9	2.8	0.12	4	1.1	1.2
trans-chlordane	3.1 [3]	2.2 [3]	2.7 [3]	2.7 [3]	----	----	1.1 [3]	1.3 [3]
trans-nonachlor	2.8 [3]	2.1 [3]	2.6 [3]	2.5 [3]	—	----	1.0 [3]	1.1 [3]
cis-chlordane	2.5	2.2	4.4	3.0	1.2	40	1.2	1.4
o,p'-DDE	2.6 [3]	2.1 [3]	2.2 [3]	2.3 [3]	----	----	0.93 [3]	1.2 [3]
p,p'-DDE	2.7 [3]	1.9 [3]	2.1 [3]	2.2 [3]	----	----	0.89 [3]	1.3 [3]
dieldrin	3.7	3.2	3.4	3.4	0.25	7	1.4	2.0
o,p'-DDD	3.7 [3]	3.6 [3]	3.8 [3]	3.7 [3]	----	----	1.5 [3]	1.8 [3]
endrin	3.9	3.4	3.5	3.6	0.26	7	1.5	2.0
cis-nonachlor	3.6 [3]	3.3 [3]	3.5 [3]	3.5 [3]	----	----	1.4 [3]	2.0 [3]
o,p'-DDT	3.9 [3]	2.2 [3]	2.9 [3]	3.0 [3]	----	----	1.2 [3]	2.0 [3]
p,p'-DDD	6.1	5.9	6.0	6.0	0.10	2	2.4	3.3
p,p'-DDT	5.4	4.4 [3]	4.4 [3]	---- [5]	----	----	2.2 [5]	4.1 [5]
mirex	<MDL [4]	<MDL [3]	<MDL [3]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
p,p'-methoxychlor	8.4 [3]	7.1 [3]	7.4 [3]	7.6 [3]	----	—	3.1 [3]	6.2 [3]

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have been background corrected using means of Day 4 Control SPMDs (Table 18).*
[3] *Value between Day 4 control SPMD MDL and MQL (Table 7). These values are presented for information purposes only.*
[4] *Value below Day 4 control SPMD MDL (Table 7).*
[5] *Value based on n=1.*
[6] *Values have not been corrected for SPMD spike recovery.*
[7] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 41A. Day 4 Concentration Factors and SPMD Sampling Rates in 1.0 ng/L SPMDs

OCs	Uncorrected [1,2]			Corrected [1,8]		
	Concentration Factor SPMD/Water	SPMD-Rs [6] L/Day	SPMD-Rs [7] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [6] L/Day	SPMD-Rs [7] L/Day
HCB	910 [3]	1.3 [3]	0.24 [3]	1,200 [3]	1.7 [3]	0.31 [3]
pentachloranisole	1,200	1.6	0.29	1,500	2.1	0.38
alpha-BHC	310 [3]	0.43 [3]	0.079 [3]	520 [3]	0.72 [3]	0.13 [3]
lindane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
beta-BHC	5,800 [3]	7.8 [3]	1.4 [3]	7,000 [3]	9.0 [3]	1.6 [3]
heptachlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
aldrin	490	0.67	0.12	740	1.0	0.18
dacthal	1,200 [3]	1.7 [3]	0.31 [3]	1,600 [3]	2.2 [3]	0.40 [3]
oxychlordane	1,200	1.6	0.29	1,200	1.6	0.29
heptachlor epoxide	580	0.81	0.15	630	0.91	0.17
trans-chlordane	690 [3]	0.93 [3]	0.17 [3]	810 [3]	1.1 [3]	0.20 [3]
trans-nonachlor	590 [3]	0.81 [3]	0.15 [3]	650 [3]	0.92 [3]	0.17 [3]
cis-chlordane	600	0.83	0.15	700	0.94	0.17
o,p'-DDE	720 [3]	0.97 [3]	0.18 [3]	920 [3]	1.3 [3]	0.24 [3]
p,p'-DDE	640 [3]	0.86 [3]	0.16 [3]	930 [3]	1.3 [3]	0.24 [3]
dieldrin	1,400	1.9	0.35	2,000	2.7	0.49
o,p'-DDD	940 [3]	1.3 [3]	0.24 [3]	1,100 [3]	1.5 [3]	0.27 [3]
endrin	1,500	2.0	0.37	2,000	2.6	0.48
cis-nonachlor	740 [3]	1.0 [3]	0.18 [3]	1,100 [3]	1.4 [3]	0.26 [3]
o,p'-DDT	860 [3]	1.2 [3]	0.22 [3]	1,400 [3]	2.0 [3]	0.37 [3]
p,p'-DDD	1,300	1.8	0.33	1,800	2.5	0.46
p,p'-DDT	1,200 [5]	1.7 [5]	0.31 [5]	2,300 [5]	3.1 [5]	0.57 [5]
mirex	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
p,p'-methoxychlor	440 [3]	0.60 [3]	0.11 [3]	890 [3]	1.2 [3]	0.22 [3]

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have not been corrected for SPMD spike recovery.*
[3] *Value between Day 4 control SPMD MDL and MQL (Table 7). These values are presented for information purposes only.*
[4] *Value below Day 4 control SPMD MDL (Table 7).*
[5] *Value based on n=1.*
[6] *SPMD sampling rate normalized to 1 g triolein.*
[7] *SPMD sampling rate normalized to 1 g SPMD.*
[8] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 42. Day 8, OC Concentrations in 1.0 ng/L SPMDs

OCs	ng / SPMD [1,2]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [7] Mean	Corrected [8] Mean
HCB	8.1 [3]	5.2 [3]	5.1 [3]	6.1 [3]	—	----	2.5 [3]	3.3 [3]
pentachloranisole	8.7	6.4	6.2 [3]	7.6 [5]	—	----	3.1 [5]	4.1 [5]
alpha-BHC	1.3 [3]	1.3 [3]	1.3 [3]	1.3 [3]	----	—	0.52 [3]	0.87 [3]
lindane	1.3 [3]	1.2 [3]	1.2 [3]	1.2 [3]	—	—	0.48 [3]	0.73 [3]
beta-BHC	20. [3]	17. [3]	17. [3]	18. [3]	----	—	7.3 [3]	8.4 [3]
heptachlor	0.76	0.69	0.74	0.73	0.036	5	0.29	0.58
aldrin	4.8 [3]	3.5 [3]	5.8 [3]	4.7 [3]	----	----	1.9 [3]	2.9 [3]
dacthal	3.6	3.2	3.2	3.3	0.23	7	1.3	1.7
oxychlordane	8.5	8.5	8.5	8.5	0.0	0	3.4	3.4
heptachlor epoxide	5.2	4.9	4.8	5.0	0.21	4	2.0	2.2
trans-chlordane	6.1 [3]	5.3 [3]	5.2 [3]	5.5 [3]	----	----	2.2 [3]	2.6 [3]
trans-nonachlor	6.1 [3]	5.2 [3]	5.0 [3]	5.4 [3]	—	----	2.2 [3]	2.5 [3]
cis-chlordane	6.0 [3]	5.6 [3]	5.5 [3]	5.7 [3]	—	----	2.3 [3]	2.6 [3]
o,p'-DDE	6.3 [3]	4.3 [3]	4.3 [3]	5.0 [3]	----	—	2.0 [3]	2.7 [3]
p,p'-DDE	4.7 [3]	4.7 [3]	3.7 [3]	4.4 [3]	—	----	1.8 [3]	2.7 [3]
dieldrin	6.2 [3]	5.9	5.8 [3]	------ [6]	----	----	2.4 [6]	3.4 [6]
o,p'-DDD	7.1 [3]	6.8 [3]	6.7 [3]	6.9 [3]	----	----	2.8 [3]	3.3 [3]
endrin	7.5	6.5	5.5	6.5	1.0	15	2.6	3.4
cis-nonachlor	7.4 [3]	7.1 [4]	6.4 [3]	7.0 [3]	----	----	2.8 [3]	3.9 [3]
o,p'-DDT	5.9 [3]	4.7 [3]	4.8 [3]	5.1 [3]	----	----	2.1 [3]	3.6 [3]
p,p'-DDD	9.9 [3]	<MDL [3]	<MDL [4]	------ [6]	----	—	4.0 [6]	5.6 [6]
p,p'-DDT	8.6 [3]	8.6 [3]	8.6 [3]	8.6 [3]	—	----	3.5 [3]	6.5 [3]
mirex	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	—	<MDL [4]	<MDL [4]
p,p'-methoxychlor	13. [3]	12. [3]	12. [3]	12. [3]	----	—	4.8 [3]	9.6 [3]

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have been background corrected using means of Day 8 Control SPMDs (Table 8).*
[3] *Value between Day 8 control SPMD MDL and MQL (Table 8). These values are presented for information purposes only.*
[4] *Value below Day 8 control SPMD MDL (Table 8).*
[5] *Value based on n=2.*
[6] *Value based on n=1.*
[7] *Values have not been corrected for SPMD spike recovery.*
[8] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 42A. Day 8 Concentration Factors and SPMD Sampling Rates in 1.0 ng/L SPMDs

OCs	Uncorrected [1,2]			Corrected [1,9]		
	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day
HCB	2,300 [3]	1.5 [3]	0.27 [3]	3,000 [3]	2.0 [3]	0.37 [3]
pentachloroanisole	2,400 [4]	1.4 [4]	0.26 [4]	3,200 [4]	1.8 [4]	0.33 [4]
alpha-BHC	370 [3]	0.26 [3]	0.048 [3]	620 [3]	0.43 [3]	0.079 [3]
lindane	300 [3]	0.21 [3]	0.038 [3]	460 [3]	0.32 [3]	0.059 [3]
beta-BHC	6,100 [3]	4.1 [3]	0.75 [3]	7,000 [3]	4.7 [3]	0.86 [3]
heptachlor	170	0.12	0.022	340	0.24	0.044
aldrin	1,000 [3]	0.68 [3]	0.12 [3]	1,500 [3]	1.0 [3]	0.18 [3]
dacthal	1,300	0.91	0.17	1,700	1.2	0.22
oxychlordane	2,300	1.6	0.29	2,300	1.6	0.29
heptachlor epoxide	1,100	0.72	0.13	1,200	0.81	0.15
trans-chlordane	1,400 [3]	0.95 [3]	0.17 [3]	1,600 [3]	1.1 [3]	0.20 [3]
trans-nonachlor	1,300 [3]	0.87 [3]	0.16 [3]	1,500 [3]	0.99 [3]	0.18 [3]
cis-chlordane	1,200 [3]	0.78 [3]	0.14 [3]	1,300 [3]	0.89 [3]	0.16 [3]
o,p'-DDE	1,500 [3]	1.1 [3]	0.20 [3]	2,100 [3]	1.5 [3]	0.27 [3]
p,p'-DDE	1,300 [3]	0.86 [3]	0.16 [3]	1,900 [3]	1.3 [3]	0.24 [3]
dieldrin	2,400 [5]	1.6 [5]	0.29 [5]	3,400 [5]	2.3 [5]	0.42 [5]
o,p'-DDD	1,800 [3]	1.2 [3]	0.22 [3]	2,100 [3]	1.4 [3]	0.26 [3]
endrin	2,600	1.8	0.33	3,400	2.4	0.44
cis-nonachlor	1,500 [3]	1.0 [3]	0.18 [3]	2,100 [3]	1.4 [3]	0.26 [3]
o,p'-DDT	1,500 [3]	1.0 [3]	0.18 [3]	2,600 [3]	1.7 [3]	0.31 [3]
p,p'-DDD	2,200 [5]	1.5 [5]	0.27 [5]	3,100 [5]	2.1 [5]	0.38 [5]
p,p'-DDT	1,900 [3]	1.3 [3]	0.24 [3]	3,600 [3]	2.4 [3]	0.44 [3]
mirex	<MDL [6]	<MDL [6]	<MDL [6]	<MDL [6]	<MDL [6]	<MDL [6]
p,p'-methoxychlor	690 [3]	0.47 [3]	0.086 [3]	1,400 [3]	0.94 [3]	0.17 [3]

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have not been corrected for SPMD spike recovery.*
[3] *Value between Day 8 control SPMD MDL and MQL (Table 8). These values are presented for information purposes only.*
[4] *Value based on n=2.*
[5] *Value based on n=1.*
[6] *Value below Day 8 control SPMD MDL (Table 8).*
[7] *SPMD sampling rate normalized to 1 g triolein.*
[8] *SPMD sampling rate normalized to 1 g SPMD.*
[9] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 43. Day 16, OC Concentrations in 1.0 ng/L SPMDs

OCs	ng / SPMD [1,2]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [6] Mean	Corrected [8] Mean
HCB	16. [3]	12. [3]	17. [3]	15. [3]	—	—	6.0 [3]	7.9 [3]
pentachloranisole	14.	14.	18.	15.	2.3	15	6.0	7.9
alpha-BHC	<MDL [4]	<MDL [4]	1.9 [3]	— [3]	—	—	0.77 [3]	1.3 [3]
lindane	<MDL [4]	<MDL [4]	1.2 [3]	— [3]	—	—	0.48 [3]	0.73 [3]
beta-BHC	27. [3]	24. [3]	27. [3]	26. [3]	—	—	10. [3]	11. [3]
heptachlor	1.2	1.4	1.5	1.4	0.15	11	0.56	1.1
aldrin	8.6 [3]	11. [3]	9.6 [3]	9.7 [3]	—	—	3.9 [3]	6.0 [3]
dacthal	4.1 [3]	4.3 [3]	4.3 [3]	4.2 [3]	—	—	1.7 [3]	2.2 [3]
oxychlordane	14. [3]	17. [3]	15. [3]	15. [3]	—	—	6.0 [3]	6.0 [3]
heptachlor epoxide	10.	12.	12.	11.	1.2	11	4.4	4.9
trans-chlordane	12. [3]	14. [3]	13. [3]	13. [3]	—	—	5.2 [3]	6.0 [3]
trans-nonachlor	12. [3]	14. [3]	12. [3]	13. [3]	—	—	5.2 [3]	5.9 [3]
cis-chlordane	15. [3]	17.	16. [3]	—	—	—	6.9 [7]	7.8 [7]
o,p'-DDE	<MDL [4]	15. [3]	<MDL [4]	— [3]	—	—	6.0 [3]	8.0 [3]
p,p'-DDE	10. [3]	10. [3]	9.0 [3]	9.7 [3]	—	—	3.9 [3]	5.8 [3]
dieldrin	13.	14.	14.	14.	0.58	4	5.6	7.9
o,p'-DDD	14.	17.	18.	16.	2.1	13	6.5	7.7
endrin	17.	18.	18.	18.	0.58	3	7.3	9.6
cis-nonachlor	14.	17.	16.	16.	1.5	9	6.5	9.2
o,p'-DDT	15. [3]	18. [3]	15. [3]	16. [3]	—	—	6.5 [3]	11. [3]
p,p'-DDD	15.	17.	19.	17.	2.0	12	6.9	9.6
p,p'-DDT	16. [3]	20. [3]	21. [3]	19. [3]	—	—	7.7 [3]	14. [3]
mirex	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	—	—	<MDL [4]	<MDL [4]
p,p'-methoxychlor	18. [3]	21.	24.	23. [5]	—	—	9.3 [5]	19. [5]

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have been background corrected using means of Day 16 Control SPMDs (Table 9).*
[3] *Value between Day 16 control SPMD MDL and MQL (Table 9). These values are presented for information purposes only.*
[4] *Value below Day 16 control SPMD MDL (Table 9).*
[5] *Value based on n=2.*
[6] *Values have not been corrected for SPMD spike recovery.*
[7] *Value based on n=1.*
[8] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 43A. Day 16 Concentration Factors and SPMD Sampling Rates in 1.0 ng/L SPMDs

OCs	Uncorrected [1,2]			Corrected [1,9]		
	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day
HCB	5,500 [3]	1.9 [3]	0.35 [3]	7,200 [3]	2.5 [3]	0.46 [3]
pentachloroanisole	4,600	1.6	0.29	6,100	2.1	0.38
alpha-BHC	550 [3]	0.19 [3]	0.035 [3]	930 [3]	0.32 [3]	0.059 [3]
lindane	300 [3]	0.10 [3]	0.018 [3]	460 [3]	0.15 [3]	0.027 [3]
beta-BHC	8,000 [3]	3.0 [3]	0.55 [3]	9,200 [3]	3.4 [3]	0.62 [3]
heptachlor	330	0.11	0.020	650	0.22	0.040
aldrin	2,100 [3]	0.69 [3]	0.13 [3]	3,200 [3]	1.1 [3]	0.20 [3]
dacthal	1,700 [3]	0.58 [3]	0.11 [3]	2,200 [3]	0.75 [3]	0.14 [3]
oxychlordane	4,000 [3]	1.4 [3]	0.26 [3]	4,000 [3]	1.4 [3]	0.26 [3]
heptachlor epoxide	2,300	0.80	0.15	2,600	0.90	0.16
trans-chlordane	3,300 [3]	1.1 [3]	0.20 [3]	3,800 [3]	1.3 [3]	0.24 [3]
trans-nonachlor	3,100 [3]	1.1 [3]	0.20 [3]	3,500 [3]	1.3 [3]	0.24 [3]
cis-chlordane	3,500 [4]	1.2 [4]	0.22 [4]	3,900 [4]	1.4 [4]	0.26 [4]
o,p'-DDE	4,600 [3]	1.6 [3]	0.29 [3]	6,200 [3]	2.1 [3]	0.38 [3]
p,p'-DDE	2,800 [3]	0.95 [3]	0.17 [3]	4,100 [3]	1.4 [3]	0.26 [3]
dieldrin	5,600	1.9	0.35	7,900	2.7	0.49
o,p'-DDD	4,100	1.4	0.26	4,800	1.7	0.31
endrin	7,300	2.5	0.46	9,600	3.3	0.60
cis-nonachlor	3,400	1.2	0.22	4,800	1.7	0.31
o,p'-DDT	4,600 [3]	1.6 [3]	0.29 [3]	7,900 [3]	2.7 [3]	0.49 [3]
p,p'-DDD	3,800	1.3	0.24	5,300	1.8	0.33
p,p'-DDT	4,300 [3]	1.5 [3]	0.27 [3]	7,800 [3]	2.8 [3]	0.51 [3]
mirex	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]
p,p'-methoxychlor	1,300 [6]	0.45 [6]	0.082 [6]	2,700 [6]	0.90 [6]	0.16 [6]

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have not been corrected for SPMD spike recovery.*
[3] *Value between Day 16 control SPMD MDL and MQL (Table 9). These values are presented for information purposes only.*
[4] *Value based on n=1.*
[5] *Value below Day 16 control SPMD MDL (Table 9).*
[6] *Value based on n=2.*
[7] *SPMD sampling rate normalized to 1 g triolein.*
[8] *SPMD sampling rate normalized to 1 g SPMD.*
[9] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 44. Day 28, OC Concentrations in 1.0 ng/L SPMDs

OCs	ng / SPMD [1,2]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [6] Mean	Corrected [7] Mean
HCB	25.	18.	29.	24.	5.6	23	9.7	13.
pentachloranisole	34.	30.	35.	33.	2.6	8	13.	17.
alpha-BHC	<MDL [3]	<MDL [3]	<MDL [3]	<MDL [3]	----	----	<MDL [3]	<MDL [3]
lindane	<MDL [3]	<MDL [3]	<MDL [3]	<MDL [3]	----	----	<MDL [3]	<MDL [3]
beta-BHC	54.	46. [4]	58.	56. [5]	----	----	23. [5]	26. [5]
heptachlor	2.1	1.2	1.4	1.6	0.47	29	0.65	0.98
aldrin	22.	22.	20.	21.	1.2	6	8.5	13.
dacthal	5.2 [4]	7.3	7.7	7.5 [5]	----	----	3.0 [5]	5.3 [5]
oxychlordane	33.	31.	30.	31.	1.5	5	13.	13.
heptachlor epoxide	24.	22.	25.	24.	1.5	6	9.7	11.
trans-chlordane	31.	29.	30.	30.	1.0	3	12.	14.
trans-nonachlor	30.	28.	29.	29.	1.0	3	12.	14.
cis-chlordane	34.	32.	33.	33.	1.0	3	13.	15.
o,p'-DDE	36.	35.	36.	36.	0.58	2	15.	20.
p,p'-DDE	27.	24.	23.	25.	2.1	8	10.	15.
dieldrin	31.	27.	33.	30.	3.1	10	12.	17.
o,p'-DDD	41.	37.	41.	40.	2.3	6	16.	19.
endrin	37.	34.	36.	36.	1.5	4	15.	20.
cis-nonachlor	39.	35.	36.	37.	2.1	6	15.	21.
o,p'-DDT	36.	28.	32.	32.	4.0	13	13.	22.
p,p'-DDD	40.	36.	40.	39.	2.3	6	16.	22.
p,p'-DDT	49.	39.	47.	45.	5.3	12	18.	33.
mirex	13. [4]	17. [4]	11. [4]	14. [4]	----	----	5.6 [4]	7.9 [4]
p,p'-methoxychlor	44.	35. [4]	45.	45. [5]	----	----	18. [5]	36. [5]

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have been background corrected using means of Day 21 Control SPMDs (Table 10).*
[3] *Value below Day 21 control SPMD MDL (Table 10).*
[4] *Value between Day 21 control SPMD MDL and MQL (Table 10). These values are presented for information purposes only.*
[5] *Value based on n=2.*
[6] *Values have not been corrected for SPMD spike recovery.*
[7] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 44A. Day 28 Concentration Factors and SPMD Sampling Rates in 1.0 ng/L SPMDs

OCs	Uncorrected [1,2]			Corrected [1,8]		
	Concentration Factor SPMD/Water	SPMD-Rs [6] L/Day	SPMD-Rs [7] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [6] L/Day	SPMD-Rs [7] L/Day
HCB	8,800	1.7	0.31	12,000	2.2	0.40
pentachloranisole	10,000	2.0	0.37	13,000	2.6	0.48
alpha-BHC	<MDL [3]	<MDL [3]	<MDL [3]	<MDL [3]	<MDL [3]	<MDL [3]
lindane	<MDL [3]	<MDL [3]	<MDL [3]	<MDL [3]	<MDL [3]	<MDL [3]
beta-BHC	19,000 [4]	3.7 [4]	0.68 [4]	22,000 [4]	4.3 [4]	0.79 [4]
heptachlor	380	0.074	0.014	580	0.15	0.027
aldrin	4,500	0.87	0.16	6,800	1.3	0.24
dacthal	3,000 [4]	0.59 [4]	0.11 [4]	5,300 [4]	0.77 [4]	0.14 [4]
oxychlordane	8,700	1.6	0.29	8,700	1.6	0.29
heptachlor epoxide	5,100	1.0	0.18	5,800	1.1	0.20
trans-chlordane	7,500	1.5	0.27	8,800	1.7	0.31
trans-nonachlor	7,100	1.3	0.24	8,200	1.5	0.27
cis-chlordane	6,500	1.3	0.24	8,000	1.5	0.27
o,p'-DDE	11,500	2.2	0.40	15,000	2.9	0.53
p,p'-DDE	7,100	1.4	0.26	11,000	2.1	0.38
dieldrin	12,000	2.4	0.44	17,000	3.4	0.62
o,p'-DDD	10,000	2.0	0.37	12,000	2.4	0.44
endrin	15,000	2.8	0.51	20,000	3.7	0.68
cis-nonachlor	7,900	1.5	0.27	11,000	2.1	0.38
o,p'-DDT	9,300	1.8	0.33	16,000	3.1	0.57
p,p'-DDD	9,000	1.7	0.31	12,000	2.4	0.44
p,p'-DDT	10,000	2.0	0.37	18,000	3.7	0.68
mirex	4,000 [5]	0.79 [5]	0.14 [5]	5,600 [5]	1.1 [5]	0.20 [5]
p,p'-methoxychlor	2,600 [4]	0.51 [4]	0.093 [4]	5,100 [4]	1.0 [4]	0.18 [4]

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have not been corrected for SPMD spike recovery.*
[3] *Value below Day 21 control SPMD MDL (Table 10).*
[4] *Value based on n=2.*
[5] *Value between Day 21 control SPMD MDL and MQL (Table 10). These values are presented for information purposes only.*
[6] *SPMD sampling rate normalized to 1 g triolein.*
[7] *SPMD sampling rate normalized to 1 g SPMD.*
[8] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 45. Day 2, OC Concentrations in 10 ng/L SPMDs

OCs	ng / SPMD [1,2]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	% CV	Uncorrected [4] Mean	Corrected [5] Mean
HCB	18.	18.	18.	18.	0.0	0	7.3	10.
pentachloranisole	21.	21.	21.	21.	0.0	0	8.5	11.
alpha-BHC	10.	10.	9.5	10.	0.29	3	4.0	6.7
lindane	8.2	8.3	8.2	8.2	0.058	1	3.3	5.
beta-BHC	29. [3]	29. [3]	30. [3]	29. [3]	---	---	12. [3]	14. [3]
heptachlor	1.8	1.8	1.8	1.8	0.0	0	0.73	1.5
aldrin	17.	17.	17.	17.	0.0	0	6.9	11.
dacthal	18.	17.	19.	18.	1.0	6	7.3	9.5
oxychlordane	22.	23.	22.	22.	0.58	3	8.9	8.9
heptachlor epoxide	20.	20.	20.	20.	0.0	0	8.1	9.1
trans-chlordane	20.	20.	20.	20.	0.0	0	8.1	9.4
trans-nonachlor	19.	19.	19.	19.	0.0	0	7.7	8.8
cis-chlordane	19.	19.	19.	19.	0.0	0	7.7	8.8
o,p'-DDE	24.	24.	24.	24.	0.0	0	9.7	13.
p,p'-DDE	27.	28.	26.	27.	1.0	4	11.	16.
dieldrin	26.	27.	26.	26.	0.58	2	10.	14.
o,p'-DDD	26.	26.	26.	26.	0.0	0	10.	12.
endrin	37.	37.	37.	37.	0.0	0	15.	20.
cis-nonachlor	22.	22.	23.	22.	0.58	3	8.9	13.
o,p'-DDT	17.	17.	18.	17.	0.58	3	6.9	12.
p,p'-DDD	34.	33.	34.	34.	0.58	2	14.	19.
p,p'-DDT	30.	29.	30.	30.	0.58	2	12.	22.
mirex	24.	24.	24.	24.	0.0	0	9.7	14.
p,p'-methoxychlor	37.	37.	37.	37.	0.0	0	15.	30.

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[2] *Values have been background corrected using means of Day 2 Control SPMDs (Table 6).*

[3] *Value between Day 2 control SPMD MDL and MQL (Table 6). These values are presented for information purposes only.*

[4] *Values have not been corrected for SPMD spike recovery.*

[5] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 45A. Day 2 Concentration Factors and SPMD Sampling Rates in 10 ng/L SPMDs

OCs	Uncorrected [1,2]			Corrected [1,6]		
	Concentration Factor SPMD/Water	SPMD-Rs [4] L/Day	SPMD-Rs [5] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [4] L/Day	SPMD-Rs [5] L/Day
HCB	1,400	3.7	0.68	1,900	4.9	0.90
pentachloranisole	1,300	3.5	0.64	1,700	4.6	0.84
alpha-BHC	410	1.1	0.20	690	1.8	0.33
lindane	350	0.95	0.17	530	1.4	0.26
beta-BHC	1,300 [3]	3.5 [3]	0.64 [3]	1,500 [3]	4.0 [3]	0.73 [3]
heptachlor	74	0.20	0.037	150	0.40	0.073
aldrin	930	2.5	0.46	1,500	3.8	0.70
dacthal	730	2.0	0.37	1,000	2.6	0.48
oxychlordane	1,000	2.7	0.49	1,000	2.7	0.49
heptachlor epoxide	810	2.2	0.40	910	2.5	0.46
trans-chlordane	920	2.5	0.46	1,100	2.9	0.53
trans-nonachlor	880	2.4	0.44	1,000	2.7	0.49
cis-chlordane	920	2.5	0.46	1,000	2.8	0.51
o,p'-DDE	1,200	3.2	0.59	1,600	4.3	0.79
p,p'-DDE	1,200	3.3	0.60	1,800	4.9	0.90
dieldrin	1,000	2.9	0.53	1,400	4.1	0.75
o,p'-DDD	1,100	3.2	0.59	1,300	3.8	0.70
endrin	1,500	4.1	0.75	2,000	5.4	0.99
cis-nonachlor	810	2.2	0.40	1,200	3.1	0.57
o,p'-DDT	820	2.2	0.40	1,400	3.7	0.68
p,p'-DDD	1,600	4.2	0.77	2,100	5.8	1.1
p,p'-DDT	1,200	3.3	0.60	2,200	6.1	1.1
mirex	1,400	3.8	0.7	2,000	5.4	0.99
p,p'-methoxychlor	1,100	2.9	0.53	2,100	5.8	1.1

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have not been corrected for SPMD spike recovery.*
[3] *Value between Day 2 control SPMD MDL and MQL (Table 6). These values are presented for information purposes only.*
[4] *SPMD sampling rate normalized to 1 g triolein.*
[5] *SPMD sampling rate normalized to 1 g SPMD.*
[6] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 46. Day 4, OC Concentrations in 10 ng/L SPMDs

OCs	ng / SPMD [1,2]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	% CV	Uncorrected [4] Mean	Corrected [5] Mean
HCB	25.	30.	31.	29.	3.2	11	12.	16.
pentachloranisole	33.	35.	36.	35.	1.5	4	14.	18.
alpha-BHC	9.5	11.	12.	11.	1.3	12	4.4	7.3
lindane	9.1	10.	11.	10.	1.0	10	4.0	6.1
beta-BHC	37.	43.	45.	42.	4.2	10	17.	20.
heptachlor	2.2 [3]	2.6 [3]	3.1 [3]	2.6 [3]	----	----	1. [3]	2.0 [3]
aldrin	24.	26.	27.	26.	1.5	6	10.	15.
dacthal	21.	22.	23.	22.	1.0	5	8.9	12.
oxychlordane	36.	39.	41.	39.	2.5	6	16.	16.
heptachlor epoxide	30.	32.	34.	32.	2.0	6	13.	15.
trans-chlordane	31.	34.	35.	33.	2.1	6	13.	15.
trans-nonachlor	29.	32.	33.	31.	2.1	7	13.	15.
cis-chlordane	29.	33.	32.	31.	2.1	7	13.	15.
o,p'-DDE	33.	36.	35.	35.	1.5	4	14.	19.
p,p'-DDE	34.	36.	33.	34.	1.5	4	14.	21.
dieldrin	35.	39.	30.	35.	4.5	13	14.	20.
o,p'-DDD	37.	39.	39.	38.	1.2	3	15.	18.
endrin	49.	54.	55.	53.	3.2	6	21.	28.
cis-nonachlor	32.	34.	35.	34.	1.5	4	14.	20.
o,p'-DDT	27.	30.	31.	29.	2.1	7	12.	20.
p,p'-DDD	46.	48.	49.	48.	1.5	3	19.	26.
p,p'-DDT	38.	41.	42.	40.	2.1	5	16.	30.
mirex	27.	31.	30.	29.	2.1	7	12.	17.
p,p'-methoxychlor	50.	53.	55.	53.	2.5	5	21.	42.

