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Organic Contaminant Levels in Three Fish Species Downchannel from the Los Alamos National Laboratory

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Organic Contaminant Levels in Three Fish Species Downchannel from the Los Alamos National Laboratory

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Abstract

Three species of fish from sites upriver and downriver of the Los Alamos National Laboratory (LANL) in the Rio Grande were analyzed for pesticides and polychlorinated biphenyls (PCBs). Data were used to implicate potential sources of the contaminants and to discuss potential risk to fish, the bald eagle, and humans. Eight of 28 contaminants were measurable in at least one sample of fish muscle tissue. Of 18 samples total, there were 18 detections of dichlorodiphenylethylene (DDE), eight of Aroclor-1254, five of dichloroethane, two of dichlorodiphenyltrichloroethane (DDT), two of endosulfan sulfate, two of gamma-chlordane, and one of Aroclor-1260. The LANL contribution, if any, to organic contaminant levels in the common carp (*Carpiodes carpio*), the channel catfish (*Ictalurus punctatus*), and the white sucker (*Catostomus commersoni*) in the Rio Grande appear to be small. The source of the DDT-related compounds was probably a pest control event in 1963 in which approximately 500,000 acres of forest west of the Rio Grande in the Santa Fe and Carson National Forests were sprayed with approximately one pound per acre of DDT (~141,044 ppm–wt/wt). DDE concentration between fish species was significantly different: the white sucker had significantly lower levels of 4,4' – DDE than the common carp and the channel catfish. This may have affected location treatment means of 4,4' – DDE; therefore, studies on the effect of the Laboratory on organic contaminant levels in fish in the Rio Grande should consider the effect of species, feeding habits, and other factors. Maximum DDE concentrations in all three fish species (0.03 to 0.15 mg kg^{-1}) were slightly below the minimum range in concentration (0.2 to 1.0 mg kg^{-1}) in prey of sensitive bird species that have been associated with reproductive effects. Assuming a maximum total fish ingestion of 21 kg yr^{-1} and a 70-kg human consumer body weight, the maximum DDT consumption by humans would be 6.7×10^{-5} mg g^{-1} d^{-1}, which is lower than the U.S. Environmental Protection Agency (EPA) human risk value of 5×10^{-4} mg kg^{-1} d^{-1}. The mean total DDT concentration of 82 μg kg^{-1} results in an EPA recommendation of no consumption restrictions for chronic systemic health endpoints for the general human population. Depending on meal size and acceptable risk levels, there are minor consumption restrictions recommended for chronic systemic health endpoints for children and for carcinogenic health endpoints for the general population. Maximum Aroclor-1254 concentrations in all three fish species (0.05 to 0.66 mg kg^{-1}) were well below the minimum range in concentration (50 to 100 mg kg^{-1}) that may adversely affect growth and reproduction of fish. Assuming a maximum total fish ingestion of 21 kg yr^{-1} and a 70-kg consumer body weight, the maximum Aroclor-1254 consumption would be 1.1×10^{-4} mg kg^{-1} d^{-1}. This is above the EPA human risk value of 2×10^{-5} mg kg^{-1} d^{-1}. Regarding the mean Aroclor-1254 concentration in fish, 0.13 mg kg^{-1}, minor consumption restrictions are recommended by the EPA on the basis of chronic systemic health endpoints for the general population and on developmental health endpoints for women of reproductive age.

Introduction

In early 1998 a preliminary risk assessment was performed at the Los Alamos National Laboratory (LANL) on the potential for environmental contaminants to adversely impact the bald eagle (Gonzales et al. 1998). The assessment was conducted as part of a three-year study on threatened and endangered species to comply with the Endangered Species Act of 1973. Although hazard index results indicated no appreciable impact to the bald eagle, this was predicated on the lack of detection of organic contaminants in sediment samples from the Rio Grande for several years (LANL 1997). Therefore, the only contribution of organic contaminant values to the bald eagle risk assessment was for the portion of the simulated eagle diet that was terrestrial, which was varied from 10% to 25%. Literature has since been found that reports detections of organics in sediment of the Rio Grande (Miller et al. 1997; Carter 1997). Additionally, uncertainties about the appropriate bioaccumulation and biomagnification factors for a freshwater system and consultations with the New Mexico Environment Department and the U.S. Fish and Wildlife Service were factors that established the need for further study. Rather than conducting additional empirical modeling, we decided to analyze three species of fish collected at five locations (one "control" and four "treatment") of the Rio Grande in 1997 for the presence of organic contaminants. Although the eagle prefers freshwater fish species such as trout, three bottom feeder species – the white sucker (*Catostomus commersoni*), the channel catfish (*Ictalurus punctatus*), and the common carp (*Carpiodes carpio*) – were sampled in order to maximize potential exposure to the eagle. These fish ingest relatively high amounts of contaminant-laden sediment and have high fat contents; therefore, exposure to contaminants through the ingestion of sediment and accumulation of lipophyllic organic contaminants would maximize contaminant loads. The concentration of radionuclides and trace metals in fish from these same sites have been reported previously (Fresquez et al. 1999).

Methods

On September 22, 1997, three or four fish samples were collected at each of five locations at the confluences of drainages from the Jemez Mountains that transect LANL and the Rio Grande (Figure 1). A raft-mounted Smith-Root Electrofisher shocking device was used to collect the fish. The San Ildefonso Pueblo served as the control site because it is upstream from LANL. Pajarito, Los Alamos, and Mortandad drainages traverse the Laboratory and terminate in the Rio Grande. The Frijoles drainage is south of the Laboratory, intersects Bandelier National Monument, and terminates at the Rio Grande. Portions of fish muscle sample (three or four fish per site) were frozen, packaged, and transported to Paragon Analytics, Inc., for chemical analysis. Samples were analyzed for 21 organochlorine (chlorinated hydrocarbon) pesticides and seven aroclors. Aroclors are mixtures of individual polychlorinated biphenyl (PCB) congeners at varying ratios. There are 209 different PCB congeners that differ in the number and/or position of chlorine atoms. The 28 analytes are listed in the Appendix.

Samples were extracted and analyzed according to Environmental Protection Agency (EPA) Solid Waste-846 procedures (EPA 1986). Specifically, the samples were extracted using soxhlet procedures based on Method 3540. The extracts were then processed using gel permeation chromatography cleanup by Method 3640. Samples containing PCBs were also

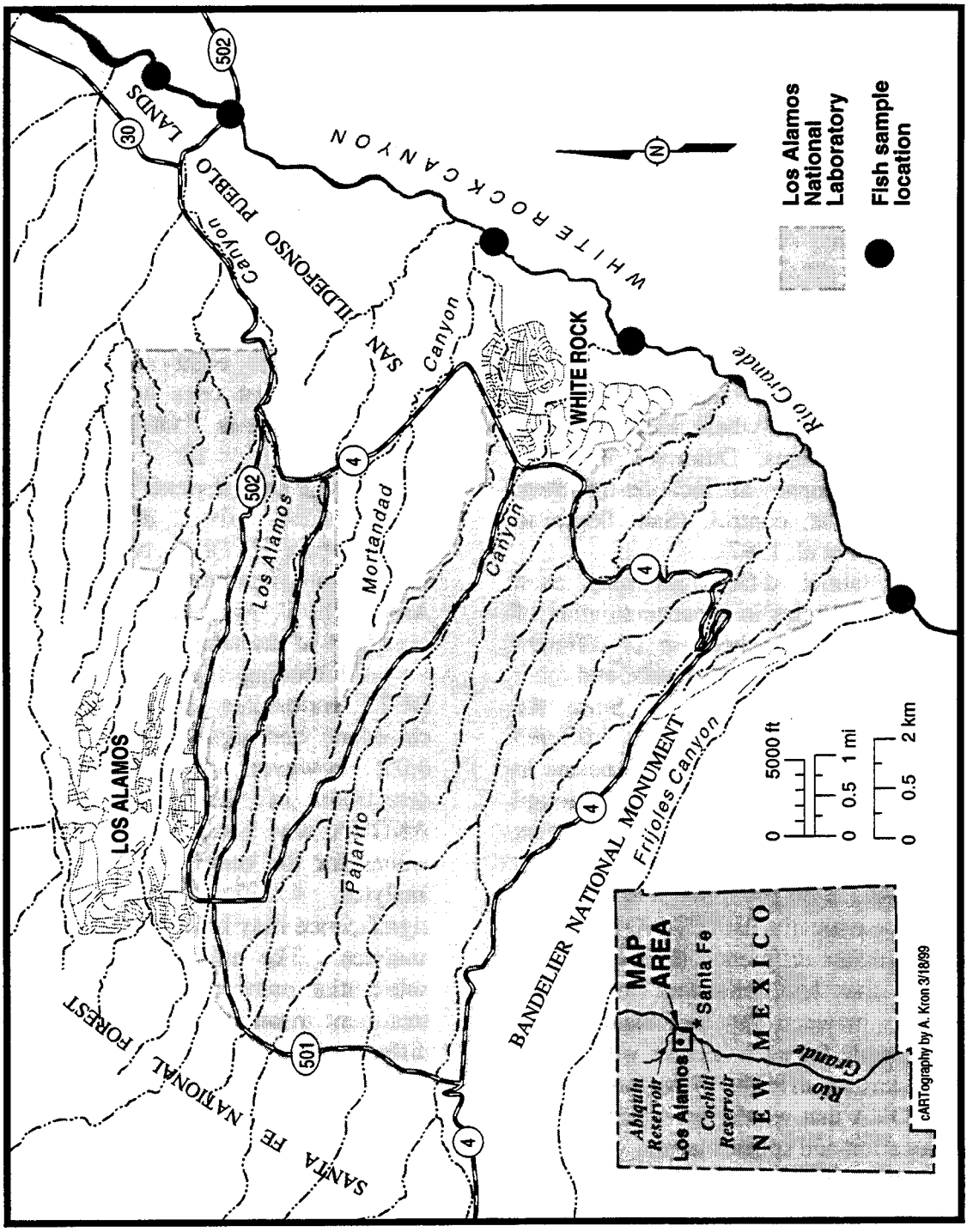

Figure 1. Locations of sites along the Rio Grande where fish were collected.

processed using sulfuric acid cleanup by Method 3665. Extracts were analyzed using gas chromatograph/electron capture detectors with a pesticides capillary column according to protocols based on EPA Method 8081. All positive results were confirmed on a RTX-50 column.

Analytes that were detected at least once within a treatment (location) were pooled with replacement values for "nondetects" that consisted of one-half the detection limit per Gilbert (1987). This was done for all sampling sites including the control. Data were then transformed to the natural logarithm and analyzed for significant differences using analysis of variance (ANOVA), where locations were considered treatments. Dunnett's procedure was used to compare all location-treatment means with the control (San Ildefonso Pueblo) (Steel et al. 1997).

Substantial differences may exist between fish species in bioaccumulation of organic contaminants because of different feeding habits, different fat levels, and other factors (Beyer et al. 1996). Since the number of each fish species differed between sampling locations, fish species as an uncontrolled "treatment" could confound results and conclusions regarding the effect of location. Therefore, contaminant data were segregated on the basis of species and analyzed statistically using ANOVA. The least significant difference (LSD) test was used as the test criterion to discern differences between any two means. The size of sample for each species within each location was insufficient to perform a two-way ANOVA that would test for interaction of the location and species term.

Although only catfish are typically consumed by people in northern New Mexico, comparisons of treatment means were made to risk-based fish consumption limit values recommended by the EPA (EPA 1997). This was done only for dichlorodiphenyltrichloroethane (DDT) and its metabolites and Aroclor-1254 because there was a substantial number of detections only for these analytes. Ecological risk screening values, with the bald eagle as a potential receptor, were cited for these two analytes with a recommendation to estimate exposure doses for the bald eagle and compare them to the risk screening values.

Results

The detailed analytical results or raw data are presented in the Appendix. Table 1 shows the arithmetic mean concentration by location of the eight analytes that were detected at least once at any of the five sampling locations. Of 18 samples total, there were 18 detections of dichlorodiphenylethylene (DDE), eight of Aroclor-1254, five of dichloroethane (DDD), two of DDT, two of endosulfan sulfate, two of gamma-chlordane, and one of Aroclor-1260. Only DDE had detections in over 50% of the samples.

Including replacement values, only DDT, endosulfan sulfate, and gamma-chlordane had significant F-values at $\alpha = 0.05$; however, there were only two detections of these analytes, and the ANOVA was based on only replacement values for the control samples of all three analytes. Therefore, the statistical significance may be artificial for these three analytes. The only analyte detected in a substantial number of samples, DDE, had treatment means that were not significantly different ($P = 0.3$). However, these analyses suffered from relatively low sample sizes, high variance, and may have been confounded by species effect. Concentrations of DDE by location are plotted in Figure 2. Mean concentrations of DDE in the common carp, channel catfish, and white suckers were 0.096 ppm ($n = 8$), 0.075 ppm ($n = 5$), and 0.019 ppm ($n = 5$),

Table 1. Mean fresh-wt concentration (ppm) of detected organic analytes upriver and downriver of the Los Alamos National Laboratory.

Analytes	Parameter	San Ildefonso (Control)	Los Alamos	Mortandad	Pajarito	Frijoles	Trt Mean
4,4' – DDT	Mean (mg kg^{-1})	0.005	0.0059	0.0041	0.005	0.0018	0.0042
	sd	0	0.0016	0.0016	0	0.0003	0.0009
	n	3	3	4	4	4	
	No. replaced values	3	2	2	4	3	
4,4' – DDD	Mean (mg kg^{-1})	0.005	0.005	0.0043	0.0075	0.0052	0.0055
	sd	0	0	0.0018	0.005	0.0032	0.0025
	n	3	3	4	4	4	
	No. replaced Values	3	3	1	3	1	
4,4' – DDE	Mean (mg kg^{-1})	0.1	0.0613	0.04	0.0485	0.095	0.0612
	sd	0.05	0.031	0.0386	0.0611	0.0241	0.0387
	n	3	3	4	4	4	
	No. replaced values	0	0	0	0	0	
Alpha-chlordane	Mean (mg kg^{-1})	0.0042	0.0025	0.0028	0.0066	0.0033	0.0038
	sd	0.0029	0	0	0.0083	0.0037	0.003
	n	3	3	4	4	4	
	No. replaced values	2	3	2	3	2	
Aroclor-1260	Mean (mg kg^{-1})	0.0500	0.0500	0.0033	0.0050	0.0055	0.047
	sd	0	0	0.0193	0	0.0768	0.024
	n	3	3	4	4	4	
	No. replaced values	3	3	3	4	3	
Aroclor-1254	Mean (mg kg^{-1})	0.1100	0.0500	0.0798	0.1900	0.2344	0.1385
	sd	0.1039	0	0.0212	0.28	0.2902	0.1478
	n	3	3	4	4	4	
	No. replaced values	2	3	1	3	1	
Endosulfan Sulfate	Mean (mg kg^{-1})	0.005	0.005	0.0039	0.005	0.0018	0.0039
	sd	0	0	0.0016	0	0.0003	0.0005
	n	3	3	4	4	4	
	No. replaced values	3	3	2	4	3	
Gamma-Chlordane	Mean (mg kg^{-1})	0.0025	0.0025	0.0025	0.0025	0.0009	0.0021
	sd	0	0	0.0014	0	0.0001	0.0004
	n	3	3	4	4	4	
	No. replaced values	3	3	3	4	3	

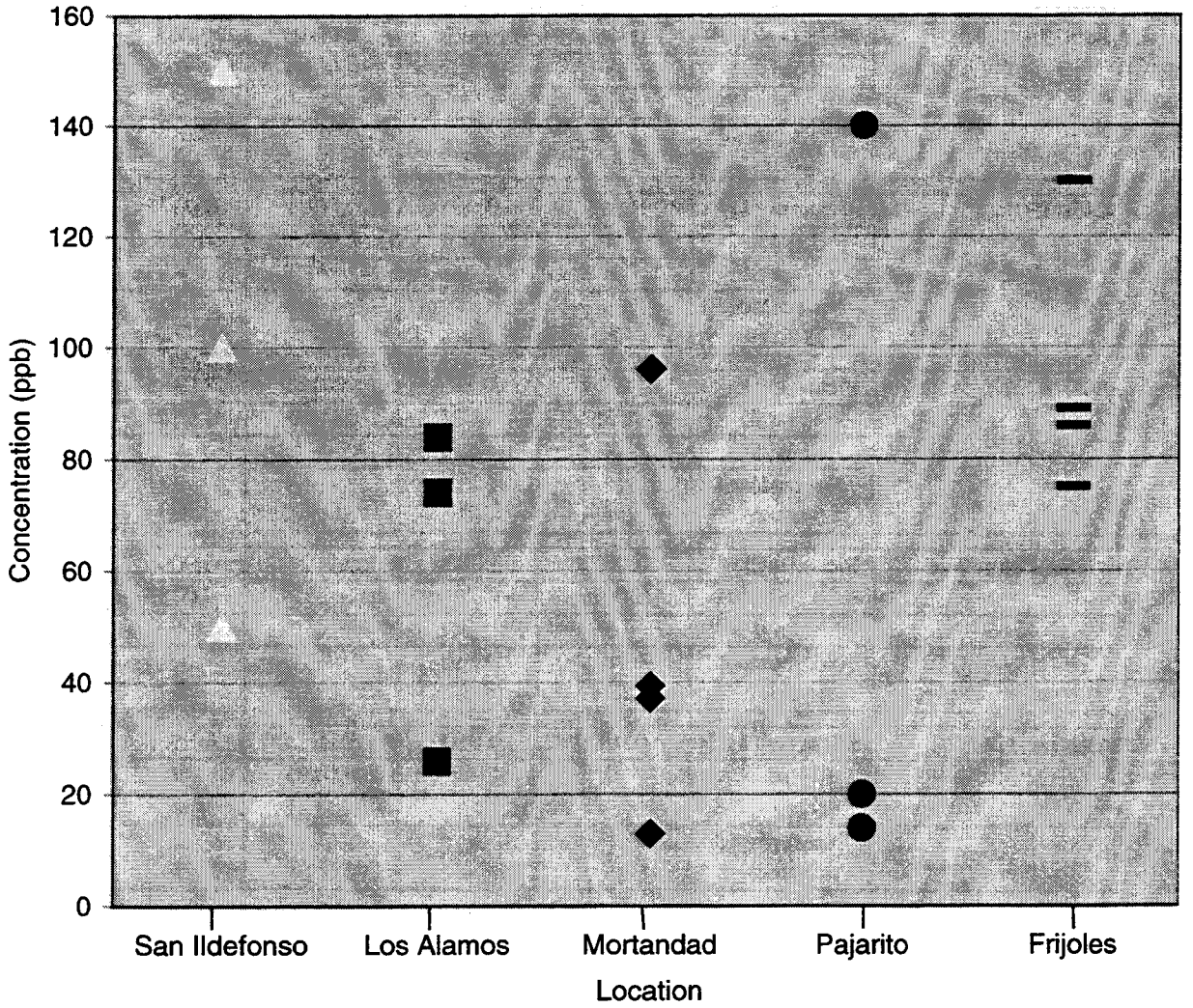

Figure 2. 4,4' – DDE concentrations in fish upriver and downriver of the Los Alamos National Laboratory.

respectively (Table 2). The ANOVA for species effect resulted in a significant (P = 0.002) F-value of 9.6. Suckers had significantly (α = 0.05) less DDE than carp and catfish. Thus, although the mean DDE concentration for the control was higher than all downriver means, the mean concentration at the Pajarito sampling location may have been biased downward as three of its four samples were suckers. Also, the mean DDE concentration at the control sampling location may have been biased upwards as all three of its samples consisted of the relatively high-concentration species – carp and catfish – with no samples of sucker.

Table 2. Fresh-weight concentration (ppm) of DDE in fish by species and location (coded).

Rep. No.	Common Carp	Channel Catfish	White Sucker
1	0.089 (F)	0.130 (F)	0.026 (LA)
2	0.086 (F)	0.074 (LA)	0.013 (M)
3	0.075 (F)	0.034 (M)	0.020 (P)
4	0.084 (LA)	0.035 (M)	0.020 (P)
5	0.096 (M)	0.100 (SI)	0.014 (P)
6	0.140 (P)		
7	0.050 (SI)		
8	0.150 (SI)		
Mean	0.096[a]	0.075[a]	0.019[b]
s	0.033	0.042	0.05

[a, b]Means followed by the same letter are not statistically different at the 95 percent confidence level.

Location Codes:
F = Confluence of Frijoles Canyon and Rio Grande;
LA = Confluence of Los Alamos Canyon and Rio Grande;
M = Confluence of Mortandad Canyon and Rio Grande;
P = Confluence of Pajarito Canyon and Rio Grande;
SI = San Ildefonso at the Rio Grande.