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have been background corrected using means of Day 4 Control SPMDs (Table 7).*
[3] *Value between Day 4 control SPMD MDL and MQL (Table 7). These values are presented for information purposes only.*
[4] *Values have not been corrected for SPMD spike recovery.*
[5] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 46A. Day 4 Concentration Factors and SPMD Sampling Rates in 10 ng/L SPMDs

OCs	Uncorrected [1,2]			Corrected [1,6]		
	Concentration Factor SPMD/Water	SPMD-Rs [4] L/Day	SPMD-Rs [5] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [4] L/Day	SPMD-Rs [5] L/Day
HCB	2,300	3.0	0.55	3,000	3.9	0.71
pentachloranisole	2,100	2.9	0.53	2,700	3.8	0.70
alpha-BHC	450	0.62	0.11	750	1.0	0.18
lindane	420	0.58	0.11	640	0.88	0.16
beta-BHC	1,900	2.5	0.46	2,200	2.9	0.53
heptachlor	100 [3]	0.15 [3]	0.027 [3]	200 [3]	0.30 [3]	0.055 [3]
aldrin	1,400	1.9	0.35	2,000	2.9	0.53
dacthal	890	1.2	0.22	1,200	1.6	0.29
oxychlordane	1,800	2.4	0.44	1,800	2.4	0.44
heptachlor epoxide	1,300	1.8	0.33	1,500	2.0	0.37
trans-chlordane	1,500	2.1	0.38	1,700	2.4	0.44
trans-nonachlor	1,500	1.9	0.35	1,700	2.2	0.40
cis-chlordane	1,500	2.0	0.37	1,800	2.3	0.42
o,p'-DDE	1,700	2.3	0.42	2,300	3.1	0.57
p,p'-DDE	1,500	2.1	0.38	2,300	3.1	0.57
dieldrin	1,400	1.9	0.35	2,000	2.7	0.49
o,p'-DDD	1,700	2.3	0.42	2,000	2.7	0.49
endrin	2,100	2.9	0.53	2,800	3.8	0.70
cis-nonachlor	1,300	1.7	0.31	1,800	2.4	0.44
o,p'-DDT	1,400	1.9	0.35	2,400	3.2	0.59
p,p'-DDD	2,100	3.0	0.55	2,900	4.2	0.77
p,p'-DDT	1,600	2.2	0.40	3,000	4.1	0.75
mirex	1,700	2.3	0.42	2,400	3.2	0.59
p,p'-methoxychlor	1,500	2.1	0.38	3,000	4.2	0.77

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have not been corrected for SPMD spike recovery.*
[3] *Value between Day 4 control SPMD MDL and MQL (Table 7). These values are presented for information purposes only.*
[4] *SPMD sampling rate normalized to 1 g triolein.*
[5] *SPMD sampling rate normalized to 1 g SPMD.*
[6] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 47. Day 8, OC Concentrations in 10 ng/L SPMDs

OCs	ng / SPMD [1,2]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	% CV	Uncorrected [3] Mean	Corrected [4] Mean
HCB	59.	69.	51.	60.	9.0	15	24.	32.
pentachloranisole	67.	76.	58.	67.	9.0	13	27.	36.
alpha-BHC	15.	14.	13.	14.	1.0	7	5.6	9.3
lindane	14.	14.	12.	13.	1.2	9	5.2	7.9
beta-BHC	95.	110.	77.	94.	17.	18	38.	44.
heptachlor	5.6	5.4	3.9	5.0	0.93	19	2.0	4.0
aldrin	46.	56.	40.	47.	8.1	17	19.	29.
dacthal	29.	30.	26.	28.	2.1	8	11.	14.
oxychlordane	67.	73.	57.	66.	8.1	12	27.	27.
heptachlor epoxide	56.	61.	47.	55.	7.1	13	22.	25.
trans-chlordane	61.	70.	51.	61.	9.5	16	25.	29.
trans-nonachlor	58.	68.	49.	58.	9.5	16	23.	26.
cis-chlordane	58.	64.	48.	57.	8.1	14	23.	26.
o,p'-DDE	60.	69.	50.	60.	9.5	16	24.	32.
p,p'-DDE	59.	65.	47.	57.	9.2	16	23.	34.
dieldrin	58.	67.	48.	58.	9.5	16	23.	32.
o,p'-DDD	69.	77.	58.	68.	9.5	14	27.	32.
endrin	86.	92.	74.	84.	9.2	11	34.	45.
cis-nonachlor	60.	68.	50.	59.	9.0	15	24.	34.
o,p'-DDT	53.	66.	48.	56.	9.3	17	23.	39.
p,p'-DDD	78.	85.	68.	77.	8.5	11	31.	43.
p,p'-DDT	70.	77.	60.	69.	8.5	12	28.	52.
mirex	41.	51.	37.	43.	7.2	17	17.	24.
p,p'-methoxychlor	82.	89.	73.	81.	8.0	10	33.	66.

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[2] *Values have been background corrected using means of Day 8 Control SPMDs (Table 8).*

[3] *Values have not been corrected for SPMD spike recovery.*

[4] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 47A. Day 8 Concentration Factors and SPMD Sampling Rates in 10 ng/L SPMDs

OCs	Uncorrected [1,2]			Corrected [1,5]		
	Concentration Factor SPMD/Water	SPMD-Rs [3] L/Day	SPMD-Rs [4] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [3] L/Day	SPMD-Rs [4] L/Day
HCB	4,500	3.1	0.57	6,000	4.1	0.75
pentachloranisole	4,100	2.8	0.51	5,500	3.7	0.68
alpha-BHC	580	0.40	0.073	1,000	0.67	0.12
lindane	550	0.38	0.070	830	0.58	0.11
beta-BHC	4,200	2.8	0.51	4,800	3.2	0.59
heptachlor	200	0.14	0.026	410	0.28	0.051
aldrin	2,600	1.7	0.31	3,900	2.6	0.46
dacthal	1,100	0.77	0.14	1,400	1.0	0.18
oxychlordane	3,000	2.0	0.37	3,000	2.0	0.37
heptachlor epoxide	2,200	1.5	0.27	2,500	1.7	0.31
trans-chlordane	2,800	1.9	0.35	3,300	2.2	0.40
trans-nonachlor	2,600	1.8	0.33	3,000	2.0	0.37
cis-chlordane	2,700	1.9	0.35	3,100	2.2	0.40
o,p'-DDE	2,900	2.0	0.37	3,900	2.7	0.49
p,p'-DDE	2,500	1.7	0.31	3,700	2.5	0.46
dieldrin	2,300	1.6	0.29	3,200	2.3	0.42
o,p'-DDD	3,000	2.1	0.38	3,600	2.5	0.46
endrin	3,400	2.3	0.42	4,500	3.0	0.55
cis-nonachlor	2,200	1.5	0.27	3,100	2.1	0.38
o,p'-DDT	2,700	1.8	0.33	4,600	3.1	0.57
p,p'-DDD	3,500	2.4	0.44	4,800	3.3	0.6
p,p'-DDT	2,800	1.9	0.35	5,200	3.5	0.64
mirex	2,400	1.7	0.31	3,400	2.4	0.44
p,p'-methoxychlor	2,400	1.6	0.29	4,700	3.2	0.59

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have not been corrected for SPMD spike recovery.*
[3] *SPMD sampling rate normalized to 1 g triolein.*
[4] *SPMD sampling rate normalized to 1 g SPMD.*
[5] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 48. Day 16, OC Concentrations in 10 ng/L SPMDs

OCs	ng / SPMD [1,2]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	% CV	Uncorrected [3] Mean	Corrected [4] Mean
HCB	85.	100.	94.	93.	7.5	8	38.	50.
pentachloranisole	100.	110.	110.	110.	5.8	5	44.	58.
alpha-BHC	15.	15.	19.	16.	2.3	14	6.5	11.
lindane	12.	13.	16.	14.	2.1	15	5.6	8.5
beta-BHC	140.	170.	160.	160.	15.	9	65.	75.
heptachlor	3.1	3.5	4.3	3.6	0.61	17	1.5	3.0
aldrin	80.	100.	93.	91.	10.	11	37.	57.
dacthal	33.	34.	33.	33.	0.58	2	13.	17.
oxychlordane	100.	120.	120.	110.	12.	11	44.	44.
heptachlor epoxide	87.	100.	97.	95.	6.8	7	38.	43.
trans-chlordane	100.	120.	110.	110.	10.	9	44.	51.
trans-nonachlor	100.	120.	110.	110.	10.	9	44.	50.
cis-chlordane	94.	110.	100.	100.	8.1	8	40.	45.
o,p'-DDE	110.	140.	120.	120.	15.	13	48.	64.
p,p'-DDE	110.	130.	120.	120.	10.	8	48.	72.
dieldrin	120.	130.	140.	130.	10.	8	52.	73.
o,p'-DDD	140.	160.	160.	150.	12.	8	60.	71.
endrin	140.	150.	160.	150.	10.	7	60.	79.
cis-nonachlor	120.	140.	140.	130.	12.	9	52.	73.
o,p'-DDT	110.	140.	130.	130.	15.	12	52.	88.
p,p'-DDD	170.	190.	200.	190.	15.	8	77.	110.
p,p'-DDT	140.	170.	160.	160.	15.	9	65.	120.
mirex	56.	83.	61.	67.	14.	21	27.	38.
p,p'-methoxychlor	140.	160.	170.	160.	15.	9	65.	130.

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[2] *Values have been background corrected using means of Day 16 Control SPMDs (Table 9).*

[3] *Values have not been corrected for SPMD spike recovery.*

[4] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 48A. Day 16 Concentration Factors and SPMD Sampling Rates in 10 ng/L SPMDs

OCs	Uncorrected [1,2]			Corrected [1,5]		
	Concentration Factor SPMD/Water	SPMD-Rs [3] L/Day	SPMD-Rs [4] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [3] L/Day	SPMD-Rs [4] L/Day
HCB	7,200	2.4	0.44	9,000	3.2	0.59
pentachloranisole	6,700	2.3	0.42	8,800	3.0	0.55
alpha-BHC	670	0.23	0.042	1,100	0.38	0.07
lindane	590	0.20	0.037	890	0.30	0.055
beta-BHC	7,100	2.4	0.44	8,200	2.8	0.51
heptachlor	150	0.051	0.0093	310	0.10	0.018
aldrin	5,000	1.7	0.31	7,700	2.6	0.48
dacthal	1,300	0.45	0.082	1,700	0.58	0.11
oxychlordane	4,900	1.7	0.31	4,900	1.7	0.31
heptachlor epoxide	3,800	1.3	0.24	4,300	1.5	0.27
trans-chlordane	5,000	1.7	0.31	5,800	2.0	0.37
trans-nonachlor	5,000	1.7	0.31	5,700	1.9	0.35
cis-chlordane	4,800	1.6	0.29	5,400	1.8	0.33
o,p'-DDE	5,800	2.0	0.37	7,700	2.7	0.49
p,p'-DDE	5,300	1.8	0.33	7,900	2.7	0.49
dieldrin	5,200	1.8	0.33	7,300	2.5	0.46
o,p'-DDD	6,700	2.3	0.42	7,900	2.7	0.49
endrin	6,000	2.1	0.38	7,900	2.8	0.51
cis-nonachlor	4,700	1.6	0.29	6,600	2.3	0.42
o,p'-DDT	6,200	2.1	0.38	10,000	3.6	0.66
p,p'-DDD	8,700	2.9	0.53	12,000	4.0	0.73
p,p'-DDT	6,500	2.2	0.40	12,000	4.1	0.75
mirex	3,900	1.3	0.24	5,400	1.8	0.33
p,p'-methoxychlor	4,600	1.6	0.29	9,300	3.2	0.59

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have not been corrected for SPMD spike recovery.*
[3] *SPMD sampling rate normalized to 1 g triolein.*
[4] *SPMD sampling rate normalized to 1 g SPMD.*
[5] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 49. Day 28, OC Concentrations in 10 ng/L SPMDs

OCs	ng / SPMD [1,2]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	% CV	Uncorrected [3] Mean	Corrected [4] Mean
HCB	100.	87.	84.	90.	8.5	9	36.	47.
pentachloranisole	110.	110.	100.	110.	5.8	5	44.	58.
alpha-BHC	14.	13.	12.	13.	1.0	8	5.2	8.7
lindane	14.	13.	13.	13.	0.58	5	5.2	7.9
beta-BHC	170.	150.	150.	160.	12.	8	65.	75.
heptachlor	3.9	4.0	3.4	3.8	0.32	8	1.5	3.0
aldrin	110.	100.	93.	100.	8.5	9	40.	62.
dacthal	29.	28.	35.	31.	3.8	12	13.	17.
oxychlordane	140.	130.	120.	130.	10.	8	52.	52.
heptachlor epoxide	110.	100.	91.	100.	10.	10	40.	45.
trans-chlordane	140.	120.	120.	130.	12.	9	52.	60.
trans-nonachlor	130.	120.	110.	120.	10.	8	48.	55.
cis-chlordane	130.	110.	110.	120.	12.	10	48.	55.
o,p'-DDE	140.	130.	120.	130.	10.	8	52.	69.
p,p'-DDE	140.	130.	120.	130.	10.	8	52.	78.
dieldrin	140.	130.	120.	130.	10.	8	52.	73.
o,p'-DDD	180.	170.	160.	170.	10.	6	69.	82.
endrin	170.	160.	150.	160.	10.	6	65.	86.
cis-nonachlor	150.	140.	130.	140.	10.	7	56.	79.
o,p'-DDT	160.	140.	140.	150.	12.	8	60.	100.
p,p'-DDD	230.	200.	190.	210.	20.	10	85.	120.
p,p'-DDT	210.	180.	170.	190.	20.	11	77.	140.
mirex	69.	68.	64.	67.	2.6	4	27.	38.
p,p'-methoxychlor	190.	170.	160.	170.	15.	9	69.	140.

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[2] *Values have been background corrected using means of Day 21 Control SPMDs (Table 10).*

[3] *Values have not been corrected for SPMD spike recovery.*

[4] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 49A. Day 28 Concentration Factors and SPMD Sampling Rates in 10 ng/L SPMDs

OCs	Uncorrected [1,2]			Corrected [1,5]		
	Concentration Factor SPMD/Water	SPMD-Rs [3] L/Day	SPMD-Rs [4] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [3] L/Day	SPMD-Rs [4] L/Day
HCB	6,800	1.3	0.24	8,900	1.7	0.31
pentachloranisole	6,700	1.3	0.24	8,800	1.7	0.31
alpha-BHC	540	0.11	0.02	900	0.18	0.033
lindane	550	0.11	0.020	830	0.17	0.031
beta-BHC	7,100	1.4	0.26	8,200	1.6	0.29
heptachlor	150	0.030	0.0055	310	0.060	0.011
aldrin	5,400	1.1	0.20	8,400	1.7	0.31
dacthal	1,300	0.24	0.044	1,700	0.31	0.057
oxychlordane	5,800	1.1	0.20	5,800	1.1	0.20
heptachlor epoxide	4,000	0.79	0.14	4,500	0.89	0.16
trans-chlordane	5,900	1.2	0.22	6,800	1.4	0.26
trans-nonachlor	5,500	1.1	0.2	6,300	1.3	0.24
cis-chlordane	5,700	1.1	0.20	6,500	1.3	0.24
o,p'-DDE	6,300	1.2	0.22	8,300	1.6	0.29
p,p'-DDE	5,700	1.1	0.20	8,600	1.6	0.29
dieldrin	5,200	1.0	0.18	7,300	1.4	0.26
o,p'-DDD	7,700	1.5	0.27	9,100	1.8	0.33
endrin	6,500	1.3	0.24	8,600	1.7	0.31
cis-nonachlor	5,100	1.0	0.18	7,200	1.4	0.26
o,p'-DDT	7,100	1.4	0.26	12,000	2.4	0.44
p,p'-DDD	9,600	1.9	0.35	13,000	2.6	0.48
p,p'-DDT	7,700	1.5	0.27	14,000	2.8	0.51
mirex	3,900	0.75	0.14	5,400	1.1	0.2
p,p'-methoxychlor	4,900	1.0	0.18	10,000	2.0	0.37

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have not been corrected for SPMD spike recovery.*
[3] *SPMD sampling rate normalized to 1 g triolein.*
[4] *SPMD sampling rate normalized to 1 g SPMD.*
[5] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 50. Day 2, OC Concentrations in 100 ng/L SPMDs

OCs	ng / SPMD [1,2]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	% CV	Uncorrected [3] Mean	Corrected [4] Mean
HCB	180	230	190	200	26.	13	81	110
pentachloranisole	210	250	220	230	21.	9	93	120
alpha-BHC	110	120	110	110	5.8	5	44	73
lindane	96	97	92	95	2.6	3	38	58
beta-BHC	270	360	290	310	47.	15	130	150
heptachlor	24	25	23	24	1.0	4	10	20
aldrin	130	200	140	160	38.	24	65	100
dacthal	200	200	190	200	5.8	3	81	110
oxychlordane	180	250	210	210	35.	17	85	85
heptachlor epoxide	200	230	200	210	17.	8	85	96
trans-chlordane	180	220	190	200	21.	11	81	94
trans-nonachlor	170	210	180	190	21.	11	77	88
cis-chlordane	170	210	180	190	21.	11	77	88
o,p'-DDE	220	280	230	240	32.	13	97	130
p,p'-DDE	290	340	290	310	29.	9	130	190
dieldrin	270	280	260	270	10.	4	110	150
o,p'-DDD	250	290	250	260	23.	9	100	120
endrin	370	390	360	370	15.	4	150	200
cis-nonachlor	230	260	230	240	17.	7	97	140
o,p'-DDT	230	280	230	250	29.	12	100	170
p,p'-DDD	350	380	350	360	17.	5	150	210
p,p'-DDT	330	370	330	340	23.	7	140	260
mirex	200	290	250	250	45.	18	100	140
p,p'-methoxychlor	450	480	440	460	21.	5	190	380

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have been background corrected using means of Day 2 Control SPMDs (Table 6).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 50A. Day 2 Concentration Factors and SPMD Sampling Rates in 100 ng/L SPMDs

OCs	Uncorrected [1,2]			Corrected [1,5]		
	Concentration Factor SPMD/Water	SPMD-Rs [3] L/Day	SPMD-Rs [4] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [3] L/Day	SPMD-Rs [4] L/Day
HCB	1,100	3.0	0.55	1,500	3.9	0.71
pentachloranisole	1,000	2.8	0.51	1,300	3.7	0.68
alpha-BHC	290	0.81	0.15	490	1.4	0.26
lindane	250	0.70	0.13	390	1.1	0.20
beta-BHC	1,800	4.8	0.88	2,100	5.5	1.0
heptachlor	77	0.20	0.037	150	0.40	0.073
aldrin	970	2.6	0.48	1,500	4.0	0.73
dacthal	810	2.2	0.40	1,100	2.9	0.53
oxychlordane	920	2.5	0.46	920	2.5	0.46
heptachlor epoxide	650	1.8	0.33	740	2.0	0.37
trans-chlordane	900	2.4	0.44	1,000	2.8	0.51
trans-nonachlor	840	2.3	0.42	960	2.6	0.48
cis-chlordane	790	2.2	0.40	910	2.5	0.46
o,p'-DDE	1,100	2.9	0.53	1,400	3.9	0.71
p,p'-DDE	1,400	3.7	0.68	2,100	5.5	1.0
dieldrin	1,100	3.0	0.55	1,500	4.2	0.77
o,p'-DDD	1,000	2.9	0.53	1,200	3.5	0.64
endrin	1,500	4.1	0.75	2,000	5.4	0.99
cis-nonachlor	810	2.2	0.40	1,200	3.1	0.57
o,p'-DDT	1,200	3.2	0.59	2,000	5.4	0.99
p,p'-DDD	1,200	3.0	0.55	1,600	4.2	0.77
p,p'-DDT	1,300	3.4	0.62	2,400	6.3	1.2
mirex	1,400	3.8	0.70	1,900	5.4	0.99
p,p'-methoxychlor	1,700	4.6	0.84	3,500	9.2	1.7

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have not been corrected for SPMD spike recovery.*
[3] *SPMD sampling rate normalized to 1 g triolein.*
[4] *SPMD sampling rate normalized to 1 g SPMD.*
[5] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 51. Day 4, OC Concentrations in 100 ng/L SPMDs

OCs	ng / SPMD [1,2]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	% CV	Uncorrected [3] Mean	Corrected [4] Mean
HCB	280	350	270	300	44.	15	120	160
pentachloranisole	360	410	340	370	36.	10	150	200
alpha-BHC	140	150	140	140	5.8	4	56	93
lindane	120	130	120	120	5.8	5	48	73
beta-BHC	430	520	420	460	55.	12	190	220
heptachlor	38	44	45	42	3.8	9	17	34
aldrin	230	290	220	250	38.	15	100	150
dacthal	250	260	240	250	10.	4	100	130
oxychlordane	330	410	320	350	49.	14	140	140
heptachlor epoxide	330	380	340	350	26.	7	140	160
trans-chlordane	300	360	280	310	42.	14	130	150
trans-nonachlor	280	350	270	300	44.	15	120	140
cis-chlordane	280	330	260	290	36.	12	120	140
o,p'-DDE	320	370	310	330	32.	10	130	170
p,p'-DDE	370	420	360	380	32.	8	150	220
dieldrin	400	450	400	420	29.	7	170	240
o,p'-DDD	400	440	380	410	31.	8	170	200
endrin	550	590	530	560	31.	6	230	300
cis-nonachlor	350	390	340	360	26.	7	150	210
o,p'-DDT	350	400	330	360	36.	10	150	250
p,p'-DDD	510	550	500	520	26.	5	210	290
p,p'-DDT	490	530	460	490	35.	7	200	370
mirex	290	350	280	310	38.	12	130	180
p,p'-methoxychlor	620	690	620	640	40.	6	260	520

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[2] *Values have been background corrected using means of Day 4 Control SPMDs (Table 7).*

[3] *Values have not been corrected for SPMD spike recovery.*

[4] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 51A. Day 4 Concentration Factors and SPMD Sampling Rates in 100 ng/L SPMDs

OCs	Uncorrected [1,2]			Corrected [1,5]		
	Concentration Factor SPMD/Water	SPMD-Rs [3] L/Day	SPMD-Rs [4] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [3] L/Day	SPMD-Rs [4] L/Day
HCB	1,600	2.3	0.42	2,200	3.0	0.55
pentachloranisole	1,600	2.2	0.40	2,200	2.9	0.53
alpha-BHC	370	0.51	0.09	620	0.85	0.16
lindane	320	0.44	0.081	490	0.67	0.12
beta-BHC	2,700	3.6	0.66	3,100	4.1	0.75
heptachlor	130	0.18	0.033	260	0.36	0.066
aldrin	1,500	2.1	0.38	2,200	3.2	0.59
dacthal	1,000	1.4	0.26	1,300	1.8	0.33
oxychlordane	1,500	2.1	0.38	1,500	2.1	0.38
heptachlor epoxide	1,100	1.5	0.27	1,200	1.7	0.31
trans-chlordane	1,400	1.9	0.35	1,700	2.2	0.40
trans-nonachlor	1,300	1.8	0.33	1,500	2.0	0.37
cis-chlordane	1,200	1.6	0.29	1,400	1.8	0.33
o,p'-DDE	1,400	2.0	0.37	1,900	2.7	0.49
p,p'-DDE	1,600	2.3	0.42	2,400	3.4	0.62
dieldrin	1,700	2.3	0.42	2,400	3.2	0.59
o,p'-DDD	1,700	2.3	0.42	2,000	2.7	0.49
endrin	2,300	3.1	0.57	3,000	4.1	0.75
cis-nonachlor	1,300	1.7	0.31	1,800	2.4	0.44
o,p'-DDT	1,800	2.3	0.42	2,900	3.9	0.71
p,p'-DDD	1,600	2.2	0.40	2,200	3.1	0.57
p,p'-DDT	1,800	2.5	0.46	3,400	4.6	0.84
mirex	1,800	2.3	0.42	2,500	3.2	0.59
p,p'-methoxychlor	2,400	3.2	0.59	4,700	6.4	1.2

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have not been corrected for SPMD spike recovery.*
[3] *SPMD sampling rate normalized to 1 g triolein.*
[4] *SPMD sampling rate normalized to 1 g SPMD.*
[5] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 52. Day 8, OC Concentrations in 100 ng/L SPMDs

OCs	ng / SPMD [1,2]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	% CV	Uncorrected [3] Mean	Corrected [4] Mean
HCB	530	750	500	590	140.	24	240	320
pentachloranisole	660	790	610	690	93.	13	280	370
alpha-BHC	200	200	180	190	12.	6	77	128
lindane	160	150	150	150	5.8	4	60	91
beta-BHC	810	1,200	770	930	240.	26	380	440
heptachlor	67	65	63	65	2.0	3	26	52
aldrin	410	670	400	490	150.	31	200	310
dacthal	370	340	310	340	30.	9	140	180
oxychlordane	590	860	630	690	150.	22	280	280
heptachlor epoxide	630	680	600	640	40.	6	260	290
trans-chlordane	560	820	550	640	150.	23	260	300
trans-nonachlor	530	800	530	620	160.	26	250	280
cis-chlordane	530	700	510	580	100.	17	230	260
o,p'-DDE	530	840	520	630	180.	29	250	330
p,p'-DDE	560	790	570	640	130.	20	260	390
dieldrin	690	770	670	710	53.	7	290	410
o,p'-DDD	730	800	680	740	60.	8	300	360
endrin	890	930	850	890	40.	4	360	470
cis-nonachlor	610	720	580	640	74.	12	260	370
o,p'-DDT	580	800	560	650	130.	20	260	440
p,p'-DDD	830	870	780	830	45.	5	330	460
p,p'-DDT	760	870	730	790	74.	9	320	590
mirex	400	630	420	480	130.	27	190	270
p,p'-methoxychlor	900	920	820	880	53.	6	350	700

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[2] *Values have been background corrected using means of Day 8 Control SPMDs (Table 8).*

[3] *Values have not been corrected for SPMD spike recovery.*

[4] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 52A. Day 8 Concentration Factors and SPMD Sampling Rates in 100 ng/L SPMDs

OCs	Uncorrected [1,2]			Corrected [1,5]		
	Concentration Factor SPMD/Water	SPMD-Rs [3] L/Day	SPMD-Rs [4] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [3] L/Day	SPMD-Rs [4] L/Day
HCB	3,300	2.2	0.40	4,400	2.9	0.53
pentachloranisole	3,000	2.1	0.38	4,000	2.8	0.51
alpha-BHC	510	0.35	0.064	850	0.58	0.11
lindane	400	0.28	0.051	610	0.42	0.077
beta-BHC	5,400	3.6	0.66	6,200	4.1	0.75
heptachlor	200	0.14	0.026	400	0.28	0.051
aldrin	3,000	2.0	0.37	4,600	3.1	0.57
dacthal	1,400	0.94	0.17	1,800	1.2	0.22
oxychlordane	3,000	2.1	0.38	3,000	2.1	0.38
heptachlor epoxide	2,000	1.4	0.26	2,200	1.6	0.29
trans-chlordane	2,900	2.0	0.37	3,300	2.3	0.42
trans-nonachlor	2,700	1.9	0.35	3,000	2.2	0.40
cis-chlordane	2,400	1.6	0.29	2,700	1.8	0.33
o,p'-DDE	2,800	1.9	0.35	3,700	2.5	0.46
p,p'-DDE	2,800	1.9	0.35	4,200	2.8	0.51
dieldrin	2,900	2.0	0.37	4,100	2.8	0.51
o,p'-DDD	3,000	2.0	0.37	3,600	2.4	0.44
endrin	3,600	2.4	0.44	4,700	3.2	0.59
cis-nonachlor	2,200	1.5	0.27	3,100	2.1	0.38
o,p'-DDT	3,100	2.1	0.38	5,200	3.6	0.66
p,p'-DDD	2,500	1.8	0.33	3,500	2.5	0.46
p,p'-DDT	2,900	2.0	0.37	5,400	3.7	0.68
mirex	2,600	1.8	0.33	3,700	2.5	0.46
p,p'-methoxychlor	3,200	2.2	0.40	6,400	4.4	0.81

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have not been corrected for SPMD spike recovery.*
[3] *SPMD sampling rate normalized to 1 g triolein.*
[4] *SPMD sampling rate normalized to 1 g SPMD.*
[5] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 53. Day 16, OC Concentrations in 100 ng/L SPMDs

OCs	ng / SPMD [1,2]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	% CV	Uncorrected [3] Mean	Corrected [4] Mean
HCB	770	930	770	820	92.	11	330	430
pentachloranisole	940	990	930	950	32.	3	380	500
alpha-BHC	210	210	200	210	5.8	3	85	140
lindane	170	200	160	180	21.	12	73	110
beta-BHC	1,200	1,500	1,200	1,300	170.	13	520	600
heptachlor	72	71	68	70	2.1	3	28	56
aldrin	630	800	630	690	98.	14	280	430
dacthal	400	360	380	380	20.	5	150	190
oxychlordane	940	1,200	940	1,000	150.	15	400	400
heptachlor epoxide	910	970	880	920	46.	5	370	420
trans-chlordane	910	990	870	920	61.	7	370	430
trans-nonachlor	890	990	840	910	76.	8	370	420
cis-chlordane	840	960	820	870	76.	9	350	400
o,p'-DDE	890	1,100	870	950	130.	14	380	510
p,p'-DDE	830	980	810	870	93.	11	350	520
dieldrin	1,100	1,100	1,000	1,100	58.	5	440	620
o,p'-DDD	1,100	1,200	1,100	1,100	58.	5	440	520
endrin	1,200	1,300	1,200	1,200	58.	5	480	630
cis-nonachlor	960	1,100	930	1,000	91.	9	400	560
o,p'-DDT	910	990	870	920	61.	7	370	630
p,p'-DDD	1,200	1,300	1,200	1,200	58.	5	480	670
p,p'-DDT	1,100	1,200	990	1,100	110.	10	440	810
mirex	560	670	550	590	67.	11	240	340
p,p'-methoxychlor	1,200	1,200	1,100	1,200	58.	5	480	960

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[2] *Values have been background corrected using means of Day 16 Control SPMDs (Table 9).*

[3] *Values have not been corrected for SPMD spike recovery.*

[4] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 53A. Day 16 Concentration Factors and SPMD Sampling Rates in 100 ng/L SPMDs

OCs	Uncorrected [1,2]			Corrected [1,5]		
	Concentration Factor SPMD/Water	SPMD-Rs [3] L/Day	SPMD-Rs [4] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [3] L/Day	SPMD-Rs [4] L/Day
HCB	4,500	1.5	0.27	5,900	2.0	0.37
pentachloranisole	4,100	1.4	0.26	5,400	1.8	0.33
alpha-BHC	570	0.19	0.035	900	0.32	0.059
lindane	490	0.17	0.031	730	0.26	0.048
beta-BHC	7,300	2.5	0.46	8,500	2.9	0.53
heptachlor	220	0.074	0.014	430	0.15	0.027
aldrin	4,200	1.4	0.26	6,400	2.2	0.40
dacthal	1,500	0.52	0.095	1,900	0.68	0.12
oxychlordane	4,300	1.5	0.27	4,300	1.5	0.27
heptachlor epoxide	2,800	0.97	0.18	3,200	1.1	0.20
trans-chlordane	4,100	1.4	0.26	4,800	1.6	0.29
trans-nonachlor	4,000	1.4	0.26	4,600	1.6	0.29
cis-chlordane	3,600	1.2	0.22	4,100	1.4	0.26
o,p'-DDE	4,200	1.5	0.27	5,700	2.0	0.37
p,p'-DDE	3,800	1.3	0.24	5,700	1.9	0.35
dieldrin	4,400	1.5	0.27	6,200	2.1	0.38
o,p'-DDD	4,400	1.5	0.27	5,200	1.8	0.33
endrin	4,800	1.7	0.31	6,300	2.2	0.40
cis-nonachlor	3,300	1.1	0.20	4,700	1.5	0.27
o,p'-DDT	4,400	1.5	0.27	7,400	2.5	0.46
p,p'-DDD	3,700	1.3	0.24	5,200	1.8	0.33
p,p'-DDT	4,000	1.4	0.26	7,400	2.6	0.48
mirex	3,300	1.1	0.20	4,700	1.5	0.27
p,p'-methoxychlor	4,400	1.5	0.27	8,700	3.0	0.55

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have not been corrected for SPMD spike recovery.*
[3] *SPMD sampling rate normalized to 1 g triolein.*
[4] *SPMD sampling rate normalized to 1 g SPMD.*
[5] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 54. Day 28, OC Concentrations in 100 ng/L SPMDs

OCs	ng / SPMD [1,2]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	% CV	Uncorrected [3] Mean	Corrected [4] Mean
HCB	1,600	1,600	1,600	1,600	0.	0	650	860
pentachloranisole	1,900	1,900	1,800	1,900	58.	3	770	1,000
alpha-BHC	340	290	310	310	25.	8	130	220
lindane	260	220	230	240	21.	9	97	150
beta-BHC	2,600	2,500	2,300	2,500	150.	6	1,000	1,100
heptachlor	95	85	88	89	5.1	6	36	72
aldrin	1,400	1,400	1,300	1,400	58.	4	560	860
dacthal	540	450	490	490	45.	9	200	260
oxychlordane	2,100	2,100	2,000	2,100	58.	3	850	850
heptachlor epoxide	1,700	1,600	1,600	1,600	58.	4	650	730
trans-chlordane	1,900	1,900	1,800	1,900	58.	3	770	900
trans-nonachlor	1,800	1,900	1,800	1,800	58.	3	730	830
cis-chlordane	1,800	1,800	1,700	1,800	58.	3	730	830
o,p'-DDE	2,000	2,100	1,900	2,000	100.	5	810	1,100
p,p'-DDE	1,700	1,800	1,700	1,700	58.	3	690	1,000
dieldrin	2,200	2,100	2,100	2,100	58.	3	850	1,200
o,p'-DDD	2,500	2,500	2,400	2,500	58.	2	1,000	1,200
endrin	2,500	2,300	2,300	2,400	120.	5	970	1,300
cis-nonachlor	2,200	2,100	2,100	2,100	58.	3	850	1,200
o,p'-DDT	2,000	1,900	1,800	1,900	100.	5	770	1,300
p,p'-DDD	2,900	2,800	2,700	2,800	100.	4	1,100	1,500
p,p'-DDT	2,500	2,200	2,200	2,300	170.	7	930	1,700
mirex	850	970	840	890	72.	8	360	510
p,p'-methoxychlor	2,500	2,000	2,200	2,200	250.	11	890	1,800

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[2] *Values have been background corrected using means of Day 28 Control SPMDs (Table 10).*

[3] *Values have not been corrected for SPMD spike recovery.*

[4] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 54A. Day 28 Concentration Factors and SPMD Sampling Rates in 100 ng/L SPMDs

OCs	Uncorrected [1,2]			Corrected [1,5]		
	Concentration Factor SPMD/Water	SPMD-Rs [3] L/Day	SPMD-Rs [4] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [3] L/Day	SPMD-Rs [4] L/Day
HCB	8,900	1.7	0.31	12,000	2.2	0.4
pentachloranisole	8,400	1.6	0.29	11,000	2.1	0.38
alpha-BHC	870	0.16	0.029	1,500	0.27	0.049
lindane	650	0.13	0.024	1,000	0.20	0.037
beta-BHC	14,000	2.8	0.51	15,000	3.2	0.59
heptachlor	280	0.054	0.0099	550	0.11	0.020
aldrin	8,400	1.6	0.29	13,000	2.5	0.46
dacthal	2,000	0.39	0.071	2,600	0.51	0.093
oxychlordane	9,200	1.8	0.33	9,200	1.8	0.33
heptachlor epoxide	5,000	1.0	0.18	5,600	1.1	0.20
trans-chlordane	8,600	1.7	0.31	10,000	2.	0.37
trans-nonachlor	7,900	1.5	0.27	9,000	1.7	0.31
cis-chlordane	7,500	1.5	0.27	8,600	1.7	0.31
o,p'-DDE	9,000	1.7	0.31	12,000	2.3	0.42
p,p'-DDE	7,500	1.5	0.27	11,000	2.2	0.4
dieldrin	8,500	1.7	0.31	12,000	2.4	0.44
o,p'-DDD	10,000	2.0	0.37	12,000	2.4	0.44
endrin	9,700	1.9	0.35	13,000	2.5	0.46
cis-nonachlor	7,100	1.4	0.26	10,000	2.0	0.37
o,p'-DDT	9,100	1.8	0.33	15,000	3.1	0.57
p,p'-DDD	8,500	1.7	0.31	12,000	2.4	0.44
p,p'-DDT	8,500	1.6	0.29	15,000	3.0	0.55
mirex	4,900	1.0	0.18	7,000	1.4	0.26
p,p'-methoxychlor	8,100	1.6	0.29	16,000	3.2	0.59

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[2] *Values have not been corrected for SPMD spike recovery.*
[3] *SPMD sampling rate normalized to 1 g triolein.*
[4] *SPMD sampling rate normalized to 1 g SPMD.*
[5] *Values have been corrected for SPMD spike recovery (QC Table 34).*

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Table 55. Day 2, OC Concentrations in 1.0 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [7] Mean	Corrected [8] Mean
HCB	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
pentachloranisole	2.1 [5]	<MDL [4]	<MDL [4]	---- [5]	----	----	0.85 [5]	1.5 [5]
alpha-BHC	<MDL [4]	<MDL [4]	1.1 [5]	---- [5]	----	----	0.44 [5]	0.94 [5]
lindane	0.61	<MDL	<MDL	---- [6]	----	----	0.25 [6]	0.44 [6]
beta-BHC	1.0	1.7	0.83	1.2	0.46	38	0.48	0.76
heptachlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
aldrin [1]	---	---	---	---	----	----	---	---
dacthal	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
oxychlordane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
heptachlor epoxide	0.75 [5]	6.0	<MDL [4]	---- [6]	----	----	2.4 [6]	5.3 [6]
trans-chlordane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
trans-nonachlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
cis-chlordane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
o,p'-DDE	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
p,p'-DDE	4.4 [5]	4.5 [5]	3.2 [5]	4.0 [5]	----	----	1.6 [5]	3.3 [5]
dieldrin	4.0 [5]	3.8 [5]	<MDL [4]	3.9 [5]	----	----	1.6 [5]	2.1 [5]
o,p'-DDD	3.6	2.1	0.38	2.0	1.6	80	0.81	1.0
endrin	4.6	6.1	3.9	4.9	----	----	2.0	2.9
cis-nonachlor	<MDL [4]	11. [5]	5.6 [5]	8.3 [5]	----	----	3.3 [5]	4.3 [5]
o,p'-DDT	<MDL [4]	5.3 [5]	5.7 [5]	5.5 [5]	----	----	2.2 [5]	2.4 [5]
p,p'-DDD	2.0	1.0	0.61	1.2	0.72	60	0.48	0.62
p,p'-DDT	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
mirex	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]
p,p'-methoxychlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	----	----	<MDL [4]	<MDL [4]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have been background corrected using means of Day 2 Control SPMDs (Table 11).*
[4] *Value below Day 2 control SPMD MDL (Table 11).*
[5] *Value between Day 2 control SPMD MDL and MQL (Table 11). These values are presented for information purposes only.*
[6] *Value based on n=1.*
[7] *Values have not been corrected for SPMD spike recovery.*
[8] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 55A. Day 2 Concentration Factors and SPMD Sampling Rates in 1.0 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,9]		
	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day
HCB	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
pentachloranisole	1,000 [5]	2.8 [5]	0.51 [5]	1,800 [5]	4.9 [5]	0.90 [5]
alpha-BHC	770 [5]	2.1 [5]	0.38 [5]	1,600 [5]	4.5 [5]	0.82 [5]
lindane	400 [6]	1.1 [6]	0.20 [6]	700 [6]	1.9 [6]	0.35 [6]
beta-BHC	320	0.88	0.16	510	1.4	0.26
heptachlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
aldrin [1]	-------	-------	-------	-------	-------	-------
dacthal	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
oxychlordane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
heptachlor epoxide	1,600 [6]	4.4 [6]	0.81 [6]	3,500 [6]	9.8 [6]	1.8 [6]
trans-chlordane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
trans-nonachlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
cis-chlordane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
o,p'-DDE	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
p,p'-DDE	1,200 [5]	3.4 [5]	0.62 [5]	2,500 [5]	6.9 [5]	1.3 [5]
dieldrin	1,200 [5]	3.3 [5]	0.60 [5]	1,600 [5]	4.2 [5]	0.77 [5]
o,p'-DDD	620	1.7	0.31	770	2.2	0.40
endrin	1,200	3.2	0.59	1,700	4.6	0.84
cis-nonachlor	2,500 [5]	7.0 [5]	1.3 [5]	3,300 [5]	9.0 [5]	1.6 [5]
o,p'-DDT	1,700 [5]	4.7 [5]	0.86 [5]	1,800 [5]	5.2 [5]	0.95 [5]
p,p'-DDD	340	0.94	0.17	440	1.2	0.22
p,p'-DDT	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
mirex	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
p,p'-methoxychlor	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value below Day 2 control SPMD MDL (Table 11).*
[5] *Value between Day 2 control SPMD MDL and MQL (Table 11). These values are presented for information purposes only.*
[6] *Value based on n=1.*
[7] *SPMD sampling rate normalized to 1 g triolein.*
[8] *SPMD sampling rate normalized to 1 g SPMD.*
[9] *Values have been corrected for SPMD spike recovery (QC Table 35).*

Table 56. Day 4, OC Concentrations in 1.0 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
							Uncorrected [8]	Corrected [9]
	Rep A	Rep B	Rep C	Mean	SD	CV	Mean	Mean
HCB	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	-----	----	<MDL [4]	<MDL [4]
pentachloranisole	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	-----	----	<MDL [4]	<MDL [4]
alpha-BHC	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	-----	-----	<MDL [4]	<MDL [4]
lindane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	-----	-----	<MDL [4]	<MDL [4]
beta-BHC	0.93	0.60	0.41	0.65	0.26	40	0.26	0.41
heptachlor	2.8 [5]	5.3 [5]	<MDL [4]	4.1 [5]	-----	----	1.7 [5]	2.3 [5]
aldrin [1]	-----	-----	-----	-----	-----	-----	-----	-----
dacthal	<MDL [4]	4.0	<MDL [4]	----- [6]	-----	-----	1.6 [6]	1.8 [6]
oxychlordane	4.6 [5]	20.	<MDL [4]	----- [6]	-----	----	8.1 [6]	9.8 [6]
heptachlor epoxide	3.5	4.7	0.35	2.9	2.2	76	1.2	2.7
trans-chlordane	5.6 [5]	14. [5]	<MDL [4]	9.8 [5]	-----	-----	4.0 [5]	5.6 [6]
trans-nonachlor	5.7 [5]	14. [5]	<MDL [4]	9.9 [5]	-----	----	4.0 [5]	5.3 [6]
cis-chlordane	6.0	12.	3.3 [5]	9.0 [7]	-----	----	3.6 [7]	5.3 [7]
o,p'-DDE	6.6 [5]	14.	3.3 [5]	----- [6]	-----	-----	5.6 [6]	7.5 [6]
p,p'-DDE	9.5	22.	12.	15.	6.6	44	6.0	12.
dieldrin	9.0	11.	5.8	8.6	2.6	30	3.5	4.5
o,p'-DDD	7.1	12.	5.6	8.2	3.3	40	3.3	4.2
endrin	14.	18.	10.	14.	4.0	29	5.6	8.0
cis-nonachlor	9.5	17.	8.5	12.	4.6	38	4.8	6.2
o,p'-DDT	11. [5]	15. [5]	8.5 [5]	12. [5]	-----	-----	4.8 [5]	5.3 [5]
p,p'-DDD	5.6	4.7	3.0	4.4	1.3	30	1.8	2.3
p,p'-DDT	4.9 [5]	8.2 [5]	<MDL [4]	6.6 [5]	-----	-----	2.7 [5]	3.6 [5]
mirex	<MDL [4]	13. [5]	<MDL [4]	----- [5]	-----	-----	5.2 [5]	8.1 [5]
p,p'-methoxychlor	5.4 [5]	10. [5]	<MDL [4]	7.7 [5]	-----	-----	3.1 [5]	3.3 [5]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have been background corrected using means of Day 4 Control SPMDs (Table 12).*
[4] *Value below Day 4 control SPMD MDL (Table 12).*
[5] *Value between Day 4 control SPMD MDL and MQL (Table 12). These values are presented for information purposes only.*
[6] *Value based on n=1.*
[7] *Value based on n=2.*
[8] *Values have not been corrected for SPMD spike recovery.*
[9] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 56A. Day 4 Concentration Factors and SPMD Sampling Rates in 1.0 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,10]		
	Concentration Factor SPMD/Water	SPMD-Rs [8] L/Day	SPMD-Rs [9] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [8] L/Day	SPMD-Rs [9] L/Day
HCB	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
pentachloranisole	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
alpha-BHC	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
lindane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]
beta-BHC	170	0.24	0.044	270	0.38	0.070
heptachlor	3,100 [5]	4.1 [5]	0.75 [5]	4,200 [5]	5.5 [5]	1.0 [5]
aldrin [1]	—	—	-------	—	-------	—
dacthal	890 [6]	1.2 [6]	0.22 [6]	1,000 [6]	1.3 [6]	0.24 [6]
oxychlordane	6,800 [6]	9.2 [6]	1.7 [6]	8,200 [6]	11. [6]	2.0 [6]
heptachlor epoxide	800	1.1	0.20	1,800	2.4	0.44
trans-chlordane	3,300 [5]	4.5 [5]	0.82 [5]	4,700 [5]	6.3 [5]	1.2 [5]
trans-nonachlor	3,300 [5]	4.5 [5]	0.82 [5]	4,400 [5]	6.0 [5]	1.1 [5]
cis-chlordane	3,300 [7]	4.5 [7]	0.82 [7]	4,800 [7]	6.6 [7]	1.2 [7]
o,p'-DDE	6,300 [6]	8.7 [6]	1.6 [6]	8,400 [6]	12. [6]	2.2 [6]
p,p'-DDE	4,600	6.3	1.2	9,200	13.	2.4
dieldrin	2,700	3.6	0.66	3,500	4.6	0.84
o,p'-DDD	2,500	3.5	0.64	3,200	4.5	0.82
endrin	3,300	4.5	0.82	4,700	6.4	1.2
cis-nonachlor	3,700	5.1	0.93	4,800	6.6	1.2
o,p'-DDT	3,700 [5]	5.1 [5]	0.93 [5]	4,100 [5]	5.7 [5]	1.0 [5]
p,p'-DDD	1,300	1.7	0.31	1,600	2.2	0.40
p,p'-DDT	2,300 [5]	3.0 [5]	0.55 [5]	3,000 [5]	3.9 [5]	0.71 [5]
mirex	9,000 [5]	12. [5]	2.2 [5]	14,000 [5]	19. [5]	3.5 [5]
p,p'-methoxychlor	2,200 [5]	3.0 [5]	0.55 [5]	2,400 [5]	3.2 [5]	0.59 [5]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value below Day 4 control SPMD MDL (Table 12).*
[5] *Value between Day 4 control SPMD MDL and MQL (Table 12). These values are presented for information purposes only.*
[6] *Value based on n=1.*
[7] *Value based on n=2.*
[8] *SPMD sampling rate normalized to 1 g triolein.*
[9] *SPMD sampling rate normalized to 1 g SPMD.*
[10] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 57. Day 8, OC Concentrations in 1.0 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [7] Mean	Corrected [8] Mean
HCB	11.	6.7	6.7	8.1	2.5	31	3.3	4.0
pentachloranisole	13.	9.1	10.	11.	2.0	18	4.4	7.7
alpha-BHC	2.1	0.90 [5]	1.3 [5]	— [6]	—	—	0.85 [6]	1.8 [6]
lindane	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	—	—	<MDL [4]	<MDL [4]
beta-BHC	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	—	—	<MDL [4]	<MDL [4]
heptachlor	10.	5.4	6.8	7.4	2.4	32	3.0	4.1
aldrin [1]	—	—	—	—	—	—	—	—
dacthal	5.9	3.7	3.7	4.4	1.3	30	1.8	2.0
oxychlordane	20.	11.	14.	15.	4.6	31	6.0	7.2
heptachlor epoxide	8.1	2.7	3.7	4.8	2.9	60	1.9	4.2
trans-chlordane	20.	11.	14.	15.	4.6	31	6.0	8.5
trans-nonachlor	20.	11.	14.	15.	4.6	31	6.0	8.0
cis-chlordane	21.	13.	15.	16.	4.2	26	6.5	9.6
o,p'-DDE	19.	12.	13.	15.	3.8	25	6.0	8.0
p,p'-DDE	25.	18.	18.	20.	4.0	20	8.1	17.
dieldrin	20.	13.	13.	15.	4.0	27	6.0	7.7
o,p'-DDD	17.	14.	14.	15.	1.7	11	6.0	7.7
endrin	33.	26.	24.	28.	4.7	17	11.	16.
cis-nonachlor	20.	13.	14.	16.	3.8	24	6.5	8.4
o,p'-DDT	23.	14.	17.	18.	4.6	26	7.3	8.1
p,p'-DDD	14.	8.5	8.8	10.	3.1	31	4.0	5.2
p,p'-DDT	17.	11.	9.5	13.	4.0	31	5.2	6.8
mirex	<MDL [4]	<MDL [4]	<MDL [4]	<MDL [4]	—	—	<MDL [4]	<MDL [4]
p,p'-methoxychlor	23.	19.	17.	20.	3.1	16	8.1	8.6

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have been background corrected using means of Day 8 Control SPMDs (Table 13).*
[4] *Value below Day 8 control SPMD MDL (Table 13).*
[5] *Value between Day 8 control SPMD MDL and MQL (Table 13). These values are presented for information purposes only.*
[6] *Value based on n=1.*
[7] *Values have not been corrected for SPMD spike recovery.*
[8] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 57A. Day 8 Concentration Factors and SPMD Sampling Rates in 1.0 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,8]		
	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [6] L/Day	SPMD-Rs [7] L/Day
HCB	6,200	4.2	0.77	7,500	5.1	0.93
pentachloranisole	5,200	3.6	0.66	9,200	6.3	1.2
alpha-BHC	1,500 [4]	1.0 [4]	0.18 [4]	3,200 [4]	2.1 [4]	0.38 [4]
lindane	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]
beta-BHC	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]
heptachlor	5,500	3.7	0.68	7,500	5.0	0.92
aldrin [1]	——	-------	-------	-------	-------	-------
dacthal	1,000	0.67	0.12	1,100	0.74	0.14
oxychlordane	5,000	3.4	0.62	6,000	4.1	0.75
heptachlor epoxide	1,300	0.88	0.16	2,800	2.0	0.37
trans-chlordane	5,000	3.4	0.62	7,100	4.8	0.88
trans-nonachlor	5,000	3.4	0.62	6,700	4.5	0.82
cis-chlordane	5,900	4.0	0.73	8,700	5.9	1.1
o,p'-DDE	6,700	4.6	0.84	9,000	6.1	1.1
p,p'-DDE	6,200	4.2	0.77	13,000	8.6	1.6
dieldrin	4,600	3.2	0.59	5,900	4.1	0.75
o,p'-DDD	4,600	3.2	0.59	5,900	4.1	0.75
endrin	6,500	4.5	0.82	9,400	6.4	1.2
cis-nonachlor	5,000	3.4	0.62	6,500	4.4	0.81
o,p'-DDT	5,600	3.8	0.70	6,200	4.2	0.77
p,p'-DDD	2,900	2.0	0.37	3,700	2.6	0.48
p,p'-DDT	4,300	3.0	0.55	5,700	3.9	0.71
mirex	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]	<MDL [5]
p,p'-methoxychlor	5,800	3.9	0.71	6,100	4.1	0.75

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value based on n=1.*
[5] *Value below Day 8 control SPMD MDL (Table 13).*
[6] *SPMD sampling rate normalized to 1 g triolein.*
[7] *SPMD sampling rate normalized to 1 g SPMD.*
[8] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 58. Day 16, OC Concentrations in 1.0 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [6] Mean	Corrected [7] Mean
HCB	22.	11.	17.	17.	5.5	32	6.9	8.4
pentachloranisole	30.	17.	25.	24.	6.6	28	9.7	17.
alpha-BHC	3.4	1.4 [4]	2.3	2.9 [5]	-----	----	1.2 [5]	2.6 [5]
lindane	3.6	0.29	1.4	1.8	1.7	94	0.73	1.3
beta-BHC	2.2	0.35 [4]	1.1	1.7 [5]	----	-----	0.69 [5]	1.1 [5]
heptachlor	28.	16.	20.	21.	6.1	29	8.5	11.
aldrin [1]	-----	-----	-----	-----	----	-----	----	-----
dacthal	13.	6.1	10.	9.7	3.5	36	3.9	4.3
oxychlordane	50.	31.	41.	41.	9.5	23	17.	20.
heptachlor epoxide	24.	13.	19.	19.	5.5	29	7.7	17.
trans-chlordane	49.	32.	43.	41.	8.6	21	17.	24.
trans-nonachlor	48.	30.	40.	39.	9.0	23	16.	21.
cis-chlordane	54.	35.	45.	45.	9.5	21	18.	26.
o,p'-DDE	50.	32.	39.	40.	9.1	23	16.	21.
p,p'-DDE	49.	34.	43.	42.	7.5	18	17.	35.
dieldrin	47.	28.	41.	39.	9.7	25	16.	21.
o,p'-DDD	50.	30.	45.	42.	10.	24	17.	22.
endrin	73.	43.	64.	60.	15.	25	24.	34.
cis-nonachlor	47.	27.	44.	39.	11.	28	16.	21.
o,p'-DDT	49.	36.	47.	44.	7.0	16	18.	20.
p,p'-DDD	37.	24.	34.	32.	6.8	21	13.	17.
p,p'-DDT	39.	23.	33.	32.	8.1	25	13.	17.
mirex	26.	17.	18.	20.	4.9	25	8.1	13.
p,p'-methoxychlor	47.	31.	49.	42.	9.9	24	17.	18.

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have been background corrected using means of Day 16 Control SPMDs (Table 14).*
[4] *Value between Day 16 control SPMD MDL and MQL (Table 14). These values are presented for information purposes only.*
[5] *Value based on n=2.*
[6] *Values have not been corrected for SPMD spike recovery.*
[7] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 58A. Day 16 Concentration Factors and SPMD Sampling Rates in 1.0 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,8]		
	Concentration Factor SPMD/Water	SPMD-Rs [6] L/Day	SPMD-Rs [7] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [6] L/Day	SPMD-Rs [7] L/Day
HCB	13,000	4.4	0.81	16,000	5.4	1.0
pentachloranisole	12,000	3.9	0.71	20,000	6.8	1.2
alpha-BHC	2,100 [4]	0.70 [4]	0.13 [4]	4,600 [4]	1.5 [4]	0.27 [4]
lindane	1,200	0.39	0.071	2,100	0.68	0.12
beta-BHC	460 [4]	0.16 [4]	0.029 [4]	730 [4]	0.25 [4]	0.046 [4]
heptachlor	15,000	5.3	0.97	20,000	7.2	1.3
aldrin [1]	-------	-------	-------	-------	-------	-------
dacthal	2,200	0.74	0.14	2,400	0.82	0.15
oxychlordane	14,000	4.7	0.86	17,000	5.7	1.0
heptachlor epoxide	5,100	1.7	0.31	11,000	3.8	0.70
trans-chlordane	14,000	4.7	0.86	20,000	6.6	1.2
trans-nonachlor	13,000	4.5	0.82	18,000	6.0	1.1
cis-chlordane	16,000	5.6	1.0	24,000	8.2	1.5
o,p'-DDE	18,000	6.2	1.1	24,000	8.3	1.5
p,p'-DDE	13,000	4.4	0.81	27,000	9.0	1.6
dieldrin	12,000	4.1	0.75	16,000	5.3	0.97
o,p'-DDD	13,000	4.4	0.81	17,000	5.6	1.0
endrin	14,000	4.9	0.90	20,000	7.0	1.3
cis-nonachlor	12,000	4.1	0.75	16,000	5.3	0.97
o,p'-DDT	14,000	4.7	0.86	15,000	5.2	0.95
p,p'-DDD	9,300	3.1	0.57	12,000	4.0	0.73
p,p'-DDT	11,000	3.7	0.68	14,000	4.9	0.90
mirex	14,000	4.7	0.86	22,000	7.3	1.3
p,p'-methoxychlor	12,000	4.1	0.75	13,000	4.4	0.81

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value based on n=2.*
[5] *SPMD sampling rate normalized to 1 g triolein.*
[6] *SPMD sampling rate normalized to 1 g SPMD.*
[7] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 59. Day 2, OC Concentrations in 10 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [6] Mean	Corrected [7] Mean
HCB	23	20.	18.	20.	2.5	13	8.1	9.9
pentachloranisole	35	32.	27.	31.	4.0	13	13.	23.
alpha-BHC	<MDL [4]	7.8	5.2	6.5 [5]	-----	-----	2.6 [5]	5.5 [5]
lindane	11	12.	<MDL [4]	12. [5]	-----	-----	4.8 [5]	8.4 [5]
beta-BHC	<MDL [4]	15.	16.	16. [5]	-----	-----	6.5 [5]	10. [5]
heptachlor	23	27.	27.	26.	2.3	9	10.	14.
aldrin [1]	-----	-----	-----	-----	-----	-----	-----	-----
dacthal	27	29.	19.	25.	5.3	21	10.	11.
oxychlordane	36	34.	27.	32.	4.7	15	13.	16.
heptachlor epoxide	18	9.3	<MDL [4]	14. [5]	-----	-----	5.6 [5]	12. [5]
trans-chlordane	34	29.	23.	29.	5.5	19	12.	17.
trans-nonachlor	30	26.	21.	26.	4.5	17	10.	13.
cis-chlordane	38	34.	28.	33.	5.0	15	13.	19.
o,p'-DDE	38	34.	31.	34.	3.5	10	14.	19.
p,p'-DDE	22	18.	17.	19.	2.6	14	7.7	16.
dieldrin	42	39.	28.	36.	7.4	21	15.	19.
o,p'-DDD	28	27.	23.	26.	2.6	10	10.	13.
endrin	41	46.	35.	41.	5.5	13	17.	24.
cis-nonachlor	37	37.	27.	34.	5.8	17	14.	18.
o,p'-DDT	32	34.	29.	32.	2.5	8	13.	14.
p,p'-DDD	43	47.	37.	42.	5.0	12	17.	22.
p,p'-DDT	22	22.	25.	23.	1.7	7	9.3	12.
mirex	19	13.	12.	15.	3.8	25	6.0	9.4
p,p'-methoxychlor	40	64.	43.	49.	13.	27	20.	21.

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have been background corrected using means of Day 2 Control SPMDs (Table 11).*
[4] *Value below Day 2 control SPMD MDL (Table 11).*
[5] *Value based on n=2.*
[6] *Values have not been corrected for SPMD spike recovery.*
[7] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 59A. Day 2 Concentration Factors and SPMD Sampling Rates in 10 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,7]		
	Concentration Factor SPMD/Water	SPMD-Rs [6] L/Day	SPMD-Rs [6] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [5] L/Day	SPMD-Rs [6] L/Day
HCB	15,000	10.	1.8	19,000	12.	2.2
pentachloranisole	15,000	7.4	1.4	27,000	13.	2.4
alpha-BHC	4,600 [4]	2.2 [4]	0.40 [4]	10,000 [4]	4.7 [4]	0.86 [4]
lindane	7,600 [4]	2.4 [4]	0.44 [4]	13,000 [4]	4.2 [4]	0.77 [4]
beta-BHC	4,300 [4]	1.5 [4]	0.27 [4]	6,700 [4]	2.4 [4]	0.44 [4]
heptachlor	18,000	10.	1.8	25,000	14.	2.6
aldrin [1]	-------	-------	-------	-------	-------	-------
dacthal	5,600	2.5	0.46	6,100	2.8	0.51
oxychlordane	11,000	7.0	1.3	13,000	8.4	1.5
heptachlor epoxide	3,700 [4]	1.7 [4]	0.31 [4]	8,000 [4]	3.8 [4]	0.70 [4]
trans-chlordane	10,000	5.5	1.0	14,000	7.7	1.4
trans-nonachlor	8,000	5.7	1.0	11,000	7.6	1.4
cis-chlordane	12,000	4.9	0.90	17,000	7.2	1.3
o,p'-DDE	16,000	7.6	1.4	21,000	10.	1.8
p,p'-DDE	5,900	3.5	0.64	12,000	7.1	1.3
dieldrin	12,000	4.3	0.79	15,000	5.5	1.0
o,p'-DDD	7,700	3.4	0.62	10,000	4.4	0.81
endrin	10,000	4.5	0.82	14,000	6.4	1.2
cis-nonachlor	11,000	4.9	0.90	14,000	6.4	1.2
o,p'-DDT	10,000	5.3	0.97	11,000	5.9	1.1
p,p'-DDD	12,000	5.5	1.0	16,000	7.1	1.3
p,p'-DDT	7,800	4.0	0.73	10,000	5.3	0.97
mirex	10,000	4.9	0.90	16,000	7.7	1.4
p,p'-methoxychlor	14,000	4.1	0.75	15,000	4.4	0.81

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value based on n=2.*
[5] *SPMD sampling rate normalized to 1 g triolein.*
[6] *SPMD sampling rate normalized to 1 g SPMD.*
[7] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 60. Day 4, OC Concentrations in 10 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [8] Mean	Corrected [9] Mean
HCB	43	34 [4]	40.	42 [6]	----	-----	17. [6]	21. [6]
pentachloroanisole	71	62	62.	65	5.2	8	26.	46.
alpha-BHC	11 [4]	<MDL [5]	<MDL [5]	----- [4]	-----	—	4.4 [4]	9.4 [4]
lindane	10	<MDL [5]	5.0 [4]	— [7]	-----	—	4.0 [7]	7.0 [7]
beta-BHC	<MDL [5]	12	12.	12 [6]	-----	—	4.8 [6]	7.6 [6]
heptachlor	47	41	51.	46	5.0	11	19.	26.
aldrin [1]	-----	-----	—	-----	----	-----	-----	—
dacthal	41	37	33.	37	4.0	11	15.	17.
oxychlordane	83	88	84.	85	2.6	3	34.	41.
heptachlor epoxide	47	38	48.	44	5.5	13	18.	40.
trans-chlordane	71	95	91.	86	13.	15	35.	49.
trans-nonachlor	66	91	86.	81	13.	16	33.	44.
cis-chlordane	82	110	97.	96	14.	15	39.	57.
o,p'-DDE	83	78	78.	80	2.9	4	32.	43.
p,p'-DDE	50	97	94.	80	26.	33	32.	65.
dieldrin	87	110	98.	98	12.	12	40.	51.
o,p'-DDD	86	89	100.	92	7.4	8	37.	47.
endrin	84	190	180.	150	59.	39	60.	86.
cis-nonachlor	78	110	97.	95	16.	17	38.	49.
o,p'-DDT	68	89	83.	80	11.	14	32.	36.
p,p'-DDD	100	80	80.	87	12.	14	35.	45.
p,p'-DDT	49	81	61.	64	16.	25	26.	34.
mirex	37	50	51.	46	7.8	17	19.	30.
p,p'-methoxychlor	110	150	110.	120	23.	19	48.	51.

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have been background corrected using means of Day 4 Control SPMDs (Table 12).*
[4] *Value between Day 4 control SPMD MDL and MQL (Table 12). These values are presented for information purposes only.*
[5] *Value below Day 4 control SPMD MDL (Table 12).*
[6] *Value based on n=2.*
[7] *Value based on n=1.*
[8] *Values have not been corrected for SPMD spike recovery.*
[9] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 60A. Day 4 Concentration Factors and SPMD Sampling Rates in 10 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,9]		
	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [7] L/Day	SPMD-Rs [8] L/Day
HCB	7,400 [4]	10. [4]	1.8 [4]	9,100 [4]	12. [4]	2.2 [4]
pentachloranisole	5,700	7.8	1.4	10,000	14.	2.6
alpha-BHC	1,400 [5]	1.9 [5]	0.35 [5]	2,900 [5]	4.0 [5]	0.73 [5]
lindane	730 [6]	1.0 [6]	0.18 [6]	1,300 [6]	1.8 [6]	0.33 [6]
beta-BHC	400 [4]	0.55 [4]	0.10 [4]	630 [4]	0.87 [4]	0.16 [4]
heptachlor	6,300	8.4	1.5	8,700	11.	2.0
aldrin [1]	-------	-------	-------	-------	-------	-------
dacthal	1,400	1.9	0.35	1,500	2.1	0.38
oxychlordane	6,800	9.4	1.7	8,200	11.	2.0
heptachlor epoxide	2,000	2.6	0.48	4,300	5.8	1.1
trans-chlordane	6,000	8.2	1.5	8,400	12.	2.2
trans-nonachlor	6,600	8.9	1.6	8,800	12.	2.2
cis-chlordane	5,300	7.1	1.3	7,700	10.	1.8
o,p'-DDE	6,500	9.0	1.6	8,800	12.	2.2
p,p'-DDE	5,400	7.5	1.4	11,000	15.	2.7
dieldrin	4,300	5.9	1.1	5,500	7.6	1.4
o,p'-DDD	4,400	6.0	1.1	5,500	7.7	1.4
endrin	6,000	8.3	1.5	8,600	12.	2.2
cis-nonachlor	5,000	6.9	1.3	6,400	9.0	1.6
o,p'-DDT	4,800	6.7	1.2	5,500	7.4	1.4
p,p'-DDD	4,200	5.7	1.0	5,400	7.4	1.4
p,p'-DDT	4,100	5.6	1.0	5,400	7.4	1.4
mirex	5,600	7.4	1.4	8,800	12.	2.2
p,p'-methoxychlor	3,700	5.1	0.9	3,900	5.4	1.0

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value based on n=2.*
[5] *Value between Day 4 control SPMD MDL and MQL (Table 12). These values are presented for information purposes only.*
[6] *Value based on n=1.*
[7] *SPMD sampling rate normalized to 1 g triolein.*
[8] *SPMD sampling rate normalized to 1 g SPMD.*
[9] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 61. Day 8, OC Concentrations in 10 ng/L SPMDs

OCs	ng / SPMD [2, 3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [4] Mean	Corrected [5] Mean
HCB	61.	82.	100.	81.	20.	25	33.	40.
pentachloranisole	88.	130.	170.	130.	41.	32	52.	91.
alpha-BHC	9.3	13.	19.	14.	4.9	35	5.6	12.
lindane	9.8	9.6	3.6	7.7	3.5	45	3.1	5.4
beta-BHC	18.	16.	21.	18.	2.5	14	7.3	12.
heptachlor	76.	95.	120.	97.	22.	23	39.	53.
aldrin [1]	-----	-----	-----	-----	-----	-----	-----	-----
dacthal	53.	59.	70.	61.	8.6	14	25.	28.
oxychlordane	130.	170.	260.	190.	67.	35	77.	93.
heptachlor epoxide	80.	120.	130.	110.	26.	24	44.	98.
trans-chlordane	140.	190.	280.	200.	71.	36	81.	110.
trans-nonachlor	140.	180.	280.	200.	72.	36	81.	110.
cis-chlordane	150.	220.	320.	230.	85.	37	93.	140.
o,p'-DDE	120.	180.	260.	190.	70.	37	77.	100.
p,p'-DDE	140.	200.	300.	210.	81.	39	85.	170.
dieldrin	160.	210.	300.	220.	71.	32	89.	110.
o,p'-DDD	150.	240.	360.	250.	110.	44	100.	130.
endrin	260.	350.	490.	370.	120.	32	150.	210.
cis-nonachlor	140.	210.	330.	230.	96.	42	93.	120.
o,p'-DDT	130.	190.	310.	210.	92.	44	85.	94.
p,p'-DDD	120.	190.	280.	200.	80.	40	81.	110.
p,p'-DDT	110.	140.	200.	150.	46.	31	60.	79.
mirex	79.	100.	150.	110.	36.	33	44.	69.
p,p'-methoxychlor	190.	240.	350.	260.	82.	32	100.	110.