Discussion

Maximum DDE concentrations in all three fish species (0.03 to 0.15 mg kg^{-1}) were slightly below the minimum range in concentration (0.2 to 1.0 mg kg^{-1}) in prey of sensitive bird species that have been associated with reproductive effects (Blus 1996).

The EPA consumption limits for DDT and its metabolites are based on the total concentration, i.e., sum of 4,4'-DDT, 4,4'-DDE, and 4,4'-DDD (referred to as "total DDT"). To compare to this limit, the concentrations of DDT, DDD, and DDE were averaged across the five sampling sites, and the means were summed. Assuming a maximum total fish ingestion of 21 kg yr^{-1} and a 70-kg consumer body weight (EPA 1993), the maximum DDT consumption would be 6.7×10^{-5} mg DDT kg^{-1} d^{-1}. This is lower than the EPA human risk value of 5×10^{-4} mg kg^{-1} d^{-1}. The mean DDE concentration for all sampling locations was 0.069 mg kg^{-1} (ppm). This is higher than concentrations of 0.005, 0.064, and 0.028 mg kg^{-1} (ppm), measured in white

sucker at upriver locations of the Rio Grande in New Mexico and Colorado in 1992/1993 (Carter 1997). For the mean concentration of 0.069 mg kg^{-1} (ppm), there are no human consumption restrictions for chronic systemic health endpoints for the general population (EPA 1997). Depending on meal size and acceptable risk levels, there are minor consumption restrictions recommended for chronic systemic health endpoints for children and for carcinogenic health endpoints for the general population (EPA 1997).

Estimates of potential exposure dose to bald eagles based on the DDE concentrations measured in fish in this study should be made and could be compared to the conservative "no observed adverse effects level" (NOAEL) of 2.2×10^{-5} mg/kg/d (Longcore et al. 1971), which has been used for ecological risk screening at LANL (Gonzales et al. 1998; Kelly et al. 1998).

It is not surprising that the control site had higher levels of DDE than the treatment sites because DDT was applied to expansive and isolated areas in numerous events between the years 1950 and 1963 (Brown et al. 1986; Allen 1989). The most recent large-scale application of DDT was a 1963 aerial broadcast of approximately 455,860 acres of the Carson and Santa Fe National Forests west of the Rio Grande (Brown et al. 1986; LASL 1963). This application included treatment of areas upriver of LANL. The rate of application was one pound of DDT per gallon of fuel oil per acre, which roughly equals 141,044 ppm (wt/wt). At a breakdown rate of approximately 90% for each 8.5 years since the DDT was applied (Stoker and Seager 1976), up to 14 ppm DDT could have existed in its original form in 1997 when the fish samples were collected, barring dilution by abiotic media such as soil, sediment, or water. At the high rate of application it also is not surprising that DDT in its original form was still detectable. Numerous isolated applications of DDT at Bandelier National Monument (Allen 1989) may be responsible for the elevated levels of DDE measured in this study at the Frijoles sampling site.

The ANOVA *F*-value for Aroclor-1254 was not significant ($\alpha = 0.05$), and a comparison of the treatment means to the control mean revealed no significant differences. Although the difference between the Frijoles mean (234 ppm) and the control mean (110 ppm) was relatively large ($\Delta = 124$ ppm) in comparison to differences associated with the other treatment means, the small sample sizes and high variation within the data set contributed to a non-significant LSD test. The Frijoles Canyon/Rio Grande confluence is immediately downriver from LANL, but Frijoles Canyon does not enter into LANL property. The fact that concentrations of Aroclor-1254 upriver from the Frijoles/Rio Grande confluence are noticeably lower suggests sources other than LANL.

Maximum Aroclor-1254 concentrations in all three fish species (0.05 to 0.66 mg kg^{-1}) were well below the minimum range in concentration (50 to 100 mg kg^{-1}) that may adversely affect growth and reproduction of fish (Niimi 1996).

Assuming a maximum total fish ingestion of 21 kg yr^{-1} and a 70-kg consumer body weight (EPA 1993), the total Aroclor-1254 consumption would be 1.07×10^{-4} mg kg^{-1} d^{-1}. This is higher than the EPA human risk value of 2×10^{-5} mg kg^{-1} d^{-1}. The mean Aroclor-1254 concentration for all sampling locations was 0.13 mg kg^{-1} (ppm). At this concentration, and depending on meal size and level of risk accepted, minor consumption restrictions are recommended by the EPA on the basis of chronic systemic health endpoints for the general population and on developmental health endpoints for

women of reproductive age (EPA 1997). Depending on meal size and acceptable risk levels, minimal consumption restrictions are recommended for developmental health endpoints for children (EPA 1997).

Estimates of potential exposure dose to bald eagles based on the DDE concentrations measured in fish in this study should be made and could be compared to the conservative NOAEL of 5.2×10^{-3} mg/kg/d (Lillie 1974), which has been used for ecological risk screening at LANL (Gonzales et al. 1998; Kelly et al. 1998).

Aroclors are mixtures of individual PCB congeners at varying ratios. There are 209 different PCB congeners. Aroclor-1254 is a compound of several PCBs (penta-, hexa-, and heptachlorobiphenyls) with 54% chlorine by mass. Water quality criteria in the Clean Water Act that are intended to protect wildlife are based on aroclor values, therefore analysis of aroclors is typically favored over analyses of congeners. Determining potential impact only on the basis of aroclors is not sufficient because

1. The biological behavior, or toxicology, of individual PCB congeners can vary substantially,
2. Risk assessment guidelines recommend the measurement of congener-specific PCBs, and
3. Aroclor analyses are estimations that are prone to error.

Because of these problems, characterization of PCB congeners at LANL should be investigated. Concentrations could potentially be predicted from aroclor concentrations by developing site-specific regression equations. Newman et al. (1998) developed equations for quantitation of aroclors from PCB congeners, e.g.,

$y_{99} = 0.0828x^{-0.0667}$; $r^2 = 0.97$,

where x = Aroclor-1248 concentration and

y = congener 99:Aroclor-1248 conversion factor.

Conclusions

The LANL contribution, if any, to organic contaminant levels in the common carp, the channel catfish, and the white sucker in the Rio Grande appear to be small; however, low sample sizes, high variation, and potential interaction of species effect with location treatment effect require additional sampling and analysis.

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Appendix

Paragon Analytics, Inc.

Pesticides / PCBs Case Narrative

Los Alamos National Laboratory SMO

4275R

Order Number - 9805229

1. This report consists of 18 fish tissue samples received by Paragon on 05/28/98.

2. These samples were extracted and analyzed according to SW-846, 3rd Edition procedures. Specifically, the solid samples were extracted using soxhlet procedures based on Method 3540. The extracts were then processed using GPC cleanup by Method 3640 in an attempt to remove potential interferences. Because samples 1, 2, 3, 8, 9, 11, 12, 16 and 18 contained targets compounds for PCB's, the extracts for these samples were also processed using sulfuric acid cleanup by Method 3665 in an attempt to remove interferences for additional PCB only analyses.

3. The extracts were then analyzed using GC/ECD (electron capture detectors) with a RTX-CL Pesticides capillary column according to protocols based on Method 8081. All positive results were then confirmed on a RTX-50 column. The quantitation of each analyte is taken from the primary column unless interferences were encountered, in which case the secondary column was used.

4. The percent breakdown criteria for Endrin, 4,4'-DDT and the combined breakdown met acceptance criteria.

5. All initial and continuing calibration criteria were met with the following exceptions;

   Initial calibration verification - Endrin aldehyde was out high on the primary column.
   Continuing calibration #2 - TCMX and heptachlor were out high on the secondary column.
   Continuing calibration #3 - Endosulfan sulfate was out low on the primary column.
   Continuing calibration #4 and #5 - A majority of the compounds were out high on the secondary column.

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Because the sensitivity of the instrument increased, no further action was taken. For compounds that were detected in the samples the results were reported from the column that did meet calibration criteria.

6. The method blanks associated with this project were below the reporting limits for all analytes.

7. All laboratory control spike and laboratory control spike duplicate recoveries and RPDs were within the acceptance criteria.

8. All matrix spike and matrix spike duplicate recoveries and RPDs were within acceptance criteria with the following exceptions:

Spiked Compound	QC Sample	Direction
Dieldrin	MS and MSD	high
4,4'-DDT	MS and MSD	high

The recoveries of these compounds in the laboratory control spike and laboratory control spike duplicate were within control limits, which suggest the outliers in the matrix spikes may have been due to matrix effects. No further action was warranted. Blank spike and blank spike duplicate results have been included.

9. Samples 1-18 were sampled on 9/22/97, received by Paragon on 5/28/98, and per LANL's approval, extracted on 6/16/98. The samples were frozen after collection, and were stored, shipped, and kept frozen until extraction. The USEPA has not established sample holding times for this matrix, and the analytes of concern are known to persist in similar environmental matrices for decades.

10. All surrogate recoveries were within acceptable limits with the following exceptions:

Surrogate	Sample	Direction
DCB	EX980616-4MB	high

The method states that one surrogate may be outside control limits without further action.

11. Samples -1, -2, -4, -5, -8, -12, and -18 were analyzed at a higher dilution in order to bring targets within the calibration range of the instrument. The reporting limits have been adjusted accordingly.

12. Results for Samples -1, -2, -3, -4, -8, -12, & 18 were reported twice, (at 2 dilution's) to give the lowest possible detection limits at the lower dilution, and to report the large hits within calibration.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Jm
Judith Melson
GC Analyst

7-16-98
Date

MB
Reviewer's Initials

7-17-98
Date

The Final Report was reviewed and approved under the contract terms and special agreements with LANL-SHO, for these fish samples.

Steven M. Fry, Ph.D.
Vice President

Date: 7/17/98

Wednesday, May 27, 1998

Los Alamos
NATIONAL LABORATORY

CHAIN OF CUSTODY DOCUMENT NUMBER: 4275RC

REQUEST NUMBER: 4275R
ANALYSIS TYPE: ORG

9805229

01

ATTN: Steve Fry
Paragon/ATI
225 COMMERCE
FT. COLLINS, CO 80524

	SAMPLE ID	CONT ID	CONTAINER DESCRIPTION	ANALYSIS ORDER CODE	PRESERVATIVE	MATRIX
01	B1E	01	Poly baggie	PESTPCB	NONE	AT
02	B2E	01	Poly baggie	PESTPCB	NONE	AT
03	B3E	01	Poly baggie	PESTPCB	NONE	AT
04	B4E	01	Poly baggie	PESTPCB	NONE	AT
05	LA1E	01	poly baggie	PESTPCB	NONE	AT
06	LA2E	01	Poly baggie	PESTPCB	NONE	AT
07	LA3E	01	Poly baggie	PESTPCB	NONE	AT
08	M1E	01	Poly baggie	PESTPCB	NONE	AT
09	M2E	01	Poly baggie	PESTPCB	NONE	AT
10	M3E	01	Poly baggie	PESTPCB	NONE	AT
11	M4E	01	Poly baggie	PESTPCB	NONE	AT
12	P1E	01	Poly baggie	PESTPCB	NONE	AT
13	P2E	01	Poly baggie	PESTPCB	NONE	AT
14	P3E	01	Poly baggie	PESTPCB	NONE	AT
15	P4E	01	Poly baggie	PESTPCB	NONE	AT
16	SI1E	01	Poly baggie	PESTPCB	NONE	AT
17	SI2E	01	Poly baggie	PESTPCB	NONE	AT
18	SI3E	01	Poly baggie	PESTPCB	NONE	AT

Relinquished By:		Date	Time
Jolene Valdez (PRINTED NAME)	Jolene Valdez (SIGNATURE)	5-27-98	13:30
Fedex (PRINTED NAME)	(SIGNATURE)	5/28/98	1000
(PRINTED NAME)	(SIGNATURE)		

Received By:		Date	Time
Fedex (PRINTED NAME)	(SIGNATURE)		
Jolene Martinez (PRINTED NAME)	Jolene Martinez (SIGNATURE)	5/28/98	1000
(PRINTED NAME)	(SIGNATURE)		

Received for DISPOSAL By:		Date	Time
(PRINTED NAME)	(SIGNATURE)		

Remarks:

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805229
Client Name: Los Alamos National Laboratory SMO
Client Project Name:
Client Project Number: 4275R
Client PO Number: 7794L0014-9S

	Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
1	B1E	9805229-1		Solid	9/22/97	
2	B2E	9805229-2		Solid	9/22/97	
3	B3E	9805229-3		Solid	9/22/97	
4	B4E	9805229-4		Solid	9/22/97	
5	LA1E	9805229-5		Solid	9/22/97	
6	LA2E	9805229-6		Solid	9/22/97	
7	LA3E	9805229-7		Solid	9/22/97	
8	M1E	9805229-8		Solid	9/22/97	
9	M2E	9805229-9		Solid	9/22/97	
10	M3E	9805229-10		Solid	9/22/97	
11	M4E	9805229-11		Solid	9/22/97	
12	P1E	9805229-12		Solid	9/22/97	
13	P2E	9805229-13		Solid	9/22/97	
14	P3E	9805229-14		Solid	9/22/97	
15	P4E	9805229-15		Solid	9/22/97	
16	SI1E	9805229-16		Solid	9/22/97	
17	SI2E	9805229-17		Solid	9/22/97	
18	SI3E	9805229-18		Solid	9/22/97	

Wednesday, May 27, 1998

Los Alamos
NATIONAL LABORATORY

CHAIN OF CUSTODY DOCUMENT NUMBER: 4275RC

REQUEST NUMBER: 4275R
ANALYSIS TYPE: ORG

9805229

01

ATTN: Steve Fry
Paragon/ATI
225 COMMERCE
FT. COLLINS, CO 80524

	SAMPLE ID	CONT ID	CONTAINER DESCRIPTION	ANALYSIS ORDER CODE	PRESERVATIVE	MATRIX
01	B1E	01	Poly baggie	PESTPCB	NONE	AT
02	B2E	01	Poly baggie	PESTPCB	NONE	AT
03	B3E	01	Poly baggie	PESTPCB	NONE	AT
04	B4E	01	Poly baggie	PESTPCB	NONE	AT
05	LA1E	01	poly baggie	PESTPCB	NONE	AT
06	LA2E	01	Poly baggie	PESTPCB	NONE	AT
07	LA3E	01	Poly baggie	PESTPCB	NONE	AT
08	M1E	01	Poly baggie	PESTPCB	NONE	AT
09	M2E	01	Poly baggie	PESTPCB	NONE	AT
10	M3E	01	Poly baggie	PESTPCB	NONE	AT
11	M4E	01	Poly baggie	PESTPCB	NONE	AT
12	P1E	01	Poly baggie	PESTPCB	NONE	AT
13	P2E	01	Poly baggie	PESTPCB	NONE	AT
14	P3E	01	Poly baggie	PESTPCB	NONE	AT
15	P4E	01	Poly baggie	PESTPCB	NONE	AT
16	SI1E	01	Poly baggie	PESTPCB	NONE	AT
17	SI2E	01	Poly baggie	PESTPCB	NONE	AT
18	SI3E	01	Poly baggie	PESTPCB	NONE	AT

Relinquished By:		Date	Time
Jolene Valdez (PRINTED NAME)	Jolene Valdez (SIGNATURE)	5-27-98	13:30
Fedex (PRINTED NAME)	(SIGNATURE)	5/28/98	1010
(PRINTED NAME)	(SIGNATURE)		

Received By:		Date	Time
Fedex (PRINTED NAME)	(SIGNATURE)		
Jolene Martinez (PRINTED NAME)	Jolene Martinez (SIGNATURE)	5/28/98	1000
(PRINTED NAME)	(SIGNATURE)		

Received for DISPOSAL By:		Date	Time
(PRINTED NAME)	(SIGNATURE)		

Remarks:

Wednesday, May 27, 1998

REQUEST NUMBER: 4275R
ANALYSIS TYPE: ORG

Los Alamos
NATIONAL LABORATORY

9805229

01

ATTN: Steve Fry
Paragon/ATI
225 COMMERCE
FT. COLLINS, CO 80524

Please analyze the enclosed samples according to the schedule indicated:

These samples are on:

SHIP DATE: 5/27/98
REPORT DUE: 6/27/98
TURN AROUND REQ'D: 30 days

LANL Request Number: 4275R
Per Agreement Number: 7794L0014-9S
Project Cost Code: WE6HTEDN0000

RAD SCREENING: Not Required
COMMENTS: 20 - 2222 , GG;

LANL ER SMO CONTACT: Joylene Valdez MS H865 5056659968
Signature: Joylene Valdez

ANALYSIS ORDER CODE	ANALYTE(S)	SAMPLE ID	CONT ID	SAMPLE MATRIX	DATE SAMPLED	COMMENTS
1 PESTPCB		B1E	01	AT	9/22/97	CARP
2 PESTPCB		B2E	01	AT	9/22/97	CARP
3 PESTPCB		B3E	01	AT	9/22/97	CARP
4 PESTPCB		B4E	01	AT	9/22/97	CATFISH
5 PESTPCB		LA1E	01	AT	9/22/97	CATFISH
6 PESTPCB		LA2E	01	AT	9/22/97	SUCKER
7 PESTPCB		LA3E	01	AT	9/22/97	CARP
8 PESTPCB		M1E	01	AT	9/22/97	CARP
0 PESTPCB		M2E	01	AT	9/22/97	CATFISH
10 PESTPCB		M3E	01	AT	9/22/97	SUCKER
11 PESTPCB		M4E	01	AT	9/22/97	CATFISH
12 PESTPCB		P1E	01	AT	9/22/97	CARP
13 PESTPCB		P2E	01	AT	9/22/97	SUCKER
14 PESTPCB		P3E	01	AT	9/22/97	SUCKER
15 PESTPCB		P4E	01	AT	9/22/97	SUCKER
16 PESTPCB		SI1E	01	AT	9/22/97	CATFISH
17 PESTPCB		SI2E	01	AT	9/22/97	CARP
18 PESTPCB		SI3E	01	AT	9/22/97	CARP

Paragon Analytics, Inc. - Fort Collins, Colorado

CONDITION OF SAMPLE UPON RECEIPT

CLIENT: LANL SHIPPING CONTAINER #: Cooler Seal

WORKORDER NO. 9805229 INITIALS: JI DATE: 5/28/97

1.	Does this project require special handling according to NEESA, Level 3, or CLP protocols? If yes, complete a. and b. a. Cooler Temperature_____ b. Lot No's._____ c. Airbill Number		Yes	(No)
2.	Are custody seals on the cooler intact? If so, how many 3	N/A	(Yes)	No
3.	Are custody seals on sample containers intact?	N/A	(Yes)	No
4.	Is there a Chain of Custody (COC) or other representative documents, letters or shipping memos?		(Yes)	No
5.	Is the COC complete? Relinquished: Yes ✓ No Requested Analysis: Yes ✓ No	N/A	(Yes)	No
6.	Is the COC in agreement with the samples received? No. of Samples: Yes ✓ No__ Sample ID's: Yes ✓ No__ Matrix: Yes ✓ No No. of Containers: Yes ✓ No		(Yes)	No
7.	Are the samples requiring chemical preservation preserved correctly?	(N/A)	Yes	No
8.	Is there enough sample? If so, are they in the proper containers?		(Yes)	No
9.	Are all samples within holding times for the requested analyses?		(Yes)	No
10.	Were the sample(s) shipped on ice?	N/A	(Yes)	No
11.	Were all sample containers received intact? (not broken or leaking, etc.)		(Yes)	No
12.	Are samples requiring no headspace, headspace free?	(N/A)	Yes	No
13.	Do the samples require quarantine?		Yes	(No)
14.	Do samples require Paragon disposal?		(Yes)	No
15.	Did the client return any unused bottles?		Yes	(No)

Describe "NO" items (except No's 1, 13, &14):_____

Was the client contacted? Yes____ No____

If yes, Date:_____ Name of person contacted:_____

Describe actions taken or client instructions:_____

Group Leader's Signature:_____ Date:_____

Cooler Temperature: 4C

FRM 201FC7 (30/7/97)

Paragon Analytics, Inc. - Fort Collins, Colorado

CONDITION OF SAMPLE UPON RECEIPT

CLIENT: LANL

SHIPPING CONTAINER #: Cooler Paul

WORKORDER NO. 9805229

INITIALS: JI

DATE: 5/28/97

1.	Does this project require special handling according to NEESA, Level 3, or CLP protocols? If yes, complete a. and b. a. Cooler Temperature_____ b. Lot No's._____ c. Airbill Number		Yes	No
2.	Are custody seals on the cooler intact? If so, how many 3	N/A	Yes	No
3.	Are custody seals on sample containers intact?	N/A	Yes	No
4.	Is there a Chain of Custody (COC) or other representative documents, letters or shipping memos?		Yes	No
5.	Is the COC complete? Relinquished: Yes ✓ No Requested Analysis: Yes ✓ No	N/A	Yes	No
6.	Is the COC in agreement with the samples received? No. of Samples: Yes ✓ No__ Sample ID's: Yes ✓ No__ Matrix: Yes ✓ No No. of Containers: Yes ✓ No		Yes	No
7.	Are the samples requiring chemical preservation preserved correctly?	N/A	Yes	No
8.	Is there enough sample? If so, are they in the proper containers?		Yes	No
9.	Are all samples within holding times for the requested analyses?		Yes	No
10.	Were the sample(s) shipped on ice?	N/A	Yes	No
11.	Were all sample containers received intact? (not broken or leaking, etc.)		Yes	No
12.	Are samples requiring no headspace, headspace free?	N/A	Yes	No
13.	Do the samples require quarantine?		Yes	No
14.	Do samples require Paragon disposal?		Yes	No
15.	Did the client return any unused bottles?		Yes	No

Describe "NO" items (except No's 1, 13, &14):_____

Was the client contacted? Yes____ No____

If yes, Date:_____ Name of person contacted:_____

Describe actions taken or client instructions:_____

Group Leader's Signature:_____ Date:_____

Cooler Temperature: 4.0

FRM 201FC7 (30/7/97)

Analytical Results

Organochlorine Pesticides

Method SW8081

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	LABQC
Lab ID:	EX980616-4MB

Sample Matrix:	Solid	Date Collected:	16-Jun-98	Sample Aliquot:	30
% Moisture:	N/A	Date Extracted:	16-Jun-98	Final Volume:	10
Cleanup Method:	SW3640	Date Analyzed:	11-Jul-98	Dilution:	1
Report Basis:	NA	Prep Batch:	EX980616-4		

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	1.7	ug/kg	1.7	U	
58-89-9	GAMMA-BHC (LINDANE)	1.7	ug/kg	1.7	U	
76-44-8	HEPTACHLOR	1.7	ug/kg	1.7	U	
309-00-2	ALDRIN	1.7	ug/kg	1.7	U	
319-85-7	BETA-BHC	1.7	ug/kg	1.7	U	
319-86-8	DELTA-BHC	1.7	ug/kg	1.7	U	
1024-57-3	HEPTACHLOR EPOXIDE	1.7	ug/kg	1.7	U	
959-98-8	ENDOSULFAN I	1.7	ug/kg	1.7	U	
5103-74-2	GAMMA-CHLORDANE	1.7	ug/kg	1.7	U	
5103-71-9	ALPHA-CHLORDANE	1.7	ug/kg	1.7	U	
72-55-9	4,4'-DDE	3.3	ug/kg	3.3	U	
60-57-1	DIELDRIN	3.3	ug/kg	3.3	U	
72-20-8	ENDRIN	3.3	ug/kg	3.3	U	
72-54-8	4,4'-DDD	3.3	ug/kg	3.3	U	
33213-65-9	ENDOSULFAN II	3.3	ug/kg	3.3	U	
50-29-3	4,4'-DDT	3.3	ug/kg	3.3	U	
7421-93-4	ENDRIN ALDEHYDE	3.3	ug/kg	3.3	U	
72-43-5	METHOXYCHLOR	17	ug/kg	17	U	
1031-07-8	ENDOSULFAN SULFATE	3.3	ug/kg	3.3	U	
53494-70-5	ENDRIN KETONE	3.3	ug/kg	3.3	U	
8001-35-2	TOXAPHENE	170	ug/kg	170	U	
12674-11-2	AROCHLOR-1016	33	ug/kg	33	U	
11104-28-2	AROCHLOR-1221	67	ug/kg	67	U	
11141-16-5	AROCHLOR-1232	33	ug/kg	33	U	
53469-21-9	AROCHLOR-1242	33	ug/kg	33	U	
12672-29-6	AROCHLOR-1248	33	ug/kg	33	U	
11097-69-1	AROCHLOR-1254	33	ug/kg	33	U	
11096-82-5	AROCHLOR-1260	33	ug/kg	33	U	

Organochlorine Pesticides

Method SW8081

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

EQC ID:	LABQC	**Sample Matrix:**	Solid	**Date Collected:**	16-Jun-98	**Sample Aliquot:**	30
Lab ID:	EX980616-4MB	**% Moisture:**	N/A	**Date Extracted:**	16-Jun-98	**Final Volume:**	10
		Cleanup Method:	SW3640	**Date Analyzed:**	11-Jul-98	**Dilution:**	1
		Report Basis:	NA	**Prep Batch:**	EX980616-4		

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	21.8	ug/kg	16.7	131	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	19.5	ug/kg	16.7	117	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID: B1E
Lab ID: 9805229-1

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 30
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	1.7	ug/kg	1.7	U	
58-89-9	GAMMA-BHC (LINDANE)	1.7	ug/kg	1.7	U	
76-44-8	HEPTACHLOR	1.7	ug/kg	1.7	U	
309-00-2	ALDRIN	1.7	ug/kg	1.7	U	
319-85-7	BETA-BHC	1.7	ug/kg	1.7	U	
319-86-8	DELTA-BHC	1.7	ug/kg	1.7	U	
1024-57-3	HEPTACHLOR EPOXIDE	1.7	ug/kg	1.7	U	
959-98-8	ENDOSULFAN I	1.7	ug/kg	1.7	U	
5103-74-2	GAMMA-CHLORDANE	1.7	ug/kg	1.7	U	
5103-71-9	ALPHA-CHLORDANE	2.6	ug/kg	1.7		
72-55-9	4,4'-DDE	74	ug/kg	3.3	E	
60-57-1	DIELDRIN	3.3	ug/kg	3.3	U	
72-20-8	ENDRIN	3.3	ug/kg	3.3	U	
72-54-8	4,4'-DDD	4	ug/kg	3.3		
33213-65-9	ENDOSULFAN II	3.3	ug/kg	3.3	U	
50-29-3	4,4'-DDT	3.3	ug/kg	3.3	U	
7421-93-4	ENDRIN ALDEHYDE	3.3	ug/kg	3.3	U	
72-43-5	METHOXYCHLOR	17	ug/kg	17	U	
1031-07-8	ENDOSULFAN SULFATE	3.3	ug/kg	3.3	U	
53494-70-5	ENDRIN KETONE	3.3	ug/kg	3.3	U	
8001-35-2	TOXAPHENE	170	ug/kg	170	U	
12674-11-2	AROCHLOR-1016	33	ug/kg	33	U	
11104-28-2	AROCHLOR-1221	67	ug/kg	67	U	
11141-16-5	AROCHLOR-1232	33	ug/kg	33	U	
53469-21-9	AROCHLOR-1242	33	ug/kg	33	U	
12672-29-6	AROCHLOR-1248	33	ug/kg	33	U	
11097-69-1	AROCHLOR-1254	170	ug/kg	33		
11096-82-5	AROCHLOR-1260	33	ug/kg	33	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Client ID:	B1E
Lab ID:	9805229-1

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 30
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	16.8	ug/kg	16.7	100	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	16.1	ug/kg	16.7	97	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID: B1E
Lab ID: 9805229-1DL5

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 12-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 30
Final Volume: 10
Dilution: 5

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	8.3	ug/kg	8.3	U	
58-89-9	GAMMA-BHC (LINDANE)	8.3	ug/kg	8.3	U	
76-44-8	HEPTACHLOR	8.3	ug/kg	8.3	U	
309-00-2	ALDRIN	8.3	ug/kg	8.3	U	
319-85-7	BETA-BHC	8.3	ug/kg	8.3	U	
319-86-8	DELTA-BHC	8.3	ug/kg	8.3	U	
1024-57-3	HEPTACHLOR EPOXIDE	8.3	ug/kg	8.3	U	
959-98-8	ENDOSULFAN I	8.3	ug/kg	8.3	U	
5103-74-2	GAMMA-CHLORDANE	8.3	ug/kg	8.3	U	
5103-71-9	ALPHA-CHLORDANE	8.3	ug/kg	8.3	U	
72-55-9	4,4'-DDE	89	ug/kg	17	detected	
60-57-1	DIELDRIN	17	ug/kg	17	U	
72-20-8	ENDRIN	17	ug/kg	17	U	
72-54-8	4,4'-DDD	17	ug/kg	17	U	
33213-65-9	ENDOSULFAN II	17	ug/kg	17	U	
50-29-3	4,4'-DDT	17	ug/kg	17	U	
7421-93-4	ENDRIN ALDEHYDE	17	ug/kg	17	U	
72-43-5	METHOXYCHLOR	83	ug/kg	83	U	
1031-07-8	ENDOSULFAN SULFATE	17	ug/kg	17	U	
53494-70-5	ENDRIN KETONE	17	ug/kg	17	U	
8001-35-2	TOXAPHENE	830	ug/kg	830	U	
12674-11-2	AROCHLOR-1016	170	ug/kg	170	U	
11104-28-2	AROCHLOR-1221	330	ug/kg	330	U	
11141-16-5	AROCHLOR-1232	170	ug/kg	170	U	
53469-21-9	AROCHLOR-1242	170	ug/kg	170	U	
12672-29-6	AROCHLOR-1248	170	ug/kg	170	U	
11097-69-1	AROCHLOR-1254	170	ug/kg	170	U	
11096-82-5	AROCHLOR-1260	170	ug/kg	170	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R

Reported on: Friday, July 17, 1998

Field ID:	B1E
Lab ID:	9805229-1DL5

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 12-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 30
Final Volume: 10
Dilution: 5

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	3.97	ug/kg	16.7	24	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	10.9	ug/kg	16.7	65	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID: B2E	**Sample Matrix:** Solid	**Date Collected:** 22-Sep-97	**Sample Aliquot:** 30
Lab ID: 9805229-2	**% Moisture:** N/A	**Date Extracted:** 16-Jun-98	**Final Volume:** 10
	Cleanup Method: SW3640	**Date Analyzed:** 11-Jul-98	**Dilution:** 1
	Report Basis: AS RECEIVED	**Prep Batch:** EX980616-4	

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	1.7	ug/kg	1.7	U	
58-89-9	GAMMA-BHC (LINDANE)	1.7	ug/kg	1.7	U	
76-44-8	HEPTACHLOR	1.7	ug/kg	1.7	U	
309-00-2	ALDRIN	1.7	ug/kg	1.7	U	
319-85-7	BETA-BHC	1.7	ug/kg	1.7	U	
319-86-8	DELTA-BHC	1.7	ug/kg	1.7	U	
1024-57-3	HEPTACHLOR EPOXIDE	1.7	ug/kg	1.7	U	
959-98-8	ENDOSULFAN I	1.7	ug/kg	1.7	U	
5103-74-2	GAMMA-CHLORDANE	1.7	ug/kg	1.7	U	
5103-71-9	ALPHA-CHLORDANE	1.7	ug/kg	1.7	U	
72-55-9	4,4'-DDE	69	ug/kg	3.3	E	
60-57-1	DIELDRIN	3.3	ug/kg	3.3	U	
72-20-8	ENDRIN	3.3	ug/kg	3.3	U	
72-54-8	4,4'-DDD	5.2	ug/kg	3.3		
33213-65-9	ENDOSULFAN II	3.3	ug/kg	3.3	U	
50-29-3	4,4'-DDT	3.3	ug/kg	3.3	U	
7421-93-4	ENDRIN ALDEHYDE	3.3	ug/kg	3.3	U	
72-43-5	METHOXYCHLOR	17	ug/kg	17	U	
1031-07-8	ENDOSULFAN SULFATE	3.3	ug/kg	3.3	U	
53494-70-5	ENDRIN KETONE	3.3	ug/kg	3.3	U	
8001-35-2	TOXAPHENE	170	ug/kg	170	U	
12674-11-2	AROCHLOR-1016	33	ug/kg	33	U	
11104-28-2	AROCHLOR-1221	67	ug/kg	67	U	
11141-16-5	AROCHLOR-1232	33	ug/kg	33	U	
53469-21-9	AROCHLOR-1242	33	ug/kg	33	U	
12672-29-6	AROCHLOR-1248	33	ug/kg	33	U	
11097-69-1	AROCHLOR-1254	86	ug/kg	33		
11096-82-5	AROCHLOR-1260	33	ug/kg	33	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	B2E
Lab ID:	9805229-2

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 30
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	16.9	ug/kg	16.7	102	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	16.5	ug/kg	16.7	99	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	B2E
Lab ID:	9805229-2DL5

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 12-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 30
Final Volume: 10
Dilution: 5

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	8.3	ug/kg	8.3	U	
58-89-9	GAMMA-BHC (LINDANE)	8.3	ug/kg	8.3	U	
76-44-8	HEPTACHLOR	8.3	ug/kg	8.3	U	
309-00-2	ALDRIN	8.3	ug/kg	8.3	U	
319-85-7	BETA-BHC	8.3	ug/kg	8.3	U	
319-86-8	DELTA-BHC	8.3	ug/kg	8.3	U	
1024-57-3	HEPTACHLOR EPOXIDE	8.3	ug/kg	8.3	U	
959-98-8	ENDOSULFAN I	8.3	ug/kg	8.3	U	
5103-74-2	GAMMA-CHLORDANE	8.3	ug/kg	8.3	U	
5103-71-9	ALPHA-CHLORDANE	8.3	ug/kg	8.3	U	
72-55-9	4,4'-DDE	86	ug/kg	17		
60-57-1	DIELDRIN	17	ug/kg	17	U	
72-20-8	ENDRIN	17	ug/kg	17	U	
72-54-8	4,4'-DDD	17	ug/kg	17	U	
33213-65-9	ENDOSULFAN II	17	ug/kg	17	U	
50-29-3	4,4'-DDT	17	ug/kg	17	U	
7421-93-4	ENDRIN ALDEHYDE	17	ug/kg	17	U	
72-43-5	METHOXYCHLOR	83	ug/kg	83	U	
1031-07-8	ENDOSULFAN SULFATE	17	ug/kg	17	U	
53494-70-5	ENDRIN KETONE	17	ug/kg	17	U	
8001-35-2	TOXAPHENE	830	ug/kg	830	U	
12674-11-2	AROCHLOR-1016	170	ug/kg	170	U	
11104-28-2	AROCHLOR-1221	330	ug/kg	330	U	
11141-16-5	AROCHLOR-1232	170	ug/kg	170	U	
53469-21-9	AROCHLOR-1242	170	ug/kg	170	U	
12672-29-6	AROCHLOR-1248	170	ug/kg	170	U	
11097-69-1	AROCHLOR-1254	170	ug/kg	170	U	
11096-82-5	AROCHLOR-1260	170	ug/kg	170	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Client ID:	B2E
Lab ID:	9805229-2DL5

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 12-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 30
Final Volume: 10
Dilution: 5

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	5.53	ug/kg	16.7	33	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	10.4	ug/kg	16.7	63	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID: B3E
Lab ID: 9805229-3

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 30
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	1.7	ug/kg	1.7	U	
58-89-9	GAMMA-BHC (LINDANE)	1.7	ug/kg	1.7	U	
76-44-8	HEPTACHLOR	1.7	ug/kg	1.7	U	
309-00-2	ALDRIN	1.7	ug/kg	1.7	U	
319-85-7	BETA-BHC	1.7	ug/kg	1.7	U	
319-86-8	DELTA-BHC	1.7	ug/kg	1.7	U	
1024-57-3	HEPTACHLOR EPOXIDE	1.7	ug/kg	1.7	U	
959-98-8	ENDOSULFAN I	1.7	ug/kg	1.7	U	
5103-74-2	GAMMA-CHLORDANE	1.7	ug/kg	1.7	U	
5103-71-9	ALPHA-CHLORDANE	8.8	ug/kg	1.7		
72-55-9	4,4'-DDE	62	ug/kg	3.3	E	
60-57-1	DIELDRIN	3.3	ug/kg	3.3	U	
72-20-8	ENDRIN	3.3	ug/kg	3.3	U	
72-54-8	4,4'-DDD	9.6	ug/kg	3.3		
33213-65-9	ENDOSULFAN II	3.3	ug/kg	3.3	U	
50-29-3	4,4'-DDT	3.3	ug/kg	3.3	U	
7421-93-4	ENDRIN ALDEHYDE	3.3	ug/kg	3.3	U	
72-43-5	METHOXYCHLOR	17	ug/kg	17	U	
1031-07-8	ENDOSULFAN SULFATE	3.3	ug/kg	3.3	U	
53494-70-5	ENDRIN KETONE	3.3	ug/kg	3.3	U	
8001-35-2	TOXAPHENE	170	ug/kg	170	U	
12674-11-2	AROCHLOR-1016	33	ug/kg	33	U	
11104-28-2	AROCHLOR-1221	67	ug/kg	67	U	
11141-16-5	AROCHLOR-1232	33	ug/kg	33	U	
53469-21-9	AROCHLOR-1242	33	ug/kg	33	U	
12672-29-6	AROCHLOR-1248	33	ug/kg	33	U	
11097-69-1	AROCHLOR-1254	300	ug/kg	33	E	
11096-82-5	AROCHLOR-1260	33	ug/kg	33	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Client ID:	B3E
Lab ID:	9805229-3

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 30
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	15.7	ug/kg	16.7	94	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	14.8	ug/kg	16.7	89	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID: B3E	**Sample Matrix:** Solid	**Date Collected:** 22-Sep-97	**Sample Aliquot:** 30
Lab ID: 9805229-3DL4	**% Moisture:** N/A	**Date Extracted:** 16-Jun-98	**Final Volume:** 10
	Cleanup Method: SW3640	**Date Analyzed:** 12-Jul-98	**Dilution:** 4
	Report Basis: AS RECEIVED	**Prep Batch:** EX980616-4	

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	6.7	ug/kg	6.7	U	
58-89-9	GAMMA-BHC (LINDANE)	6.7	ug/kg	6.7	U	
76-44-8	HEPTACHLOR	6.7	ug/kg	6.7	U	
309-00-2	ALDRIN	6.7	ug/kg	6.7	U	
319-85-7	BETA-BHC	6.7	ug/kg	6.7	U	
319-86-8	DELTA-BHC	6.7	ug/kg	6.7	U	
1024-57-3	HEPTACHLOR EPOXIDE	6.7	ug/kg	6.7	U	
959-98-8	ENDOSULFAN I	6.7	ug/kg	6.7	U	
5103-74-2	GAMMA-CHLORDANE	6.7	ug/kg	6.7	U	
5103-71-9	ALPHA-CHLORDANE	9.1	ug/kg	6.7		
72-55-9	4,4'-DDE	75	ug/kg	13		
60-57-1	DIELDRIN	13	ug/kg	13	U	
72-20-8	ENDRIN	13	ug/kg	13	U	
72-54-8	4,4'-DDD	13	ug/kg	13	U	
33213-65-9	ENDOSULFAN II	13	ug/kg	13	U	
50-29-3	4,4'-DDT	13	ug/kg	13	U	
7421-93-4	ENDRIN ALDEHYDE	13	ug/kg	13	U	
72-43-5	METHOXYCHLOR	67	ug/kg	67	U	
1031-07-8	ENDOSULFAN SULFATE	13	ug/kg	13	U	
53494-70-5	ENDRIN KETONE	13	ug/kg	13	U	
8001-35-2	TOXAPHENE	670	ug/kg	670	U	
12674-11-2	AROCHLOR-1016	130	ug/kg	130	U	
11104-28-2	AROCHLOR-1221	270	ug/kg	270	U	
11141-16-5	AROCHLOR-1232	130	ug/kg	130	U	
53469-21-9	AROCHLOR-1242	130	ug/kg	130	U	
12672-29-6	AROCHLOR-1248	130	ug/kg	130	U	
11097-69-1	AROCHLOR-1254	660	ug/kg	130		
11096-82-5	AROCHLOR-1260	130	ug/kg	130	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R

Reported on: Friday, July 17, 1998

Field ID:	B3E
Lab ID:	9805229-3DL4

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 12-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 30
Final Volume: 10
Dilution: 4

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	6.53	ug/kg	16.7	39	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	9.03	ug/kg	16.7	54	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID: B4E
Lab ID: 9805229-4