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[3] *Values have been background corrected using means of Day 8 Control SPMDs (Table 13).*

[4] *Values have not been corrected for SPMD spike recovery.*

[5] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 61A. Day 8 Concentration Factors and SPMD Sampling Rates in 10 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,6]		
	Concentration Factor SPMD/Water	SPMD-Rs [4] L/Day	SPMD-Rs [5] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [4] L/Day	SPMD-Rs [5] L/Day
HCB	14,000	10.	1.8	17,000	12.	2.2
pentachloranisole	11,000	7.8	1.4	20,000	14.	2.6
alpha-BHC	1,800	1.2	0.22	3,800	2.6	0.48
lindane	560	0.39	0.071	980	0.68	0.12
beta-BHC	610	0.41	0.075	1,000	0.65	0.12
heptachlor	13,000	8.9	1.6	18,000	12.	2.2
aldrin [1]	-------	-------	-------	-------	-------	-------
dacthal	2,300	1.5	0.27	2,500	1.7	0.31
oxychlordane	15,000	10.	1.8	19,000	12.	2.2
heptachlor epoxide	4,800	3.3	0.60	11,000	7.3	1.3
trans-chlordane	14,000	9.5	1.7	19,000	13.	2.4
trans-nonachlor	16,000	11.	2.0	22,000	15.	2.7
cis-chlordane	13,000	8.5	1.6	19,000	13.	2.4
o,p'-DDE	16,000	11.	2.0	20,000	15.	2.7
p,p'-DDE	14,000	9.8	1.8	29,000	20.	3.7
dieldrin	9,700	6.6	1.2	12,000	8.5	1.6
o,p'-DDD	12,000	8.1	1.5	15,000	10.	1.8
endrin	15,000	10.	1.8	21,000	14.	2.6
cis-nonachlor	12,000	8.3	1.5	16,000	11.	2.0
o,p'-DDT	13,000	8.8	1.6	14,000	9.8	1.8
p,p'-DDD	9,600	6.5	1.2	13,000	8.4	1.5
p,p'-DDT	9,500	6.5	1.2	13,000	8.6	1.6
mirex	13,000	8.9	1.6	20,000	14.	2.6
p,p'-methoxychlor	7,700	5.5	1.0	8,500	5.9	1.1

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *SPMD sampling rate normalized to 1 g triolein.*
[5] *SPMD sampling rate normalized to 1 g SPMD.*
[6] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 62. Day 16, OC Concentrations in 10 ng/L SPMDs

OCs	ng / SPMD [2, 3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [4] Mean	Corrected [5] Mean
HCB	140	100	130	120	21.	18	48.	59
pentachloranisole	230	160	210	200	36.	18	81.	140
alpha-BHC	16	17	54	29	22.	76	12.	26
lindane	22	13	33	23	10.	43	9.3	16
beta-BHC	25	20	13	19	6.0	32	7.7	12
heptachlor	150	140	160	150	10.	7	60.	81
aldrin [1]	-----	-----	-----	-----	-----	-----	-----	-----
dacthal	100	77	100	92	13.	14	37.	41
oxychlordane	250	230	210	230	20.	9	93.	110
heptachlor epoxide	170	140	130	150	21.	14	60.	130
trans-chlordane	240	250	210	230	21.	9	93.	130
trans-nonachlor	210	230	190	210	20.	10	85.	110
cis-chlordane	280	280	230	260	29.	11	100.	150
o,p'-DDE	290	220	270	260	36.	14	100.	130
p,p'-DDE	170	270	140	190	68.	36	77.	160
dieldrin	280	270	230	260	26.	10	100.	130
o,p'-DDD	330	290	320	310	21.	7	130.	170
endrin	260	450	240	320	120.	38	130.	190
cis-nonachlor	240	260	210	240	25.	10	97.	130
o,p'-DDT	240	300	240	260	35.	13	100.	110
p,p'-DDD	380	250	370	330	72.	22	130.	170
p,p'-DDT	160	180	210	180	25.	14	73.	100
mirex	130	140	140	140	5.8	4	56.	88
p,p'-methoxychlor	310	320	210	280	61.	22	110.	120

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[3] *Values have been background corrected using means of Day 16 Control SPMDs (Table 14).*

[4] *Values have not been corrected for SPMD spike recovery.*

[5] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 62A. Day 16 Concentration Factors and SPMD Sampling Rates in 10 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,6]		
	Concentration Factor SPMD/Water	SPMD-Rs [4] L/Day	SPMD-Rs [5] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [4] L/Day	SPMD-Rs [5] L/Day
HCB	21,000	7.2	1.3	26,000	8.8	1.6
pentachloranisole	18,000	6.0	1.1	30,000	11.	2.0
alpha-BHC	3,800	1.2	0.22	8,100	2.6	0.48
lindane	1,700	0.58	0.11	2,900	1.0	0.18
beta-BHC	640	0.22	0.040	1,000	0.35	0.064
heptachlor	20,000	6.9	1.3	27,000	9.3	1.7
aldrin [1]	-------	-------	-------	-------	-------	-------
dacthal	3,400	1.2	0.22	3,700	1.3	0.24
oxychlordane	19,000	6.3	1.2	22,000	7.6	1.4
heptachlor epoxide	6,500	2.2	0.40	14,000	4.9	0.90
trans-chlordane	16,000	5.5	1.0	22,000	7.7	1.4
trans-nonachlor	17,000	5.8	1.1	22,000	7.7	1.4
cis-chlordane	14,000	4.8	0.88	20,000	7.1	1.3
o,p'-DDE	20,000	7.3	1.3	27,000	9.7	1.8
p,p'-DDE	13,000	4.4	0.81	27,000	9.0	1.6
dieldrin	11,000	3.9	0.71	14,000	5.0	0.92
o,p'-DDD	15,000	5.0	0.92	20,000	6.4	1.2
endrin	13,000	4.4	0.81	19,000	6.3	1.2
cis-nonachlor	13,000	4.3	0.79	17,000	5.6	1.0
o,p'-DDT	15,000	5.4	0.99	17,000	6.0	1.1
p,p'-DDD	15,000	5.4	0.99	20,000	7.0	1.3
p,p'-DDT	12,000	3.9	0.71	16,000	5.1	0.93
mirex	16,000	5.7	1.0	26,000	8.9	1.6
p,p'-methoxychlor	8,500	3.0	0.55	9,200	3.2	0.59

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *SPMD sampling rate normalized to 1 g triolein.*
[5] *SPMD sampling rate normalized to 1 g SPMD.*
[6] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 63. Day 2, OC Concentrations in 100 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B	Rep C	Mean	SD	CV	Uncorrected [4] Mean	Corrected [5] Mean
HCB	270	260	220	250	26.	10	100	120
pentachloranisole	450	410	380	410	35.	9	170	300
alpha-BHC	190	170	200	190	15.	8	77	160
lindane	120	100	130	120	15.	13	48	84
beta-BHC	110	100	120	110	10.	9	44	70
heptachlor	270	210	230	240	31.	13	97	130
aldrin [1]	-----	-----	-----	-----	-----	-----	-----	-----
dacthal	310	300	310	310	5.8	2	130	140
oxychlordane	420	380	370	390	26.	7	160	190
heptachlor epoxide	240	290	280	270	26.	10	110	240
trans-chlordane	380	330	330	350	29.	8	140	200
trans-nonachlor	350	300	300	320	29.	9	130	170
cis-chlordane	410	380	370	390	21.	5	160	240
o,p'-DDE	410	360	360	380	29.	8	150	200
p,p'-DDE	210	180	180	190	17.	9	77	160
dieldrin	430	430	420	430	5.8	1	170	220
o,p'-DDD	470	520	440	480	40.	8	190	240
endrin	470	460	460	460	5.8	1	190	270
cis-nonachlor	390	370	370	380	12.	3	150	190
o,p'-DDT	310	230	290	280	42.	15	110	120
p,p'-DDD	540	570	510	540	30.	6	220	290
p,p'-DDT	270	210	270	250	35.	14	100	130
mirex	250	200	200	220	29.	13	89	140
p,p'-methoxychlor	290	280	300	290	10.	3	120	130

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*

[3] *Values have been background corrected using means of Day 2 Control SPMDs (Table 11).*

[4] *Values have not been corrected for SPMD spike recovery.*

[5] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 63A. Day 2 Concentration Factors and SPMD Sampling Rates in 100 ng/L SPMDs

OCs	Uncorrected [2,3]			Corrected [2,6]		
	Concentration Factor SPMD/Water	SPMD-Rs [4] L/Day	SPMD-Rs [5] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [4] L/Day	SPMD-Rs [5] L/Day
HCB	2,500	6.9	1.3	3,000	8.4	1.5
pentachloranisole	2,300	6.2	1.1	4,100	11.	2.0
alpha-BHC	700	1.9	0.35	1,500	4.0	0.73
lindane	480	1.3	0.24	840	2.3	0.42
beta-BHC	370	1.0	0.18	580	1.6	0.29
heptachlor	2,600	7.1	1.3	3,500	9.6	1.8
aldrin [1]	-------	-------	-------	-------	-------	-------
dacthal	1,100	2.8	0.51	1,200	3.1	0.57
oxychlordane	2,400	6.4	1.2	2,800	7.7	1.4
heptachlor epoxide	1,100	3.0	0.55	2,400	6.7	1.2
trans-chlordane	2,000	5.4	0.99	2,800	7.6	1.4
trans-nonachlor	2,100	5.6	1.0	2,700	7.5	1.4
cis-chlordane	2,000	5.3	0.97	3,000	7.8	1.4
o,p'-DDE	2,300	6.5	1.2	3,100	8.7	1.6
p,p'-DDE	1,300	3.5	0.64	2,700	7.1	1.3
dieldrin	1,800	4.9	0.90	2,300	6.3	1.2
o,p'-DDD	2,000	5.4	0.99	2,500	6.9	1.3
endrin	2,000	5.3	0.97	2,800	7.6	1.4
cis-nonachlor	1,700	4.8	0.88	2,200	6.2	1.1
o,p'-DDT	1,600	4.4	0.81	1,700	4.9	0.90
p,p'-DDD	2,300	6.3	1.2	3,100	8.2	1.5
p,p'-DDT	1,400	3.9	0.71	1,900	5.1	0.93
mirex	2,000	5.5	1.0	3,200	8.6	1.6
p,p'-methoxychlor	1,300	3.3	0.60	1,400	3.5	0.64

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *SPMD sampling rate normalized to 1 g triolein.*
[5] *SPMD sampling rate normalized to 1 g SPMD.*
[6] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 64. Day 4, OC Concentrations in 100 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A [4]	Rep B	Rep C	Mean [5]	SD	CV	Uncorrected [5,6] Mean	Corrected [5,7] Mean
HCB	-----	290	400	350	-----	—	140	170
pentachloranisole	-----	470	670	570	-----	-----	230	400
alpha-BHC	-----	200	190	200	-----	-----	81	170
lindane	-----	150	150	150	-----	—	60	110
beta-BHC	-----	110	120	120	-----	-----	48	76
heptachlor	-----	350	390	370	-----	—	150	200
aldrin [1]	-----	-----	-----	-----	-----	-----	-----	-----
dacthal	-----	320	360	340	-----	-----	140	160
oxychlordane	-----	510	690	600	-----	-----	240	290
heptachlor epoxide	-----	390	430	410	-----	-----	170	380
trans-chlordane	—	550	600	580	—	—	230	320
trans-nonachlor	-----	520	570	550	-----	-----	220	290
cis-chlordane	-----	590	670	630	-----	-----	250	370
o,p'-DDE	-----	460	660	560	-----	-----	230	310
p,p'-DDE	-----	420	330	380	-----	—	150	310
dieldrin	-----	660	670	670	-----	-----	270	350
o,p'-DDD	-----	670	850	760	-----	—	310	400
endrin	-----	1,300	720	1,000	-----	-----	400	570
cis-nonachlor	-----	630	650	640	-----	-----	260	340
o,p'-DDT	-----	520	520	520	-----	-----	210	230
p,p'-DDD	-----	700	870	790	-----	-----	320	420
p,p'-DDT	-----	450	480	470	—	—	190	250
mirex	-----	280	350	320	-----	-----	130	200
p,p'-methoxychlor	-----	510	480	500	-----	-----	200	210

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*
[3] *Values have been background corrected using means of Day 4 Control SPMDs (Table 12).*
[4] *Sample lost during analysis.*
[5] *Values based on n=2.*
[6] *Values have not been corrected for SPMD spike recovery.*
[7] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 64A. Day 4 Concentration Factors and SPMD Sampling Rates in 100 ng/L SPMDs

OCs	Uncorrected [2,3,4]			Corrected [2,4,7]		
	Concentration Factor SPMD/Water	SPMD-Rs [5] L/Day	SPMD-Rs [6] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [5] L/Day	SPMD-Rs [6] L/Day
HCB	3,500	4.8	0.88	4,300	5.9	1.1
pentachloranisole	3,200	4.3	0.79	5,500	7.5	1.4
alpha-BHC	740	1.0	0.18	1,500	2.1	0.38
lindane	600	0.83	0.15	1,100	1.5	0.27
beta-BHC	400	0.55	0.10	630	0.87	0.16
heptachlor	4,100	5.5	1.0	5,400	7.4	1.4
aldrin [1]	-------	-------	-------	-------	-------	———
dacthal	1,200	1.6	0.29	1,300	1.8	0.33
oxychlordane	3,600	4.9	0.90	4,300	5.9	1.1
heptachlor epoxide	1,700	2.3	0.42	3,800	5.1	0.93
trans-chlordane	3,200	4.5	0.82	4,500	6.3	1.2
trans-nonachlor	3,500	4.8	0.88	4,600	6.4	1.2
cis-chlordane	3,100	4.3	0.79	4,600	6.3	1.2
o,p'-DDE	3,600	4.8	0.88	4,800	6.4	1.2
p,p'-DDE	2,500	3.5	0.64	5,300	7.1	1.3
dieldrin	2,800	3.8	0.70	3,600	4.9	0.90
o,p'-DDD	3,200	4.3	0.79	4,100	5.5	1.0
endrin	4,200	5.8	1.1	6,000	8.3	1.5
cis-nonachlor	3,000	4.0	0.73	3,900	5.2	1.0
o,p'-DDT	3,000	4.1	0.75	3,300	4.6	0.84
p,p'-DDD	3,400	4.6	0.84	4,400	6.0	1.1
p,p'-DDT	2,700	3.7	0.68	3,600	4.9	0.90
mirex	3,000	4.0	0.73	4,500	6.3	1.2
p,p'-methoxychlor	2,100	2.9	0.53	2,200	3.1	0.57

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[3] *Values have not been corrected for SPMD spike recovery.*

[4] *Value based on n=2.*

[5] *SPMD sampling rate normalized to 1 g triolein.*

[6] *SPMD sampling rate normalized to 1 g SPMD.*

[7] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 65. Day 8, OC Concentrations in 100 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B [4]	Rep C [4]	Mean [5]	SD	CV	Uncorrected [5,6] Mean	Corrected [5,7] Mean
HCB	550	-----	-----	-----	-----	-----	220	270
pentachloranisole	880	-----	-----	-----	-----	-----	350	610
alpha-BHC	330	-----	-----	-----	-----	-----	130	280
lindane	190	-----	-----	-----	-----	-----	77	140
beta-BHC	130	-----	-----	-----	-----	-----	52	83
heptachlor	610	-----	-----	-----	-----	-----	250	340
aldrin [1]	-----	-----	-----	-----	-----	-----	-----	-----
dacthal	420	-----	-----	-----	-----	-----	170	190
oxychlordane	970	-----	-----	-----	-----	-----	390	470
heptachlor epoxide	900	-----	-----	-----	-----	-----	360	800
trans-chlordane	990	-----	-----	-----	-----	-----	400	560
trans-nonachlor	960	-----	-----	-----	-----	-----	390	520
cis-chlordane	1,100	-----	-----	-----	-----	-----	440	650
o,p'-DDE	820	-----	-----	-----	-----	-----	330	440
p,p'-DDE	790	-----	-----	-----	-----	-----	320	650
dieldrin	1,100	-----	-----	-----	-----	-----	440	560
o,p'-DDD	1,200	-----	-----	-----	-----	-----	480	620
endrin	2,100	-----	-----	-----	-----	-----	850	1,200
cis-nonachlor	1,100	-----	-----	-----	-----	-----	440	570
o,p'-DDT	840	-----	-----	-----	-----	-----	340	380
p,p'-DDD	1,300	-----	-----	-----	-----	-----	520	680
p,p'-DDT	680	-----	-----	-----	-----	-----	270	360
mirex	570	-----	-----	-----	-----	-----	230	360
p,p'-methoxychlor	700	-----	-----	-----	-----	-----	280	300

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*
[3] *Values have been background corrected using means of Day 8 Control SPMDs (Table 13).*
[4] *Sample lost during analysis.*
[5] *Values based on n=1.*
[6] *Values have not been corrected for SPMD spike recovery.*
[7] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 65A. Day 8 Concentration Factors and SPMD Sampling Rates in 100 ng/L SPMDs

OCs	Uncorrected [2, 3, 4]			Corrected [2, 4, 7]		
	Concentration Factor SPMD/Water	SPMD-Rs [5] L/Day	SPMD-Rs [6] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [5] L/Day	SPMD-Rs [6] L/Day
HCB	5,500	3.8	0.70	6,800	4.6	0.84
pentachloranisole	4,800	3.3	0.60	8,400	5.8	1.1
alpha-BHC	1,200	0.83	0.15	2,500	1.8	0.33
lindane	770	0.52	0.095	1,400	0.91	0.17
beta-BHC	430	0.30	0.055	690	0.48	0.088
heptachlor	6,800	4.5	0.82	9,200	6.1	1.1
aldrin [1]	----	----	----	----	----	----
dacthal	1,400	0.96	0.18	1,600	1.1	0.20
oxychlordane	5,800	4.0	0.73	7,000	4.8	0.88
heptachlor epoxide	3,600	2.5	0.46	8,000	5.6	1.0
trans-chlordane	5,600	3.8	0.70	7,900	5.4	0.99
trans-nonachlor	6,200	4.2	0.77	8,300	5.6	1.0
cis-chlordane	5,400	3.7	0.68	8,000	5.4	0.99
o,p'-DDE	5,200	3.5	0.64	6,900	4.7	0.86
p,p'-DDE	5,400	3.7	0.68	11,000	7.6	1.4
dieldrin	4,500	3.1	0.57	5,800	4.0	0.73
o,p'-DDD	4,900	3.4	0.62	6,400	4.4	0.81
endrin	8,900	6.1	1.1	13,000	8.7	1.6
cis-nonachlor	5,000	3.4	0.62	6,500	4.4	0.81
o,p'-DDT	4,900	3.3	0.60	5,400	3.7	0.68
p,p'-DDD	5,500	3.8	0.70	7,200	4.9	0.90
p,p'-DDT	3,900	2.7	0.49	5,100	3.6	0.66
mirex	5,200	3.6	0.66	8,200	5.6	1.0
p,p'-methoxychlor	2,900	2.0	0.37	3,100	2.1	0.38

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value based on n=1.*
[5] *SPMD sampling rate normalized to 1 g triolein.*
[6] *SPMD sampling rate normalized to 1 g SPMD.*
[7] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 66. Day 16, OC Concentrations in 100 ng/L SPMDs

OCs	ng / SPMD [2,3]						ng / g	
	Rep A	Rep B [4]	Rep C [4]	Mean [5]	SD	CV	Uncorrected [5,6] Mean	Corrected [5,7] Mean
HCB	1,500	—	—	—	—	—	600	730
pentachloranisole	2,400	—	—	—	—	—	970	1,700
alpha-BHC	460	—	—	—	—	—	190	400
lindane	310	—	—	—	—	—	130	230
beta-BHC	300	—	—	—	—	—	120	190
heptachlor	1,200	—	—	—	—	—	480	650
aldrin [1]	—	—	—	—	—	—	—	—
dacthal	1,000	—	—	—	—	—	400	440
oxychlordane	2,300	—	—	—	—	—	930	1,100
heptachlor epoxide	1,800	—	—	—	—	—	730	1,600
trans-chlordane	2,200	—	—	—	—	—	890	1,300
trans-nonachlor	2,000	—	—	—	—	—	810	1,100
cis-chlordane	2,400	—	—	—	—	—	970	1,400
o,p'-DDE	2,300	—	—	—	—	—	930	1,200
p,p'-DDE	1,200	—	—	—	—	—	480	980
dieldrin	2,500	—	—	—	—	—	1,000	1,300
o,p'-DDD	3,700	—	—	—	—	—	1,500	1,900
endrin	2,400	—	—	—	—	—	970	1,400
cis-nonachlor	2,400	—	—	—	—	—	970	1,300
o,p'-DDT	1,500	—	—	—	—	—	600	670
p,p'-DDD	4,000	—	—	—	—	—	1,600	2,100
p,p'-DDT	1,200	—	—	—	—	—	480	630
mirex	1,100	—	—	—	—	—	440	690
p,p'-methoxychlor	1,200	—	—	—	—	—	480	510

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*
[3] *Values have been background corrected using means of Day 16 Control SPMDs (Table 14).*
[4] *Sample lost during analysis.*
[5] *Values based on n=1.*
[6] *Values have not been corrected for SPMD spike recovery.*
[7] *Values have been corrected for SPMD spike recovery (QC Table 35).*

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Table 66A. Day 16 Concentration Factors and SPMD Sampling Rates in 100 ng/L SPMDs

OCs	Uncorrected [2, 3, 4]			Corrected [2, 4, 7]		
	Concentration Factor SPMD/Water	SPMD-Rs [5] L/Day	SPMD-Rs [6] L/Day	Concentration Factor SPMD/Water	SPMD-Rs [5] L/Day	SPMD-Rs [6] L/Day
HCB	15,000	5.2	0.95	18,000	6.3	1.2
pentachloranisole	13,000	4.5	0.82	23,000	7.9	1.4
alpha-BHC	1,700	0.58	0.11	3,600	1.2	0.22
lindane	1,300	0.43	0.079	2,300	0.75	0.14
beta-BHC	1,000	0.34	0.062	1,600	0.54	0.099
heptachlor	13,000	4.5	0.82	18,000	6.1	1.1
aldrin [1]	——	——	——	——	——	——
dacthal	3,300	1.1	0.20	3,700	1.2	0.22
oxychlordane	14,000	4.7	0.86	16,000	5.7	1.0
heptachlor epoxide	7,300	2.5	0.46	16,000	5.6	1.0
trans-chlordane	13,000	4.3	0.79	18,000	6.1	1.1
trans-nonachlor	13,000	4.4	0.81	17,000	5.9	1.1
cis-chlordane	12,000	4.1	0.75	17,000	6.0	1.1
o,p'-DDE	15,000	4.9	0.90	19,000	6.5	1.2
p,p'-DDE	8,100	2.8	0.51	17,000	5.7	1.0
dieldrin	10,000	3.5	0.64	13,000	4.5	0.82
o,p'-DDD	15,000	5.2	0.95	20,000	6.7	1.2
endrin	10,000	3.5	0.64	15,000	5.0	0.92
cis-nonachlor	11,000	3.8	0.70	15,000	4.9	0.90
o,p'-DDT	8,600	2.9	0.53	9,600	3.2	0.59
p,p'-DDD	17,000	5.8	1.1	22,000	7.5	1.4
p,p'-DDT	6,900	2.4	0.44	9,000	3.2	0.59
mirex	10,000	3.4	0.62	16,000	5.3	0.97
p,p'-methoxychlor	5,000	1.7	0.31	5,300	1.8	0.33

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Values have not been corrected for SPMD spike recovery.*
[4] *Value based on n=1.*
[5] *SPMD sampling rate normalized to 1 g triolein.*
[6] *SPMD sampling rate normalized to 1 g SPMD.*
[7] *Values have been corrected for SPMD spike recovery (QC Table 35).*

Table 67. SPMD sampling rates (R_s) for organochlorine pesticides (100 ng/L nominal water concentration, for 16 days at 26 °C)

OCs	Log K_{ow}[a]	SPMD/water Concentration factor[b]	R_s(L/d)
HCB	6.2	18,000	1.2
pentachlonanisole	>5.1	23,000	1.4
α-BHC	3.8	3,600	0.22
β-BHC	3.8	1,600	0.099
lindane	3.9	2,300	0.14
dacthal	-	3,700	0.22
heptachlor	4.4	18,000	1.1
heptachlor epoxide	2.6	16,000	1.0
oxychlordane	-	16,000	1.0
trans-chlordane	4.1	18,000	1.1
cis-chlordane	4.1	17,000	1.1
trans-nonachlor	5.6	17,000	1.1
cis-nonachlor	-	15,000	0.90
o,p'-DDT	-	9,600	0.59
o,p'-DDD	-	20,000	1.2
o,p'-DDE	-	19,000	1.2
p,p'-DDT	5.7	9,000	0.59
p,p'-DDD	6.1	22,000	1.4
p,p'-DDE	6.0	17,000	1.0
dieldrin	3.5	13,000	0.82
endrin	5.5	15,000	0.92
mirex	-	16,000	0.97
methoxychlor	4.2	5,300	0.33

[a] Values from various literature sources.
[b] Concentration factor in whole device, i.e., lipid plus membrane
[c] Normalized to 1 g of SPMD (lipid plus membrane)

Table 68. Mean (days 2-16) R_s values (normalized to 1 g triolein) for individual analytes at each exposure temperature (10 ng/L). Values in parenthesis are CV (%).

OCs	10 °C	18 °C	26 °C
HCB	3.6 (13)	4.0 (15)	11 (13)
PCA	4.1 (12)	3.8 (15)	13 (9)
α-BHC	-	0.96 (55)	3.3 (30)
lindane	0.63 (43)	0.79 (52)	1.9 (72)
β-BHC	0.53 (54)	2.9 (6)	1.1 (72)
heptachlor	4.6 (15)	0.26 (47)	12 (14)
dacthal	0.72 (28)	1.3 (51)	1.9 (29)
oxychlordane	2.9 (22)	2.2 (17)	9.8 (18)
heptachlor epoxide	1.5 (37)	1.9 (20)	5.5 (23)
trans-chlordane	3.0 (17)	2.4 (14)	10 (24)
trans-nonachlor	3.2 (17)	2.2 (14)	11 (28)
cis-chlordane	3.1 (11)	2.3 (15)	9.3 (26)
o,p'-DDE	3.0 (20)	3.2 (20)	12 (17)
p,p'-DDE	3.0 (10)	3.3 (29)	13 (39)
dieldrin	1.8 (20)	2.9 (24)	6.7 (22)
o,p'-DDD	2.5 (38)	2.9 (19)	7.1 (29)
endrin	2.2 (18)	3.8 (27)	9.7 (35)
cis-nonachlor	2.7 (11)	2.5 (15)	8.0 (27)
o,p'-DDT	2.9 (15)	3.4 (7)	7.3 (22)
p,p'-DDD	2.5 (37)	4.3 (21)	7.5(7)
p,p'-DDT	3.5 (10)	4.5 (22)	6.6 (22)
mirex	3.9 (9)	3.2 (43)	10 (25)
p,p'-methoxychlor	3.8 (63)	4.1 26)	4.7 (22)

Table 69. Mean (days 2-16) R_s values (normalized to 1 g triolein) for individual analytes at each exposure temperature (100 ng/L). Values in parenthesis are CV (%).

OCs	10 °C	18 °C	26 °C
HCB	2.1 (9)	3.0 (22)	6.3 (22)
PCA	2.9 (6)	2.8 (23)	8.0 (23)
α-BHC	0.54 (45)	0.78 (51)	2.3 (45)
lindane	0.35 (63)	0.61 (52)	1.4 (43)
β-BHC	-	4.2 (22)	0.87 (51)
heptachlor	2.7 (12)	0.29 (33)	7.3 (20)
dacthal	0.57 (44)	1.6 (52)	1.8 (44)
oxychlordane	2.4 (5)	2.0 (18)	6.0 (18)
heptachlor epoxide	1.3 (9)	1.6 (20)	5.8 (10)
trans-chlordane	2.5 (6)	2.2 (19)	6.4 (12)
trans-nonachlor	2.7 (5)	2.1 (17)	6.4 (11)
cis-chlrodane	2.6 (6)	1.9 (21)	6.4 (14)
o,p'-DDE	2.5 (2)	2.8 (25)	6.6 (22)
p,p'-DDE	2.7 (17)	3.4 (39)	6.9 (10)
dieldrin	1.4 (7)	3.1 (24)	4.9 (17)
o,p'-DDD	2.6 (3)	2.6 (24)	5.9 (17)
endrin	2.2 (19)	3.4 (24)	7.4 (19)
cis-nonachlor	2.2 (4)	2.3 (25)	5.2 (13)
o,p'-DDT	2.0 (13)	3.9 (2)	4.1 (17)
p,p'-DDD	2.4 (4)	2.9 (30)	6.7 (19)
p,p'-DDT	2.4 (11)	4.3 (32)	4.2 (19)
mirex	3.0 (5)	3.2 (45)	6.5 (20)
p,p'-methoxychlor	1.4 21)	5.8 (40)	2.6 (27)

QUALITY CONTROL TABLES

10 °C AND 26 °C OC DILUTER STUDY

QC Table 1. Standard Deviations of Lowest Concentration GC Calibration Standards

OCs	ng / Sample							
	Rep A	Rep B	Rep C	Rep D	Rep E	Mean	SD	CV
HCB	2.6	2.6	2.6	2.5	2.5	2.6	0.055	2.1
pentachloranisole	2.7	2.7	2.7	2.6	2.6	2.7	0.055	2.0
alpha-BHC	2.6	2.6	2.5	2.6	2.6	2.6	0.045	1.7
lindane	2.7	2.7	2.5	2.7	2.8	2.7	0.11	4.1
beta-BHC	6.0	6.0	5.2	5.7	5.9	5.8	0.34	5.9
heptachlor	2.6	2.7	2.2	2.5	2.7	2.5	0.21	8.4
aldrin [1]	-----	-----	-----	-----	-----	-----	-------	-----
dacthal	6.0	6.1	5.7	5.8	5.7	5.9	0.18	3.1
oxychlordane	2.8	2.9	2.5	2.7	2.8	2.7	0.15	5.6
heptachlor epoxide	2.7	2.7	2.5	2.5	2.7	2.6	0.11	4.2
trans-chlordane	2.6	2.7	2.5	2.5	2.5	2.6	0.089	3.4
trans-nonachlor	2.7	2.8	2.5	2.5	2.6	2.6	0.13	5.0
cis-chlordane	2.6	2.7	2.6	2.5	2.6	2.6	0.071	2.7
o,p'-DDE	5.4	5.5	5.3	5.3	5.2	5.3	0.11	2.1
p,p'-DDE	5.8	5.9	5.5	5.6	5.6	5.7	0.16	2.8
dieldrin	5.3	5.5	5.0	5.2	5.3	5.3	0.18	3.4
o,p'-DDD	6.4	6.5	5.4	5.9	6.1	6.1	0.44	7.2
endrin	11.	12.	11.	12.	11.	11.	0.55	5.0
cis-nonachlor	5.4	5.6	4.9	5.1	5.3	5.3	0.27	5.1
o,p'-DDT	5.4	5.4	5.3	5.9	6.3	5.7	0.43	7.5
p,p'-DDD	14.	14.	11.	12.	13.	13.	1.3	10.
p,p'-DDT	9.7	9.5	11.	12.	13.	11.	1.5	14.
mirex	11.	11.	9.6	9.8	10.	10.	0.67	6.7
p,p'-methoxychlor	11.	11.	11.	14.	15.	12.	1.9	16.

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

10 °C AND 26 °C OC DILUTER STUDY

QC Table 2. Estimated Instrumental Background

OCs	Rep A Area	Rep A ng	Min area	Min ng	SD[2]
HCB	57,000	2.6	1,000	0.046	0.0010
pentachloranisole	65,000	2.7	1,000	0.042	0.00084
alpha-BHC	21,000	2.6	1,000	0.12	0.0020
lindane	24,000	2.7	1,000	0.11	0.0045
beta-BHC	36,000	6.0	1,000	0.17	0.010
heptachlor	32,000	2.6	1,000	0.081	0.0068
aldrin [1]	---------	-----	-------	--------	---------
dacthal	61,000	6.0	1,000	0.098	0.0030
oxychlordane	33,000	2.8	1,000	0.085	0.0048
heptachlor epoxide	28,000	2.7	1,000	0.096	0.0040
trans-chlordane	34,000	2.6	1,000	0.076	0.0026
trans-nonachlor	35,000	2.7	1,000	0.077	0.0039
cis-chlordane	34,000	2.6	1,000	0.076	0.0021
o,p'-DDE	39,000	5.4	1,000	0.14	0.0029
p,p'-DDE	91,000	5.8	1,000	0.064	0.0018
dieldrin	55,000	5.3	1,000	0.096	0.0033
o,p'-DDD	35,000	6.4	1,000	0.18	0.013
endrin	93,000	11.	1,000	0.12	0.0060
cis-nonachlor	73,000	5.4	1,000	0.074	0.0038
o,p'-DDT	29,000	5.4	1,000	0.19	0.014
p,p'-DDD	64,000	14.	1,000	0.22	0.022
p,p'-DDT	50,000	9.7	1,000	0.19	0.027
mirex	150,000	11.	1,000	0.073	0.0049
p,p'-methoxychlor	31,000	11.	1,000	0.35	0.056

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *Estimates of standard deviations were derived by multiplying the CVs (expressed as decimal equivalents) in QC Table 1 by the ng in this table.*

18 °C OC DILUTER STUDY

QC Table 3. Standard Deviations of Lowest Concentration GC Calibration Standards

OCs	ng / Sample							
	Rep A	Rep B	Rep C	Rep D	Rep E	Mean	SD	CV
HCB	1.2	1.2	1.2	1.3	1.3	1.2	0.017	1.4
pentachloranisole	1.2	1.2	1.2	1.3	1.3	1.2	0.018	1.5
alpha-BHC	1.2	1.3	1.2	1.2	1.2	1.2	0.030	2.5
lindane	1.3	1.3	1.3	1.3	1.3	1.3	0.0084	0.65
beta-BHC	2.4	2.4	2.5	2.5	2.5	2.5	0.037	1.5
heptachlor	1.2	1.2	1.2	1.2	1.2	1.2	0.017	1.4
aldrin	1.2	1.2	1.2	1.3	1.3	1.2	0.019	1.6
dacthal	2.4	2.5	2.5	2.6	2.5	2.5	0.052	2.1
oxychlordane	1.1	1.1	1.2	1.2	1.2	1.2	0.064	5.3
heptachlor epoxide	1.1	1.2	1.2	1.3	1.2	1.2	0.042	3.5
trans-chlordane	1.2	1.2	1.3	1.3	1.3	1.2	0.043	3.6
trans-nonachlor	1.2	1.2	1.2	1.3	1.2	1.2	0.033	2.8
cis-chlordane	1.2	1.2	1.2	1.3	1.3	1.2	0.020	1.7
o,p'-DDE	2.4	2.4	2.5	2.5	2.5	2.5	0.039	1.6
p,p'-DDE	4.9	4.9	5.0	4.9	5.0	4.9	0.063	1.3
dieldrin	2.3	2.5	2.4	2.5	2.5	2.4	0.084	3.5
o,p'-DDD	2.3	2.4	2.4	2.5	2.5	2.4	0.064	2.7
endrin	4.8	4.9	4.9	5.0	5.0	4.9	0.081	1.7
cis-nonachlor	2.4	2.4	2.5	2.5	2.5	2.5	0.043	1.7
o,p'-DDT	2.3	2.4	2.4	2.5	2.5	2.4	0.075	3.1
p,p'-DDD	4.7	4.8	4.9	4.9	5.0	4.9	0.12	2.4
p,p'-DDT	4.7	4.8	4.9	5.0	5.0	4.9	0.120	2.4
mirex	4.8	4.8	4.9	5.0	5.0	4.9	0.092	1.9
p,p'-methoxychlor	5.7	5.8	6.0	6.2	6.3	6.0	0.254	4.2

18 °C OC DILUTER STUDY

QC Table 4. Estimated Instrumental Background

OCs	#1 Area	#1 ng	Min area	Min ng	SD [1]
HCB	29,000	1.2	1,000	0.042	0.00059
pentachloranisole	33,000	1.2	1,000	0.037	0.00056
alpha-BHC	12,000	1.2	1,000	0.098	0.0025
lindane	14,000	1.3	1,000	0.089	0.00058
beta-BHC	33,000	2.4	1,000	0.073	0.0011
heptachlor	19,000	1.2	1,000	0.065	0.00091
aldrin	32,000	1.2	1,000	0.038	0.00061
dacthal	26,000	2.4	1,000	0.094	0.0020
oxychlordane	18,000	1.1	1,000	0.062	0.0033
heptachlor epoxide	16,000	1.1	1,000	0.071	0.0025
trans-chlordane	17,000	1.2	1,000	0.071	0.0026
trans-nonachlor	19,000	1.2	1,000	0.062	0.0017
cis-chlordane	19,000	1.2	1,000	0.064	0.0011
o,p'-DDE	20,000	2.4	1,000	0.12	0.0019
p,p'-DDE	48,000	4.9	1,000	0.10	0.0013
dieldrin	27,000	2.3	1,000	0.086	0.0030
o,p'-DDD	19,000	2.3	1,000	0.12	0.0032
endrin	48,000	4.8	1,000	0.10	0.0017
cis-nonachlor	39,000	2.4	1,000	0.062	0.0011
o,p'-DDT	21,000	2.3	1,000	0.11	0.0034
p,p'-DDD	36,000	4.7	1,000	0.13	0.0031
p,p'-DDT	44,000	4.7	1,000	0.11	0.0026
mirex	77,000	4.8	1,000	0.062	0.0012
p,p'-methoxychlor	21,000	5.7	1,000	0.27	0.011

[1] *Estimates of standard deviations were derived by multiplying the CVs (expressed as decimal equivalents) in QC Table 3 by the ng in this table.*

10 °C OC DILUTER STUDY

QC Table 5. Day 2 OC Background in Control Exposure SPMDs

OCs	ng / SPMD [2]						ng / g
	Rep A	Rep B	Rep C	Mean	SD	CV	Mean
HCB	10.	0.70	12.	7.6	6.0	79	3.1
pentachloranisole	2.5	1.3	2.8	2.2	0.79	36	0.89
alpha-BHC	6.9	3.8	6.8	5.8	1.8	30	2.3
lindane	0.11 [3]	0.11 [3]	0.11 [3]	0.11 [3]	0.0045 [4]	4	0.044 [3]
beta-BHC	0.17 [3]	0.17 [3]	0.17 [3]	0.17 [3]	0.010 [4]	6	0.069 [3]
heptachlor	0.081 [3]	0.67	1.1	0.62	0.51	82	0.25
aldrin [1]	------	------	--------	--------	--------	----	--------
dacthal	0.098 [3]	0.098 [3]	0.098 [3]	0.098 [3]	0.0030 [4]	3	0.040 [3]
oxychlordane	0.085 [3]	0.60	0.91	0.53	0.42	79	0.21
heptachlor epoxide	0.096 [3]	0.096 [3]	0.096 [3]	0.096 [3]	0.0040 [4]	4	0.039 [3]
trans-chlordane	2.2	2.1	1.4	1.9	0.44	23	0.77
trans-nonachlor	1.7	1.4	0.63	1.2	0.55	46	0.48
cis-chlordane	1.3	0.74	0.076 [3]	0.71	0.61	86	0.29
o,p'-DDE	0.14 [3]	0.62	0.14 [3]	0.30	0.28	93	0.12
p,p'-DDE	1.9	2.2	1.3	1.8	0.46	26	0.73
dieldrin	0.096 [3]	0.096 [3]	0.096 [3]	0.096 [3]	0.0033 [4]	3	0.039 [3]
o,p'-DDD	0.18 [3]	0.18 [3]	0.18 [3]	0.18 [3]	0.013 [4]	7	0.073 [3]
endrin	1.7	2.3	1.9	2.0	0.31	16	0.81
cis-nonachlor	0.99	0.88	1.0	1.0	0.067	7	0.40
o,p'-DDT	0.19 [3]	0.94	1.5	0.88	0.66	75	0.35
p,p'-DDD	0.22 [3]	0.22 [3]	0.22 [3]	0.22 [3]	0.022 [4]	10	0.089 [3]
p,p'-DDT	0.19 [3]	0.19 [3]	0.19 [3]	0.19 [3]	0.027 [4]	14	0.077 [3]
mirex	2.6	1.4	2.8	2.3	0.76	33	0.93
p,p'-methoxychlor	0.35 [3]	5.3	2.9	2.9	2.5	86	1.2

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[3] *Average instrumental background. See QC Table 2.*

[4] *Standard deviations were selected from QC Table 2.*

10 °C OC DILUTER STUDY

QC Table 6. Day 4 OC Background in Control Exposure SPMDs

OCs	ng / SPMD [2]						ng / g
	Rep A	Rep B	Rep C	Mean	SD	CV	Mean
HCB	14.	11.	13.	13.	1.5	12	5.2
pentachloranisole	3.4	2.1	2.0	2.5	0.78	31	1.0
alpha-BHC	1.6	4.2	4.6	3.5	1.6	46	1.4
lindane	0.11 [3]	0.63	0.11 [3]	0.28	0.30	110	0.11
beta-BHC	1.1	0.17 [3]	0.17 [3]	0.48	0.54	110	0.19
heptachlor	1.6	1.7	0.081 [3]	1.1	0.91	80	0.44
aldrin [1]	--------	--------	--------	--------	--------	--------	--------
dacthal	0.70	2.3	1.6	1.5	0.80	53	0.60
oxychlordane	1.1	3.7	2.6	2.5	1.3	52	1.0
heptachlor epoxide	0.096 [3]	0.096 [3]	0.096 [3]	0.096 [3]	0.0040 [4]	4	0.039 [3]
trans-chlordane	3.3	2.8	2.7	2.9	0.32	11	1.2
trans-nonachlor	2.6	2.2	2.3	2.4	0.21	9	0.97
cis-chlordane	1.4	2.2	1.2	1.6	0.53	33	0.65
o,p'-DDE	3.4	2.4	0.14 [3]	2.0	1.7	85	0.81
p,p'-DDE	2.7	2.1	5.2	3.3	1.6	48	1.3
dieldrin	0.82	1.1	0.096 [3]	0.67	0.52	78	0.27
o,p'-DDD	0.18 [3]	0.18 [3]	0.18 [3]	0.18 [3]	0.013 [4]	7	0.073 [3]
endrin	3.4	1.3	2.8	2.5	1.1	44	1.0
cis-nonachlor	1.2	2.3	1.6	1.7	0.56	33	0.69
o,p'-DDT	0.19 [3]	1.8	0.19 [3]	0.73	0.93	130	0.29
p,p'-DDD	0.22 [3]	0.22 [3]	0.22 [3]	0.22 [3]	0.022 [4]	10	0.089 [3]
p,p'-DDT	0.19 [3]	0.19 [3]	0.19 [3]	0.19 [3]	0.027 [4]	14	0.077 [3]
mirex	4.6	2.7	2.1	3.1	1.3	42	1.3
p,p'-methoxychlor	26.	2.4	6.8	12.	13.	110	4.8

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[3] *Average instrumental background. See QC Table 2.*

[4] *Standard deviations were selected from QC Table 2.*

10 °C OC DILUTER STUDY

QC Table 7. Day 8 OC Background in Control Exposure SPMDs

OCs	ng / SPMD [2]						ng / g
	Rep A	Rep B	Rep C	Mean	SD	CV	Mean
HCB	20.	19.	22.	20.	1.5	8	8.1
pentachloranisole	8.6	5.8	7.7	7.4	1.4	19	3.0
alpha-BHC	11.	9.6	16.	12.	3.4	28	4.8
lindane	0.11 [3]	0.11 [3]	0.11 [3]	0.11 [3]	0.0045 [4]	4	0.044 [3]
beta-BHC	0.17 [3]	0.17 [3]	0.17 [3]	0.17 [3]	0.010 [4]	6	0.069 [3]
heptachlor	3.7	2.9	2.0	2.9	0.85	29	1.2
aldrin [1]	--------	--------	--------	--------	--------	--------	--------
dacthal	0.098 [3]	0.098 [3]	0.098 [3]	0.098 [3]	0.0030 [4]	3	0.040 [3]
oxychlordane	4.4	3.7	2.8	3.6	0.80	22	1.5
heptachlor epoxide	0.096 [3]	0.096 [3]	0.096 [3]	0.096 [3]	0.0040 [4]	4	0.039 [3]
trans-chlordane	7.4	2.9	5.0	5.1	2.3	45	2.1
trans-nonachlor	6.4	2.1	4.0	4.2	2.2	52	1.7
cis-chlordane	4.6	0.076 [3]	2.9	2.5	2.3	92	1.0
o,p'-DDE	8.1	0.14 [3]	4.5	4.2	4.0	95	1.7
p,p'-DDE	5.2	1.9	3.2	3.4	1.7	50	1.4
dieldrin	1.9	0.096 [3]	0.096 [3]	0.70	1.0	140	0.28
o,p'-DDD	0.18 [3]	3.9	0.18 [3]	1.4	2.1	150	0.56
endrin	2.8	0.12 [3]	2.0	1.6	1.4	88	0.65
cis-nonachlor	2.7	2.1	1.8	2.2	0.46	21	0.89
o,p'-DDT	5.1	4.5	2.9	4.2	1.1	26	1.7
p,p'-DDD	0.22 [3]	0.22 [3]	0.22 [3]	0.22 [3]	0.022 [4]	10	0.089 [3]
p,p'-DDT	1.4	0.19 [3]	0.19 [3]	0.59	0.70	120	0.24
mirex	7.4	6.6	5.5	6.5	0.95	15	2.6
p,p'-methoxychlor	5.9	0.35 [3]	0.35 [3]	2.2	3.2	150	0.89

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[3] *Average instrumental background. See QC Table 2.*

[4] *Standard deviations were selected from QC Table 2.*

10 °C OC DILUTER STUDY

QC Table 8. Day 16 OC Background in Control Exposure SPMDs

OCs	ng / SPMD [2]						ng / g
	Rep A	Rep B	Rep C	Mean	SD	CV	Mean
HCB	16.	14.	33.	21.	10.	48	8.5
pentachloranisole	7.2	5.1	13.	8.4	4.1	49	3.4
alpha-BHC	3.0	5.5	11.	6.5	4.1	63	2.6
lindane	0.11 [3]	0.11 [3]	2.1	0.77	1.1	140	0.31
beta-BHC	0.17 [3]	0.17 [3]	0.17 [3]	0.17 [3]	0.010 [4]	6	0.069 [3]
heptachlor	7.4	3.7	8.6	6.6	0.0068	0	2.7
aldrin [1]	——	--------	--------	——	———	——	--------
dacthal	4.7	0.098 [3]	0.098 [3]	1.6	2.7	170	0.65
oxychlordane	17.	4.7	12.	11.	6.2	56	4.4
heptachlor epoxide	2.3	0.096 [3]	0.096 [3]	0.83	1.3	160	0.33
trans-chlordane	9.9	4.6	12.	8.8	3.8	43	3.5
trans-nonachlor	8.9	3.6	11.	7.8	3.8	49	3.1
cis-chlordane	6.8	2.7	7.8	5.8	2.7	47	2.3
o,p'-DDE	11.	4.1	13.	9.4	4.7	50	3.8
p,p'-DDE	6.5	2.8	8.2	5.8	2.8	48	2.3
dieldrin	3.2	0.096 [3]	1.2	1.5	1.6	110	0.60
o,p'-DDD	0.18 [3]	5.0	7.7	4.3	3.8	88	1.7
endrin	0.12 [3]	1.4	2.8	1.4	1.3	93	0.56
cis-nonachlor	3.0	2.6	5.8	3.8	1.7	45	1.5
o,p'-DDT	6.9	5.2	14.	8.7	4.7	54	3.5
p,p'-DDD	0.22 [3]	0.22 [3]	0.22 [3]	0.22 [3]	0.022 [4]	10	0.089 [3]
p,p'-DDT	5.0	2.9	4.6	4.2	1.1	26	1.7
mirex	12.	8.8	21.	14.	6.3	45	5.6
p,p'-methoxychlor	0.27 [3]	29.	4.8	11.	15.	140	4.4

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[3] *Average instrumental background. See QC Table 2.*

[4] *Standard deviations were selected from QC Table 2.*

18 °C OC DILUTER STUDY

QC Table 9. Day 2 OC Background in Control Exposure SPMDs

OCs	ng / SPMD [1]						ng / g
	Rep A	Rep B	Rep C	Mean	SD	CV	Mean
HCB	2.2	1.7	2.1	2.0	0.26	13	0.81
pentachloranisole	2.0	1.7	1.9	1.9	0.15	8	0.77
alpha-BHC	0.098 [2]	0.80	0.098 [2]	0.33	0.41	120	0.13
lindane	1.7	0.65	0.30	0.88	0.73	83	0.35
beta-BHC	23.	15.	15.	18.	5.0	28	7.3
heptachlor	0.065 [2]	0.065 [2]	0.065 [2]	0.065 [2]	0.00091 [3]	1	0.026 [2]
aldrin	1.6	0.95	1.5	1.4	0.35	25	0.56
dacthal	2.2	1.3	1.2	1.6	0.55	34	0.65
oxychlordane	2.5	1.7	1.8	2.0	0.44	22	0.81
heptachlor epoxide	1.4	1.0	0.85	1.1	0.28	25	0.44
trans-chlordane	2.6	1.8	2.1	2.2	0.40	18	0.89
trans-nonachlor	2.3	1.6	2.1	2.0	0.36	18	0.81
cis-chlordane	2.5	2.2	2.1	2.3	0.21	9	0.93
o,p'-DDE	4.6	3.4	3.6	3.9	0.64	16	1.6
p,p'-DDE	5.0	2.5	3.3	3.6	1.3	36	1.5
dieldrin	2.8	1.4	1.7	2.0	0.74	37	0.81
o,p'-DDD	2.1	0.80	1.2	1.4	0.67	48	0.56
endrin	6.3	5.6	5.4	5.8	0.47	8	2.3
cis-nonachlor	3.2	3.1	2.6	3.0	0.32	11	1.2
o,p'-DDT	3.0	2.7	2.9	2.9	0.15	5	1.2
p,p'-DDD	2.0	0.13 [2]	0.13 [2]	0.75	1.1	150	0.30
p,p'-DDT	7.4	5.6	5.5	6.2	1.1	18	2.5
mirex	4.5	2.4	3.8	3.6	1.1	31	1.5
p,p'-methoxychlor	6.4	5.6	4.9	5.6	0.75	13	2.3

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*

[2] *Average instrumental background. See QC Table 4.*

[3] *Standard deviations were selected from QC Table 4.*

18 °C OC DILUTER STUDY

QC Table 10. Day 4 OC Background in Control Exposure SPMDs

OCs	ng / SPMD [1]						ng / g
	Rep A	Rep B	Rep C	Mean	SD	CV	Mean
HCB	3.3	3.2	4.5	3.7	0.72	19	1.5
pentachloranisole	3.0	2.8	3.4	3.1	0.31	10	1.3
alpha-BHC	1.5	1.3	1.8	1.5	0.25	17	0.60
lindane	0.72	0.58	1.5	0.93	0.50	54	0.38
beta-BHC	20.	15.	20.	18.	2.9	16	7.3
heptachlor	0.93	0.065 [2]	0.065 [2]	0.35	0.50	140	0.14
aldrin	2.6	2.5	2.7	2.6	0.10	4	1.0
dacthal	1.1	0.53	0.094 [2]	0.57	0.50	88	0.23
oxychlordane	3.6	3.5	3.3	3.5	0.15	4	1.4
heptachlor epoxide	1.5	1.3	1.7	1.5	0.20	13	0.60
trans-chlordane	3.1	3.1	3.9	3.4	0.46	14	1.4
trans-nonachlor	3.1	3.1	3.6	3.3	0.29	9	1.3
cis-chlordane	2.4	2.3	2.1	2.3	0.15	7	0.93
o,p'-DDE	5.1	5.0	6.1	5.4	0.61	11	2.2
p,p'-DDE	5.5	5.7	6.2	5.8	0.36	6	2.3
dieldrin	2.4	2.5	2.9	2.6	0.26	10	1.0
o,p'-DDD	1.6	1.7	3.4	2.2	1.0	45	0.89
endrin	5.8	5.7	5.9	5.8	0.10	2	2.3
cis-nonachlor	2.7	2.7	3.5	3.0	0.46	15	1.2
o,p'-DDT	3.1	3.3	4.3	3.6	0.64	18	1.5
p,p'-DDD	1.3	1.3	0.99	1.2	0.18	15	0.48
p,p'-DDT	6.5	6.2	7.2	6.6	0.51	8	2.7
mirex	6.1	6.1	7.3	6.5	0.69	11	2.6
p,p'-methoxychlor	0.27 [2]	4.3	3.3	2.6	2.1	81	1.0

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[2] *Average instrumental background. See QC Table 4.*

18 °C OC DILUTER STUDY

QC Table 11. Day 8 OC Background in Control Exposure SPMDs

OCs	ng / SPMD [1]						ng / g
	Rep A	Rep B	Rep C	Mean	SD	CV	Mean
HCB	2.8	4.9	4.1	3.9	1.1	28	1.6
pentachloranisole	2.6	3.9	3.5	3.3	0.67	20	1.3
alpha-BHC	1.2	1.7	1.4	1.4	0.25	18	0.56
lindane	0.089 [2]	0.61	0.48	0.39	0.27	69	0.16
beta-BHC	13.	19.	14.	15.	3.2	21	6.0
heptachlor	0.065 [2]	0.065 [2]	0.065 [2]	0.065 [2]	0.00091 [3]	----	0.026 [2]
aldrin	2.2	4.2	3.4	3.3	1.0	30	1.3
dacthal	0.38	0.64	0.094 [2]	0.37	0.27	73	0.15
oxychlordane	2.5	4.1	3.9	3.5	0.87	25	1.4
heptachlor epoxide	1.1	1.6	1.6	1.4	0.29	21	0.56
trans-chlordane	2.5	4.6	3.9	3.7	1.1	30	1.5
trans-nonachlor	2.4	4.7	3.9	3.7	1.2	32	1.5
cis-chlordane	1.6	3.3	2.8	2.6	0.87	33	1.0
o,p'-DDE	4.1	7.1	5.8	5.7	1.5	26	2.3
p,p'-DDE	5.0	7.3	6.5	6.3	1.2	19	2.5
dieldrin	1.9	3.1	2.8	2.6	0.62	24	1.0
o,p'-DDD	0.99	2.8	2.5	2.1	0.97	46	0.85
endrin	6.1	6.2	7.1	6.5	0.55	8	2.6
cis-nonachlor	1.1	3.4	2.2	2.2	1.2	55	0.89
o,p'-DDT	2.6	5.4	3.6	3.9	1.4	36	1.6
p,p'-DDD	0.13 [2]	2.0	1.1	1.1	0.94	85	0.44
p,p'-DDT	5.2	7.6	6.4	6.4	1.2	19	2.6
mirex	5.1	8.8	7.6	7.2	1.9	26	2.9
p,p'-methoxychlor	4.0	0.27 [2]	0.27 [2]	1.5	2.2	150	0.60

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*

[2] *Average instrumental background. See QC Table 4.*

[3] *Standard deviations were selected from QC Table 4.*

18 °C OC DILUTER STUDY

QC Table 12. Day 16 OC Background in Control Exposure SPMDs

OCs	ng / SPMD [1]						ng / g
	Rep A	Rep B	Rep C	Mean	SD	CV	Mean
HCB	5.0	8.2	5.0	6.1	1.8	30	2.5
pentachloranisole	6.1	7.9	5.7	6.6	1.2	18	2.7
alpha-BHC	2.9	3.1	2.3	2.8	0.42	15	1.1
lindane	0.73	1.3	0.56	0.86	0.39	45	0.35
beta-BHC	22.	29.	21.	24.	4.4	18	9.7
heptachlor	0.065 [2]	0.065 [2]	0.065 [2]	0.065 [2]	0.00091 [3]	----	0.026 [2]
aldrin	5.8	8.0	5.5	6.4	1.4	22	2.6
dacthal	0.83	0.094 [2]	1.5	0.81	0.70	86	0.33
oxychlordane	8.5	13.	9.0	10.	2.5	25	4.0
heptachlor epoxide	2.5	3.2	2.3	2.7	0.47	17	1.1
trans-chlordane	8.1	13.	7.5	9.5	3.0	32	3.8
trans-nonachlor	8.3	14.	7.7	10.	3.5	35	4.0
cis-chlordane	6.0	8.3	5.2	6.5	1.6	25	2.6
o,p'-DDE	11.	18.	10.	13.	4.4	34	5.2
p,p'-DDE	10.	15.	9.4	11.	3.1	28	4.4
dieldrin	4.0	5.3	4.0	4.4	0.75	17	1.8
o,p'-DDD	4.3	5.4	4.0	4.6	0.74	16	1.9
endrin	8.2	9.7	7.3	8.4	1.2	14	3.4
cis-nonachlor	5.0	4.7	4.8	4.8	0.15	3	1.9
o,p'-DDT	5.9	9.9	6.4	7.4	2.2	30	3.0
p,p'-DDD	3.5	4.5	3.4	3.8	0.61	16	1.5
p,p'-DDT	9.6	14.	9.4	11.	2.6	24	4.4
mirex	12.	18.	12.	14.	3.5	25	5.6
p,p'-methoxychlor	0.27 [2]	4.2	3.7	2.7	2.1	78	1.1

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*

[2] *Average instrumental background. See QC Table 4.*

[3] *Standard deviations were selected from QC Table 4.*

18 °C OC DILUTER STUDY

QC Table 13. Day 28 OC Background in Control Exposure SPMDs

OCs	ng / SPMD [1]						ng / g
	Rep A	Rep B	Rep C	Mean	SD	CV	Mean
HCB	10.	8.1	8.2	8.8	1.1	13	3.5
pentachloranisole	7.6	7.8	8.5	8.0	0.47	6	3.2
alpha-BHC	2.6	3.0	5.7	3.8	1.7	45	1.5
lindane	3.0	0.81	0.089 [2]	1.3	1.5	120	0.52
beta-BHC	27.	25.	35.	29.	5.3	18	12.
heptachlor	0.065 [2]	0.065 [2]	0.065 [2]	0.065 [2]	0.00091 [3]	----	0.026 [2]
aldrin	5.2	8.5	7.1	6.9	1.7	25	2.8
dacthal	1.1	0.87	0.090 [2]	0.69	0.53	77	0.28
oxychlordane	14.	15.	13.	14.	1.0	7	5.6
heptachlor epoxide	3.6	3.6	4.0	3.7	0.23	6	1.5
trans-chlordane	13.	15.	15.	14.	1.2	9	5.6
trans-nonachlor	14.	16.	15.	15.	1.0	7	6.0
cis-chlordane	9.4	11.	10.	10.	0.81	8	4.0
o,p'-DDE	16.	21.	20.	19.	2.6	14	7.7
p,p'-DDE	13.	15.	15.	14.	1.2	9	5.6
dieldrin	5.3	5.2	5.4	5.3	0.10	2	2.1
o,p'-DDD	5.5	5.8	6.6	6.0	0.57	10	2.4
endrin	9.0	11.	10.	10.	1.0	10	4.0
cis-nonachlor	6.5	5.8	7.9	6.7	1.1	16	2.7
o,p'-DDT	9.9	12.	8.9	10.	1.6	16	4.0
p,p'-DDD	4.8	5.2	5.7	5.2	0.45	9	2.1
p,p'-DDT	14.	16.	14.	15.	1.2	8	6.0
mirex	16.	21.	19.	19.	2.5	13	7.7
p,p'-methoxychlor	8.0	5.0	0.27 [2]	4.4	3.9	89	1.8

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*

[2] *Average instrumental background. See QC Table 4.*

26 °C OC DILUTER STUDY

QC Table 14. Day 2 OC Background in Control Exposure SPMDs

OCs	ng / SPMD [2]						ng / g
	Rep A	Rep B	Rep C	Mean	SD	CV	Mean
HCB	9.9	8.4	8.9	9.1	0.76	8	3.7
pentachloranisole	2.0	0.61	1.4	1.3	0.70	54	0.52
alpha-BHC	2.1	1.4	1.6	1.7	0.36	20	0.69
lindane	0.11 [3]	0.11 [3]	0.11 [3]	0.11 [3]	0.0045 [4]	4	0.044 [3]
beta-BHC	0.17 [3]	0.17 [3]	0.17 [3]	0.17 [3]	0.010 [4]	6	0.069 [3]
heptachlor	1.7	2.3	2.2	2.1	0.32	15	0.85
aldrin [1]	-----	-----	-----	-----	-----	-----	-----
dacthal	2.6	1.5	0.10 [3]	1.4	1.3	93	0.56
oxychlordane	4.5	2.9	1.6	3.0	1.5	50	1.2
heptachlor epoxide	0.55	0.10 [3]	0.10 [3]	0.25	0.26	100	0.10
trans-chlordane	4.9	4.4	2.1	3.8	1.5	39	1.5
trans-nonachlor	3.9	3.2	1.1	2.7	1.5	56	1.1
cis-chlordane	2.4	1.1	0.80	1.4	0.85	61	0.56
o,p'-DDE	2.6	0.14 [3]	0.14 [3]	0.96	1.4	150	0.39
p,p'-DDE	2.1	1.9	1.2	1.7	0.47	28	0.69
dieldrin	1.4	1.2	0.10 [3]	0.90	0.70	78	0.36
o,p'-DDD	0.18 [3]	0.18 [3]	0.18 [3]	0.18 [3]	0.013 [4]	7	0.073 [3]
endrin	0.82	0.12 [3]	0.12 [3]	0.35	0.40	110	0.14
cis-nonachlor	1.7	1.4	1.5	1.5	0.15	10	0.60
o,p'-DDT	2.4	0.19 [3]	0.19 [3]	0.93	1.3	140	0.38
p,p'-DDD	0.22 [3]	0.22 [3]	0.22 [3]	0.22 [3]	0.022 [4]	10	0.089 [3]
p,p'-DDT	2.4	0.19 [3]	2.7	1.8	1.4	78	0.73
mirex	3.2	1.9	2.6	2.6	0.65	25	1.0
p,p'-methoxychlor	7.2	9.0	10.	8.7	1.4	16	3.5

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[3] *Average instrumental background. See QC Table 2.*

[4] *Standard deviations were selected from QC Table 2.*

26 °C OC DILUTER STUDY

QC Table 15. Day 4 OC Background in Control Exposure SPMDs

OCs	ng / SPMD [2]						ng / g
	Rep A	Rep B	Rep C	Mean	SD	CV	Mean
HCB	14.	17.	9.7	14.	3.7	26	5.6
pentachloranisole	4.7	6.9	2.1	4.6	2.4	52	1.9
alpha-BHC	3.9	9.2	2.4	5.2	3.6	69	2.1
lindane	1.6	0.11 [3]	0.11 [3]	0.61	0.86	140	0.25
beta-BHC	0.17 [3]	0.17 [3]	0.17 [3]	0.17 [3]	0.010 [4]	10	0.069 [3]
heptachlor	2.1	3.4	3.2	2.9	0.70	20	1.2
aldrin [1]	-----	-----	-----	-----	-----	-----	-----
dacthal	1.9	2.1	2.6	2.2	0.36	16	0.89
oxychlordane	5.2	6.5	4.6	5.4	0.97	18	2.2
heptachlor epoxide	0.10 [3]	0.10 [3]	0.10 [3]	0.10 [3]	0.0040 [4]	4	0.040 [3]
trans-chlordane	5.5	6.9	3.9	5.4	1.5	28	2.2
trans-nonachlor	4.7	5.3	2.2	4.1	1.6	39	1.7
cis-chlordane	3.2	3.8	2.6	3.2	0.60	19	1.3
o,p'-DDE	5.5	4.5	3.3	4.4	1.1	25	1.8
p,p'-DDE	4.0	3.7	2.7	3.5	0.68	19	1.4
dieldrin	2.0	2.1	1.8	2.0	0.15	8	0.81
o,p'-DDD	0.18 [3]	0.18 [3]	0.18 [3]	0.18 [3]	0.013 [4]	7	0.073 [3]
endrin	0.12 [3]	1.1	1.3	0.84	0.63	75	0.34
cis-nonachlor	2.8	3.0	1.7	2.5	0.70	28	1.0
o,p'-DDT	6.1	4.9	2.6	4.5	1.8	40	1.8
p,p'-DDD	0.22 [3]	0.22 [3]	0.22 [3]	0.22 [3]	0.022 [4]	10	0.089 [3]
p,p'-DDT	2.5	5.0	3.8	3.8	1.3	34	1.5
mirex	8.8	4.9	3.8	5.8	2.6	45	2.3
p,p'-methoxychlor	8.1	6.7	4.9	6.6	1.6	20	2.7

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Average instrumental background. See QC Table 2.*
[4] *Standard deviations were selected from QC Table 2.*