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 23
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	2.2	ug/kg	2.2	U	
58-89-9	GAMMA-BHC (LINDANE)	2.2	ug/kg	2.2	U	
76-44-8	HEPTACHLOR	2.2	ug/kg	2.2	U	
309-00-2	ALDRIN	2.2	ug/kg	2.2	U	
319-85-7	BETA-BHC	2.2	ug/kg	2.2	U	
319-86-8	DELTA-BHC	2.2	ug/kg	2.2	U	
1024-57-3	HEPTACHLOR EPOXIDE	2.2	ug/kg	2.2	U	
959-98-8	ENDOSULFAN I	2.2	ug/kg	2.2	U	
5103-74-2	GAMMA-CHLORDANE	2.2	ug/kg	2.2	U	
5103-71-9	ALPHA-CHLORDANE	2.2	ug/kg	2.2	U	
72-55-9	4,4'-DDE	110	ug/kg	4.3	E	
60-57-1	DIELDRIN	4.3	ug/kg	4.3	U	
72-20-8	ENDRIN	4.3	ug/kg	4.3	U	
72-54-8	4,4'-DDD	4.3	ug/kg	4.3	U	
33213-65-9	ENDOSULFAN II	4.3	ug/kg	4.3	U	
50-29-3	4,4'-DDT	4.3	ug/kg	4.3	U	
7421-93-4	ENDRIN ALDEHYDE	4.3	ug/kg	4.3	U	
72-43-5	METHOXYCHLOR	22	ug/kg	22	U	
1031-07-8	ENDOSULFAN SULFATE	4.3	ug/kg	4.3	U	
53494-70-5	ENDRIN KETONE	4.3	ug/kg	4.3	U	
8001-35-2	TOXAPHENE	220	ug/kg	220	U	
12674-11-2	AROCHLOR-1016	43	ug/kg	43	U	
11104-28-2	AROCHLOR-1221	87	ug/kg	87	U	
11141-16-5	AROCHLOR-1232	43	ug/kg	43	U	
53469-21-9	AROCHLOR-1242	43	ug/kg	43	U	
12672-29-6	AROCHLOR-1248	43	ug/kg	43	U	
11097-69-1	AROCHLOR-1254	43	ug/kg	43	U	
11096-82-5	AROCHLOR-1260	170	ug/kg	43		

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R

Reported on: Friday, July 17, 1998

Field ID:	B4E
Lab ID:	9805229-4

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 23
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	24.7	ug/kg	21.7	114	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	19	ug/kg	21.7	87	47 - 137

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	B4E
Lab ID:	9805229-4DL5

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 12-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 23
Final Volume: 10
Dilution: 5

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	11	ug/kg	11	U	
58-89-9	GAMMA-BHC (LINDANE)	11	ug/kg	11	U	
76-44-8	HEPTACHLOR	11	ug/kg	11	U	
309-00-2	ALDRIN	11	ug/kg	11	U	
319-85-7	BETA-BHC	11	ug/kg	11	U	
319-86-8	DELTA-BHC	11	ug/kg	11	U	
1024-57-3	HEPTACHLOR EPOXIDE	11	ug/kg	11	U	
959-98-8	ENDOSULFAN I	11	ug/kg	11	U	
5103-74-2	GAMMA-CHLORDANE	11	ug/kg	11	U	
5103-71-9	ALPHA-CHLORDANE	11	ug/kg	11	U	
72-55-9	4,4'-DDE	130	ug/kg	22		
60-57-1	DIELDRIN	22	ug/kg	22	U	
72-20-8	ENDRIN	22	ug/kg	22	U	
72-54-8	4,4'-DDD	22	ug/kg	22	U	
33213-65-9	ENDOSULFAN II	22	ug/kg	22	U	
50-29-3	4,4'-DDT	22	ug/kg	22	U	
7421-93-4	ENDRIN ALDEHYDE	22	ug/kg	22	U	
72-43-5	METHOXYCHLOR	110	ug/kg	110	U	
1031-07-8	ENDOSULFAN SULFATE	22	ug/kg	22	U	
53494-70-5	ENDRIN KETONE	22	ug/kg	22	U	
8001-35-2	TOXAPHENE	1100	ug/kg	1100	U	
12674-11-2	AROCHLOR-1016	220	ug/kg	220	U	
11104-28-2	AROCHLOR-1221	430	ug/kg	430	U	
11141-16-5	AROCHLOR-1232	220	ug/kg	220	U	
53469-21-9	AROCHLOR-1242	220	ug/kg	220	U	
12672-29-6	AROCHLOR-1248	220	ug/kg	220	U	
11097-69-1	AROCHLOR-1254	220	ug/kg	220	U	
11096-82-5	AROCHLOR-1260	220	ug/kg	220	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Sample ID:	B4E
Lab ID:	9805229-4DL5

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 12-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 23
Final Volume: 10
Dilution: 5

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	5.39	ug/kg	21.7	25	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	13.6	ug/kg	21.7	63	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID: M1E
Lab ID: 9805229-8

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 30
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	1.7	ug/kg	1.7	U	
58-89-9	GAMMA-BHC (LINDANE)	1.7	ug/kg	1.7	U	
76-44-8	HEPTACHLOR	1.7	ug/kg	1.7	U	
309-00-2	ALDRIN	1.7	ug/kg	1.7	U	
319-85-7	BETA-BHC	1.7	ug/kg	1.7	U	
319-86-8	DELTA-BHC	1.7	ug/kg	1.7	U	
1024-57-3	HEPTACHLOR EPOXIDE	1.7	ug/kg	1.7	U	
959-98-8	ENDOSULFAN I	1.7	ug/kg	1.7	U	
5103-74-2	GAMMA-CHLORDANE	1.7	ug/kg	1.7	U	
5103-71-9	ALPHA-CHLORDANE	3.1	ug/kg	1.7		
72-55-9	4,4'-DDE	79	ug/kg	3.3	E	
60-57-1	DIELDRIN	3.3	ug/kg	3.3	U	
72-20-8	ENDRIN	3.3	ug/kg	3.3	U	
72-54-8	4,4'-DDD	5.5	ug/kg	3.3		
33213-65-9	ENDOSULFAN II	3.3	ug/kg	3.3	U	
50-29-3	4,4'-DDT	3.3	ug/kg	3.3	U	
7421-93-4	ENDRIN ALDEHYDE	3.3	ug/kg	3.3	U	
72-43-5	METHOXYCHLOR	17	ug/kg	17	U	
1031-07-8	ENDOSULFAN SULFATE	3.3	ug/kg	3.3	U	
53494-70-5	ENDRIN KETONE	3.3	ug/kg	3.3	U	
8001-35-2	TOXAPHENE	170	ug/kg	170	U	
12674-11-2	AROCHLOR-1016	33	ug/kg	33	U	
11104-28-2	AROCHLOR-1221	67	ug/kg	67	U	
11141-16-5	AROCHLOR-1232	33	ug/kg	33	U	
53469-21-9	AROCHLOR-1242	33	ug/kg	33	U	
12672-29-6	AROCHLOR-1248	33	ug/kg	33	U	
11097-69-1	AROCHLOR-1254	100	ug/kg	33		
11096-82-5	AROCHLOR-1260	33	ug/kg	33	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R

Reported on: Friday, July 17, 1998

Client ID:	M1E
Lab ID:	9805229-8

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 30
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	16.5	ug/kg	16.7	99	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	15.6	ug/kg	16.7	94	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	M1E
Lab ID:	9805229-8DL5

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 12-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 30
Final Volume: 10
Dilution: 5

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	8.3	ug/kg	8.3	U	
58-89-9	GAMMA-BHC (LINDANE)	8.3	ug/kg	8.3	U	
76-44-8	HEPTACHLOR	8.3	ug/kg	8.3	U	
309-00-2	ALDRIN	8.3	ug/kg	8.3	U	
319-85-7	BETA-BHC	8.3	ug/kg	8.3	U	
319-86-8	DELTA-BHC	8.3	ug/kg	8.3	U	
1024-57-3	HEPTACHLOR EPOXIDE	8.3	ug/kg	8.3	U	
959-98-8	ENDOSULFAN I	8.3	ug/kg	8.3	U	
5103-74-2	GAMMA-CHLORDANE	8.3	ug/kg	8.3	U	
5103-71-9	ALPHA-CHLORDANE	8.3	ug/kg	8.3	U	
72-55-9	4,4'-DDE	96	ug/kg	17		
60-57-1	DIELDRIN	17	ug/kg	17	U	
72-20-8	ENDRIN	17	ug/kg	17	U	
72-54-8	4,4'-DDD	17	ug/kg	17	U	
33213-65-9	ENDOSULFAN II	17	ug/kg	17	U	
50-29-3	4,4'-DDT	17	ug/kg	17	U	
7421-93-4	ENDRIN ALDEHYDE	17	ug/kg	17	U	
72-43-5	METHOXYCHLOR	83	ug/kg	83	U	
1031-07-8	ENDOSULFAN SULFATE	17	ug/kg	17	U	
53494-70-5	ENDRIN KETONE	17	ug/kg	17	U	
8001-35-2	TOXAPHENE	830	ug/kg	830	U	
12674-11-2	AROCHLOR-1016	170	ug/kg	170	U	
11104-28-2	AROCHLOR-1221	330	ug/kg	330	U	
11141-16-5	AROCHLOR-1232	170	ug/kg	170	U	
53469-21-9	AROCHLOR-1242	170	ug/kg	170	U	
12672-29-6	AROCHLOR-1248	170	ug/kg	170	U	
11097-69-1	AROCHLOR-1254	170	ug/kg	170	U	
11096-82-5	AROCHLOR-1260	170	ug/kg	170	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	M1E
Lab ID:	9805229-8DL5

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 12-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 30
Final Volume: 10
Dilution: 5

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	4.48	ug/kg	16.7	27	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	11.2	ug/kg	16.7	67	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	M2E
Lab ID:	9805229-9

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 30
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	1.7	ug/kg	1.7	U	
58-89-9	GAMMA-BHC (LINDANE)	1.7	ug/kg	1.7	U	
76-44-8	HEPTACHLOR	1.7	ug/kg	1.7	U	
309-00-2	ALDRIN	1.7	ug/kg	1.7	U	
319-85-7	BETA-BHC	1.7	ug/kg	1.7	U	
319-86-8	DELTA-BHC	1.7	ug/kg	1.7	U	
1024-57-3	HEPTACHLOR EPOXIDE	1.7	ug/kg	1.7	U	
959-98-8	ENDOSULFAN I	1.7	ug/kg	1.7	U	
5103-74-2	GAMMA-CHLORDANE	4.3	ug/kg	1.7		
5103-71-9	ALPHA-CHLORDANE	2.9	ug/kg	1.7		
72-55-9	4,4'-DDE	34	ug/kg	3.3		
60-57-1	DIELDRIN	3.3	ug/kg	3.3	U	
72-20-8	ENDRIN	3.3	ug/kg	3.3	U	
72-54-8	4,4'-DDD	3.3	ug/kg	3.3	U	
33213-65-9	ENDOSULFAN II	3.3	ug/kg	3.3	U	
50-29-3	4,4'-DDT	4.8	ug/kg	3.3		
7421-93-4	ENDRIN ALDEHYDE	3.3	ug/kg	3.3	U	
72-43-5	METHOXYCHLOR	17	ug/kg	17	U	
1031-07-8	ENDOSULFAN SULFATE	3.9	ug/kg	3.3		
53494-70-5	ENDRIN KETONE	3.3	ug/kg	3.3	U	
8001-35-2	TOXAPHENE	170	ug/kg	170	U	
12674-11-2	AROCHLOR-1016	33	ug/kg	33	U	
11104-28-2	AROCHLOR-1221	67	ug/kg	67	U	
11141-16-5	AROCHLOR-1232	33	ug/kg	33	U	
53469-21-9	AROCHLOR-1242	33	ug/kg	33	U	
12672-29-6	AROCHLOR-1248	33	ug/kg	33	U	
11097-69-1	AROCHLOR-1254	83	ug/kg	33		
11096-82-5	AROCHLOR-1260	33	ug/kg	33	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	M2E
Lab ID:	9805229-9

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 16-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980616-4

Sample Aliquot: 30
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	17.8	ug/kg	16.7	107	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	17.8	ug/kg	16.7	107	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	LABQC	Sample Matrix:	Solid	Date Collected:	17-Jun-98	Sample Aliquot:	10
Lab ID:	EX980617-10MB	% Moisture:	N/A	Date Extracted:	17-Jun-98	Final Volume:	10
		Cleanup Method:	SW3640	Date Analyzed:	11-Jul-98	Dilution:	1
		Report Basis:	NA	Prep Batch:	EX980617-10		

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	5	ug/kg	5	U	
58-89-9	GAMMA-BHC (LINDANE)	5	ug/kg	5	U	
76-44-8	HEPTACHLOR	5	ug/kg	5	U	
309-00-2	ALDRIN	5	ug/kg	5	U	
319-85-7	BETA-BHC	5	ug/kg	5	U	
319-86-8	DELTA-BHC	5	ug/kg	5	U	
1024-57-3	HEPTACHLOR EPOXIDE	5	ug/kg	5	U	
959-98-8	ENDOSULFAN I	5	ug/kg	5	U	
5103-74-2	GAMMA-CHLORDANE	5	ug/kg	5	U	
5103-71-9	ALPHA-CHLORDANE	5	ug/kg	5	U	
72-55-9	4,4'-DDE	10	ug/kg	10	U	
60-57-1	DIELDRIN	10	ug/kg	10	U	
72-20-8	ENDRIN	10	ug/kg	10	U	
72-54-8	4,4'-DDD	10	ug/kg	10	U	
33213-65-9	ENDOSULFAN II	10	ug/kg	10	U	
50-29-3	4,4'-DDT	10	ug/kg	10	U	
7421-93-4	ENDRIN ALDEHYDE	10	ug/kg	10	U	
72-43-5	METHOXYCHLOR	50	ug/kg	50	U	
1031-07-8	ENDOSULFAN SULFATE	10	ug/kg	10	U	
53494-70-5	ENDRIN KETONE	10	ug/kg	10	U	
8001-35-2	TOXAPHENE	500	ug/kg	500	U	
12674-11-2	AROCHLOR-1016	100	ug/kg	100	U	
11104-28-2	AROCHLOR-1221	200	ug/kg	200	U	
11141-16-5	AROCHLOR-1232	100	ug/kg	100	U	
53469-21-9	AROCHLOR-1242	100	ug/kg	100	U	
12672-29-6	AROCHLOR-1248	100	ug/kg	100	U	
11097-69-1	AROCHLOR-1254	100	ug/kg	100	U	
11096-82-5	AROCHLOR-1260	100	ug/kg	100	U	

Organochlorine Pesticides

Method SW8081

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	LABQC
Lab ID:	EX980617-10MB

Sample Matrix:	Solid	**Date Collected:**	17-Jun-98	**Sample Aliquot:**	10
% Moisture:	N/A	**Date Extracted:**	17-Jun-98	**Final Volume:**	10
Cleanup Method:	SW3640	**Date Analyzed:**	11-Jul-98	**Dilution:**	1
Report Basis:	NA	**Prep Batch:**	EX980617-10		

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	48.9	ug/kg	50	98	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	43.4	ug/kg	50	87	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	LA1E
Lab ID:	9805229-5

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 17-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980617-10

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	5	ug/kg	5	U	
58-89-9	GAMMA-BHC (LINDANE)	5	ug/kg	5	U	
76-44-8	HEPTACHLOR	5	ug/kg	5	U	
309-00-2	ALDRIN	5	ug/kg	5	U	
319-85-7	BETA-BHC	5	ug/kg	5	U	
319-86-8	DELTA-BHC	5	ug/kg	5	U	
1024-57-3	HEPTACHLOR EPOXIDE	5	ug/kg	5	U	
959-98-8	ENDOSULFAN I	5	ug/kg	5	U	
5103-74-2	GAMMA-CHLORDANE	5	ug/kg	5	U	
5103-71-9	ALPHA-CHLORDANE	5	ug/kg	5	U	
72-55-9	4,4'-DDE	74	ug/kg	10		
60-57-1	DIELDRIN	10	ug/kg	10	U	
72-20-8	ENDRIN	10	ug/kg	10	U	
72-54-8	4,4'-DDD	10	ug/kg	10	U	
33213-65-9	ENDOSULFAN II	10	ug/kg	10	U	
50-29-3	4,4'-DDT	7.8	ug/kg	10	J	
7421-93-4	ENDRIN ALDEHYDE	10	ug/kg	10	U	
72-43-5	METHOXYCHLOR	50	ug/kg	50	U	
1031-07-8	ENDOSULFAN SULFATE	10	ug/kg	10	U	
53494-70-5	ENDRIN KETONE	10	ug/kg	10	U	
8001-35-2	TOXAPHENE	500	ug/kg	500	U	
12674-11-2	AROCHLOR-1016	100	ug/kg	100	U	
11104-28-2	AROCHLOR-1221	200	ug/kg	200	U	
11141-16-5	AROCHLOR-1232	100	ug/kg	100	U	
53469-21-9	AROCHLOR-1242	100	ug/kg	100	U	
12672-29-6	AROCHLOR-1248	100	ug/kg	100	U	
11097-69-1	AROCHLOR-1254	100	ug/kg	100	U	
11096-82-5	AROCHLOR-1260	100	ug/kg	100	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	LA1E
Lab ID:	9805229-5

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 17-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980617-10

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	47.1	ug/kg	50	94	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	39.5	ug/kg	50	79	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	LA2E
Lab ID:	9805229-6

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 17-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980617-10

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	5	ug/kg	5	U	
58-89-9	GAMMA-BHC (LINDANE)	5	ug/kg	5	U	
76-44-8	HEPTACHLOR	5	ug/kg	5	U	
309-00-2	ALDRIN	5	ug/kg	5	U	
319-85-7	BETA-BHC	5	ug/kg	5	U	
319-86-8	DELTA-BHC	5	ug/kg	5	U	
1024-57-3	HEPTACHLOR EPOXIDE	5	ug/kg	5	U	
959-98-8	ENDOSULFAN I	5	ug/kg	5	U	
5103-74-2	GAMMA-CHLORDANE	5	ug/kg	5	U	
5103-71-9	ALPHA-CHLORDANE	5	ug/kg	5	U	
72-55-9	4,4'-DDE	26	ug/kg	10		
60-57-1	DIELDRIN	10	ug/kg	10	U	
72-20-8	ENDRIN	10	ug/kg	10	U	
72-54-8	4,4'-DDD	10	ug/kg	10	U	
33213-65-9	ENDOSULFAN II	10	ug/kg	10	U	
50-29-3	4,4'-DDT	10	ug/kg	10	U	
7421-93-4	ENDRIN ALDEHYDE	10	ug/kg	10	U	
72-43-5	METHOXYCHLOR	50	ug/kg	50	U	
1031-07-8	ENDOSULFAN SULFATE	10	ug/kg	10	U	
53494-70-5	ENDRIN KETONE	10	ug/kg	10	U	
8001-35-2	TOXAPHENE	500	ug/kg	500	U	
12674-11-2	AROCHLOR-1016	100	ug/kg	100	U	
11104-28-2	AROCHLOR-1221	200	ug/kg	200	U	
11141-16-5	AROCHLOR-1232	100	ug/kg	100	U	
53469-21-9	AROCHLOR-1242	100	ug/kg	100	U	
12672-29-6	AROCHLOR-1248	100	ug/kg	100	U	
11097-69-1	AROCHLOR-1254	100	ug/kg	100	U	
11096-82-5	AROCHLOR-1260	100	ug/kg	100	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID	LA2E
Lab ID	9805229-6

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 17-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980617-10

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	49.1	ug/kg	50	98	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	38.2	ug/kg	50	76	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID: LA3E
Lab ID: 9805229-7

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 17-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980617-10

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	5	ug/kg	5	U	
58-89-9	GAMMA-BHC (LINDANE)	5	ug/kg	5	U	
76-44-8	HEPTACHLOR	5	ug/kg	5	U	
309-00-2	ALDRIN	5	ug/kg	5	U	
319-85-7	BETA-BHC	5	ug/kg	5	U	
319-86-8	DELTA-BHC	5	ug/kg	5	U	
1024-57-3	HEPTACHLOR EPOXIDE	5	ug/kg	5	U	
959-98-8	ENDOSULFAN I	5	ug/kg	5	U	
5103-74-2	GAMMA-CHLORDANE	5	ug/kg	5	U	
5103-71-9	ALPHA-CHLORDANE	5	ug/kg	5	U	
72-55-9	4,4'-DDE	84	ug/kg	10		
60-57-1	DIELDRIN	10	ug/kg	10	U	
72-20-8	ENDRIN	10	ug/kg	10	U	
72-54-8	4,4'-DDD	10	ug/kg	10	U	
33213-65-9	ENDOSULFAN II	10	ug/kg	10	U	
50-29-3	4,4'-DDT	10	ug/kg	10	U	
7421-93-4	ENDRIN ALDEHYDE	10	ug/kg	10	U	
72-43-5	METHOXYCHLOR	50	ug/kg	50	U	
1031-07-8	ENDOSULFAN SULFATE	10	ug/kg	10	U	
53494-70-5	ENDRIN KETONE	10	ug/kg	10	U	
8001-35-2	TOXAPHENE	500	ug/kg	500	U	
12674-11-2	AROCHLOR-1016	100	ug/kg	100	U	
11104-28-2	AROCHLOR-1221	200	ug/kg	200	U	
11141-16-5	AROCHLOR-1232	100	ug/kg	100	U	
53469-21-9	AROCHLOR-1242	100	ug/kg	100	U	
12672-29-6	AROCHLOR-1248	100	ug/kg	100	U	
11097-69-1	AROCHLOR-1254	100	ug/kg	100	U	
11096-82-5	AROCHLOR-1260	100	ug/kg	100	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R