26 °C OC DILUTER STUDY

QC Table 16. Day 8 OC Background in Control Exposure SPMDs

OCs	ng / SPMD [2]						ng / g
	Rep A	Rep B	Rep C	Mean	SD	CV	Mean
HCB	7.9	8.6	8.3	8.3	0.35	4	3.3
pentachloranisole	2.1	1.9	1.7	1.9	0.20	11	0.77
alpha-BHC	1.5	1.8	1.8	1.7	0.17	10	0.69
lindane	0.11 [3]	0.11 [3]	0.50	0.24	0.23	96	0.10
beta-BHC	0.24	1.3	0.89	0.81	0.53	65	0.33
heptachlor	2.1	1.4	1.2	1.6	0.47	29	0.65
aldrin [1]	-----	-----	-----	-----	-----	-----	-----
dacthal	0.10	0.69	0.35	0.38	0.30	79	0.15
oxychlordane	4.5	4.2	2.9	3.9	0.85	22	1.6
heptachlor epoxide	0.10 [3]	0.10 [3]	0.10 [3]	0.10 [3]	0.0040 [4]	4	0.040 [3]
trans-chlordane	7.0	6.6	5.3	6.3	0.89	14	2.5
trans-nonachlor	5.0	3.7	3.2	4.0	0.93	23	1.6
cis-chlordane	2.8	2.3	1.7	2.3	0.55	24	0.93
o,p'-DDE	4.2	3.9	2.9	3.7	0.68	18	1.5
p,p'-DDE	6.9	6.4	4.8	6.0	1.1	18	2.4
dieldrin	3.0	2.8	2.2	2.7	0.42	16	1.1
o,p'-DDD	0.79	0.66	0.18 [3]	0.54	0.32	59	0.22
endrin	1.9	2.5	0.93	1.8	0.79	44	0.73
cis-nonachlor	5.7	7.6	3.9	5.7	1.9	33	2.3
o,p'-DDT	6.5	6.0	3.8	5.4	1.4	26	2.2
p,p'-DDD	0.22 [3]	0.22 [3]	0.22 [3]	0.22 [3]	0.022 [4]	10	0.089 [3]
p,p'-DDT	4.8	5.1	3.7	4.5	0.74	16	1.8
mirex	10.	12.	3.0	8.3	4.7	57	3.3
p,p'-methoxychlor	1.9	2.0	3.4	2.4	0.84	35	0.97

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[3] *Average instrumental background. See QC Table 2.*

[4] *Standard deviations were selected from QC Table 2.*

26 °C OC DILUTER STUDY

QC Table 17. Day 16 OC Background in Control Exposure SPMDs

OCs	ng / SPMD [2]						ng / g
	Rep A	Rep B	Rep C	Mean	SD	CV	Mean
HCB	10.	7.9	9.3	9.1	1.1	12	3.7
pentachloranisole	4.0	3.1	4.0	3.7	0.52	14	1.5
alpha-BHC	2.2	1.9	1.9	2.0	0.17	9	0.81
lindane	0.11 [3]	0.11 [3]	0.11 [3]	0.11 [3]	0.0045 [4]	4	0.044 [3]
beta-BHC	0.65	0.70	0.54	0.63	0.082	13	0.25
heptachlor	3.4	2.3	.3.0	2.9	0.56	19	1.2
aldrin [1]	-----	-----	-----	-----	-----	-----	-----
dacthal	0.39	0.10 [3]	0.35	0.28	0.16	57	0.11
oxychlordane	7.8	5.2	6.9	6.6	1.3	20	2.7
heptachlor epoxide	0.10 [3]	0.10 [3]	0.10 [3]	0.10 [3]	0.0040 [4]	4	0.039 [3]
trans-chlordane	10.	8.2	10.	9.4	1.0	11	3.8
trans-nonachlor	9.2	5.9	8.3	7.8	1.7	22	3.1
cis-chlordane	5.6	3.6	5.0	4.7	1.0	21	1.9
o,p'-DDE	9.3	5.6	7.6	7.5	1.9	25	3.0
p,p'-DDE	12.	8.9	11.	11.	1.6	15	4.4
dieldrin	4.8	4.0	5.1	4.6	0.57	12	1.9
o,p'-DDD	1.6	1.0	1.7	1.4	0.38	27	0.56
endrin	7.7	5.5	5.2	6.1	1.4	23	2.5
cis-nonachlor	8.3	7.2	8.2	7.9	0.61	8	3.2
o,p'-DDT	13.	7.9	13.	11.	2.9	26	4.4
p,p'-DDD	0.46	0.30	0.46	0.41	0.092	22	0.17
p,p'-DDT	6.6	7.9	6.3	6.9	0.85	12	2.8
mirex	11.	11.	8.8	10.	1.3	13	4.0
p,p'-methoxychlor	4.6	3.6	4.2	4.1	0.50	12	1.7

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*
[3] *Average instrumental background. See QC Table 2.*
[4] *Standard deviations were selected from QCTable 2.*

10 °C OC DILUTER STUDY

QC Table 18. Raw Data for OCs in Control Water

OCs	ng / L [2]				
	Day 0	Day 8	Day 16	Mean	SD
HCB	0.13	0.043	0.078	0.084	0.044
pentachloranisole	0.35	0.10	0.13	0.19	0.14
alpha-BHC	0.25	0.28	0.19	0.24	0.05
lindane	0.028 [3]	0.028 [3]	0.028 [3]	0.028 [3]	0.0011 [4]
beta-BHC	0.043 [3]	0.043 [3]	0.043 [3]	0.043 [3]	0.0025 [4]
heptachlor	0.14	0.020 [3]	0.020 [3]	0.060	0.069
aldrin [1]	--------	--------	--------	--------	--------
dacthal	0.23	0.15	0.20	0.19	0.040
oxychlordane	0.33	0.11	0.14	0.19	0.12
heptachlor epoxide	0.024 [3]	0.024 [3]	0.23	0.093	0.12
trans-chlordane	0.019 [3]	0.019 [3]	0.019 [3]	0.019 [3]	0.00065 [4]
trans-nonachlor	0.019 [3]	0.019 [3]	0.019 [3]	0.019 [3]	0.00098 [4]
cis-chlordane	0.18	0.019 [3]	0.12	0.11	0.081
o,p'-DDE	0.19	0.18	0.035 [3]	0.14	0.087
p,p'-DDE	0.43	0.28	0.48	0.40	0.1
dieldrin	0.024 [3]	0.024 [3]	0.24	0.096	0.12
o,p'-DDD	0.045 [3]	0.045 [3]	0.045 [3]	0.045 [3]	0.0033 [4]
endrin	0.030 [3]	0.030 [3]	0.030 [3]	0.030 [3]	0.0015 [4]
cis-nonachlor	0.019 [3]	0.019 [3]	0.019 [3]	0.019 [3]	0.0010 [4]
o,p'-DDT	0.25	0.048 [3]	0.063	0.12	0.11
p,p'-DDD	0.055 [3]	0.055 [3]	0.055 [3]	0.055 [3]	0.0055 [4]
p,p'-DDT	0.048 [3]	0.048 [3]	0.048 [3]	0.048 [3]	0.0068 [4]
mirex	0.018 [3]	0.018 [3]	0.018 [3]	0.018 [3]	0.0012 [4]
p,p'-methoxychlor	0.13	0.063	0.088 [3]	0.094	0.034

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *Sample = 4 L of control chamber water.*
[3] *Average instrumental background. See QC Table 2.*
[4] *Standard deviations were selected from QC Table 2.*

18 °C OC DILUTER STUDY

QC Table 19. Raw Data for OCs in Control Water

OCs	ng / L [1]				
	Day 0	Day 16	Day 28	Mean	SD
HCB	0.010 [2]	0.010 [2]	0.010 [2]	0.010 [2]	0.00015 [3]
pentachloranisole	0.010 [2]	0.015	0.055	0.027	0.025
alpha-BHC	0.025 [2]	0.025 [2]	0.048	0.033	0.013
lindane	0.023 [2]	0.023 [2]	0.030	0.025	0.0043
beta-BHC	0.075	0.085	0.095	0.085	0.010
heptachlor	0.015 [2]	0.015 [2]	0.015 [2]	0.015 [2]	0.00023 [3]
aldrin	0.010 [2]	0.010 [2]	0.010 [2]	0.010 [2]	0.00015 [3]
dacthal	0.023 [2]	0.023 [2]	0.023 [2]	0.023 [2]	0.00050 [3]
oxychlordane	0.025	0.043	0.058	0.042	0.016
heptachlor epoxide	0.020	0.035	0.065	0.040	0.023
trans-chlordane	0.025	0.043	0.065	0.044	0.020
trans-nonachlor	0.030	0.040	0.053	0.041	0.011
cis-chlordane	0.075	0.085	0.10	0.087	0.013
o,p'-DDE	0.030 [2]	0.030 [2]	0.080	0.047	0.029
p,p'-DDE	0.025 [2]	0.030 [2]	0.025 [2]	0.027 [2]	0.00033 [2]
dieldrin	0.023 [2]	0.023 [2]	0.023 [2]	0.023 [2]	0.00075 [3]
o,p'-DDD	0.030 [2]	0.030 [2]	0.030 [2]	0.030 [2]	0.00080 [3]
endrin	0.18	0.18	0.18	0.18	0.00043 [3]
cis-nonachlor	0.020	0.043	0.083	0.048	0.032
o,p'-DDT	0.028 [2]	0.028 [2]	0.028 [2]	0.028 [2]	0.00085 [3]
p,p'-DDD	0.033 [2]	0.033 [2]	0.033 [2]	0.033 [2]	0.00078 [3]
p,p'-DDT	0.10	0.13	0.19	0.14	0.046
mirex	0.015 [2]	0.015 [2]	0.015 [2]	0.015 [2]	0.00030 [3]
p,p'-methoxychlor	0.068 [2]	0.068 [2]	0.068 [2]	0.068 [2]	0.0028 [3]

[1] *Sample = 4 L of control chamber water.*

[2] *Average instrumental background. See QC Table 4.*

[3] *Standard deviations were selected from QC Table 4.*

26 °C OC DILUTER STUDY

QC Table 20. Raw Data for OCs in Control Water

OCs	ng / L [2]			
	Day 0	Day 16	Mean	SD
HCB	0.088	0.058	0.073	0.021
pentachloranisole	0.15	0.11	0.13	0.028
alpha-BHC	0.030 [3]	0.030 [3]	0.030 [3]	0.00025 [4]
lindane	0.028 [3]	0.028 [3]	0.028 [3]	0.00021 [4]
beta-BHC	0.043 [3]	0.043 [3]	0.043 [3]	0.00050 [4]
heptachlor	0.020 [3]	0.020 [3]	0.020 [3]	0.0011 [4]
aldrin [1]	-----	-----	-----	
dacthal	0.75	0.65	0.70	0.071
oxychlordane	0.55	0.58	0.57	0.021
heptachlor epoxide	0.28	0.38	0.33	0.071
trans-chlordane	0.58	0.50	0.54	0.057
trans-nonachlor	0.48 [3]	0.55	0.52	0.049
cis-chlordane	0.17	0.13	0.15	0.028
o,p'-DDE	0.11	0.20	0.16	0.064
p,p'-DDE	0.65	0.60	0.63	0.035
dieldrin	0.38	0.40	0.39	0.014
o,p'-DDD	0.43	0.25	0.34	0.13
endrin	0.45	0.33	0.39	0.085
cis-nonachlor	0.40	0.33	0.37	0.049
o,p'-DDT	0.43	0.30	0.37	0.092
p,p'-DDD	0.16	0.055 [3]	0.11	0.074
p,p'-DDT	0.048 [3]	0.048 [3]	0.048 [3]	0.0035 [4]
mirex	0.16	0.13	0.15	0.021
p,p'-methoxychlor	0.088 [3]	0.088 [3]	0.088 [3]	0.0068 [4]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *Sample = 4 L of control chamber water.*
[3] *Average instrumental background. See QC Table 2.*
[4] *Standard deviations were selected from QC Table 2.*

10 °C OC DILUTER STUDY

QC Table 21. Estimated Concentrations of OCs in Water Reagent Blanks

OCs	ng / Sample [2]			
	Day 0	Day 8	Day 16	Mean
HCB	0.046 [3]	0.046 [3]	0.046 [3]	0.046 [3]
pentachloranisole	0.15	0.042 [3]	0.15	0.11
alpha-BHC	0.80	0.12 [3]	0.51	0.48
lindane	0.11 [3]	0.11 [3]	0.11 [3]	0.11 [3]
beta-BHC	0.17 [3]	0.17 [3]	0.17 [3]	0.17 [3]
heptachlor	0.081 [3]	0.081 [3]	0.081 [3]	0.081 [3]
aldrin [1]	--------	--------	--------	--------
dacthal	0.95	0.76	0.57	0.76
oxychlordane	0.085 [3]	0.085 [3]	0.085 [3]	0.085 [3]
heptachlor epoxide	0.096 [3]	0.096 [3]	0.096 [3]	0.096 [3]
trans-chlordane	0.076 [3]	0.076 [3]	0.076 [3]	0.076 [3]
trans-nonachlor	0.077 [3]	0.077 [3]	0.077 [3]	0.077 [3]
cis-chlordane	0.076 [3]	0.076 [3]	0.076 [3]	0.076 [3]
o,p'-DDE	0.14 [3]	0.14 [3]	0.14 [3]	0.14 [3]
p,p'-DDE	2.0	1.6	1.7	1.8
dieldrin	0.096 [3]	0.57	0.40	0.36
o,p'-DDD	0.18 [3]	0.18 [3]	0.18 [3]	0.18 [3]
endrin	0.12 [3]	0.12 [3]	0.12 [3]	0.12 [3]
cis-nonachlor	0.074 [3]	0.074 [3]	0.074 [3]	0.074 [3]
o,p'-DDT	0.19 [3]	0.19 [3]	0.19 [3]	0.19 [3]
p,p'-DDD	0.22 [3]	0.22 [3]	0.22 [3]	0.22 [3]
p,p'-DDT	0.19 [3]	0.19 [3]	0.19 [3]	0.19 [3]
mirex	0.073 [3]	0.073 [3]	0.073 [3]	0.073 [3]
p,p'-methoxychlor	0.35 [3]	0.35 [3]	0.35 [3]	0.35 [3]

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *Sample is water method reagent solvents processed as a water sample.*
[3] *Average instrumental background. See QC Table 2.*

10 °C OC DILUTER STUDY

QC Table 22. Estimated OC Concentrations in Reagent Blanks for SPMDs

OCs	ng / Sample [2]				
	Rep A	Rep B	Rep C	Mean	SD
HCB	0.046 [3]	0.046 [3]	0.046 [3]	0.046 [3]	0.0010 [4]
pentachloranisole	0.12	0.21	0.042 [3]	0.12	0.084
alpha-BHC	0.12 [3]	0.18	0.12 [3]	0.14	0.035
lindane	0.11 [3]	0.12	0.11 [3]	0.11	0.0058
beta-BHC	0.17 [3]	0.23	0.17 [3]	0.19	0.035
heptachlor	0.081 [3]	0.081 [3]	0.081 [3]	0.081 [3]	0.0068 [4]
aldrin [1]	--------	--------	--------	--------	----------
dacthal	0.41	0.78	0.27	0.49	0.26
oxychlordane	0.085 [3]	0.085 [3]	0.085 [3]	0.085 [3]	0.0048 [4]
heptachlor epoxide	2.0	0.096 [3]	0.096 [3]	0.73	1.1
trans-chlordane	0.20	1.5	0.076 [3]	0.59	0.79
trans-nonachlor	0.080	0.71	0.077 [3]	0.29	0.36
cis-chlordane	0.33	0.20	0.076 [3]	0.20	0.13
o,p'-DDE	0.14 [3]	0.14 [3]	0.14 [3]	0.14 [3]	0.0029 [4]
p,p'-DDE	0.90	0.064 [3]	0.080	0.35	0.48
dieldrin	0.19	1.3	0.096 [3]	0.53	0.67
o,p'-DDD	0.90	0.90	0.18 [3]	0.66	0.42
endrin	0.12 [3]	2.1	0.12 [3]	0.78	1.1
cis-nonachlor	0.14	0.15	0.074 [3]	0.12	0.041
o,p'-DDT	0.19 [3]	0.19 [3]	0.19 [3]	0.19 [3]	0.014 [4]
p,p'-DDD	3.7	0.22 [3]	0.22 [3]	1.4	2.0
p,p'-DDT	0.19 [3]	0.19 [3]	0.19 [3]	0.19 [3]	0.027 [4]
mirex	0.61	0.073 [3]	0.073 [3]	0.25	0.31
p,p'-methoxychlor	0.80	0.62	0.35 [3]	0.59	0.23

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *Sample is SPMD method reagent solvents processed as an SPMD sample.*
[3] *Average instrumental background. See QC Table 2.*
[4] *Standard deviations were selected from QC Table 2.*

10 °C OC DILUTER STUDY

QC Table 23. Estimated OC Concentrations in SPMD Dialysis Blanks

OCs	ng / SPMD [2]						ng / g
	Rep A	Rep B	Rep C	Rep D	Mean	SD	Mean
HCB	4.3	7.2	1.9	11.	6.1	3.9	2.5
pentachloranisole	0.042 [3]	0.94	0.042 [3]	0.042 [3]	0.27	0.45	0.11
alpha-BHC	0.12 [3]	1.7	0.12 [3]	1.5	0.86	0.90	0.35
lindane	0.11 [3]	2.3	0.11 [3]	3.4	1.5	1.6	0.60
beta-BHC	0.17 [3]	1.4	0.17 [3]	0.17 [3]	0.48	0.62	0.19
heptachlor	0.081 [3]	0.31	0.081 [3]	0.36	0.21	0.15	0.085
aldrin [1]	--------	--------	--------	--------	--------	--------	--------
dacthal	0.098 [3]	0.36	0.098 [3]	0.28	0.21	0.13	0.085
oxychlordane	0.085 [3]	0.41	0.085 [3]	0.47	0.26	0.21	0.10
heptachlor epoxide	3.6	4.9	0.096 [3]	8.8	4.3	3.6	1.7
trans-chlordane	0.076 [3]	5.2	0.076 [3]	0.68	1.5	2.5	0.60
trans-nonachlor	0.077 [3]	0.67	0.077 [3]	0.21	0.26	0.28	0.10
cis-chlordane	0.076 [3]	0.12	0.076 [3]	0.076 [3]	0.087	0.022	0.035
o,p'-DDE	0.14 [3]	0.14 [3]	0.14 [3]	5.2	1.4	2.5	0.56
p,p'-DDE	0.88	1.0	0.064 [3]	1.9	0.96	0.75	0.39
dieldrin	0.096 [3]	0.52	0.096 [3]	0.48	0.30	0.23	0.12
o,p'-DDD	0.18 [3]	2.1	0.18 [3]	3.1	1.4	1.5	0.56
endrin	0.12 [3]	0.12 [3]	0.12 [3]	5.1	1.4	2.5	0.56
cis-nonachlor	0.58	1.0	0.074 [3]	1.1	0.69	0.47	0.28
o,p'-DDT	0.19 [3]	0.40	0.19 [3]	0.40	0.30	0.12	0.12
p,p'-DDD	3.3	3.1	0.22 [3]	7.6	3.6	3.0	1.5
p,p'-DDT	0.19 [3]	0.50	0.19 [3]	1.2	0.52	0.48	0.21
mirex	0.99	0.073 [3]	0.073 [3]	0.073 [3]	0.30	0.46	0.12
p,p'-methoxychlor	9.6	1.4	0.35 [3]	15.	6.6	7.0	2.7

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *Freshly prepared SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[3] *Average instrumental background. See QC Table 2.*

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QC Table 24. Estimated Concentrations of OCs in Water Reagent Blanks

OCs	ng / Sample [1]			
	Day 0	Day 16	Day 28	Mean
HCB	0.042 [2]	0.042 [2]	0.042 [2]	0.042 [2]
pentachloranisole	0.037 [2]	0.21	0.037 [2]	0.095
alpha-BHC	0.098 [2]	0.098 [2]	0.098 [2]	0.098 [2]
lindane	0.089 [2]	0.089 [2]	0.089 [2]	0.089 [2]
beta-BHC	0.35	0.90	0.48	0.58
heptachlor	0.065 [2]	0.065 [2]	0.065 [2]	0.065 [2]
aldrin	0.038 [2]	0.038 [2]	0.038 [2]	0.038 [2]
dacthal	0.094 [2]	0.094 [2]	0.094 [2]	0.094 [2]
oxychlordane	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]
heptachlor epoxide	0.071 [2]	0.071 [2]	0.071 [2]	0.071 [2]
trans-chlordane	0.071 [2]	0.071 [2]	0.071 [2]	0.071 [2]
trans-nonachlor	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]
cis-chlordane	0.064 [2]	1.2	0.56	0.61
o,p'-DDE	0.12 [2]	0.12 [2]	0.12 [2]	0.12 [2]
p,p'-DDE	0.10 [2]	0.10 [2]	0.10 [2]	0.10 [2]
dieldrin	0.086 [2]	0.086 [2]	0.086 [2]	0.086 [2]
o,p'-DDD	0.12 [2]	0.12 [2]	0.12 [2]	0.12 [2]
endrin	0.10 [2]	2.1	0.94	1.0
cis-nonachlor	0.062 [2]	0.55	0.062 [2]	0.22
o,p'-DDT	0.11 [2]	0.11 [2]	0.11 [2]	0.11 [2]
p,p'-DDD	0.13 [2]	0.13 [2]	0.13 [2]	0.13 [2]
p,p'-DDT	0.11 [2]	1.1	0.11 [2]	0.44
mirex	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]
p,p'-methoxychlor	9.8	0.27 [2]	0.27 [2]	3.4

[1] *Sample is water method reagent solvents processed as a water sample.*
[2] *Average instrumental background. See QC Table 4.*

18 °C OC DILUTER STUDY

QC Table 25. Estimated OC Concentrations in Reagent Blanks for SPMDs

OCs	ng / Sample [1]						
	Rep A	Rep B	Rep C	Rep D	Rep E	Mean	SD
HCB	0.042 [2]	0.042 [2]	0.042 [2]	0.042 [2]	0.042 [2]	0.042 [2]	0.00059 [3]
pentachloranisole	0.037 [2]	0.037 [2]	0.24	0.037 [2]	0.19	0.11	0.099
alpha-BHC	0.098 [2]	0.098 [2]	0.098 [2]	0.098 [2]	0.71	0.22	0.27
lindane	0.089 [2]	0.089 [2]	0.089 [2]	0.089 [2]	0.089 [2]	0.089 [2]	0.00058 [3]
beta-BHC	0.29	0.40	0.51	0.59	0.65	0.49	0.14
heptachlor	0.065 [2]	0.065 [2]	0.065 [2]	0.065 [2]	0.065 [2]	0.065 [2]	0.00091 [3]
aldrin	0.19	0.038 [2]	0.038 [2]	0.038 [2]	0.038 [2]	0.068	0.068
dacthal	6.2	0.36	0.094 [2]	0.094 [2]	0.094 [2]	1.4	2.7
oxychlordane	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.0033 [3]
heptachlor epoxide	0.071 [2]	0.071 [2]	0.071 [2]	0.071 [2]	0.071 [2]	0.071 [2]	0.0025 [3]
trans-chlordane	0.33	0.071 [2]	0.37	0.071 [2]	0.071 [2]	0.18	0.15
trans-nonachlor	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.0017 [3]
cis-chlordane	0.42	0.33	0.64	0.32	0.26	0.39	0.15
o,p'-DDE	0.12 [2]	0.12 [2]	0.57	0.12 [2]	0.12 [2]	0.21	0.20
p,p'-DDE	0.10 [2]	0.10 [2]	0.10 [2]	0.10 [2]	0.10 [2]	0.10 [2]	0.0013 [3]
dieldrin	0.086 [2]	0.41	2.3	0.73	0.46	0.80	0.87
o,p'-DDD	0.12 [2]	0.12 [2]	0.12 [2]	0.12 [2]	0.12 [2]	0.12 [2]	0.0032 [3]
endrin	0.67	0.34	1.5	0.72	0.41	0.73	0.46
cis-nonachlor	0.24	0.062 [2]	0.54	0.51	0.062 [2]	0.28	0.23
o,p'-DDT	0.11 [2]	0.11 [2]	0.11 [2]	0.11 [2]	0.11 [2]	0.11 [2]	0.0034 [3]
p,p'-DDD	0.13 [2]	0.13 [2]	0.13 [2]	0.13 [2]	0.13 [2]	0.13 [2]	0.0031 [3]
p,p'-DDT	0.31	0.11 [2]	0.66	0.97	1.0	0.61	0.40
mirex	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.0012 [3]
p,p'-methoxychlor	9.7	0.27 [2]	0.27 [2]	0.27 [2]	0.27 [2]	2.2	4.2

[1] *Sample is SPMD method reagent solvents processed as an SPMD sample.*
[2] *Average instrumental background. See QC Table 4.*
[3] *Standard deviations were selected from QC Table 4.*

18 °C OC DILUTER STUDY

QC Table 26. Estimated OC Concentrations in SPMD Dialysis Blanks

OCs	ng / SPMD [1]							ng / g
	Rep A	Rep B	Rep C	Rep D	Rep E	Mean	SD	Mean
HCB	0.042 [2]	0.042 [2]	0.042 [2]	0.042 [2]	0.042 [2]	0.042 [2]	0.00059 [3]	0.017 [2]
pentachloranisole	0.23	0.18	0.037 [2]	0.037 [2]	0.037 [2]	0.21	0.094	0.085
alpha-BHC	0.098 [2]	0.098 [2]	0.098 [2]	0.098 [2]	0.098 [2]	0.098 [2]	0.0025 [3]	0.040 [2]
lindane	0.089 [2]	0.089 [2]	0.089 [2]	0.089 [2]	0.089 [2]	0.089 [2]	0.00058 [3]	0.036 [2]
beta-BHC	1.5	2.2	0.073 [2]	0.073 [2]	0.073 [2]	1.9	1.0	0.77
heptachlor	0.065 [2]	0.065 [2]	0.065 [2]	0.065 [2]	0.065 [2]	0.065 [2]	0.00091 [3]	0.026 [2]
aldrin	0.038 [2]	0.038 [2]	0.038 [2]	0.038 [2]	0.038 [2]	0.038 [2]	0.00061 [3]	0.015 [2]
dacthal	1.5	0.094 [2]	0.094 [2]	0.094 [2]	0.094 [2]	0.80	0.63	0.32
oxychlordane	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.0033 [3]	0.025 [2]
heptachlor epoxide	0.071 [2]	0.071 [2]	0.071 [2]	0.071 [2]	0.071 [2]	0.071 [2]	0.0025 [3]	0.029 [2]
trans-chlordane	0.071 [2]	0.59	0.071 [2]	0.071 [2]	0.071 [2]	0.33	0.23	0.13
trans-nonachlor	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.0017 [3]	0.025 [2]
cis-chlordane	0.87	0.89	0.064 [2]	0.064 [2]	0.064 [2]	0.88	0.45	0.35
o,p'-DDE	0.12 [2]	0.12 [2]	0.12 [2]	0.12 [2]	0.12 [2]	0.12 [2]	0.0019 [3]	0.048 [2]
p,p'-DDE	0.10 [2]	0.10 [2]	0.10 [2]	0.10 [2]	0.10 [2]	0.10 [2]	0.0013 [3]	0.040 [2]
dieldrin	0.086 [2]	0.086 [2]	0.086 [2]	0.086 [2]	0.086 [2]	0.086 [2]	0.0030 [3]	0.035 [2]
o,p'-DDD	0.12 [2]	0.12 [2]	0.12 [2]	0.12 [2]	0.12 [2]	0.12 [2]	0.0032 [3]	0.048 [2]
endrin	1.8	1.6	0.10 [2]	0.10 [2]	0.10 [2]	1.7	0.88	0.69
cis-nonachlor	0.50	0.45	0.062 [2]	0.062 [2]	0.062 [2]	0.48	0.23	0.19
o,p'-DDT	0.11 [2]	0.11 [2]	0.11 [2]	0.11 [2]	0.11 [2]	0.11 [2]	0.0034 [3]	0.044 [2]
p,p'-DDD	0.13 [2]	0.13 [2]	0.13 [2]	0.13 [2]	0.13 [2]	0.13 [2]	0.0031 [3]	0.052 [2]
p,p'-DDT	2.0	0.11 [2]	0.11 [2]	0.11 [2]	0.11 [2]	1.1	0.85	0.44
mirex	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.062 [2]	0.0012 [3]	0.025 [2]
p,p'-methoxychlor	0.27 [2]	0.27 [2]	0.27 [2]	0.27 [2]	0.27 [2]	0.27 [2]	0.011 [3]	0.11 [2]

[1] *Freshly prepared SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[2] *Average instrumental background. See QC Table 4.*

[3] *Standard deviations were selected from QC Table 4.*

26 °C OC DILUTER STUDY

QC Table 27. Estimated Concentrations of OCs in Water Reagent Blanks

OCs	ng / Sample [2]		
	Day 0	Day 16	Mean
HCB	0.046 [3]	0.046 [3]	0.046 [3]
pentachloranisole	0.042 [3]	0.042 [3]	0.042 [3]
alpha-BHC	0.12 [3]	0.12 [3]	0.12 [3]
lindane	0.11 [3]	0.11 [3]	0.11 [3]
beta-BHC	0.17 [3]	0.17 [3]	0.17 [3]
heptachlor	0.081 [3]	0.081 [3]	0.081 [3]
aldrin [1]	-----	----	----
dacthal	0.84	0.58	0.71
oxychlordane	0.085 [3]	0.085 [3]	0.085 [3]
heptachlor epoxide	0.096 [3]	0.096 [3]	0.096 [3]
trans-chlordane	2.1	0.73	1.4
trans-nonachlor	0.077 [3]	0.077 [3]	0.077 [3]
cis-chlordane	0.076 [3]	0.076 [3]	0.076 [3]
o,p'-DDE	0.14 [3]	0.14 [3]	0.14 [3]
p,p'-DDE	3.4	0.91	2.2
dieldrin	0.096 [3]	0.096 [3]	0.096 [3]
o,p'-DDD	0.18 [3]	0.18 [3]	0.18 [3]
endrin	0.12 [3]	0.12 [3]	0.12 [3]
cis-nonachlor	0.080	0.074 [3]	0.077
o,p'-DDT	0.19 [3]	0.19 [3]	0.19 [3]
p,p'-DDD	0.22 [3]	0.22 [3]	0.22 [3]
p,p'-DDT	0.19 [3]	0.19 [3]	0.19 [3]
mirex	0.82	0.073 [3]	0.45
p,p'-methoxychlor	6.8	7.2	7.0

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *Sample is water method reagent solvents processed as a water sample.*
[3] *Average instrumental background. See QC Table 2.*

26 °C OC DILUTER STUDY

QC Table 28. Estimated OC Concentrations in Reagent Blanks for SPMDs

OCs	ng / Sample [2]				
	Rep A	Rep B	Rep C	Mean	SD
HCB	0.046 [3]	0.046 [3]	0.13	0.074	0.048
pentachloranisole	0.060	0.090	0.16	0.10	0.051
alpha-BHC	0.12 [3]	0.12 [3]	0.12 [3]	0.12 [3]	0.0020 [4]
lindane	0.11 [3]	0.11 [3]	0.11 [3]	0.11 [3]	0.0045 [4]
beta-BHC	0.17 [3]	0.17 [3]	0.17 [3]	0.17 [3]	0.010 [4]
heptachlor	0.081 [3]	0.081 [3]	0.13	0.10	0.028
aldrin [1]	-----	-----	-----	-----	-----
dacthal	0.46	0.51	0.44	0.47	0.036
oxychlordane	0.085 [3]	0.085 [3]	0.10	0.090	0.0087
heptachlor epoxide	0.42	0.096 [3]	0.096 [3]	0.20	0.19
trans-chlordane	0.40	0.57	0.70	0.56	0.15
trans-nonachlor	0.31	0.28	0.35	0.31	0.035
cis-chlordane	0.076 [3]	0.076 [3]	0.076 [3]	0.076 [3]	0.0021 [4]
o,p'-DDE	0.14 [3]	0.14 [3]	0.14 [3]	0.14 [3]	0.0029 [4]
p,p'-DDE	0.40	0.51	1.2	0.70	0.43
dieldrin	0.22	0.51	0.70	0.48	0.24
o,p'-DDD	0.18 [3]	0.18 [3]	0.18 [3]	0.18 [3]	0.013 [4]
endrin	0.51	0.29	0.12 [3]	0.31	0.20
cis-nonachlor	0.11	0.070	0.37	0.18	0.16
o,p'-DDT	0.19 [3]	0.19 [3]	0.26	0.21	0.040
p,p'-DDD	0.22 [3]	0.30	0.22 [3]	0.25	0.046
p,p'-DDT	0.19 [3]	0.19 [3]	0.19 [3]	0.19 [3]	0.027 [4]
mirex	0.073 [3]	0.073 [3]	0.073 [3]	0.073 [3]	0.0049 [4]
p,p'-methoxychlor	0.22	1.4	0.75	0.79	0.59

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *Sample is SPMD method reagent solvents processed as an SPMD sample.*
[3] *Average instrumental background. See QC Table 2.*
[4] *Standard deviations were selected from QC Table 2.*