Reported on: Friday, July 17, 1998

Field ID:	LA3E
Lab ID:	9805229-7

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 17-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980617-10

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	47.7	ug/kg	50	95	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	38.3	ug/kg	50	77	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	LABQC	Sample Matrix:	Solid	Date Collected:	26-Jun-98	Sample Aliquot:	10
Lab ID:	EX980626-1MB	% Moisture:	N/A	Date Extracted:	26-Jun-98	Final Volume:	10
		Cleanup Method:	SW3640	Date Analyzed:	11-Jul-98	Dilution:	1
		Report Basis:	NA	Prep Batch:	EX980626-1		

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	5	ug/kg	5	U	
58-89-9	GAMMA-BHC (LINDANE)	5	ug/kg	5	U	
76-44-8	HEPTACHLOR	5	ug/kg	5	U	
309-00-2	ALDRIN	5	ug/kg	5	U	
319-85-7	BETA-BHC	5	ug/kg	5	U	
319-86-8	DELTA-BHC	5	ug/kg	5	U	
1024-57-3	HEPTACHLOR EPOXIDE	5	ug/kg	5	U	
959-98-8	ENDOSULFAN I	5	ug/kg	5	U	
5103-74-2	GAMMA-CHLORDANE	5	ug/kg	5	U	
5103-71-9	ALPHA-CHLORDANE	5	ug/kg	5	U	
72-55-9	4,4'-DDE	10	ug/kg	10	U	
60-57-1	DIELDRIN	10	ug/kg	10	U	
72-20-8	ENDRIN	10	ug/kg	10	U	
72-54-8	4,4'-DDD	10	ug/kg	10	U	
33213-65-9	ENDOSULFAN II	10	ug/kg	10	U	
50-29-3	4,4'-DDT	10	ug/kg	10	U	
7421-93-4	ENDRIN ALDEHYDE	10	ug/kg	10	U	
72-43-5	METHOXYCHLOR	50	ug/kg	50	U	
1031-07-8	ENDOSULFAN SULFATE	10	ug/kg	10	U	
53494-70-5	ENDRIN KETONE	10	ug/kg	10	U	
8001-35-2	TOXAPHENE	500	ug/kg	500	U	
12674-11-2	AROCHLOR-1016	100	ug/kg	100	U	
11104-28-2	AROCHLOR-1221	200	ug/kg	200	U	
11141-16-5	AROCHLOR-1232	100	ug/kg	100	U	
53469-21-9	AROCHLOR-1242	100	ug/kg	100	U	
12672-29-6	AROCHLOR-1248	100	ug/kg	100	U	
11097-69-1	AROCHLOR-1254	100	ug/kg	100	U	
11096-82-5	AROCHLOR-1260	100	ug/kg	100	U	

Organochlorine Pesticides

Method SW8081

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R

Reported on: Friday, July 17, 1998

Field ID:	LABQC
Lab ID:	EX980626-1MB

Sample Matrix:	Solid	**Date Collected:**	26-Jun-98	**Sample Aliquot:**	10
% Moisture:	N/A	**Date Extracted:**	26-Jun-98	**Final Volume:**	10
Cleanup Method:	SW3640	**Date Analyzed:**	11-Jul-98	**Dilution:**	1
Report Basis:	NA	**Prep Batch:**	EX980626-1		

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	53.2	ug/kg	50	106	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	47.3	ug/kg	50	95	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	M3E
Lab ID:	9805229-10

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	5	ug/kg	5	U	
58-89-9	GAMMA-BHC (LINDANE)	5	ug/kg	5	U	
76-44-8	HEPTACHLOR	5	ug/kg	5	U	
309-00-2	ALDRIN	5	ug/kg	5	U	
319-85-7	BETA-BHC	5	ug/kg	5	U	
319-86-8	DELTA-BHC	5	ug/kg	5	U	
1024-57-3	HEPTACHLOR EPOXIDE	5	ug/kg	5	U	
959-98-8	ENDOSULFAN I	5	ug/kg	5	U	
5103-74-2	GAMMA-CHLORDANE	5	ug/kg	5	U	
5103-71-9	ALPHA-CHLORDANE	5	ug/kg	5	U	
72-55-9	4,4'-DDE	13	ug/kg	10		
60-57-1	DIELDRIN	10	ug/kg	10	U	
72-20-8	ENDRIN	10	ug/kg	10	U	
72-54-8	4,4'-DDD	10	ug/kg	10	U	
33213-65-9	ENDOSULFAN II	10	ug/kg	10	U	
50-29-3	4,4'-DDT	10	ug/kg	10	U	
7421-93-4	ENDRIN ALDEHYDE	10	ug/kg	10	U	
72-43-5	METHOXYCHLOR	50	ug/kg	50	U	
1031-07-8	ENDOSULFAN SULFATE	10	ug/kg	10	U	
53494-70-5	ENDRIN KETONE	10	ug/kg	10	U	
8001-35-2	TOXAPHENE	500	ug/kg	500	U	
12674-11-2	AROCHLOR-1016	100	ug/kg	100	U	
11104-28-2	AROCHLOR-1221	200	ug/kg	200	U	
11141-16-5	AROCHLOR-1232	100	ug/kg	100	U	
53469-21-9	AROCHLOR-1242	100	ug/kg	100	U	
12672-29-6	AROCHLOR-1248	100	ug/kg	100	U	
11097-69-1	AROCHLOR-1254	100	ug/kg	100	U	
11096-82-5	AROCHLOR-1260	100	ug/kg	100	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	M3E
Lab ID:	9805229-10

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	46.5	ug/kg	50	93	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	34.8	ug/kg	50	70	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	M4E
Lab ID:	9805229-11

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	5	ug/kg	5	U	
58-89-9	GAMMA-BHC (LINDANE)	5	ug/kg	5	U	
76-44-8	HEPTACHLOR	5	ug/kg	5	U	
309-00-2	ALDRIN	5	ug/kg	5	U	
319-85-7	BETA-BHC	5	ug/kg	5	U	
319-86-8	DELTA-BHC	5	ug/kg	5	U	
1024-57-3	HEPTACHLOR EPOXIDE	5	ug/kg	5	U	
959-98-8	ENDOSULFAN I	5	ug/kg	5	U	
5103-74-2	GAMMA-CHLORDANE	5	ug/kg	5	U	
5103-71-9	ALPHA-CHLORDANE	5	ug/kg	5	U	
72-55-9	4,4'-DDE	35	ug/kg	10		
60-57-1	DIELDRIN	10	ug/kg	10	U	
72-20-8	ENDRIN	10	ug/kg	10	U	
72-54-8	4,4'-DDD	10	ug/kg	10	U	
33213-65-9	ENDOSULFAN II	10	ug/kg	10	U	
50-29-3	4,4'-DDT	10	ug/kg	10	U	
7421-93-4	ENDRIN ALDEHYDE	10	ug/kg	10	U	
72-43-5	METHOXYCHLOR	50	ug/kg	50	U	
1031-07-8	ENDOSULFAN SULFATE	10	ug/kg	10	U	
53494-70-5	ENDRIN KETONE	10	ug/kg	10	U	
8001-35-2	TOXAPHENE	500	ug/kg	500	U	
12674-11-2	AROCHLOR-1016	100	ug/kg	100	U	
11104-28-2	AROCHLOR-1221	200	ug/kg	200	U	
11141-16-5	AROCHLOR-1232	100	ug/kg	100	U	
53469-21-9	AROCHLOR-1242	100	ug/kg	100	U	
12672-29-6	AROCHLOR-1248	100	ug/kg	100	U	
11097-69-1	AROCHLOR-1254	86	ug/kg	100	J	
11096-82-5	AROCHLOR-1260	100	ug/kg	100	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R

Reported on: Friday, July 17, 1998

Field ID:	M4E
Lab ID:	9805229-11

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	57.5	ug/kg	50	115	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	36.8	ug/kg	50	74	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID	P1E
Lab ID	9805229-12

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	5	ug/kg	5	U	
58-89-9	GAMMA-BHC (LINDANE)	5	ug/kg	5	U	
76-44-8	HEPTACHLOR	5	ug/kg	5	U	
309-00-2	ALDRIN	5	ug/kg	5	U	
319-85-7	BETA-BHC	5	ug/kg	5	U	
319-86-8	DELTA-BHC	5	ug/kg	5	U	
1024-57-3	HEPTACHLOR EPOXIDE	5	ug/kg	5	U	
959-98-8	ENDOSULFAN I	5	ug/kg	5	U	
5103-74-2	GAMMA-CHLORDANE	5	ug/kg	5	U	
5103-71-9	ALPHA-CHLORDANE	19	ug/kg	5		
72-55-9	4,4'-DDE	140	ug/kg	10	E	
60-57-1	DIELDRIN	10	ug/kg	10	U	
72-20-8	ENDRIN	10	ug/kg	10	U	
72-54-8	4,4'-DDD	15	ug/kg	10		
33213-65-9	ENDOSULFAN II	10	ug/kg	10	U	
50-29-3	4,4'-DDT	10	ug/kg	10	U	
7421-93-4	ENDRIN ALDEHYDE	10	ug/kg	10	U	
72-43-5	METHOXYCHLOR	50	ug/kg	50	U	
1031-07-8	ENDOSULFAN SULFATE	10	ug/kg	10	U	
53494-70-5	ENDRIN KETONE	10	ug/kg	10	U	
8001-35-2	TOXAPHENE	500	ug/kg	500	U	
12674-11-2	AROCHLOR-1016	100	ug/kg	100	U	
11104-28-2	AROCHLOR-1221	200	ug/kg	200	U	
11141-16-5	AROCHLOR-1232	100	ug/kg	100	U	
53469-21-9	AROCHLOR-1242	100	ug/kg	100	U	
12672-29-6	AROCHLOR-1248	100	ug/kg	100	U	
11097-69-1	AROCHLOR-1254	610	ug/kg	100		
11096-82-5	AROCHLOR-1260	100	ug/kg	100	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	P1E
Lab ID:	9805229-12

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	56.2	ug/kg	50	112	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	42	ug/kg	50	84	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	P1E
Lab ID:	9805229-12DL2

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 12-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 2

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	10	ug/kg	10	U	
58-89-9	GAMMA-BHC (LINDANE)	10	ug/kg	10	U	
76-44-8	HEPTACHLOR	10	ug/kg	10	U	
309-00-2	ALDRIN	10	ug/kg	10	U	
319-85-7	BETA-BHC	10	ug/kg	10	U	
319-86-8	DELTA-BHC	10	ug/kg	10	U	
1024-57-3	HEPTACHLOR EPOXIDE	10	ug/kg	10	U	
959-98-8	ENDOSULFAN I	10	ug/kg	10	U	
5103-74-2	GAMMA-CHLORDANE	10	ug/kg	10	U	
5103-71-9	ALPHA-CHLORDANE	14	ug/kg	10	U	
72-55-9	4,4'-DDE	140	ug/kg	20		
60-57-1	DIELDRIN	20	ug/kg	20	U	
72-20-8	ENDRIN	20	ug/kg	20	U	
72-54-8	4,4'-DDD	20	ug/kg	20	U	
33213-65-9	ENDOSULFAN II	20	ug/kg	20	U	
50-29-3	4,4'-DDT	20	ug/kg	20	U	
7421-93-4	ENDRIN ALDEHYDE	20	ug/kg	20	U	
72-43-5	METHOXYCHLOR	100	ug/kg	100	U	
1031-07-8	ENDOSULFAN SULFATE	20	ug/kg	20	U	
53494-70-5	ENDRIN KETONE	20	ug/kg	20	U	
8001-35-2	TOXAPHENE	1000	ug/kg	1000	U	
12674-11-2	AROCHLOR-1016	200	ug/kg	200	U	
11104-28-2	AROCHLOR-1221	400	ug/kg	400	U	
11141-16-5	AROCHLOR-1232	200	ug/kg	200	U	
53469-21-9	AROCHLOR-1242	200	ug/kg	200	U	
12672-29-6	AROCHLOR-1248	200	ug/kg	200	U	
11097-69-1	AROCHLOR-1254	200	ug/kg	200	U	
11096-82-5	AROCHLOR-1260	200	ug/kg	200	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R

Reported on: Friday, July 17, 1998

Field ID:	P1E
Lab ID:	9805229-12DL2

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 12-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 2

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	48.9	ug/kg	50	98	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	38.6	ug/kg	50	77	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R

Reported on: Friday, July 17, 1998

Field ID:	P2E
Lab ID:	9805229-13

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	5	ug/kg	5	U	
58-89-9	GAMMA-BHC (LINDANE)	5	ug/kg	5	U	
76-44-8	HEPTACHLOR	5	ug/kg	5	U	
309-00-2	ALDRIN	5	ug/kg	5	U	
319-85-7	BETA-BHC	5	ug/kg	5	U	
319-86-8	DELTA-BHC	5	ug/kg	5	U	
1024-57-3	HEPTACHLOR EPOXIDE	5	ug/kg	5	U	
959-98-8	ENDOSULFAN I	5	ug/kg	5	U	
5103-74-2	GAMMA-CHLORDANE	5	ug/kg	5	U	
5103-71-9	ALPHA-CHLORDANE	5	ug/kg	5	U	
72-55-9	4,4'-DDE	20	ug/kg	10		
60-57-1	DIELDRIN	10	ug/kg	10	U	
72-20-8	ENDRIN	10	ug/kg	10	U	
72-54-8	4,4'-DDD	10	ug/kg	10	U	
33213-65-9	ENDOSULFAN II	10	ug/kg	10	U	
50-29-3	4,4'-DDT	10	ug/kg	10	U	
7421-93-4	ENDRIN ALDEHYDE	10	ug/kg	10	U	
72-43-5	METHOXYCHLOR	50	ug/kg	50	U	
1031-07-8	ENDOSULFAN SULFATE	10	ug/kg	10	U	
53494-70-5	ENDRIN KETONE	10	ug/kg	10	U	
8001-35-2	TOXAPHENE	500	ug/kg	500	U	
12674-11-2	AROCHLOR-1016	100	ug/kg	100	U	
11104-28-2	AROCHLOR-1221	200	ug/kg	200	U	
11141-16-5	AROCHLOR-1232	100	ug/kg	100	U	
53469-21-9	AROCHLOR-1242	100	ug/kg	100	U	
12672-29-6	AROCHLOR-1248	100	ug/kg	100	U	
11097-69-1	AROCHLOR-1254	100	ug/kg	100	U	
11096-82-5	AROCHLOR-1260	100	ug/kg	100	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R

Reported on: Friday, July 17, 1998

Field ID:	P2E
Lab ID:	9805229-13

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	51.9	ug/kg	50	104	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	38.8	ug/kg	50	78	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R

Reported on: Friday, July 17, 1998

Field ID:	P3E
Lab ID:	9805229-14

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	5	ug/kg	5	U	
58-89-9	GAMMA-BHC (LINDANE)	5	ug/kg	5	U	
76-44-8	HEPTACHLOR	5	ug/kg	5	U	
309-00-2	ALDRIN	5	ug/kg	5	U	
319-85-7	BETA-BHC	5	ug/kg	5	U	
319-86-8	DELTA-BHC	5	ug/kg	5	U	
1024-57-3	HEPTACHLOR EPOXIDE	5	ug/kg	5	U	
959-98-8	ENDOSULFAN I	5	ug/kg	5	U	
5103-74-2	GAMMA-CHLORDANE	5	ug/kg	5	U	
5103-71-9	ALPHA-CHLORDANE	5	ug/kg	5	U	
72-55-9	4,4'-DDE	20	ug/kg	10		
60-57-1	DIELDRIN	10	ug/kg	10	U	
72-20-8	ENDRIN	10	ug/kg	10	U	
72-54-8	4,4'-DDD	10	ug/kg	10	U	
33213-65-9	ENDOSULFAN II	10	ug/kg	10	U	
50-29-3	4,4'-DDT	10	ug/kg	10	U	
7421-93-4	ENDRIN ALDEHYDE	10	ug/kg	10	U	
72-43-5	METHOXYCHLOR	50	ug/kg	50	U	
1031-07-8	ENDOSULFAN SULFATE	10	ug/kg	10	U	
53494-70-5	ENDRIN KETONE	10	ug/kg	10	U	
8001-35-2	TOXAPHENE	500	ug/kg	500	U	
12674-11-2	AROCHLOR-1016	100	ug/kg	100	U	
11104-28-2	AROCHLOR-1221	200	ug/kg	200	U	
11141-16-5	AROCHLOR-1232	100	ug/kg	100	U	
53469-21-9	AROCHLOR-1242	100	ug/kg	100	U	
12672-29-6	AROCHLOR-1248	100	ug/kg	100	U	
11097-69-1	AROCHLOR-1254	100	ug/kg	100	U	
11096-82-5	AROCHLOR-1260	100	ug/kg	100	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R

Reported on: Friday, July 17, 1998

Field ID:	P3E
Lab ID:	9805229-14

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	50	ug/kg	50	100	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	39.9	ug/kg	50	80	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	P4E
Lab ID:	9805229-15

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 12-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	5	ug/kg	5	U	
58-89-9	GAMMA-BHC (LINDANE)	5	ug/kg	5	U	
76-44-8	HEPTACHLOR	5	ug/kg	5	U	
309-00-2	ALDRIN	5	ug/kg	5	U	
319-85-7	BETA-BHC	5	ug/kg	5	U	
319-86-8	DELTA-BHC	5	ug/kg	5	U	
1024-57-3	HEPTACHLOR EPOXIDE	5	ug/kg	5	U	
959-98-8	ENDOSULFAN I	5	ug/kg	5	U	
5103-74-2	GAMMA-CHLORDANE	5	ug/kg	5	U	
5103-71-9	ALPHA-CHLORDANE	5	ug/kg	5	U	
72-55-9	4,4'-DDE	14	ug/kg	10		
60-57-1	DIELDRIN	10	ug/kg	10	U	
72-20-8	ENDRIN	10	ug/kg	10	U	
72-54-8	4,4'-DDD	10	ug/kg	10	U	
33213-65-9	ENDOSULFAN II	10	ug/kg	10	U	
50-29-3	4,4'-DDT	10	ug/kg	10	U	
7421-93-4	ENDRIN ALDEHYDE	10	ug/kg	10	U	
72-43-5	METHOXYCHLOR	50	ug/kg	50	U	
1031-07-8	ENDOSULFAN SULFATE	10	ug/kg	10	U	
53494-70-5	ENDRIN KETONE	10	ug/kg	10	U	
8001-35-2	TOXAPHENE	500	ug/kg	500	U	
12674-11-2	AROCHLOR-1016	100	ug/kg	100	U	
11104-28-2	AROCHLOR-1221	200	ug/kg	200	U	
11141-16-5	AROCHLOR-1232	100	ug/kg	100	U	
53469-21-9	AROCHLOR-1242	100	ug/kg	100	U	
12672-29-6	AROCHLOR-1248	100	ug/kg	100	U	
11097-69-1	AROCHLOR-1254	100	ug/kg	100	U	
11096-82-5	AROCHLOR-1260	100	ug/kg	100	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R

Reported on: Friday, July 17, 1998

Field ID:	P4E
Lab ID:	9805229-15

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 12-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	49.5	ug/kg	50	99	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	36.6	ug/kg	50	73	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	SI1E
Lab ID:	9805229-16

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	5	ug/kg	5	U	
58-89-9	GAMMA-BHC (LINDANE)	5	ug/kg	5	U	
76-44-8	HEPTACHLOR	5	ug/kg	5	U	
309-00-2	ALDRIN	5	ug/kg	5	U	
319-85-7	BETA-BHC	5	ug/kg	5	U	
319-86-8	DELTA-BHC	5	ug/kg	5	U	
1024-57-3	HEPTACHLOR EPOXIDE	5	ug/kg	5	U	
959-98-8	ENDOSULFAN I	5	ug/kg	5	U	
5103-74-2	GAMMA-CHLORDANE	5	ug/kg	5	U	
5103-71-9	ALPHA-CHLORDANE	7.6	ug/kg	5		
72-55-9	4,4'-DDE	100	ug/kg	10		
60-57-1	DIELDRIN	10	ug/kg	10	U	
72-20-8	ENDRIN	10	ug/kg	10	U	
72-54-8	4,4'-DDD	10	ug/kg	10	U	
33213-65-9	ENDOSULFAN II	10	ug/kg	10	U	
50-29-3	4,4'-DDT	10	ug/kg	10	U	
7421-93-4	ENDRIN ALDEHYDE	10	ug/kg	10	U	
72-43-5	METHOXYCHLOR	50	ug/kg	50	U	
1031-07-8	ENDOSULFAN SULFATE	10	ug/kg	10	U	
53494-70-5	ENDRIN KETONE	10	ug/kg	10	U	
8001-35-2	TOXAPHENE	500	ug/kg	500	U	
12674-11-2	AROCHLOR-1016	100	ug/kg	100	U	
11104-28-2	AROCHLOR-1221	200	ug/kg	200	U	
11141-16-5	AROCHLOR-1232	100	ug/kg	100	U	
53469-21-9	AROCHLOR-1242	100	ug/kg	100	U	
12672-29-6	AROCHLOR-1248	100	ug/kg	100	U	
11097-69-1	AROCHLOR-1254	100	ug/kg	100	U	
11096-82-5	AROCHLOR-1260	100	ug/kg	100	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	SI1E
Lab ID:	9805229-16

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	47.1	ug/kg	50	94	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	39.3	ug/kg	50	79	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID: SI2E	**Sample Matrix:** Solid	**Date Collected:** 22-Sep-97	**Sample Aliquot:** 10
Lab ID: 9805229-17	**% Moisture:** N/A	**Date Extracted:** 26-Jun-98	**Final Volume:** 10
	Cleanup Method: SW3640	**Date Analyzed:** 11-Jul-98	**Dilution:** 1
	Report Basis: AS RECEIVED	**Prep Batch:** EX980626-1	

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	5	ug/kg	5	U	
58-89-9	GAMMA-BHC (LINDANE)	5	ug/kg	5	U	
76-44-8	HEPTACHLOR	5	ug/kg	5	U	
309-00-2	ALDRIN	5	ug/kg	5	U	
319-85-7	BETA-BHC	5	ug/kg	5	U	
319-86-8	DELTA-BHC	5	ug/kg	5	U	
1024-57-3	HEPTACHLOR EPOXIDE	5	ug/kg	5	U	
959-98-8	ENDOSULFAN I	5	ug/kg	5	U	
5103-74-2	GAMMA-CHLORDANE	5	ug/kg	5	U	
5103-71-9	ALPHA-CHLORDANE	5	ug/kg	5	U	
72-55-9	4,4'-DDE	50	ug/kg	10		
60-57-1	DIELDRIN	10	ug/kg	10	U	
72-20-8	ENDRIN	10	ug/kg	10	U	
72-54-8	4,4'-DDD	10	ug/kg	10	U	
33213-65-9	ENDOSULFAN II	10	ug/kg	10	U	
50-29-3	4,4'-DDT	10	ug/kg	10	U	
7421-93-4	ENDRIN ALDEHYDE	10	ug/kg	10	U	
72-43-5	METHOXYCHLOR	50	ug/kg	50	U	
1031-07-8	ENDOSULFAN SULFATE	10	ug/kg	10	U	
53494-70-5	ENDRIN KETONE	10	ug/kg	10	U	
8001-35-2	TOXAPHENE	500	ug/kg	500	U	
12674-11-2	AROCHLOR-1016	100	ug/kg	100	U	
11104-28-2	AROCHLOR-1221	200	ug/kg	200	U	
11141-16-5	AROCHLOR-1232	100	ug/kg	100	U	
53469-21-9	AROCHLOR-1242	100	ug/kg	100	U	
12672-29-6	AROCHLOR-1248	100	ug/kg	100	U	
11097-69-1	AROCHLOR-1254	100	ug/kg	100	U	
11096-82-5	AROCHLOR-1260	100	ug/kg	100	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	SI2E
Lab ID:	9805229-17

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	51.5	ug/kg	50	103	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	41.5	ug/kg	50	83	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	SI3E
Lab ID:	9805229-18

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	5	ug/kg	5	U	
58-89-9	GAMMA-BHC (LINDANE)	5	ug/kg	5	U	
76-44-8	HEPTACHLOR	5	ug/kg	5	U	
309-00-2	ALDRIN	5	ug/kg	5	U	
319-85-7	BETA-BHC	5	ug/kg	5	U	
319-86-8	DELTA-BHC	5	ug/kg	5	U	
1024-57-3	HEPTACHLOR EPOXIDE	5	ug/kg	5	U	
959-98-8	ENDOSULFAN I	5	ug/kg	5	U	
5103-74-2	GAMMA-CHLORDANE	5	ug/kg	5	U	
5103-71-9	ALPHA-CHLORDANE	5	ug/kg	5	U	
72-55-9	4,4'-DDE	150	ug/kg	10	E	
60-57-1	DIELDRIN	10	ug/kg	10	U	
72-20-8	ENDRIN	10	ug/kg	10	U	
72-54-8	4,4'-DDD	10	ug/kg	10	U	
33213-65-9	ENDOSULFAN II	10	ug/kg	10	U	
50-29-3	4,4'-DDT	10	ug/kg	10	U	
7421-93-4	ENDRIN ALDEHYDE	10	ug/kg	10	U	
72-43-5	METHOXYCHLOR	50	ug/kg	50	U	
1031-07-8	ENDOSULFAN SULFATE	10	ug/kg	10	U	
53494-70-5	ENDRIN KETONE	10	ug/kg	10	U	
8001-35-2	TOXAPHENE	500	ug/kg	500	U	
12674-11-2	AROCHLOR-1016	100	ug/kg	100	U	
11104-28-2	AROCHLOR-1221	200	ug/kg	200	U	
11141-16-5	AROCHLOR-1232	100	ug/kg	100	U	
53469-21-9	AROCHLOR-1242	100	ug/kg	100	U	
12672-29-6	AROCHLOR-1248	100	ug/kg	100	U	
11097-69-1	AROCHLOR-1254	230	ug/kg	100		
11096-82-5	AROCHLOR-1260	100	ug/kg	100	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R

Reported on: Friday, July 17, 1998

Field ID:	SI3E
Lab ID:	9805229-18

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	55.6	ug/kg	50	111	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	42.4	ug/kg	50	85	47 - 137

U = Less than the Reporting Limit

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID: SI3E	**Sample Matrix:** Solid	**Date Collected:** 22-Sep-97	**Sample Aliquot:** 10
Lab ID: 9805229-18DL2	**% Moisture:** N/A	**Date Extracted:** 26-Jun-98	**Final Volume:** 10
	Cleanup Method: SW3640	**Date Analyzed:** 12-Jul-98	**Dilution:** 2
	Report Basis: AS RECEIVED	**Prep Batch:** EX980626-1	

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
319-84-6	ALPHA-BHC	10	ug/kg	10	U	
58-89-9	GAMMA-BHC (LINDANE)	10	ug/kg	10	U	
76-44-8	HEPTACHLOR	10	ug/kg	10	U	
309-00-2	ALDRIN	10	ug/kg	10	U	
319-85-7	BETA-BHC	10	ug/kg	10	U	
319-86-8	DELTA-BHC	10	ug/kg	10	U	
1024-57-3	HEPTACHLOR EPOXIDE	10	ug/kg	10	U	
959-98-8	ENDOSULFAN I	10	ug/kg	10	U	
5103-74-2	GAMMA-CHLORDANE	10	ug/kg	10	U	
5103-71-9	ALPHA-CHLORDANE	10	ug/kg	10	U	
72-55-9	4,4'-DDE	150	ug/kg	20		
60-57-1	DIELDRIN	20	ug/kg	20	U	
72-20-8	ENDRIN	20	ug/kg	20	U	
72-54-8	4,4'-DDD	20	ug/kg	20	U	
33213-65-9	ENDOSULFAN II	20	ug/kg	20	U	
50-29-3	4,4'-DDT	20	ug/kg	20	U	
7421-93-4	ENDRIN ALDEHYDE	20	ug/kg	20	U	
72-43-5	METHOXYCHLOR	100	ug/kg	100	U	
1031-07-8	ENDOSULFAN SULFATE	20	ug/kg	20	U	
53494-70-5	ENDRIN KETONE	20	ug/kg	20	U	
8001-35-2	TOXAPHENE	1000	ug/kg	1000	U	
12674-11-2	AROCHLOR-1016	200	ug/kg	200	U	
11104-28-2	AROCHLOR-1221	400	ug/kg	400	U	
11141-16-5	AROCHLOR-1232	200	ug/kg	200	U	
53469-21-9	AROCHLOR-1242	200	ug/kg	200	U	
12672-29-6	AROCHLOR-1248	200	ug/kg	200	U	
11097-69-1	AROCHLOR-1254	200	ug/kg	200	U	
11096-82-5	AROCHLOR-1260	200	ug/kg	200	U	

Organochlorine Pesticides

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID	SI3E
Lab ID	9805229-18DL2

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: AS RECEIVED

Date Collected: 22-Sep-97
Date Extracted: 26-Jun-98
Date Analyzed: 12-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 2

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	40.8	ug/kg	50	82	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	32.9	ug/kg	50	66	47 - 137

U = Less than the Reporting Limit

Supporting QA/QC Data

Surrogate Summary for Organochlorine Pesticides

Wednesday, July 15, 1998

Control Limits	Lower	Upper
Decachlorobiphenyl	34	129
Tetrachloro-m-xylene	47	137

Lab ID	Client Sample ID	Collected	Received	DCB % Recovery	TCX % Recovery
Prep Batch ID: EX980616-4					
Project Number: 9805229					
9805229-1	B1E	9/22/97	5/28/98	101	97
9805229-1DL5	B1E	9/22/97	5/28/98	24	65
9805229-2	B2E	9/22/97	5/28/98	102	99
9805229-2DL5	B2E	9/22/97	5/28/98	33	63
9805229-3	B3E	9/22/97	5/28/98	94	89
9805229-3DL4	B3E	9/22/97	5/28/98	39	54
9805229-3MS	B3E	9/22/97	5/28/98	103	111
9805229-3MSD	B3E	9/22/97	5/28/98	101	106
9805229-4	B4E	9/22/97	5/28/98	114	87
9805229-4DL5	B4E	9/22/97	5/28/98	25	63
9805229-8	M1E	9/22/97	5/28/98	99	94
9805229-8DL5	M1E	9/22/97	5/28/98	27	67
9805229-9	M2E	9/22/97	5/28/98	107	107
EX980616-4LCS	LABQC	6/16/98	6/16/98	104	93
EX980616-4LCSD	LABQC	6/16/98	6/16/98	104	93
EX980616-4MB	LABQC	6/16/98	6/16/98	131	117

Organochlorine Pesticides

Blank Spike and Blank Spike Duplicate

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

BS ID: EX980616-4LCS
BSD ID: EX980616-4LCSD

Sample Matrix:	Solid	**Date Collected:**	16-Jun-98	**Sample Aliquot:**	30
% Moisture:	N/A	**Date Extracted:**	16-Jun-98	**Final Volume:**	10
Cleanup Method:	SW3640	**Date Analyzed:**	11-Jul-98	**Dilution:**	1
Report Basis:	N/A	**Prep Batch:**	EX980616-4		

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	BS % Rec.	Control Limits
58-89-9	GAMMA-BHC (LINDANE)	13.3	11.8	ug/kg	1.67	89	54 - 127
76-44-8	HEPTACHLOR	13.3	11.9	ug/kg	1.67	89	55 - 140
309-00-2	ALDRIN	13.3	11.7	ug/kg	1.67	88	55 - 130
60-57-1	DIELDRIN	13.3	12.5	ug/kg	3.33	93	66 - 136
72-20-8	ENDRIN	13.3	13.1	ug/kg	3.33	98	77 - 129
50-29-3	4,4'-DDT	13.3	12.3	ug/kg	3.33	92	69 - 117

CASNO	Target Analyte	Spike Added	BSD Result	Units	Reporting Limit	BSD % Rec.	RPD	RPD Limits
58-89-9	GAMMA-BHC (LINDANE)	13.3	12.2	ug/kg	1.67	91	2	20
76-44-8	HEPTACHLOR	13.3	11.9	ug/kg	1.67	89	0	20
309-00-2	ALDRIN	13.3	11.8	ug/kg	1.67	89	1	20
60-57-1	DIELDRIN	13.3	12.5	ug/kg	3.33	94	1	20
72-20-8	ENDRIN	13.3	13.3	ug/kg	3.33	99	1	20
50-29-3	4,4'-DDT	13.3	12.3	ug/kg	3.33	92	0	20

Surrogate Recovery BS/BSD

CASNO	Target Analyte	Spike Added	BS % Rec.	BSD % Rec.	RPD	Control Limits
2051-24-3	DECACHLOROBIPHENYL	16.7	104	104	0	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	16.7	93	93	0	47 - 137

Organochlorine Pesticides

Matrix Spike and Matrix Spike Duplicate

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R
Reported on: Friday, July 17, 1998

Field ID:	B3E
Lab ID:	9805229-3

Sample Matrix:	Solid	Date Collected:	22-Sep-97	Sample Aliquot:	30
% Moisture:	N/A	Date Extracted:	16-Jun-98	Final Volume:	10
Cleanup Method:	SW3640	Date Analyzed:	11-Jul-98	Dilution:	1
Report Basis:	AS RECEIVED	Prep Batch:	EX980616-4		

CASNO	Target Analyte	Spike Added	Sample Result	Units	Reporting Limit	Result Qualifier	MS Result	MS % Rec.	Control Limits
58-89-9	GAMMA-BHC (LINDANE)	13.3	1.67	ug/kg	1.67	U	15.2	114	54 - 127
76-44-8	HEPTACHLOR	13.3	1.67	ug/kg	1.67	U	16.2	121	55 - 140
309-00-2	ALDRIN	13.3	1.67	ug/kg	1.67	U	7.33	55	55 - 130
60-57-1	DIELDRIN	13.3	3.33	ug/kg	3.33	U	22.5	169	66 - 136
72-20-8	ENDRIN	13.3	3.33	ug/kg	3.33	U	11.5	86	77 - 129
50-29-3	4,4'-DDT	13.3	3.33	ug/kg	3.33	U	20.1	151	69 - 117

CASNO	Target Analyte	Spike Added	MSD Result	Units	Reporting Limit	MSD % Rec.	RPD	RPD Limits
58-89-9	GAMMA-BHC (LINDANE)	13.3	15.1	ug/kg	1.67	113	1	20
76-44-8	HEPTACHLOR	13.3	16.1	ug/kg	1.67	121	0	20
309-00-2	ALDRIN	13.3	7.13	ug/kg	1.67	53	3	20
60-57-1	DIELDRIN	13.3	21.3	ug/kg	3.33	160	5	20
72-20-8	ENDRIN	13.3	10.8	ug/kg	3.33	81	7	20
50-29-3	4,4'-DDT	13.3	19.2	ug/kg	3.33	144	5	20

Surrogate Recovery MS/MSD

CASNO	Target Analyte	Spike Added	MS % Rec.	MSD % Rec.	RPD	Control Limits
2051-24-3	DECACHLOROBIPHENYL	16.7	103	101	1	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	16.7	111	106	5	47 - 137

Prep Batch Summary for Organochlorine Pesticides

Method SW8081

Prep Batch ID:	EX980616-4
Date prepped:	16-Jun-98

Project Number: 9805229

COC Number:

Lab ID	Client Sample ID	Date Collected	Date Received
9805229-1	B1E	9/22/97	5/28/98
9805229-1DL5	B1E	9/22/97	5/28/98
9805229-2	B2E	9/22/97	5/28/98
9805229-2DL5	B2E	9/22/97	5/28/98
9805229-3	B3E	9/22/97	5/28/98
9805229-3DL4	B3E	9/22/97	5/28/98
9805229-3MS	B3E	9/22/97	5/28/98
9805229-3MSD	B3E	9/22/97	5/28/98
9805229-4	B4E	9/22/97	5/28/98
9805229-4DL5	B4E	9/22/97	5/28/98
9805229-8	M1E	9/22/97	5/28/98
9805229-8DL5	M1E	9/22/97	5/28/98
9805229-9	M2E	9/22/97	5/28/98
EX980616-4LCS	LABQC	6/16/98	6/16/98
EX980616-4LCSD	LABQC	6/16/98	6/16/98
EX980616-4MB	LABQC	6/16/98	6/16/98

Surrogate Summary for Organochlorine Pesticides

Wednesday, July 15, 1998

Control Limits	Lower	Upper
Decachlorobiphenyl	34	129
Tetrachloro-m-xylene	47	137

Lab ID	Client Sample ID	Collected	Received	DCB % Recovery	TCX % Recovery
Prep Batch ID: EX980617-10					
Project Number: 9805229					
9805229-5	LA1E	9/22/97	5/28/98	94	79
9805229-6	LA2E	9/22/97	5/28/98	98	76
9805229-7	LA3E	9/22/97	5/28/98	95	77
EX980617-10LCS	LABQC	6/17/98	6/17/98	100	79
EX980617-10LCSD	LABQC	6/17/98	6/17/98	100	82
EX980617-10MB	LABQC	6/17/98	6/17/98	98	87

Organochlorine Pesticides

Blank Spike and Blank Spike Duplicate

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R

Reported on: Friday, July 17, 1998

BS ID: EX980617-10LCS
BSD ID: EX980617-10LCSD

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: N/A

Date Collected: 17-Jun-98
Date Extracted: 17-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980617-10

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	BS % Rec.	Control Limits
58-89-9	GAMMA-BHC (LINDANE)	40	33.1	ug/kg	5	83	54 - 127
76-44-8	HEPTACHLOR	40	33.8	ug/kg	5	85	55 - 140
309-00-2	ALDRIN	40	33.5	ug/kg	5	84	55 - 130
60-57-1	DIELDRIN	40	36.7	ug/kg	10	92	66 - 136
72-20-8	ENDRIN	40	38	ug/kg	10	95	77 - 129
50-29-3	4,4'-DDT	40	36.5	ug/kg	10	91	69 - 117

CASNO	Target Analyte	Spike Added	BSD Result	Units	Reporting Limit	BSD % Rec.	RPD	RPD Limits
58-89-9	GAMMA-BHC (LINDANE)	40	33.6	ug/kg	5	84	1	20
76-44-8	HEPTACHLOR	40	34.1	ug/kg	5	85	0	20
309-00-2	ALDRIN	40	34	ug/kg	5	85	1	20
60-57-1	DIELDRIN	40	37.8	ug/kg	10	95	3	20
72-20-8	ENDRIN	40	39.2	ug/kg	10	98	3	20
50-29-3	4,4'-DDT	40	37.5	ug/kg	10	94	3	20

Surrogate Recovery BS/BSD

CASNO	Target Analyte	Spike Added	BS % Rec.	BSD % Rec.	RPD	Control Limits
2051-24-3	DECACHLOROBIPHENYL	50	100	100	0	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	50	79	82	4	47 - 137

Prep Batch Summary for Organochlorine Pesticides

Method SW8081

Prep Batch ID:	EX980617-10
Date prepared:	17-Jun-98

Project Number: 9805229

COC Number:

Lab ID	Client Sample ID	Date Collected	Date Received
9805229-5	LA1E	9/22/97	5/28/98
9805229-6	LA2E	9/22/97	5/28/98
9805229-7	LA3E	9/22/97	5/28/98
EX980617-10LCS	LABQC	6/17/98	6/17/98
EX980617-10LCSD	LABQC	6/17/98	6/17/98
EX980617-10MB	LABQC	6/17/98	6/17/98

Surrogate Summary for Organochlorine Pesticides

Wednesday, July 15, 1998

Control Limits	Lower	Upper
Decachlorobiphenyl	34	129
Tetrachloro-m-xylene	47	137

Lab ID	Client Sample ID	Collected	Received	DCB % Recovery	TCX % Recovery
Prep Batch ID: EX980626-1					
Project Number: 9805229					
9805229-10	M3E	9/22/97	5/28/98	93	70
9805229-11	M4E	9/22/97	5/28/98	115	74
9805229-12	P1E	9/22/97	5/28/98	112	84
9805229-12DDL2	P1E	9/22/97	5/28/98	98	77
9805229-13	P2E	9/22/97	5/28/98	104	78
9805229-14	P3E	9/22/97	5/28/98	100	80
9805229-15	P4E	9/22/97	5/28/98	99	73
9805229-16	SI1E	9/22/97	5/28/98	94	79
9805229-17	SI2E	9/22/97	5/28/98	103	83
9805229-18	SI3E	9/22/97	5/28/98	111	85
9805229-18DL2	SI3E	9/22/97	5/28/98	82	66
EX980626-1LCS	LABQC	6/26/98	6/26/98	103	92
EX980626-1LCSD	LABQC	6/26/98	6/26/98	127	116
EX980626-1MB	LABQC	6/26/98	6/26/98	106	95

Organochlorine Pesticides

Blank Spike and Blank Spike Duplicate

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9805229
Client Name: Los Alamos National Laboratory
ClientProject ID: 4275R

Reported on: Friday, July 17, 1998

BS ID: EX980626-1LCS
BSD ID: EX980626-1LCSD

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3640
Report Basis: N/A

Date Collected: 26-Jun-98
Date Extracted: 26-Jun-98
Date Analyzed: 11-Jul-98
Prep Batch: EX980626-1

Sample Aliquot: 10
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	BS % Rec.	Control Limits
58-89-9	GAMMA-BHC (LINDANE)	40	33.9	ug/kg	5	85	54 - 127
76-44-8	HEPTACHLOR	40	33.6	ug/kg	5	84	55 - 140
309-00-2	ALDRIN	40	33.6	ug/kg	5	84	55 - 130
60-57-1	DIELDRIN	40	35.8	ug/kg	10	89	66 - 136
72-20-8	ENDRIN	40	37.8	ug/kg	10	95	77 - 129
50-29-3	4,4'-DDT	40	35.3	ug/kg	10	88	69 - 117

CASNO	Target Analyte	Spike Added	BSD Result	Units	Reporting Limit	BSD % Rec.	RPD	RPD Limits
58-89-9	GAMMA-BHC (LINDANE)	40	43.5	ug/kg	5	109	25	20
76-44-8	HEPTACHLOR	40	42.7	ug/kg	5	107	24	20
309-00-2	ALDRIN	40	43.3	ug/kg	5	108	25	20
60-57-1	DIELDRIN	40	46.6	ug/kg	10	117	27	20
72-20-8	ENDRIN	40	48.1	ug/kg	10	120	23	20
50-29-3	4,4'-DDT	40	45.7	ug/kg	10	114	26	20

Surrogate Recovery BS/BSD

CASNO	Target Analyte	Spike Added	BS % Rec.	BSD % Rec.	RPD	Control Limits
2051-24-3	DECACHLOROBIPHENYL	50	103	127	21	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	50	92	116	23	47 - 137

Prep Batch Summary for Organochlorine Pesticides

Method SW8081

Prep Batch ID:	EX980626-1
Date Prepared:	26-Jun-98

Project Number: 9805229

COC Number:

Lab ID	Client Sample ID	Date Collected	Date Received
9805229-10	M3E	9/22/97	5/28/98
9805229-11	M4E	9/22/97	5/28/98
9805229-12	P1E	9/22/97	5/28/98
9805229-12DDL2	P1E	9/22/97	5/28/98
9805229-13	P2E	9/22/97	5/28/98
9805229-14	P3E	9/22/97	5/28/98
9805229-15	P4E	9/22/97	5/28/98
9805229-16	SI1E	9/22/97	5/28/98
9805229-17	SI2E	9/22/97	5/28/98
9805229-18	SI3E	9/22/97	5/28/98
9805229-18DL2	SI3E	9/22/97	5/28/98
EX980626-1LCS	LABQC	6/26/98	6/26/98
EX980626-1LCSD	LABQC	6/26/98	6/26/98
EX980626-1MB	LABQC	6/26/98	6/26/98

Pesticides Breakdown Report

Paragon Analytics, Inc.