26 °C OC DILUTER STUDY

QC Table 29. Estimated OC Concentrations in SPMD Dialysis Blanks

OCs	ng / SPMD [2]					ng / g
	Rep A	Rep B	Rep C	Mean	SD	Mean
HCB	4.0	8.3	0.046 [3]	4.1	4.1	1.7
pentachloranisole	0.042 [3]	0.042 [3]	0.042 [3]	0.042 [3]	0.00084 [4]	0.017 [3]
alpha-BHC	0.12 [3]	0.12 [3]	0.12 [3]	0.12 [3]	0.0020 [4]	0.048 [3]
lindane	0.11 [3]	0.11 [3]	0.11 [3]	0.11 [3]	0.0045 [4]	0.044 [3]
beta-BHC	0.17 [3]	0.17 [3]	0.17 [3]	0.17 [3]	0.010 [4]	0.069 [3]
heptachlor	0.081 [3]	0.081 [3]	0.081 [3]	0.081 [3]	0.0068 [4]	0.033 [3]
aldrin [1]	-----	-----	-----	-----	-----	-----
dacthal	0.91	2.2	0.098 [3]	1.1	1.1	0.44
oxychlordane	1.5	1.2	0.085 [3]	0.93	0.75	0.38
heptachlor epoxide	1.5	4.7	0.096 [3]	2.1	2.4	0.85
trans-chlordane	0.53	0.89	0.076 [3]	0.50	0.41	0.20
trans-nonachlor	0.077 [3]	0.077 [3]	0.077 [3]	0.077 [3]	0.0039 [4]	0.031 [3]
cis-chlordane	0.076 [3]	0.076 [3]	0.076 [3]	0.076 [3]	0.0021 [4]	0.031 [3]
o,p'-DDE	0.14 [3]	0.14 [3]	0.14 [3]	0.14 [3]	0.0029 [4]	0.056 [3]
p,p'-DDE	1.1	1.7	0.064 [3]	0.95	0.83	0.38
dieldrin	0.096 [3]	1.1	0.096 [3]	0.43	0.58	0.17
o,p'-DDD	1.2	1.4	0.18 [3]	0.93	0.65	0.38
endrin	0.12 [3]	0.12 [3]	0.12 [3]	0.12 [3]	0.0060 [4]	0.048 [3]
cis-nonachlor	0.51	0.61	0.074 [3]	0.40	0.29	0.16
o,p'-DDT	0.19 [3]	1.2	0.19 [3]	0.53	0.58	0.21
p,p'-DDD	0.22 [3]	3.0	0.22 [3]	1.1	1.6	0.44
p,p'-DDT	0.19 [3]	2.2	0.19 [3]	0.86	1.2	0.35
mirex	0.44	1.2	0.073 [3]	0.57	0.57	0.23
p,p'-methoxychlor	4.4	7.8	0.35 [3]	4.2	3.7	1.7

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *Freshly prepared SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48 g).*

[3] *Average instrumental background. See QC Table 2.*

[4] *Standard deviations were selected from QC Table 2.*

10 °C OC DILUTER STUDY

QC Table 30. OC Recoveries from Spiked Control Water

OCs	ng / Sample [2, 3]						
	Medium Conc. Day 8	Medium % Recovered Day 8	High Conc. Day 0	High % Recovered Day 0	High Conc. Day 16	High % Recovered Day 16	% Recovered Study
HCB	5.9	87	65	87	50	67	80
pentachloranisole	9.3	98	95	86	85	77	87
alpha-BHC	3.3	73	70	100	60	86	86
lindane	5.5	81	80	100	70	88	90
beta-BHC	9.0	82	95	100	85	89	90
heptachlor	5.4	68	65	100	50	77	82
aldrin [1]	-----	-----	-----	-----	-----	-----	-----
dacthal	10.	100	95	100	90	95	98
oxychlordane	8.8	88	90	100	70	78	89
heptachlor epoxide	8.4	70	90	100	75	83	84
trans-chlordane	10.	100	95	95	80	80	92
trans-nonachlor	8.5	94	90	100	70	82	92
cis-chlordane	10.	100	100	100	80	80	93
o,p'-DDE	10.	83	100	91	75	68	81
p,p'-DDE	12.	92	100	91	80	73	85
dieldrin	14.	100	110	100	80	73	91
o,p'-DDD	8.0	84	90	100	70	78	87
endrin	11.	92	90	95	90	95	94
cis-nonachlor	9.0	90	100	100	75	83	91
o,p'-DDT	10.	100	95	100	75	79	93
p,p'-DDD	8.4	76	90	95	75	79	83
p,p'-DDT	6.5	93	75	100	60	80	91
mirex	8.0	73	85	100	65	76	83
p,p'-methoxychlor	13.	100	120	100	85	89	96
Average		88		97		81	89

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *Sample is amount OCs in QC Table 30A added to 4 L of control water and processed as a water sample.*

[3] *Values have been background corrected using means of control water (QC Table 23).*

18 °C OC DILUTER STUDY

QC Table 31. OC Recoveries from Spiked Control Water

OCs	ng / Sample [1,2]							
	Low Conc. Day 0	Low % Recovered Day 0	Medium Conc. Day 0	Medium % Recovered Day 0	High Conc. Day 0	High % Recovered Day 0	High Conc. Day 16	High % Recovered Day 16
HCB	0.77	55	18	78	79	61	83	55
pentachloranisole	0.80	57	20	83	85	65	87	58
alpha-BHC	0.65	59	14	64	69	58	68	52
lindane	0.73	61	18	86	84	65	83	59
beta-BHC	1.4	100	35	100	140	100	150	100
heptachlor	0.52	37	10	50	44	40	44	34
aldrin	0.69	28	17	49	77	48	84	49
dacthal	<MDL [3]	----	<MDL [3]	----	<MDL [3]	----	<MDL [3]	----
oxychlordane	0.94	63	25	100	110	85	110	73
heptachlor epoxide	0.86	54	20	87	89	68	90	60
trans-chlordane	0.86	51	21	81	90	64	92	61
trans-nonachlor	0.84	47	20	80	90	64	92	58
cis-chlordane	0.66	44	18	82	76	58	79	56
o,p'-DDE	1.3	81	21	84	92	66	95	59
p,p'-DDE	1.4	100	19	76	88	68	89	59
dieldrin	<MDL [3]	----	<MDL [3]	----	<MDL [3]	----	<MDL [3]	----
o,p'-DDD	1.2	80	20	100	89	81	92	77
endrin	<MDL [3]	----	<MDL [3]	----	<MDL [3]	----	<MDL [3]	----
cis-nonachlor	1.2	67	20	80	89	68	92	61
o,p'-DDT	1.2	86	22	100	94	78	91	70
p,p'-DDD	1.6	100	21	110	96	74	98	70
p,p'-DDT	1.6	100	23	100	100	83	95	73
mirex	1.5	75	19	73	85	71	88	68
p,p'-methoxychlor	1.7	20	22	81	110	100	100	91
Average		65		83		70		64

[1] *Sample is amount OCs in QC Table 31B added to control water and processed as a water sample.*
[2] *Values have been background corrected using means of control water (Table 16).*
[3] *Value below control water MDL (Table 16).*

26 °C OC DILUTER STUDY

QC Table 32. OC Recoveries from Spiked Control Water

OCs	ng / Sample [2, 3]				
	High Conc. Day 0	High % Recovered Day 0	High Conc. Day 16	High % Recovered Day 16	% Recovered Study
HCB	55	79	58	83	81
pentachloranisole	100	91	110	100	96
alpha-BHC	78	100	79	100	100
lindane	89	100	91	100	100
beta-BHC	110	100	110	100	100
heptachlor	63	89	64	91	90
aldrin [1]	-----	-----	-----	-----	-----
dacthal	120	100	109	100	100
oxychlordane	97	100	94	97	99
heptachlor epoxide	110	100	100	100	100
trans-chlordane	110	100	109	100	100
trans-nonachlor	100	100	97	100	100
cis-chlordane	110	100	110	100	100
o,p'-DDE	110	100	110	100	100
p,p'-DDE	110	100	109	100	100
dieldrin	100	100	98	98	99
o,p'-DDD	100	100	100	100	100
endrin	100	100	95	102	101
cis-nonachlor	110	100	110	100	100
o,p'-DDT	100	100	98	100	100
p,p'-DDD	99	100	95	100	100
p,p'-DDT	78	100	73	100	100
mirex	80	92	75	87	90
p,p'-methoxychlor	94	100	100	100	100
Average		98		98	98

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*
[2] *Sample is amount OCs in Table 22 added to control water and processed as a water sample.*
[3] *Values have been background corrected using means of control water (Table 11).*

10 °C AND 26 °C OC DILUTER STUDY

QC Table 33. OC Recoveries from Spiked Blank SPMDs

OCs	ng / Sample [2]							
	Amount Spiked [3]	Rep A	Rep B	Rep C	Mean	SD	CV	% Recovered
HCB	38	31	28	34	31	3.0	10	82
pentachloranisole	54	31	29	34	31	2.5	8	57
alpha-BHC	45	22	19	22	21	1.7	8	47
lindane	44	26	26	24	25	1.2	5	57
beta-BHC	41	26	26	25	26	0.58	2	63
heptachlor	35	27	26	25	26	1.0	4	74
aldrin [1]	-----	-----	-----	-----	-----	-----	-----	-----
dacthal	49	47	33	52	44	9.8	22	90
oxychlordane	46	39	33	43	38	5.0	13	83
heptachlor epoxide	44	21	18	22	20	2.1	11	45
trans-chlordane	48	34	31	36	34	2.5	7	71
trans-nonachlor	44	33	30	35	33	2.5	8	75
cis-chlordane	50	34	31	36	34	2.5	7	68
o,p'-DDE	51	36	34	45	38	5.9	16	75
p,p'-DDE	47	22	22	24	23	1.2	5	49
dieldrin	49	39	35	40	38	2.6	7	78
o,p'-DDD	45	31	31	43	35	6.9	20	78
endrin	53	36	36	39	37	1.7	5	70
cis-nonachlor	47	33	34	40	36	3.8	11	77
o,p'-DDT	48	41	45	42	43	2.1	5	90
p,p'-DDD	53	38	45	40	41	3.6	9	77
p,p'-DDT	42	30	28	37	32	4.7	15	76
mirex	50	32	31	34	32	1.5	5	64
p,p'-methoxychlor	48	47	41	48	45	3.8	8	94
Average								71

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*

[3] *Nominal concentration in spike solution.*

18 °C OC DILUTER STUDY

QC Table 34. OC Recoveries from Spiked Blank SPMDs

OCs	ng / Sample [1]								Mean Spiked ng [2]	% Recovered
	Rep A	Rep B	Rep C	Rep D	Rep E	Mean	SD	CV		
HCB	57	44	45	41	46	47	6.1	13	62	76
pentachloranisole	60	46	47	42	47	48	6.8	14	63	76
alpha-BHC	36	31	32	27	30	31	3.3	11	52	60
lindane	49	41	43	36	39	42	4.9	12	64	66
beta-BHC	110	97	110	75	86	96	15.	16	110	87
heptachlor	10	20	22	21	24	19	5.5	29	38	50
aldrin	59	47	45	42	49	48	6.5	14	74	65
dacthal	68	56	63	55	64	61	5.5	9	79	77
oxychlordane	78	66	68	59	66	67	6.8	10	62	100
heptachlor epoxide	64	53	55	48	58	56	5.9	11	63	89
trans-chlordane	66	56	54	51	60	57	5.8	10	66	86
trans-nonachlor	65	56	55	51	60	57	5.3	9	65	88
cis-chlordane	55	48	49	45	52	50	3.8	8	57	88
o,p'-DDE	65	59	62	55	64	61	4.1	7	81	75
p,p'-DDE	70	66	67	63	68	67	2.6	4	100	67
dieldrin	57	52	58	49	59	55	4.3	8	77	71
o,p'-DDD	69	61	63	59	69	64	4.6	7	76	84
endrin	78	69	70	62	68	69	5.7	8	91	76
cis-nonachlor	57	52	52	47	55	53	3.8	7	75	71
o,p'-DDT	49	47	44	36	39	43	5.4	13	73	59
p,p'-DDD	75	70	73	69	75	72	2.8	4	100	72
p,p'-DDT	57	55	52	45	46	51	5.3	10	94	54
mirex	72	66	61	60	67	65	4.9	8	92	71
p,p'-methoxychlor	67	65	64	50	53	60	7.7	13	120	50
Average									76	73

[1] *SPMD is 45.7 cm x 2.54 cm with 0.5 mL (0.455g) triolein (total SPMD mass = 2.48g).*

[2] *Amount from QC Table 34A.*

10 °C OC DILUTER STUDY

QC Table 35. Measured OC Concentrations in 10 µg/L Diluter Stocks

OCs	µg / L [2]						
	Nominal Concentration	Day 0	Day 8	Day 16	Mean	Study SD	Study CV
HCB	10	7.2	6.8	7.2	7.1	0.23	3
pentachloranisole	10	10.	9.6	11.	10.	0.72	7
alpha-BHC	10	5.0	8.8	4.4	6.1	2.4	39
lindane	10	6.0	8.6	5.6	6.7	1.6	24
beta-BHC	10	11.	11.	11.	11.	0.0	0
heptachlor	10	7.4	8.0	7.6	7.7	0.31	4
aldrin [1]	----	------	------	------	------	------	------
dacthal	10	10.	11.	11.	11.	0.58	5
oxychlordane	10	9.4	14.	14.	12.	2.7	23
heptachlor epoxide	10	9.0	13.	11.	11.	2.0	18
trans-chlordane	10	9.4	14.	13.	12.	2.4	20
trans-nonachlor	10	8.8	9.6	9.2	9.2	0.40	4
cis-chlordane	10	10.	10.	10.	10.	0.0	0
o,p'-DDE	10	11.	11.	11.	11.	0.0	0
p,p'-DDE	10	11.	11.	12.	11.	0.58	5
dieldrin	10	8.	9.4	11.	9.5	1.5	16
o,p'-DDD	10	9.4	11.	9.8	10.	0.83	8
endrin	10	11.	12.	12.	12.	0.58	5
cis-nonachlor	10	10.	11.	10.	10.	0.58	6
o,p'-DDT	10	10.	10.	11.	10.	0.58	6
p,p'-DDD	10	10.	12.	11.	11.	1.0	9
p,p'-DDT	10	8.6	9.4	7.6	8.5	0.90	11
mirex	10	11.	12.	10.	11.	1.0	9
p,p'-methoxychlor	10	10.	11.	11.	11.	0.58	5

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *100 µL of the 10 µg/L diluter stock was added to 1 L of 10 °C well water every 10 minutes and dumped into 1 ng/L exposure chamber.*

10 °C OC DILUTER STUDY

QC Table 36. Measured OC Concentrations in 100 µg/L Diluter Stock

OCs	ug / L [2]						
	Nominal Concentration	Day 0	Day 8	Day 16	Mean	Study SD	Study CV
HCB	100	78	70	76	75	4.2	6
pentachloranisole	100	110	100	110	110	5.8	5
alpha-BHC	100	27	50	38	38	12.	32
lindane	100	44	61	51	52	8.5	16
beta-BHC	100	98	100	97	98	1.5	2
heptachlor	100	68	70	67	68	1.5	2
aldrin [1]	-----	-----	-----	-----	-----	-------	-------
dacthal	100	97	98	95	97	1.5	2
oxychlordane	100	90	92	89	90	1.5	2
heptachlor epoxide	100	86	91	86	88	2.9	3
trans-chlordane	100	94	95	92	94	1.5	2
trans-nonachlor	100	86	88	85	86	1.5	2
cis-chlordane	100	100	100	100	100	0.00	0
o,p'-DDE	100	110	99	100	100	6.1	6
p,p'-DDE	100	120	110	120	120	5.8	5
dieldrin	100	92	91	90	91	1.0	1
o,p'-DDD	100	89	92	92	91	1.7	2
endrin	100	100	110	100	100	5.8	6
cis-nonachlor	100	91	92	90	91	1.0	1
o,p'-DDT	100	93	92	92	92	0.58	1
p,p'-DDD	100	93	98	94	95	2.6	3
p,p'-DDT	100	66	72	66	68	3.5	5
mirex	100	97	97	96	97	0.58	1
p,p'-methoxychlor	100	94	90	94	93	2.3	3

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *100 µL of the 100 µg/L diluter stock was added to 1 L of 10 °C well water every 10 minutes and dumped into 10 ng/L exposure chamber.*

10 °C OC DILUTER STUDY

QC Table 37. Measured OC Concentrations in 1,000 µg/L Diluter Stock

OCs	ug / L [2]						
	Nominal Concentration	Day 0	Day 8	Day 16	Mean	Study SD	Study CV
HCB	1,000	720	730	780	740	32	4
pentachloranisole	1,000	1,000	1,100	1,100	1,100	58	5
alpha-BHC	1,000	870	940	890	900	36	4
lindane	1,000	840	920	880	880	40	5
beta-BHC	1,000	960	1,100	1,000	1,000	72	7
heptachlor	1,000	670	730	710	700	31	4
aldrin [1]	-------	--------	--------	--------	--------	-----	-----
dacthal	1,000	930	1,000	990	970	38	4
oxychlordane	1,000	880	970	940	930	46	5
heptachlor epoxide	990	840	930	890	890	45	5
trans-chlordane	1,000	910	980	970	950	38	4
trans-nonachlor	1,000	830	920	890	880	46	5
cis-chlordane	1,000	940	1,000	1,000	980	35	4
o,p'-DDE	1,000	970	1,000	1,000	990	17	2
p,p'-DDE	1,000	930	990	990	970	35	4
dieldrin	1,000	880	970	950	930	47	5
o,p'-DDD	1,000	890	920	910	910	15	2
endrin	1,000	1,000	1,100	1,100	1,100	58	5
cis-nonachlor	990	890	980	950	940	46	5
o,p'-DDT	1,000	920	960	970	950	26	3
p,p'-DDD	1,000	1,000	1,100	1,100	1,100	58	5
p,p'-DDT	1,000	880	900	900	890	10	1
mirex	1,000	950	1,000	1,000	980	29	3
p,p'-methoxychlor	1,000	940	950	980	960	21	2

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *100 µL of the 1,000 µg/L diluter stock was added to 1 L of 10 °C well water every 10 minutes and dumped into 100 ng/L exposure chamber.*

18 °C OC DILUTER STUDY

QC Table 38. Measured OC Concentrations in 10 µg/L Diluter Stocks

OCs	µg / L [1]						
	Nominal Concentration	Day 0	Day 16	Day 28	Mean	Study SD	Study CV
HCB	10	10.	11.	9.9	10.	0.61	6
pentachloranisole	10	11.	11.	10.	11.	0.58	5
alpha-BHC	10	9.6	9.0	9.4	9.3	0.31	3
lindane	10	10.	10.	10.	10.	0.0	0
beta-BHC	10	8.8	9.4	8.9	9.0	0.32	4
heptachlor	10	9.4	9.8	9.4	9.5	0.23	2
aldrin	10	16.	17.	16.	16.	0.58	4
dacthal	10	8.8	9.1	8.7	8.9	0.21	2
oxychlordane	10	11.	11.	10.	11.	0.58	5
heptachlor epoxide	10	11.	11.	11.	11.	0.0	0
trans-chlordane	10	11.	12.	12.	12.	0.58	5
trans-nonachlor	10	11.	12.	12.	12.	0.58	5
cis-chlordane	10	9.7	10.	9.7	9.8	0.17	2
o,p'-DDE	10	11.	12.	11.	11.	0.58	5
p,p'-DDE	10	10.	11.	10.	10.	0.58	6
dieldrin	10	10.	10.	9.8	9.9	0.12	1
o,p'-DDD	10	9.1	9.5	9.0	9.2	0.26	3
endrin	10	9.8	10.	9.6	9.8	0.20	2
cis-nonachlor	10	11.	11.	11.	11.	0.0	0
o,p'-DDT	10	10.	11.	9.8	10.	0.64	6
p,p'-DDD	10	8.6	8.8	8.4	8.6	0.20	2
p,p'-DDT	10	11.	12.	11.	11.	0.58	5
mirex	10	10.	11.	10.	10.	0.58	6
p,p'-methoxychlor	10	8.4	8.5	7.8	8.2	0.38	5

[1] *100 µL of the 10 µg/L diluter stock was added to 1 L of 18 °C well water every 10 minutes and dumped into 1 ng/L exposure chamber.*

18 °C OC DILUTER STUDY

QC Table 39. Measured OC Concentrations in 100 µg/L Diluter Stock

OCs	µg / L [1]						
	Nominal Concentration	Day 0	Day 16	Day 28	Mean	Study SD	Study CV
HCB	100	97	99	94	97	2.5	3
pentachloranisole	100	100	100	96	99	2.3	2
alpha-BHC	100	91	80	76	82	7.8	10
lindane	100	91	81	86	86	5.0	6
beta-BHC	100	88	90	90	89	1.2	1
heptachlor	100	88	89	86	88	1.5	2
aldrin	100	150	160	160	160	5.8	4
dacthal	100	84	88	86	86	2.0	2
oxychlordane	100	100	100	100	100	0.0	0
heptachlor epoxide	100	100	100	100	100	0.0	0
trans-chlordane	100	120	120	120	120	0.0	0
trans-nonachlor	100	110	110	110	110	0.0	0
cis-chlordane	100	95	97	95	96	1.2	1
o,p'-DDE	100	110	110	100	110	5.8	5
p,p'-DDE	100	99	110	100	100	6.1	6
dieldrin	100	93	96	93	94	1.7	2
o,p'-DDD	100	80	88	83	84	4.0	5
endrin	100	90	89	90	90	0.58	1
cis-nonachlor	100	100	100	100	100	0.0	0
o,p'-DDT	100	86	89	87	87	1.5	2
p,p'-DDD	100	84	88	87	86	2.1	2
p,p'-DDT	100	87	89	88	88	1.0	1
mirex	100	98	99	97	98	1.0	1
p,p'-methoxychlor	100	65	74	68	69	4.6	7

[1] *100 µL of the 100 µg/L diluter stock was added to 1 L of 18 °C well water every 10 minutes and dumped into 10 ng/L exposure chamber.*

18 °C OC DILUTER STUDY

QC Table 40. Measured OC Concentrations in 1,200 µg/L Diluter Stock

OCs	µg / L [1]						
	Nominal Concentration	Day 0	Day 16	Day 28	Mean	Study SD	Study CV
HCB	1,200	1,200	1,300	1,300	1,300	58	4
pentachloranisole	1,200	1,200	1,300	1,300	1,300	58	4
alpha-BHC	1,200	1,200	1,200	1,000	1,100	120	10
lindane	1,200	1,300	1,300	1,200	1,300	58	4
beta-BHC	1,200	1,200	1,300	1,100	1,200	100	8
heptachlor	1,200	1,100	1,100	1,100	1,100	0	0
aldrin	1,600	1,900	2,000	1,600	1,800	210	10
dacthal	1,200	1,200	1,200	1,300	1,200	58	5
oxychlordane	1,200	1,300	1,400	1,300	1,300	58	4
heptachlor epoxide	1,200	1,300	1,400	1,300	1,300	58	4
trans-chlordane	1,200	1,400	1,500	1,300	1,400	100	7
trans-nonachlor	1,200	1,400	1,500	1,300	1,400	100	7
cis-chlordane	1,200	1,200	1,300	1,000	1,200	150	10
o,p'-DDE	1,200	1,300	1,400	1,200	1,300	100	8
p,p'-DDE	1,200	1,200	1,300	1,100	1,200	100	8
dieldrin	1,200	1,200	1,200	1,200	1,200	0	0
o,p'-DDD	1,200	1,100	1,200	1,100	1,100	58	5
endrin	1,200	1,100	1,100	1,100	1,100	0	0
cis-nonachlor	1,200	1,300	1,400	1,200	1,300	100	8
o,p'-DDT	1,200	1,100	1,100	1,300	1,200	120	10
p,p'-DDD	1,200	1,200	1,300	1,100	1,200	100	8
p,p'-DDT	1,200	1,200	1,200	1,200	1,200	0	0
mirex	1,200	1,200	1,300	1,200	1,200	58	5
p,p'-methoxychlor	1,200	930	930	1,300	1,100	210	20

[1] *100 µL of the 1,200 µg/L diluter stock was added to 1 L of 18 °C well water every 10 minutes and dumped into 100 ng/L exposure chamber.*

26 °C OC DILUTER STUDY

QC Table 41. Measured OC Concentrations in 10 µg/L Diluter Stocks

OCs	µg / L [2]						
	Nominal Concentration	Day 0	Day 8	Day 16	Mean	Study SD	Study CV
HCB	10	7.7	7.1	7.4	7.4	0.30	4
pentachloranisole	10	12.	10.	11.	11.	1.0	9
alpha-BHC	10	3.3	3.7	4.7	3.9	0.72	18
lindane	10	5.9	4.6	6.0	5.5	0.78	14
beta-BHC	10	9.5	10.	11.	10.	0.76	8
heptachlor	10	6.5	8.2	8.6	7.8	1.1	14
aldrin [1]	----	----	----	----	----	----	----
dacthal	10	9.8	11.	11.	11.	0.69	6
oxychlordane	10	8.6	11.	11.	10.	1.4	14
heptachlor epoxide	10	8.4	11.	11.	10.	1.5	15
trans-chlordane	10	9.3	11.	11.	10.	0.98	10
trans-nonachlor	10	8.3	10.	11.	9.8	1.4	14
cis-chlordane	10	10.	11.	12.	11.	1.0	9
o,p'-DDE	10	11.	11.	12.	11.	0.58	5
p,p'-DDE	10	13.	11.	12.	12.	1.0	8
dieldrin	10	9.1	10.	11.	10.	0.95	9
o,p'-DDD	10	8.9	10.	11.	10.	1.1	11
endrin	10	10.	11.	12.	11.	1.0	9
cis-nonachlor	10	8.9	10.	11.	10.	1.1	11
o,p'-DDT	10	8.8	9.3	11.	9.7	1.2	12
p,p'-DDD	10	9.6	9.5	10.	9.7	0.26	3
p,p'-DDT	10	6.1	6.6	8.6	7.1	1.3	18
mirex	10	9.6	10.	11.	10.	0.72	7
p,p'-methoxychlor	10	9.0	8.5	11.	9.5	1.3	14

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *100 µL of the 10 µg/L diluter stock was added to 1 L of 26 °C well water every 10 minutes and dumped into 1 ng/L exposure chamber.*

26 °C OC DILUTER STUDY

QC Table 42. Measured OC Concentrations in 100 µg/L Diluter Stock

OCs	µg / L [2]						
	Nominal Concentration	Day 0	Day 8	Day 16	Mean	Study SD	Study CV
HCB	100	75	47	64	62	14.	23
pentachloranisole	100	110	70	98	90	21.	23
alpha-BHC	100	32	29	35	32	3.3	10
lindane	100	55	55	53	54	1.2	2
beta-BHC	100	92	80	110	94	15.	16
heptachlor	100	63	70	79	71	8.0	11
aldrin [1]	-----	-----	-----	-----	----	-----	-----
dacthal	100	95	100	110	100	7.6	8
oxychlordane	100	84	95	110	96	13.	14
heptachlor epoxide	100	81	90	110	94	15.	16
trans-chlordane	100	90	85	100	92	7.6	8
trans-nonachlor	100	80	80	99	86	11.	13
cis-chlordane	100	98	90	110	99	10.	10
o,p'-DDE	100	110	95	110	110	8.7	8
p,p'-DDE	100	120	95	120	110	14.	13
dieldrin	100	88	70	98	85	14.	16
o,p'-DDD	100	85	85	98	89	7.5	8
endrin	100	100	110	110	110	5.8	5
cis-nonachlor	100	87	95	98	93	5.7	6
o,p'-DDT	100	86	90	100	92	7.2	8
p,p'-DDD	100	92	90	95	92	2.5	3
p,p'-DDT	100	61	65	68	65	3.5	5
mirex	100	93	100	99	97	3.8	4
p,p'-methoxychlor	100	92	85	130	100	24.	24

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *100 µL of the 100 µg/L diluter stock was added to 1 L of 26 °C well water every 10 minutes and dumped into 10 ng/L exposure chamber.*

26 °C OC DILUTER STUDY

QC Table 43. Measured OC Concentrations in 1,000 µg/L Diluter Stock

OCs	µg / L [2]						
	Nominal Concentration	Day 0	Day 8	Day 16	Mean	Study SD	Study CV
HCB	1,000	740	680	620	680	60	9
pentachloranisole	1,000	1,100	1,100	1,000	1,100	58	5
alpha-BHC	1,000	610	1,100	970	890	250	28
lindane	1,000	710	1,000	1,000	900	170	19
beta-BHC	1,000	910	1,100	1,100	1,000	110	11
heptachlor	1,000	620	890	830	780	140	18
aldrin [1]	-----	-----	-----	-----	-----	-----	-----
dacthal	1,000	940	1,200	1,200	1,100	150	14
oxychlordane	1,000	830	1,200	1,200	1,100	210	19
heptachlor epoxide	990	810	1,200	1,200	1,100	230	21
trans-chlordane	1,000	890	1,100	1,100	1,000	120	12
trans-nonachlor	1,000	790	1,100	1,100	1,000	180	18
cis-chlordane	1,000	950	1,100	1,100	1,100	87	8
o,p'-DDE	1,000	1,100	1,100	1,100	1,100	0	0
p,p'-DDE	1,000	1,100	970	1,100	1,100	75	7
dieldrin	1,000	860	1,000	1,100	990	120	12
o,p'-DDD	1,000	860	1,000	1,100	990	120	12
endrin	1,000	980	1,200	1,200	1,100	130	12
cis-nonachlor	990	860	1,100	1,100	1,000	140	14
o,p'-DDT	1,000	860	1,100	1,100	1,000	140	14
p,p'-DDD	1,000	940	1,100	1,200	1,100	130	12
p,p'-DDT	1,000	740	1,100	950	930	180	19
mirex	1,000	920	1,100	1,100	1,000	100	10
p,p'-methoxychlor	1,000	910	1,100	970	990	97	10

[1] *Aldrin was not added to the exposure because it was used as the GC method internal standard.*

[2] *100 µL of the 1,000 µg/L diluter stock was added to 1 L of 26 °C well water every 10 minutes and dumped into 100 ng/L exposure chamber.*

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2. Petty, J.D., Poulton, B.C., Charbonneau, C.S., and Huckins, J.N. Determination of Bioavailable Contaminants in the Lower Missouri River Following the Flood of 1993. Presented at the 1st Annual Conference on Natural Resources of the Missouri River Basin, January 14-16, 1997, Columbia, MO.

3. Petty, J.D., Huckins, J.N., Orazio, C.E., Lebo, J.A., Gibson, V.L., and Clark, R.C. Determination of Bioavailable Waterborne Concentrations of Organochlorine Compounds - Possible Environmental Hormones. Presented at the Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, March 3-8, 1996, Chicago, IL.

Manuscripts:

1. Petty, J.D., Poulton, B.C., Charbonneau, C.S., Huckins, J.N., and Prest, H.F. 1997. Determination of Bioavailable Contaminants in the Lower Missouri River Following the Flood of 1993. In review, *Environ. Sci. Technol.*

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3. Petty, J.D., Huckins, J.N., Orazio, C.E., Lebo, J.A., Poulton, B.C., Gale, R.W., Charbonneau, C.S., and Kaiser, E.M. 1995. Determination of Waterborne Bioavailable Organochlorine Pesticide Residues in the Lower Missouri River, *Environ. Sci. Tech.*, 29: 2561-2566.

PERSONNEL RECEIVING PAY FROM THIS EFFORT

1. Randal C. Clark

2. Carl E. Orazio

APPENDIX 1 SUPPORTIVE INFORMATION

NFCRC Protocol P-93-33-01

Work Unit 30072

Date Prepared: October 5, 1992

Study Title: **Uptake of Organochlorine Pesticides by Semipermeable Membrane Devices (SPMDs) During Flow-through Aqueous Exposures at Various Concentrations and Temperatures.**

This study is designed to characterize the uptake of 25 organochlorine pesticides by SPMDs under various concentrations and temperature conditions in flow-through laboratory exposures.

This study protocol is Study 1 of NFCRC Annual Work Plan Work Unit 30072 "Development and Application of Semipermeable Membrane Devices (SPMDs) as Environmental Dosimeters".

This research will be conducted in basic accordance with Good Laboratory Practice outlined in the Federal Register (160.120; 40 CFR Ch 1; 7-1-85 edition; subpart G - "Protocol for and conduct of a study:).

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1. Title and purpose of study.

Study Title: Uptake of Organochlorine Pesticides by Semipermeable Membrane Devices (SPMDs) During Flow-through Aqueous Exposures at Various Concentrations and Temperatures.

An understanding of the effects of temperature and contaminant concentration on the uptake of organochlorine pesticides by SPMDs is essential to the estimation of ambient organochlorine pesticide water concentrations from SPMDs.

2. Identification of the test and control substances.

Test Toxicants:

High purity (>95%) organochlorines routinely analyzed by NFCRC:

Aldrin	HCB
BHC- Alpha & Beta & Delta	Heptachlor
Chlordane - Cis & Trans	Heptachlor Epoxide
Dacthal	Lindane
DDD - o,p' & p,p'	Methoxychlor
DDE - o,p' & p,p'	Mirex
DDT - o,p' & p,p'	Nonachlor - Cis & Trans
Dieldrin	Oxychlordane
Endrin	PCA

Test Substances -

1. Triolein - High purity (≥ 95%), Sigma Chemical Co.

2. Acetone - HPLC Grade, Fisher Chemical Co.

3. Sanaqua - Didecyl dimethyl ammonium chloride solution (7.5%).

4. Polyethylene layflat tubing - Virgin plastic, no additives. 0.0089 cm thick and 2.54 cm wide, Brentwood Plastics.

3. Name and address of sponsor and facility.

The sponsor for this study is the U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. The testing facility is the National Fisheries Contaminant Research Center (NFCRC), U.S. Fish and Wildlife Service, 4200 New Haven Rd., Columbia, MO. 65201.