Sample: PEM MX-A20-16 20%

Inst. ID: ECD2
Date: 10 Jul 98 07:51 PM

Data file #1: C:\HPCHEM\6\DATA\980710\0710EA01.D
Data file #2: C:\HPCHEM\6\DATA\980710\0710EA01.D\0710EB01.D

$$\% \text{ breakdown for 4,4'-DDT} = \frac{\text{Total DDT degradation peak area (DDE + DDD)}}{\text{Total DDT peak area (DDT + DDE + DDD)}} \times 100$$

Compound	Column #1 Area	Column #2 Area
4,4'-DDT	5576346	6138007
4,4'-DDE	64215	217593
4,4'-DDD	56325	203575
% breakdown	2.12	6.42

$$\% \text{ breakdown for Endrin} = \frac{\text{Total endrin degradation peak area (endrin aldehyde + endrin ketone)}}{\text{Total endrin peak area (endrin + endrin aldehyde + endrin ketone)}} \times 100$$

Compound	Column #1 Area	Column #2 Area
Endrin	2896098	3996994
Endrin Aldehyde	95947	0
Endrin Ketone	97536	121022
% breakdown	6.26	2.94

Initial Calibration Summary

Paragon Analytics, Inc.

Method: C:\HPCHEM\6\METHODS\1A071098.M
Calibration Date: 07/10/98

Inst. ID: ECD2
Colunm #1: RTX-CLPesticides

000076

Calibration files
1 = 0710EA11.D 2 = 0710EA10.D 3 = 0710EA09.D
4 = 0710EA08.D 5 = 0710EA07.D 6 =

	Calibration Factors								Corr Coef	Curve Fit
Compoumds	1	2	3	4	5	6	Ave. CF	%RSD	r2	Type
TCMX	41071	39458	37743	35344	32916		37306	8.7	0.997	Linear
Aroclor-1016	1154	1090	1040	940	858		1016	11.6	0.995	Linear
Aroclor-1016 {2}	2186	2020	1846	1643	1518		1842	14.7	0.996	Linear
Aroclor-1016 {3}	396	387	371	349	346		370	6.0	1.000	Linear
Aroclor-1016 {4}	873	824	780	711	701		778	9.5	0.999	Linear
Aroclor-1016 {5}	1987	1759	1623	1455	1331		1631	15.7	0.996	Linear
Aroclor-1016 {6}	1145	1084	1020	932	866		1009	11.2	0.997	Linear
Aroclor-1016 {7}	846	805	760	696	645		750	10.8	0.997	Linear
Aroclor-1016 {8}	1756	1685	1578	1435	1332		1557	11.2	0.997	Linear
Aroclor-1260	2887	2625	2388	2080	1873		2371	17.2	0.994	Linear
Aroclor-1260 {2}	4092	3778	3430	3014	2736		3410	16.1	0.995	Linear
Aroclor-1260 {3}	1501	1470	1476	1384	1291		1424	6.1	0.997	Linear
Aroclor-1260 {4}	2814	2490	2298	2052	1877		2306	15.9	0.996	Linear
Aroclor-1260 {5}	1347	1300	1248	1155	1076		1225	8.9	0.997	Linear
Aroclor-1260 {6}	2589	2434	2301	2093	1933		2270	11.5	0.996	Linear
Aroclor-1260 {7}	4737	4423	4109	3777	3474		4104	12.2	0.997	Linear
Aroclor-1260 {8}	2188	2084	2002	1851	1731		1971	9.2	0.997	Linear
Decachlorobiphenyl	38682	35563	32477	29048	26631		32480	14.9	0.996	Linear

Paragon Analytics, Inc.

Method: C:\HPCHEM\6\METHODS\1A071098.M
Calibration Date: 07/10/98

Inst. ID: ECD2
Colunm #2: RTX-50

Calibration files
1 = 0710EA11.D 2 = 0710EA10.D 3 = 0710EA09.D
4 = 0710EA08.D 5 = 0710EA07.D 6 =

	Calibration Factors								Corr Coef	Curve Fit
Compoumds	1	2	3	4	5	6	Ave. CF	%RSD	r2	Type
TCMX	48258	46512	44821	40887	37517		43599	10.0	0.996	Linear
Aroclor-1016	1507	1263	1061	935	853		1124	23.5	0.997	Linear
Aroclor-1016 {2}	2503	2236	1896	1699	1520		1971	20.2	0.995	Linear
Aroclor-1016 {3}	678	715	602	554	511		612	13.8	0.996	Linear
Aroclor-1016 {4}	1517	1409	1274	1152	1059		1282	14.5	0.996	Linear
Aroclor-1016 {5}	4492	3985	3542	3101	2804		3585	18.9	0.995	Linear
Aroclor-1016 {6}	1538	1376	1260	1131	1035		1268	15.6	0.996	Linear
Aroclor-1016 {7}	1132	1046	995	927	862		993	10.5	0.997	Linear
Aroclor-1016 {8}	1022	944	864	769	699		860	15.1	0.995	Linear
Aroclor-1260	4243	3697	3491	2956	2639		3405	18.5	0.991	Linear
Aroclor-1260 {2}	4284	3810	3497	3022	2706		3464	18.1	0.993	Linear
Aroclor-1260 {3}	1661	1480	1392	1293	1205		1406	12.5	0.998	Linear
Aroclor-1260 {4}	2580	2322	2074	1917	1735		2126	15.7	0.996	Linear
Aroclor-1260 {5}	1409	1289	1170	1174	1076		1224	10.5	0.997	Linear
Aroclor-1260 {6}	2516	2335	2134	1949	1788		2145	13.6	0.996	Linear
Aroclor-1260 {7}	4572	4124	3726	3576	3300		3859	12.9	0.998	Linear
Aroclor-1260 {8}	3504	3202	2948	2690	2485		2966	13.6	0.997	Linear
Decachlorobiphenyl	44124	40020	36280	32559	29780		36553	15.7	0.996	Linear

Initial Calibration Summary

000078

Paragon Analytics, Inc.

Method: C:\HPCHEM\6\METHODS\1A071098.M
Calibration Date: 07/10/98

Inst. ID: ECD2

Calibration files
1 = 0710EA11.D 2 = 0710EA10.D 3 = 0710EA09.D
4 = 0710EA08.D 5 = 0710EA07.D 6 =

Compoumds	Linear Equation Column #1 Area = Slope X Concentration + Intercept	Linear Equation Column #2 Area = Slope X Concentration + Intercept
TCMX	Y = (32232) X + (78438)	Y = (36565) X + (110623)
Aroclor-1016	Y = (832) X + (28545)	Y = (791) X + (46312)
Aroclor-1016 {2}	Y = (1451) X + (57866)	Y = (1429) X + (78091)
Aroclor-1016 {3}	Y = (339) X + (4442)	Y = (490) X + (18451)
Aroclor-1016 {4}	Y = (679) X + (14138)	Y = (1015) X + (39536)
Aroclor-1016 {5}	Y = (1273) X + (52427)	Y = (2643) X + (137285)
Aroclor-1016 {6}	Y = (839) X + (25782)	Y = (990) X + (40757)
Aroclor-1016 {7}	Y = (626) X + (18962)	Y = (840) X + (22793)
Aroclor-1016 {8}	Y = (1290) X + (40696)	Y = (668) X + (28638)
Aroclor-1260	Y = (1775) X + (88835)	Y = (2489) X + (137036)
Aroclor-1260 {2}	Y = (2602) X + (120604)	Y = (2558) X + (134766)
Aroclor-1260 {3}	Y = (1276) X + (24538)	Y = (1168) X + (34572)
Aroclor-1260 {4}	Y = (1793) X + (75220)	Y = (1665) X + (67189)
Aroclor-1260 {5}	Y = (1052) X + (26939)	Y = (1059) X + (23749)
Aroclor-1260 {6}	Y = (1873) X + (60379)	Y = (1722) X + (62793)
Aroclor-1260 {7}	Y = (3363) X + (111327)	Y = (3206) X + (93755)
Aroclor-1260 {8}	Y = (1690) X + (43172)	Y = (2393) X + (84392)
Decachlorobiphenyl	Y = (25474) X + (103859)	Y = (28442) X + (119185)

Y = area X = Concentration
Colunm #1: RTX-CLPesticides Colunm #2: RTX-50

000079

Paragon Analytics, Inc.

Method: C:\HPCHEM\6\METHODS\1A071098.M
Calibration Date: 07/10/98

Inst. ID: ECD2

Calibration files
1 = 0710EA11.D 2 = 0710EA10.D 3 = 0710EA09.D
4 = 0710EA08.D 5 = 0710EA07.D 6 =

	Initial Calibration Concentration Levels (ng/ml)					
Compoumds	1	2	3	4	5	6
TCMX	5	10	20	40	60	
Aroclor-1016	50	100	200	400	600	
Aroclor-1016 {2}	50	100	200	400	600	
Aroclor-1016 {3}	50	100	200	400	600	
Aroclor-1016 {4}	50	100	200	400	600	
Aroclor-1016 {5}	50	100	200	400	600	
Aroclor-1016 {6}	50	100	200	400	600	
Aroclor-1016 {7}	50	100	200	400	600	
Aroclor-1016 {8}	50	100	200	400	600	
Aroclor-1260	50	100	200	400	600	
Aroclor-1260 {2}	50	100	200	400	600	
Aroclor-1260 {3}	50	100	200	400	600	
Aroclor-1260 {4}	50	100	200	400	600	
Aroclor-1260 {5}	50	100	200	400	600	
Aroclor-1260 {6}	50	100	200	400	600	
Aroclor-1260 {7}	50	100	200	400	600	
Aroclor-1260 {8}	50	100	200	400	600	
Decachlorobiphenyl	5	10	20	40	60	

Initial Calibration Summary

Paragon Analytics, Inc.

Method: C:\HPCHEM\6\METHODS\1A071098.M
Calibration Date: 07/10/98

Inst. ID: ECD2

Calibration files
1 = 0710EA11.D 2 = 0710EA10.D 3 = 0710EA09.D
4 = 0710EA08.D 5 = 0710EA07.D 6 =

	Column #1	RT Window		Column #2	RT Window	
Compoumds	RT	From	To	RT	From	To
TCMX	7.370	7.270	7.470	8.037	7.937	8.137
Aroclor-1016	8.123	8.023	8.223	9.247	9.147	9.347
Aroclor-1016 {2}	8.809	8.709	8.909	10.069	9.969	10.169
Aroclor-1016 {3}	9.150	9.050	9.250	10.462	10.362	10.562
Aroclor-1016 {4}	9.193	9.093	9.293	10.602	10.502	10.702
Aroclor-1016 {5}	9.905	9.805	10.005	10.797	10.697	10.897
Aroclor-1016 {6}	10.018	9.918	10.118	11.077	10.977	11.177
Aroclor-1016 {7}	10.333	10.233	10.433	11.314	11.214	11.414
Aroclor-1016 {8}	10.617	10.517	10.717	11.418	11.318	11.518
Aroclor-1260	12.904	12.804	13.004	15.248	15.148	15.348
Aroclor-1260 {2}	13.567	13.467	13.667	15.650	15.550	15.750
Aroclor-1260 {3}	13.901	13.801	14.001	16.244	16.144	16.344
Aroclor-1260 {4}	14.667	14.567	14.767	16.894	16.794	16.994
Aroclor-1260 {5}	14.814	14.714	14.914	17.008	16.908	17.108
Aroclor-1260 {6}	15.463	15.363	15.563	17.585	17.485	17.685
Aroclor-1260 {7}	16.308	16.208	16.408	17.909	17.809	18.009
Aroclor-1260 {8}	16.947	16.847	17.047	18.652	18.552	18.752
Decachlorobiphenyl	18.863	18.723	19.003	20.948	20.808	21.088

Colunm #1: RTX-CLPesticides Colunm #2: RTX-50

Calibration Verification Summary

Paragon Analytics, Inc.

Sample: ICV 1016 MX-A53-10 20%

Inst. ID: ECD2
Date Aquired:11 Jul 98 01:28 AM

Data File #1: C:\HPCHEM\6\DATA\980710\0710EA12.D
Data File #2: C:\HPCHEM\6\DATA\980710\0710EA12.D\0710EB12.D

	Column #1			Column #2				Col. #1	Col.#2	Col. #1	Col.#2
COMPOUND	Exp. RT (min)	Found RT (min)	Dev (min)	Exp. RT (min)	Found RT (min)	Dev (min)	Nom Conc ng/ml	Conc ng/ml	Conc ng/ml	%D	%D
TCMX											
Aroclor-1016	8.123	8.126	-0.003	9.247	9.250	-0.003	400	375.21	389.08		
Aroclor-1016 {2}	8.809	8.811	-0.002	10.069	10.071	-0.003	400	414.41	420.08		
Aroclor-1016 {3}	9.150	9.152	-0.002	10.462	10.465	-0.003	400	400.63	416.31		
Aroclor-1016 {4}	9.193	9.195	-0.002	10.602	10.604	-0.003	400	400.59	410.42		
Aroclor-1016 {5}	9.905	9.908	-0.003	10.797	10.800	-0.003	400	419.71	420.59		
Aroclor-1016 {6}	10.018	10.021	-0.002	11.077	11.080	-0.003	400	419.66	415.37		
Aroclor-1016 {7}	10.333	10.336	-0.002	11.314	11.317	-0.003	400	424.88	406.01		
Aroclor-1016 {8}	10.617	10.619	-0.003	11.418	11.421	-0.003	400	405.94	400.75		
Aroclor-1016 Total							3200	3261.038	3278.624	1.91	2.46
Aroclor-1260											
Aroclor-1260 {2}											
Aroclor-1260 {3}											
Aroclor-1260 {4}											
Aroclor-1260 {5}											
Aroclor-1260 {6}											
Aroclor-1260 {7}											
Aroclor-1260 {8}											
Aroclor-1260 Total											
Decachlorobiphenyl											

Column #1: RTX-1701

Column #2: RTX-50

180000

Calibration Verification Summary

Paragon Analytics, Inc.

Sample: ICV 1016 MX-A51-12 20%

Inst. ID: ECD2
Date Aquired:11 Jul 98 01:59 AM

Data File #1: C:\HPCHEM\6\DATA\980710\0710EA13.D
Data File #2: C:\HPCHEM\6\DATA\980710\0710EA13.D\0710EB13.D

	Column #1			Column #2				Col. #1	Col.#2	Col. #1	Col.#2
COMPOUND	Exp. RT (min)	Found RT (min)	Dev (min)	Exp. RT (min)	Found RT (min)	Dev (min)	Nom Conc ng/ml	Conc ng/ml	Conc ng/ml	%D	%D
TCMX											
Aroclor-1016											
Aroclor-1016 {2}											
Aroclor-1016 {3}											
Aroclor-1016 {4}											
Aroclor-1016 {5}											
Aroclor-1016 {6}											
Aroclor-1016 {7}											
Aroclor-1016 {8}											
Aroclor-1016 Total											
Aroclor-1260	12.904	12.907	-0.004	15.248	15.252	-0.004	400	420.66	474.53		
Aroclor-1260 {2}	13.567	13.571	-0.004	15.650	15.654	-0.004	400	431.31	461.00		
Aroclor-1260 {3}	13.901	13.906	-0.004	16.244	16.247	-0.003	400	418.59	497.90		
Aroclor-1260 {4}	14.667	14.671	-0.004	16.894	16.896	-0.003	400	352.40	378.73		
Aroclor-1260 {5}	14.814	14.819	-0.005	17.008	17.011	-0.002	400	360.94	405.12		
Aroclor-1260 {6}	15.463	15.467	-0.004	17.585	17.587	-0.002	400	366.77	392.79		
Aroclor-1260 {7}	16.308	16.311	-0.003	17.909	17.912	-0.002	400	360.48	372.07		
Aroclor-1260 {8}	16.947	16.950	-0.003	18.652	18.653	-0.001	400	384.72	373.48		
Aroclor-1260 Total							3200	3095.864	3355.623	3.25	4.86
Decachlorobiphenyl											

Column #1: RTX-1701

Column #2: RTX-50

280000

Initial Calibration Summary

Paragon Analytics, Inc.

Method: C:\HPCHEM\6\METHODS\OC071098.M
Calibration Date: 07/10/98

Inst. ID: ECD2
Colunm #1: RTX-CLPesticides

Calibration files
1 = 0710EA18.D 2 = 0710EA17.D 3 = 0710EA16.D
4 = 0710EA15.D 5 = 0710EA14.D 6 =

	Calibration Factors								Corr Coef	Curve Fit
Compoumds	1	2	3	4	5	6	Ave. CF	%RSD	r2	Type
Tetrachloro-m-xylene (surr)	38098	37768	37021	33607	29881		35275	9.9	0.996	Linear
alpha-BHC	32193	34100	36463	40575	40900		36846	10.5	1.000	Linear
gamma-BHC (Lindane)	33870	35975	38044	40679	40050		37724	7.5	1.000	Linear
Heptachlor	45515	45667	44291	42738	39487		43540	5.9	0.998	Linear
Aldrin	33269	33831	33863	34754	33518		33847	1.7	1.000	Linear
beta-BHC	23790	24004	23422	22621	21516		23071	4.4	0.999	Linear
delta-BHC	26710	24375	26411	32454	33656		28721	14.2	0.999	Linear
Heptachlor Epoxide	41683	41525	40020	38334	35452		39403	6.6	0.998	Linear
Endosulfan I	38534	38424	37241	35920	33833		36791	5.3	0.999	Linear
gamma-Chlordane	40701	40660	39372	38308	35881		38984	5.1	0.999	Linear
alpha-Chlordane	41178	41858	40770	38929	36797		39906	5.1	0.999	Linear
4,4'-DDE	29358	30355	31091	31982	30207		30599	3.2	0.999	Linear
Dieldrin	32134	32750	32721	32431	30422		32092	3.0	0.999	Linear
Endrin	26188	27028	27089	27722	26134		26832	2.5	0.999	Linear
4,4'-DDD	21396	22124	22723	24144	23775		22833	5.0	1.000	Linear
Endosulfan II	35357	34729	33814	32279	29664		33169	6.9	0.998	Linear
4,4'-DDT	27920	27652	28390	29100	27883		28189	2.0	0.999	Linear
Endrin Aldehyde	24963	24323	24638	22598	20882		23481	7.3	0.998	Linear
Methoxychlor	18256	17418	15869	13776	11859		15436	17.0	0.994	Linear
Endosulfan Sulfate	25815	26269	25804	24964	23571		25285	4.2	0.999	Linear
Endrin Ketone	27611	28328	28158	27086	25251		27287	4.5	0.999	Linear
Decachlorobiphenyl (surr)	35055	32603	28844	24213	20853		28314	20.6	0.995	Linear

Initial Calibration Summary

000084

Paragon Analytics, Inc.