4. Proposed starting and completion dates.

The study will begin in October 1992 and is anticipated to end in Spring 1993. The completion date relates to the termination of flow-through exposures and does not reflect time for data analysis and manuscript generation. The three tasks will be conducted sequentially due to personnel and equipment limitations.

5. Justification for selection of test system.

The primary reason for the selection of a constant flow-through system is to directly elucidate key SPMD-contaminant interactions. Calculation of sampling rates, using SPMD data derived from static or field exposures with different test chemical concentrations and temperatures is extremely difficult and has a wide margin of error.

6. Species number, body weight, sex, and source.

Not applicable.

7. Procedure for identification of test system.

SPMD exposures to organochlorine pesticides will be conducted in the Biology East Wet Laboratory. Diluter #1 area will be used in the Study.

Four 30 Liter aquaria (test chambers 1,2,3, & 4) will be required for the three 14 day SPMD exposures. Aquaria 1 will have a nominal water concentration of 1 ng/L organochlorine pesticides. Aquaria 2 will have a nominal water concentration of 10 ng/L organochlorine pesticides. Aquaria 3 will have a nominal water concentration of 100 ng/L organochlorine pesticides. Aquaria 4 will have a nominal water concentration of 0 ng/L organochlorine pesticides.

8. Experimental design.

See outline (Section 19).

9. Diet, solvents.

Test toxicants will be dissolved in nanograde acetone to prepare the Diluter Stock Solutions. 100 μL volumes of the Diluter Stock Solutions will be added to the test chambers during each diluter dump cycle (10 minutes).

10. Route of administration.

The SPMDs will be suspended in the water column of the test chambers of the Diluter. Well water (at various temperatures) will flow through the aquaria for 14 days.

The concentration of organochlorine pesticides in the test water will be at least an order of magnitude less than their water solubility ($\geq$ 5 μg/L).

11. Dosage level of control substances.

See Section 19 (Outline).

12. Method to measure degree of uptake.

Chemical residue analysis will be conducted for 25 organochlorines in samples of SPMDs, test chamber water and Diluter Stock Solutions using a modified versions of SOPs C4.21, C5.66, and C5.173.

13. Type and frequency of tests, analyses, and measurements.

See Section 19.

14. Records.

Records to be maintained include diluter calibration and operation, Diluter Stock calculations and measurements, diluter water temperature, and analysis of organochlorine concentrations in diluter test chamber water and SPMDs.

Until archiving, data will be stored on data sheets and in laboratory notebooks located in Randal Clark's office in the basement. Also data will be stored in the NIC 486 computer in room 15. Permanent archiving of data will follow SOP B5.147.

15. Date of approval of protocoll.

See Section 17.

16. Statistics.

Data from these experiments will be entered into Lotus 1-2-3 Spreadsheet files for the generation of spreadsheets and limited statistics such as test compound concentrations, means and Standard Deviations.

Further analyses will be conducted using SigmaPlot Scientific Graph System.

17. Signatures.

Prepared by: _____
Randal Clark
Environmental Chemistry

Approved by: _____
James Huckins
Research Chemist

_____
Jim Petty
Senior Research Scientist

_____ 10/14/92
Ted Schwartz
Chief Chemist

Chris Ingersoll 10/14/92
Chris Ingersoll
Fisheries Biologist

Joseph B. Hunn 10-15-92
Joseph B. Hunn
Quality Assurance Officer

_____ 10-15-92
Richard A. Schoettger
Center Director

18. SOPs used in Study.

SOP #	Date	Title
B5.106	11/28/88	Safety Plan for the Main Building Wet Laboratory.
B5.147	09/14/88	Permanent Archiving of Handwritten Materials.
B5.217	03/03/90	Preparation of Semipermeable Polymeric Membrane Devices (SPMDs) with Model Lipid for Monitoring Organic Contaminants in Water.
C4.21	11/14/84	Operation, Maintenance and Calibration of a Varian 3700 Electron Capture Detector.
C5.66	10/19/87	Procedure for Analysis of Organochlorine Chemical Residues in Fish Tissues.
C5.72	11/05/87	The Cleaning of Labware for Use in Organic Contaminant Residue Analysis.
C5.173	01/06/92	Semipermeable Membrane Device (SPMD) Cleanup and Preparation for Analysis.

19. Outline of Organochlorine Diluter Study.

I. Test Schedules -

A. Task A - 10 °C Diluter test conducted in Fall 1992.

B. Task B - 18 °C Diluter test conducted in winter 1992/93.

C. Task C - 26 °C Diluter test conducted in spring 1993.

D. All three of the above tasks are considered one study and are identical with the exception of the diluter temperature.

II. Test Toxicants -

A. High purity (>95%) organochlorines routinely analyzed by NFCRC:

Aldrin	HCB
BHC- Alpha & Beta & Delta	Heptachlor
Chlordane - Cis & Trans	Heptachlor Epoxide
Dacthal	Lindane
DDD - o,p' & p,p'	Methoxychlor
DDE - o,p' & p,p'	Mirex
DDT - o,p' & p,p'	Nonachlor - Cis & Trans
Dieldrin	Oxychlordane
Endrin	PCA

III. Test Substances -

A. Triolein - High purity (≥ 95%), Sigma Chemical Co.

B. Acetone - HPLC Grade, Fisher Chemical Co.

C. Sanaqua - Didecyl dimethyl ammonium chloride solution (7.5%).

D. Polyethylene layflat tubing - Virgin plastic, no additives. 0.0089 cm thick and 2.54 cm wide, Brentwood Plastics.

IV. Test Parameters -

A. **Test Location -**

1. Biology East Wet Lab.

2. Flow-through Diluter # 1.

B. **Test Temperatures -**

1. Task 1, 10 °C diluter -

   Diluter well water will need to be chilled from 18 °C to 10 °C.

2. Task 2, 18 °C diluter -

   Diluter well water average temperature is 18 °C. No alteration of temperature of diluter water is needed.

3. Task 3, 26 °C diluter -

   Diluter well water will need to be heated from 18 °C to 26 °C.

C. **Test volume -** 30 L per aquaria (test chamber).

D. **Test Water -** NFCRC well water (hardness = 294 mg/L as $CaCO_3$, total alkalinity = 256 mg/L as $CaCO_3$, DOC = 1.84 mg/L, POC = 0.87 mg/L, and TOC = 2.70 mg/L).

E. **Test light cycle -** Normal lab light cycle.

F. **Aquaria turnover rate -** Diluter dump cycle consists of 1 L per 10 minutes, resulting in a turnover rate of 5 hours per 30 L aquaria.

G. **Test (Task) length -** 14 days.

H. **Test Subjects -**

1. Semipermeable Membrane Device (SPMD) = 2.54 cm wide polyethylene layflat tubes that are 45.7 cm long (pre-extracted with hexane), containing 0.423 g (0.5 mL) triolein configured as a thin film.

2. A total of 144 SPMDs will be used in the three tasks.

I. **Test Concentrations -**

1. **Control test chamber -**

   a. 100 µL of acetone will be delivered to the 30 L control test chamber every dump cycle (10 minutes).

b. Solvent concentration in the control test chamber will be 0.11 mL/L. ~250 mL of acetone will be used in the control test chamber during the study.

2. **Low concentration test chamber -**

a. A 250 mL solution containing each of the 25 organochlorine toxicants at a concentration of 9.7 µg/L in acetone will be prepared. This will be the low concentration Diluter Stock.

b. 100 µL of low concentration Diluter Stock will be delivered to the 30 L low concentration test chamber every dump cycle (10 minutes).

c. This will deliver a 1 ng/L nominal concentration of the organochlorine pesticides to the low concentration test chamber.

d. Solvent (acetone) concentration in the low concentration water will be 0.10 mL/L.

3. **Medium concentration test chamber -**

a. A 250 mL solution containing each of the 25 organochlorine test toxicants at a concentration of 99 µg/L in acetone will be prepared. This will be the medium concentration Diluter Stock.

b. 100 µL of medium concentration Diluter Stock will be delivered to the 30 L medium concentration test chamber every dump cycle (10 minutes).

c. This will deliver a 10 ng/L nominal concentration of the organochlorine pesticides to the medium concentration test chamber.

d. Solvent (acetone) concentration in the medium concentration water will be 0.10 mL/L.

4. **High concentration test chamber -**

a. A 250 mL solution containing each of the 25 organochlorine test toxicants at a concentration of 958 µg/L in acetone will be prepared. This will be the high concentration Diluter Stock.

b. 100 µL of high concentration Diluter Stock will be delivered to the 30 L high concentration test chamber every dump cycle (10 minutes).

c. This will deliver a 100 ng/L nominal concentration of the organochlorine pesticides to the low concentration test chamber.

d. Solvent (acetone) concentration in the high concentration water will be 0.10 mL/L.

J. **Diluter setup, Day 0 -**

1. **SPMDs holding ring -**

a. A 1 foot diameter stainless steel ring will be suspended under the center of the diluter water inlet spout for each aquaria (1-4) (N=4).

b. Each of the above rings will be divided into four quadrants, each having a 90° arc using aluminum wire.

2. **SPMDs placed in diluter test chambers on Day 0 -**

a. Three SPMDs will be prepared using triolein. These SPMDs will be blanks used to determine the organochlorine background of the SPMDs (N=3 per task, N=9 per study).

b. **Aquaria 1 -**

(1) For each Task, 12 SPMDs will be placed in Aquaria 1. 3 SPMDs will be in each quadrant of the SPMD holding ring (N=12).

(2) SPMDs in Aquaria 1 will be used for the low treatment or concentration.

c. **Aquaria 2 -**

(1) For each Task, 12 SPMDs will be placed in Aquaria 2. 3 SPMDs will be in each quadrant of the SPMD holding ring (N=12).

(2) SPMDs in Aquaria 2 will be used for the medium treatment or concentration.

d. **Aquaria 3 -**

(1) For each Task, 12 SPMDs will be placed in Aquaria 3. 3 SPMDs will be in each quadrant of the SPMD holding ring (N=12).

(2) SPMDs in Aquaria 3 will be used for the high treatment or concentration.

e. **Aquaria 4 -**

(1) For each Task, 12 SPMDs will be placed in Aquaria 4. 3 SPMDs will be in each quadrant of the SPMD holding ring (N=12).

(2) SPMDs in Aquaria 4 will be used for the control treatment or concentration.

f. **Total SPMDs required for Study.**

(1) Blank SPMDs - (N=3 per task, N=9 per study).

(2) Low Concentration SPMDs - Used in Aquaria 1 (N=12 per task, N=36 per study).

(3) Medium Concentration SPMDs - Used in Aquaria 2 (N=12 per task, N=36 per study).

(4) High Concentration SPMDs - Used in Aquaria 3 (N=12 per task, N=36 per study).

(5) Control Concentration SPMDs - Used in Aquaria 4 (N=12 per task, N=36 per study).

(6) Total SPMDs placed in Diluter on Day 0 N=48 per task, 144 per study.

K. **Treatment of SPMDs -**

1. SPMDs in all aquaria in Diluter 1 will be dipped in Sanaqua on Study Day 0 and Study Day 7 to retard biological growth on outside surface.

V. **Test measurements -**

A. **Sampling Method -**

1. **SPMDs -**

a. SPMDs will be collected on Study Days 1,3,7, and 14 (4 sampling times) for each aquaria (1-4).

b. Collected SPMDs will be place in solvent rinsed Aluminum foil and frozen (-25 °C) until analysis.

2. **Aquaria Water -**

a. A 100 mL class A volumetric pipet will be used to sample Diluter water from the center of SPMD holding ring.

b. Water will be collected in a brown glass 1,100 mL bottle (teflon lined lid) with 50 mL hexane added as keeper.

c. Water samples will be kept in refrigerator (5 °C) until analysis.

B. **Sampling schedule for organochlorine analysis -**

1. **SPMDs -**

a. **Sampling schedule for SPMDs on Day 0 -**

On Day 0, three replicate Blank SPMDs will be prepared for analysis (N=3 per task, N=9 per study).

b. **Sampling Schedule for SPMDs in Diluter (Days 1,3,7, and 14) -**

Three SPMDs will be randomly collected from the SPMD ring of each aquaria on sample days 1, 3, 7, and 14 (N=3 per aquaria, N=12 per Diluter per sample day, N=48 per task and N=144 per study).

2. **Aquaria Water -**

a. One 1000 mL water sample from each aquaria (1-4) will be collected on Study Day 0 (N=4 per task, N=12 per study).

b. One additional 1000 mL water sample will be randomly collected from one of the aquaria on Study Day 0 as a QC replicate (N=1 per task and N=3 per study).

c. One 1000 mL water sample from each aquaria (1-4) will be collected on Study Day 14 (N=4 per task, N=12 per Study).

d. One additional 1000 mL water sample will be randomly collected from one of the aquaria on Study Day 14 as a QC replicate (N=1 per task, N=3 per study).

e. Total water samples collected - (10 per task, 30 per study).

3. **Diluter Stock Solutions -**

a. One 2 mL sample from each of the Diluter Stock Solutions (N=4) will be collected on Day 0 (N=4 per Task, N=12 per Study).

b. One 2 mL sample from each of the Diluter Stock Solutions (N=4) will be collected on Day 14 (N=4 per Task, N=12 per Study).

c. Total Diluter Stock Solutions collected will be N=8 per Task, N=24 per Study).

4. **Lagoon Effluent Water Samples -**

1 water sample from lagoon effluent will be taken at the end of each Task (N=1 per Task, N=3 per Study).

5. **Total Diluter Samples collected in Diluter Study.**

   a. Blank SPMDs - 3 per Task, 9 per Study.

   b. Diluter SPMDs - 48 per Task, 144 per Study.

   c. Diluter Water - 10 per Task, 30 per Study.

   d. Diluter Stock Solutions - 8 per task, 24 per Study.

   e. Lagoon effluent - 1 per Task, 3 per Study.

   f. Total Samples analyzed - 70 per Task, 210 per Study.

C. **Method of chemical measurement -**

1. Chemical residue analysis for organochlorines of all diluter samples, which includes stock solutions, triolein, SPMDs, and aquaria water.

   a. Aquaria Water Samples -

      Using modified version of SOP C4.21 and SOP C5.66.

   b. SPMD Membrane Samples -

      Using modified version of SOP C4.21, SOP C5.66, and SOP C5.173.

   c. All Other Diluter Samples -

      Using modified version of SOP C4.21 and SOP C5.66.

2. **Aquaria water quality -**

   Diluter temperature measured daily.

D. **Method of disposal of diluter effluent -**

Effluent from the test chambers of the Diluter will go into the Blueline pipe. The Blueline pipe goes to the HAL Building for treatment (removal of toxicants) before being released to the environment.

MSC Protocol P-95-33-01

Work Unit 30072

Date Prepared: April 11, 1995

Study Title: **Uptake of Three Concentrations of Organochlorine Pesticides by Semipermeable Membrane Devices (SPMDs) During Flow-through Aqueous Exposures at 18 °C Temperature.**

This study is designed to characterize the uptake of 24 organochlorine pesticides at three concentrations by SPMDs in flow-through laboratory exposures at 18 °C.

This protocol is an continuation of Task B of Protocol P-93-33-01.

This study protocol is Study 2 of MSC Annual Work Plan Work Unit 30072 "Development and Application of Semipermeable Membrane Devices (SPMDs) as Environmental Dosimeters".

This research will be conducted in basic accordance with Good Laboratory Practice outlined in the Federal Register (160.120; 40 CFR Ch 1; 7-1-85 edition; subpart G - "Protocol for and conduct of a study:).

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1. Title and purpose of study.

Study Title: Uptake of Three Concentrations of Organochlorine Pesticides by Semipermeable Membrane Devices (SPMDs) During Flow-through Aqueous Exposures at 18 °C Temperature.

An understanding of the effects of temperature and contaminant concentration on the uptake of organochlorine pesticides by SPMDs is essential to the estimation of ambient organochlorine pesticide water concentrations from SPMDs.

2. Identification of the test and control substances.

Test Toxicants:

High purity (>95%) organochlorines used in study:

Aldrin	HCB
BHC- Alpha & Beta	Heptachlor
Chlordane - Cis & Trans	Heptachlor Epoxide
Dacthal	Lindane
DDD - o,p' & p,p'	Methoxychlor
DDE - o,p' & p,p'	Mirex
DDT - o,p' & p,p'	Nonachlor - Cis & Trans
Dieldrin	Oxychlordane
Endrin	PCA

Test Substances -

1. Triolein - High purity (≥ 95%), Sigma Chemical Co.

2. Acetone - HPLC Grade, Fisher Chemical Co.

3. Sanaqua - Didecyl dimethyl ammonium chloride solution (7.5%).

4. Polyethylene layflat tubing - Virgin plastic, no additives. 0.0089 cm thick and 2.54 cm wide, Brentwood Plastics.

3. Name and address of sponsor and facility.

The sponsor for this study is the U.S. National Biological Service, Department of the Interior, Washington, D.C, and the Strategic Environmental Research and Development Program, Department of Defense, 2200 Clarendon Blvd., Suite 900, Arlingtion, VA 22201. The testing facility is the Midwest Science Center (MSC), U.S. National Biological Service, 4200 New Haven Rd., Columbia, MO. 65201.

4. Proposed starting and completion dates.

The study will be conducted from April to June, 1995. The completion date relates to the termination of flow-through exposures and does not reflect time for data analysis and manuscript generation.

5. Justification for selection of test system.

The primary reason for the selection of a constant flow-through system is to directly elucidate key SPMD-contaminant interactions. Calculation of sampling rates, using SPMD data derived from static or field exposures with different test chemical concentrations and temperatures is extremely difficult and has a wide margin of error.

6. Species number, body weight, sex, and source.

Not applicable.

7. Procedure for identification of test system.

SPMD exposures to organochlorine pesticides will be conducted in the Biology East Wet Laboratory. Diluter #3 area will be used in the study.

Four 30 Liter aquaria (test chambers 1,2,3, & 4) will be required for the 28 day SPMD exposure. Aquaria 1 will have a nominal water concentration of 1 ng/L organochlorine pesticides. Aquaria 2 will have a nominal water concentration of 10 ng/L organochlorine pesticides. Aquaria 3 will have a nominal water concentration of 100 ng/L organochlorine pesticides. Aquaria 4 will have a nominal water concentration of 0 ng/L organochlorine pesticides.

8. Experimental design.

See outline (Section 19).

9. Diet, solvents.

Test toxicants will be dissolved in nanograde acetone to prepare the Diluter Stock Solutions. ~100 µL volumes of the Diluter Stock Solutions will be added to the test chambers during each diluter dump cycle (10 minutes).

10. Route of administration.

The SPMDs will be suspended in the water column of the exposure chambers of the flow-through diluter. 18 °C well water, with test compounds, will flow through the exposure chambers for 28 days.

The concentration of organochlorine pesticides in the test water will be at least an order of magnitude less than their water solubility ($\geq$ 5 μg/L).

11. Dosage level of control substances.

See Section 19 (Outline).

12. Method to measure degree of uptake.

Chemical residue analysis will be conducted for 24 organochlorines in samples of SPMDs, test chamber water and Diluter Stock Solutions using the most current versions of SOPs C4.21, C5.66, and C5.173.

13. Type and frequency of tests, analyses, and measurements.

See Section 19.

14. Records.

Records to be maintained include diluter calibration and operation, diluter stock calculations and measurements, diluter water temperature, and analysis of organochlorine concentrations in flow-through exposure chambers water and SPMDs.

Until archiving, data will be stored on data sheets, in laboratory notebooks, and in NIC 486 computer located in Randal Clark's office. Permanent archiving of data will follow SOP B5.147.

15. Date of approval of protocol.

See Section 17.

16. Statistics.

Data from these experiments will be entered into Lotus 1-2-3 Spreadsheet files for the generation of spreadsheets and limited statistics such as test compound concentrations, means and Standard Deviations.

Further analyses will be conducted using SigmaPlot Scientific Graph System.

17. Signatures.

Prepared by: 4/17/95
Randal Clark
Environmental Chemistry

Approved by: 4/17/95
James Huckins
Research Chemist

4/17/95
Jim Petty
Senior Research Scientist

4/18/95
Ted Schwartz
Chief Chemist

4/18/95
Chris Ingersoll
Fisheries Biologist

4/17/95
Linda Sappington
Acting Quality Assurance Officer

4/18/95
Bill Mauck
Acting Center Director

18. **SOPs used in Study.**

SOP #	Date	Title
B5.106	11/28/88	Safety Plan for the Fish and Invertebrate Toxicology Section.
B5.147	09/14/88	Permanent Archiving of Handwritten Materials.
B5.217	03/03/90	Preparation of Semipermeable Polymeric Membrane Devices (SPMDs) with Model Lipid for Monitoring Organic Contaminants in Water.
C4.21	11/14/84	Operation, Maintenance and Calibration of a Varian 3700 Electron Capture Detector.
C5.66	10/19/87	Procedure for Analysis of Organochlorine Chemical Residues in Fish Tissues.
C5.70	11/16/87	The Treatment of Extracts of Environmental Samples for Removal of Elemental Sulfur.
C5.72	11/05/87	The Cleaning of Labware for Use in Organic Contaminant Residue Analysis.
C5.139	09/28/90	Gas Chromatographic Procedure for Screening and Semi-quantitative Analysis of Sample Solutions Prior to Determinative Analysis.
C5.173	09/14/93	Semipermeable Membrane Device (SPMD) Cleanup and Preparation for Analysis.
C5.200	02/07/94	Use of the Phenogel Column in Conjunction with the Autoinjector-HPLC-Fraction Collector to Clean up Dialysates from SPMDs and Other Types of Extracts.
C5.201	02/15/94	Use of Miniature Potassium Silicate Columns to Clean up Dialysates and Certain Other Environmental Samples.

19. Study Participants.

Name	Signature	Initials	Have Read Procotol and SOPs	Date
Randal Clark	Randal Clark	RC	✓	4/17/
Jim Huckins	Jim Huckins	JH	✓	4/17/
Ginger Gibson	Virginia Lee Gibson	VLG	✓	4-17-
John Lebo	John A Lebo	JL	✓	4/17/
Carl Orazio	Carl Orazio	CEO	✓	4/17/9
Jim Petty	Jim Petty	JP	✓	4/17/

20. Outline of Organochlorine Flow-through Laboratory Study.

I. **Test Schedules -**

18 °C flow-through laboratory test conducted in April-June 1995.

II. **Test Toxicants -**

A. High purity (>95%) organochlorines routinely analyzed by MSC:

Aldrin	HCB
BHC- Alpha & Beta	Heptachlor
Chlordane - Cis & Trans	Heptachlor Epoxide
Dacthal	Lindane
DDD - o,p' & p,p'	Methoxychlor
DDE - o,p' & p,p'	Mirex
DDT - o,p' & p,p'	Nonachlor - Cis & Trans
Dieldrin	Oxychlordane
Endrin	PCA

III. **Test Substances -**

A. Triolein - High purity (≥ 95%), Sigma Chemical Co.

B. Acetone - HPLC Grade, Fisher Chemical Co.

C. Sanaqua - Didecyl dimethyl ammonium chloride solution (7.5%).

D. Polyethylene layflat tubing - Virgin plastic, no additives. 0.0089 cm thick and 2.54 cm wide, Brentwood Plastics.

IV. **Test Parameters -**

A. **Test Location -**

1. Biology East Wet Lab.

2. Flow-through Diluter # 3.

B. **Test Temperatures -**

1. 18 °C well water.

2. Flow-through diluter well water will be kept at a average temperature of 18 °C, by chilling or heating as necessary.

C. **Test volume -** 30 L per exposure chamber.

D. **Test Water** - MSC well water (hardness = 341 mg/L as $CaCO_3$, total alkalinity = 256 mg/L as $CaCO_3$, DOC = 1.84 mg/L, POC = 0.87 mg/L, and TOC = 2.70 mg/L).

E. **Test light cycle** - Normal lab light cycle.

F. **Exposure chamber turnover rate** - Flow-through diluter dump cycle consists of 1 L per 10 minutes, resulting in a turnover rate of 5 hours per 30 L exposure chamber.

G. **Test length** - 28 days exposures.

H. **Test Subjects** -

1. Semipermeable Membrane Device (SPMD) = 2.54 cm wide polyethylene layflat tubes that are 45.7 cm long (2.48g) (pre-extracted with hexane), containing 0.455 g (0.5 mL) triolein configured as a thin film.

2. SOP B5.217 will be used to prepare the SPMDs.

3. A total of 63 SPMDs will be used in the study.

I. **Test Concentrations** -

1. **Control test chamber (exposure chamber #4)** -

a. 100 µL of acetone will be delivered to the 30 L control exposure chamber every dump cycle (10 minutes).

b. Solvent concentration in the control exposure chamber will be ~0.1 mL/L.

2. **Low concentration exposure chamber (exposure chamber #1)** -

a. A solution containing each of the 24 organochlorine toxicants at a concentration of ~10 µg/L in acetone will be prepared. This will be the low concentration diluter stock.

b. 100 µL of low concentration diluter stock will be delivered to the 30 L low concentration exposure chamber every dump cycle (10 minutes).

c. Solvent concentration in the low concentration exposure chamber water will be ~0.1 mL/L.

3. **Medium concentration test chamber (exposure chamber #2)** -

a. A solution containing each of the 24 organochlorine test toxicants at a concentration of ~100 µg/L in acetone will be prepared. This will be the medium concentration diluter stock.

b. 100 µL of medium concentration diluter stock will be delivered to the 30 L medium concentration exposure chamber every dump cycle (10 minutes).

c. Solvent concentration in the medium concentration exposure chamber water will be ~0.1 mL/L.

4. **High concentration test chamber (exposure chamber #3) -**

a. A solution containing each of the 24 organochlorine test toxicants at a concentration of ~1,000 µg/L in acetone will be prepared. This will be the high concentration diluter stock.

b. 100 µL of high concentration diluter stock will be delivered to the 30 L high concentration exposure chamber every dump cycle (10 minutes).

c. Solvent concentration in the high concentration water will be ~0.1 mL/L.

J. **Flow-through exposure chambers setup, Day 0 -**

1. **SPMDs holding ring -**

a. A 1 foot diameter stainless steel ring will be suspended under the center of the flow-through diluter water inlet spout for each exposure chamber (1-4) (n=4).

b. Each of the rings will be divided into three quadrants, using aluminum wire. Each quadrant having a 120° arc.

2. **SPMDs placed in exposure test chambers on Day 0 -**

a. **SPMD Storage Blanks -**

Three SPMDs will be prepared on Day 0 along with the exposure chamber SPMDs. These SPMDs will be exposed to laboratory air at time of SPMD deployment in exposure chambers. The SPMDs will be placed in clean glass bottles and stored the same as exposure chamber SPMD samples. The SPMDs will be treated the same as the exposure chamber

samples. These SPMD Storage Blanks will be used to determine the organochlorine background of the SPMDs (n=3).

b. **Exposure chamber 1 -**

(1) 15 SPMDs will be placed in exposure chamber 1. 5 SPMDs will be placed in each quadrant of the SPMD holding ring (n=15).

(2) SPMDs in exposure chamber 1 will be used for the low treatment or concentration.

c. **Exposure chamber 2 -**

(1) 15 SPMDs will be placed in exposure chamber 2. 5 SPMDs will be placed in each quadrant of the SPMD holding ring (n=15).

(2) SPMDs in exposure chamber 2 will be used for the medium treatment or concentration.

d. **Exposure chamber 3 -**

(1) 15 SPMDs will be placed in exposure chamber 3. 5 SPMDs will be placed in each quadrant of the SPMD holding ring (n=15).

(2) SPMDs in exposure chamber 3 will be used for the high treatment or concentration.

e. **Exposure chamber 4 -**

(1) 15 SPMDs will be placed in exposure chamber 4. 5 SPMDs will be placed in each quadrant of the SPMD holding ring (n=15).

(2) SPMDs in exposure chamber 4 will be used for the control treatment or concentration.

f. **Total SPMDs required for Day 0.**

(1) Storage Blank SPMDs - (n=3).

(2) Low Concentration SPMDs - Used in exposure chamber 1 (n=15).

(3) Medium Concentration SPMDs - Used in exposure chamber 2 (n=15).

(4) High Concentration SPMDs - Used in exposure

chamber 3 (n=15).

(5) Control Concentration SPMDs - Used in exposure chamber 4 (n=15).

(6) Total SPMDs placed in exposure chambers on Day 0 (n=60).

(7) Total SPMDs prepared on Day 0 (storage Blanks and exposure chamber SPMDS) n=63.

K. **Treatment of SPMDs -**

SPMDs in all exposure chambers will be dipped in Sanaqua on Study Days 0, 8 and 16 to retard biological growth on outside surfaces.

V. **Test measurements -**

A. **Sampling Method -**

1. **SPMDs -**

a. SPMDs will be collected on Study Days 2, 4, 8, 16, and 28 (5 sampling times) from each exposure chamber (1-4).

b. Collected SPMDs will be place in solvent rinsed labeled glass bottle and frozen (-25 °C) until analysis.

2. **Exposure chamber Water -**

a. A 500 mL glass beaker will be submerged in each test chamber throughout the study in order to equilibrate with test chamber water and compounds. This beaker will be used to sample the exposure chamber water.

b. Water from the glass beaker will be poured into a 1000 mL Class A graduated glass cylinder for volume measurement.

c. Water from the glass graduated cylinder will be collected in a brown glass 4,000 mL bottle (teflon lined lid) with 100 mL methylene chloride added as keeper.

d. Water samples will be kept in refrigerator (5 °C) until analysis.

B. **Sampling schedule for organochlorine analysis -**

1. **SPMDs -**

a. **Sampling Schedule for SPMDs in exposure chambers (Days 2, 4, 8, 16, and 28) -**

Three SPMDs will be randomly collected from the SPMD ring of each exposure chamber on sample days 2, 4, 8, 16, and 28 (n=3 per exposure chamber per sample day, n=12 per flow-through diluter per sample day, n=60 for study).

2. **Exposure chamber Water -**

a. **Exposure chamber 1 (Low concentration).**

One 4,000 mL water sample from low concentration exposure chamber 1 will be collected on Study Day 0, 16 and 28 (n=3).

b. **Exposure chamber 2 (Medium concentration).**

One 2,000 mL water sample from medium concentration exposure chamber 2 will be collected on Study Day 0, 16, and 28 (n=3).

c. **Exposure chamber 3 (high concentration).**

Two replicate 1,000 mL water sample from high concentration exposure chamber 3 will be collected on Study Day 0, 16, and 28 (n=6). These samples will be Rep 1 and 2.

d. **Exposure chamber 4 (control concentration).**

Two 4,000 mL water sample from control concentration exposure chamber 4 will be collected on Study Day 0, 16, and 28 (n=6). One sample will be used for the control water sample, and one sample will be the water for the water spike.

e. **Total water samples collected.**

18 water samples will be collected in this study.

3. **Diluter Stock Solutions -**

One 10 mL sample from each of the Diluter Stock Solutions (n=4) will be collected on Day 0, 16, and 28 (n=12 for study).

4. **Lagoon Effluent Water Samples -**

a. 1 water sample (1,000 mL) from lab lagoon effluent will be collected at the beginning of the study, before test compounds are added to flow-through diluter system. (n=1).

b. 1 water sample (1,000 mL) from lab lagoon effluent will be collected at the end of the study on Day 28. (n=1).

c. A total of 2 lab lagoon effluent water samples will be collected. These sample will indicate if detectable levels of test compounds are being released in lab effluent.

5. **Total Flow-through Diluter Samples collected in Laboratory Study.**

a. Storage blank SPMDs - n=3.

b. Exposure chamber SPMDs - n=60.

c. Exposure chamber water - n=18.

d. Diluter stock solutions - n=12.

e. Lab lagoon effluent - n=2.

f. Total samples analyzed - n=95.

C. **Quality Control Samples and Standards.**

1. Quality control samples include water reagent blanks, SPMD reagent blanks, SPMD storage blanks, SPMD dialysis blanks, spike verification samples, water spikes, and SPMD dialysis method spikes. These samples will increase the number of samples to analyze by ~30% (n=~30 samples for study).

2. A set of 7 calibration standards are injected at the beginning and end of each GC run. Plus a standard is injected after every 8 samples. So standards will increase the number of chromatograms to process by ~30%, (n=~30 for study).

D. **Method of chemical measurement -**

1. Chemical residue analysis for organochlorines of all flow-through diluter samples, which includes stock solutions, SPMDs, and exposure chamber water, and quality control samples.

a. Exposure Chamber Water Samples and other samples -

Use SOP C4.21 and SOP C5.201.

b. SPMD Samples -

Use SOP C4.21, SOP C5.70, SOP C5.173, SOP C5.200.

2. **Exposure chamber water quality -**

Flow-through diluter water temperature and exposure chamber temperatures measured daily.

E. **Method of disposal of diluter effluent -**

Effluent from the test chambers of the flow-through diluter will go into the Blueline pipe. The Blueline pipe goes to the MSC treatment system for the removal of toxicants by activated charcoal before being released to MSC's effluent treatment lagoon.