Method: C:\HPCHEM\6\METHODS\OC071098.M
Calibration Date: 07/10/98

Inst. ID: ECD2
Colunm #2: RTX-50

Calibration files
1 = 0710EA18.D 2 = 0710EA17.D 3 = 0710EA16.D
4 = 0710EA15.D 5 = 0710EA14.D 6 =

Compoumds	Calibration Factors						Ave. CF	%RSD	Corr Coef r2	Curve Fit Type
	1	2	3	4	5	6				
Tetrachloro-m-xylene (surr)	48375	47651	45616	40818	35466		43585	12.4	0.995	Linear
alpha-BHC	55900	53731	54254	53521	51253		53732	3.1	1.000	Linear
gamma-BHC (Lindane)	56319	53502	52652	51012	47837		52264	6.0	0.999	Linear
Heptachlor	52431	47693	44164	41401	39096		44957	11.7	0.999	Linear
Aldrin	52498	49534	46427	44024	41845		46866	9.1	1.000	Linear
beta-BHC	32816	30988	28391	25620	22983		28160	14.1	0.997	Linear
delta-BHC	39749	39511	39973	41241	40753		40246	1.8	1.000	Linear
Heptachlor Epoxide	62361	58693	53614	49239	44699		53721	13.2	0.998	Linear
Endosulfan I	56592	54645	51059	48843	45132		51254	8.9	0.999	Linear
gamma-Chlordane	61414	58682	54302	49602	46297		54059	11.5	0.999	Linear
alpha-Chlordane	61283	60425	56098	52148	47575		55506	10.4	0.998	Linear
4,4'-DDE	57262	54051	51490	48973	45008		51357	9.1	0.998	Linear
Dieldrin	57370	53746	51077	48400	43761		50871	10.2	0.998	Linear
Endrin	42993	42653	40479	38563	35089		39955	8.1	0.998	Linear
4,4'-DDD	41074	41943	39496	37872	34847		39047	7.2	0.998	Linear
Endosulfan II	47781	48224	44798	41489	37732		44005	10.1	0.998	Linear
4,4'-DDT	37065	36932	35959	34635	32282		35375	5.6	0.999	Linear
Endrin Aldehyde	22610	24698	24914	25335	24539		24419	4.3	1.000	Linear
Methoxychlor	16786	16000	14673	13085	12002		14509	13.7	0.998	Linear
Endosulfan Sulfate	22610	24698	24914	25335	24539		24419	4.3	1.000	Linear
Endrin Ketone	30677	30702	29814	28837	27254		29457	4.9	0.999	Linear
Decachlorobiphenyl (surr)	39917	36962	32732	27946	24274		32366	19.7	0.995	Linear

000085

Paragon Analytics, Inc.

Method: C:\HPCHEM\6\METHODS\OC071098.M
Calibration Date: 07/10/98

Inst. ID: ECD2

Calibration files
1 = 0710EA18.D 2 = 0710EA17.D 3 = 0710EA16.D
4 = 0710EA15.D 5 = 0710EA14.D 6 =

Compoumds	Linear Equation Column #1 Area = Slope X Concentration + Intercept	Linear Equation Column #2 Area = Slope X Concentration + Intercept
Tetrachloro-m-xylene (surr)	Y = (29323) X + (110468)	Y = (34604) X + (163286)
alpha-BHC	Y = (41633) X + (-35206)	Y = (51098) X + (25012)
gamma-BHC (Lindane)	Y = (40565) X + (-17552)	Y = (47439) X + (42779)
Heptachlor	Y = (39139) X + (41504)	Y = (38339) X + (50932)
Aldrin	Y = (33621) X + (5144)	Y = (41211) X + (44814)
beta-BHC	Y = (21360) X + (15851)	Y = (22358) X + (48478)
delta-BHC	Y = (34513) X + (-49118)	Y = (40927) X + (-4090)
Heptachlor Epoxide	Y = (35078) X + (39667)	Y = (43617) X + (83367)
Endosulfan I	Y = (33543) X + (29563)	Y = (44484) X + (57646)
gamma-Chlordane	Y = (35611) X + (31306)	Y = (45272) X + (71446)
alpha-Chlordane	Y = (36468) X + (31941)	Y = (46671) X + (76345)
4,4'-DDE	Y = (30361) X + (15049)	Y = (44356) X + (120036)
Dieldrin	Y = (30361) X + (37918)	Y = (43057) X + (135254)
Endrin	Y = (26208) X + (18803)	Y = (34623) X + (96585)
4,4'-DDD	Y = (24006) X + (-14725)	Y = (34439) X + (84385)
Endosulfan II	Y = (29342) X + (70481)	Y = (37020) X + (123209)
4,4'-DDT	Y = (27993) X + (9724)	Y = (32000) X + (62752)
Endrin Aldehyde	Y = (20600) X + (53583)	Y = (24645) X + (3921)
Methoxychlor	Y = (11432) X + (342699)	Y = (11670) X + (232791)
Endosulfan Sulfate	Y = (23419) X + (36136)	Y = (24645) X + (3921)
Endrin Ketone	Y = (25089) X + (44501)	Y = (27041) X + (44292)
Decachlorobiphenyl (surr)	Y = (19886) X + (278118)	Y = (23236) X + (299965)

Y = area
Colunm #1: RTX-CLPesticides

X = Concentration
Colunm #2: RTX-50

Initial Calibration Summary

Paragon Analytics, Inc.

Method: C:\HPCHEM\6\METHODS\OC071098.M
Calibration Date: 07/10/98

Inst. ID: ECD2

Calibration files
1 = 0710EA18.D 2 = 0710EA17.D 3 = 0710EA16.D
4 = 0710EA15.D 5 = 0710EA14.D 6 =

	Initial Calibration Concentration Levels (ng/ml)					
Compoumds	1	2	3	4	5	6
Tetrachloro-m-xylene (surr)	5	10	20	50	100	
alpha-BHC	2.5	5	10	25	50	
gamma-BHC (Lindane)	2.5	5	10	25	50	
Heptachlor	2.5	5	10	25	50	
Aldrin	2.5	5	10	25	50	
beta-BHC	2.5	5	10	25	50	
delta-BHC	2.5	5	10	25	50	
Heptachlor Epoxide	2.5	5	10	25	50	
Endosulfan I	2.5	5	10	25	50	
gamma-Chlordane	2.5	5	10	25	50	
alpha-Chlordane	2.5	5	10	25	50	
4,4'-DDE	5	10	20	50	100	
Dieldrin	5	10	20	50	100	
Endrin	5	10	20	50	100	
4,4'-DDD	5	10	20	50	100	
Endosulfan II	5	10	20	50	100	
4,4'-DDT	5	10	20	50	100	
Endrin Aldehyde	5	10	20	50	100	
Methoxychlor	25	50	100	250	500	
Endosulfan Sulfate	5	10	20	50	100	
Endrin Ketone	5	10	20	50	100	
Decachlorobiphenyl (surr)	10	20	40	100	200	

000086

000087

Paragon Analytics, Inc.

Method: C:\HPCHEM\6\METHODS\OC071098.M
Calibration Date: 07/10/98

Inst. ID: ECD2

Calibration files
1 = 0710EA18.D 2 = 0710EA17.D 3 = 0710EA16.D
4 = 0710EA15.D 5 = 0710EA14.D 6 =

	Column #1	RT Window		Column #2	RT Window	
Compoumds	RT	From	To	RT	From	To
Tetrachloro-m-xylene (surr)	7.374	7.274	7.474	8.041	7.941	8.141
alpha-BHC	8.518	8.418	8.618	9.398	9.298	9.498
gamma-BHC (Lindane)	9.135	9.035	9.235	10.201	10.101	10.301
Heptachlor	10.017	9.917	10.117	10.721	10.621	10.821
Aldrin	10.555	10.455	10.655	11.323	11.223	11.423
beta-BHC	9.309	9.209	9.409	10.648	10.548	10.748
delta-BHC	9.639	9.539	9.739	11.127	11.088	11.288
Heptachlor Epoxide	11.628	11.528	11.728	12.561	12.461	12.661
Endosulfan I	12.403	12.303	12.503	13.443	13.343	13.543
gamma-Chlordane	11.862	11.762	11.962	12.991	12.891	13.091
alpha-Chlordane	12.121	12.021	12.221	13.359	13.259	13.459
4,4'-DDE	12.278	12.178	12.378	14.015	13.915	14.115
Dieldrin	12.925	12.825	13.025	14.395	14.295	14.495
Endrin	13.480	13.380	13.580	15.538	15.438	15.638
4,4'-DDD	13.658	13.558	13.758	15.951	15.851	16.051
Endosulfan II	14.073	13.973	14.173	16.293	16.193	16.393
4,4'-DDT	14.430	14.330	14.530	16.686	16.586	16.786
Endrin Aldehyde	15.347	15.247	15.447	17.371	17.271	17.471
Methoxychlor	15.957	15.857	16.057	18.396	18.296	18.496
Endosulfan Sulfate	16.516	16.416	16.616	17.371	17.271	17.471
Endrin Ketone	17.107	17.007	17.207	18.631	18.531	18.731
Decachlorobiphenyl (surr)	18.865	18.765	18.965	20.951	20.851	21.051

Colunm #1: RTX-CLPesticides Colunm #2: RTX-50

Calibration Verification Summary

000088

Paragon Analytics, Inc.

Sample: ICV PEST MX-C38-02 20%

Inst. ID: ECD2.
Date Aquired:11 Jul 98 05:02 AM

Data File #1: C:\HPCHEM\6\DATA\980710\0710EA19.D
Data File #2: C:\HPCHEM\6\DATA\980710\0710EA19.D\0710EB19.D

	Column #1			Column #2				Col. #1	Col.#2	Col. #1	Col.#2
COMPOUND	Exp. RT (min)	Found RT (min)	Dev (min)	Exp. RT (min)	Found RT (min)	Dev (min)	Nom Conc ng/ml	Conc ng/ml	Conc ng/ml	%D	%D
Tetrachloro-m-xylene (surr	7.374	7.376	-0.003	8.041	8.044	-0.003	50	51.24	52.38	2.48	4.76
alpha-BHC	8.518	8.521	-0.003	9.398	9.401	-0.003	25	25.59	26.43	2.34	5.73
gamma-BHC (Lindane)	9.135	9.138	-0.003	10.201	10.204	-0.003	25	24.74	25.63	1.04	2.52
Heptachlor	10.017	10.019	-0.003	10.721	10.724	-0.003	25	25.71	25.08	2.84	0.32
Aldrin	10.555	10.558	-0.003	11.323	11.327	-0.003	25	26.08	26.17	4.31	4.68
beta-BHC	9.309	9.312	-0.003	10.648	10.651	-0.003	25	26.40	27.05	5.59	8.21
delta-BHC	9.639	9.642	-0.003	11.127	11.131	-0.003	25	25.28	25.86	1.13	3.42
Heptachlor Epoxide	11.628	11.631	-0.003	12.561	12.565	-0.004	25	25.40	25.53	1.59	2.12
Endosulfan I	12.403	12.406	-0.003	13.443	13.448	-0.005	25	25.51	26.30	2.04	5.20
gamma-Chlordane	11.862	11.865	-0.003	12.991	12.995	-0.004	25	25.42	25.60	1.66	2.40
alpha-Chlordane	12.121	12.124	-0.003	13.359	13.364	-0.005	25	25.05	25.58	0.20	2.34
4,4'-DDE	12.278	12.282	-0.004	14.015	14.021	-0.006	50	49.08	49.42	1.84	1.15
Dieldrin	12.925	12.929	-0.004	14.395	14.401	-0.006	50	52.89	54.38	5.78	8.76
Endrin	13.480	13.484	-0.004	15.538	15.544	-0.006	50	46.68	47.84	6.64	4.33
4,4'-DDD	13.658	13.663	-0.005	15.951	15.957	-0.006	50	50.03	52.10	0.06	4.19
Endosulfan II	14.073	14.077	-0.005	16.293	16.298	-0.005	50	51.50	52.11	2.99	4.23
4,4'-DDT	14.430	14.434	-0.005	16.686	16.691	-0.005	50	53.25	51.53	6.49	3.06
Endrin Aldehyde	15.347	15.352	-0.005	17.371	17.375	-0.004	50	62.08	48.14	24.16	3.71
Methoxychlor	15.957	15.962	-0.005	18.396	18.400	-0.004	250	252.16	249.01	0.86	0.40
Endosulfan Sulfate	16.516	16.520	-0.004	17.371	17.375	-0.004	50	49.11	48.14	1.79	3.71
Endrin Ketone	17.107	17.110	-0.003	18.631	18.635	-0.004	50	53.14	53.48	6.29	6.96
Decachlorobiphenyl (surr)	18.865	18.868	-0.003	20.951	20.956	-0.005	100	108.92	108.58	8.92	8.58

Column #1: RTX-CLPesticides

Column #2: RTX-50

Calibration Verification Summary

Paragon Analytics, Inc.

Sample: CCV 1016/1260 MX-C25-04 20%

Inst. ID: ECD2
Date Aquired:11 Jul 98 10:08 AM

Data File #1: C:\HPCHEM\6\DATA\980710\0710EA28.D
Data File #2: C:\HPCHEM\6\DATA\980710\0710EA28.D\0710EB28.D

	Column #1			Column #2				Col. #1	Col.#2	Col. #1	Col.#2
COMPOUND	Exp. RT (min)	Found RT (min)	Dev (min)	Exp. RT (min)	Found RT (min)	Dev (min)	Nom Conc ng/ml	Conc ng/ml	Conc ng/ml	%D	%D
TCMX	7.370	7.382	-0.011	8.037	8.047	-0.010	40	44.51	45.09	11.27	12.71
Aroclor-1016	8.123	8.133	-0.010	9.247	9.256	-0.009	400	436.99	459.80		
Aroclor-1016 {2}	8.809	8.819	-0.010	10.069	10.078	-0.009	400	433.84	439.44		
Aroclor-1016 {3}	9.150	9.161	-0.010	10.462	10.471	-0.009	400	428.19	445.99		
Aroclor-1016 {4}	9.193	9.204	-0.011	10.602	10.611	-0.009	400	413.62	432.64		
Aroclor-1016 {5}	9.905	9.915	-0.010	10.797	10.805	-0.008	400	438.55	429.80		
Aroclor-1016 {6}	10.018	10.028	-0.010	11.077	11.084	-0.008	400	434.80	437.10		
Aroclor-1016 {7}	10.333	10.344	-0.011	11.314	11.321	-0.007	400	403.29	440.03		
Aroclor-1016 {8}	10.617	10.627	-0.011	11.418	11.427	-0.009	400	423.69	432.96		
Aroclor-1016 Total							3200	3412.989	3517.755	6.66	9.93
Aroclor-1260	12.904	12.917	-0.013	15.248	15.263	-0.014	400	421.42	469.92		
Aroclor-1260 {2}	13.567	13.579	-0.013	15.650	15.663	-0.012	400	430.69	460.91		
Aroclor-1260 {3}	13.901	13.915	-0.014	16.244	16.254	-0.010	400	427.98	446.04		
Aroclor-1260 {4}	14.667	14.683	-0.017	16.894	16.902	-0.009	400	427.93	409.10		
Aroclor-1260 {5}	14.814	14.831	-0.017	17.008	17.017	-0.009	400	423.35	407.30		
Aroclor-1260 {6}	15.463	15.479	-0.016	17.585	17.592	-0.007	400	429.66	406.45		
Aroclor-1260 {7}	16.308	16.319	-0.012	17.909	17.916	-0.007	400	436.86	409.32		
Aroclor-1260 {8}	16.947	16.957	-0.009	18.652	18.658	-0.006	400	439.89	402.39		
Aroclor-1260 Total							3200	3437.79	3411.425	7.43	6.61
Decachlorobiphenyl	18.863	18.871	-0.008	20.948	20.957	-0.009	40	44.81	42.61	12.01	6.53

Column #1: RTX-1701

Column #2: RTX-50

000089

Calibration Verification Summary

060000

Paragon Analytics, Inc.

Inst. ID: ECD2

Sample: CCV PEST MX-C37-03 20%

Date Aquired:11 Jul 98 10:39 AM

Data File #1: C:\HPCHEM\6\DATA\980710\0710EA29.D
Data File #2: C:\HPCHEM\6\DATA\980710\0710EA29.D\0710EB29.D

	Column #1			Column #2				Col. #1	Col.#2	Col. #1	Col.#2
COMPOUND	Exp. RT (min)	Found RT (min)	Dev (min)	Exp. RT (min)	Found RT (min)	Dev (min)	Nom Conc ng/ml	Conc ng/ml	Conc ng/ml	%D	%D
Tetrachloro-m-xylene (surr	7.374	7.375	-0.001	8.041	8.041	0.000	50	51.06	52.18	2.12	4.37
alpha-BHC	8.518	8.519	-0.001	9.398	9.397	0.000	25	24.06	24.47	3.76	2.13
gamma-BHC (Lindane)	9.135	9.136	-0.001	10.201	10.200	0.001	25	24.11	24.10	3.57	3.62
Heptachlor	10.017	10.018	-0.001	10.721	10.721	0.000	25	24.11	26.68	3.58	6.70
Aldrin	10.555	10.556	-0.001	11.323	11.324	0.000	25	23.29	24.41	6.85	2.36
beta-BHC	9.309	9.309	0.000	10.648	10.647	0.001	25	24.03	24.84	3.86	0.65
delta-BHC	9.639	9.640	0.000	11.127	11.125	0.002	25	23.99	24.66	4.03	1.37
Heptachlor Epoxide	11.628	11.629	0.000	12.561	12.560	0.001	25	23.86	24.85	4.54	0.60
Endosulfan I	12.403	12.403	0.000	13.443	13.442	0.001	25	23.21	24.73	7.16	1.06
gamma-Chlordane	11.862	11.862	0.000	12.991	12.989	0.001	25	23.93	21.23	4.30	15.06
alpha-Chlordane	12.121	12.121	0.000	13.359	13.359	0.001	25	23.62	24.88	5.50	0.48
4,4'-DDE	12.278	12.277	0.001	14.015	14.011	0.004	50	48.53	50.05	2.94	0.10
Dieldrin	12.925	12.925	0.000	14.395	14.394	0.001	50	47.91	50.31	4.19	0.61
Endrin	13.480	13.479	0.001	15.538	15.536	0.002	50	50.14	51.15	0.28	2.29
4,4'-DDD	13.658	13.655	0.003	15.951	15.947	0.004	50	48.25	49.00	3.49	1.99
Endosulfan II	14.073	14.072	0.001	16.293	16.290	0.003	50	49.15	47.31	1.70	5.37
4,4'-DDT	14.430	14.428	0.002	16.686	16.684	0.002	50	48.99	46.95	2.01	6.10
Endrin Aldehyde	15.347	15.345	0.001	17.371	17.369	0.002	50	48.62	48.73	2.76	2.54
Methoxychlor	15.957	15.954	0.002	18.396	18.395	0.001	250	260.68	241.34	4.27	3.46
Endosulfan Sulfate	16.516	16.515	0.001	17.371	17.369	0.002	50	49.52	48.73	0.96	2.54
Endrin Ketone	17.107	17.106	0.001	18.631	18.630	0.001	50	50.49	47.42	0.97	5.15
Decachlorobiphenyl (surr)	18.865	18.863	0.001	20.951	20.949	0.002	100	102.86	97.30	2.86	2.70

Column #1: RTX-CLPesticides

Column #2: RTX-50

Calibration Verification Summary

Paragon Analytics, Inc.

Sample: CCV 1016/1260 MX-C25-04 20%

Inst. ID: ECD2
Date Aquired:11 Jul 98 05:17 PM

000091

Data File #1: C:\HPCHEM\6\DATA\980710\0710EA41.D
Data File #2: C:\HPCHEM\6\DATA\980710\0710EA41.D\0710EB41.D

	Column #1			Column #2				Col. #1	Col.#2	Col. #1	Col.#2
COMPOUND	Exp. RT (min)	Found RT (min)	Dev (min)	Exp. RT (min)	Found RT (min)	Dev (min)	Nom Conc ng/ml	Conc ng/ml	Conc ng/ml	%D	%D
TCMX	7.370	7.387	-0.017	8.037	8.052	-0.015	40	41.34	44.21	3.36	10.52
Aroclor-1016	8.123	8.139	-0.016	9.247	9.260	-0.013	400	400.03	445.22		
Aroclor-1016 {2}	8.809	8.826	-0.017	10.069	10.083	-0.015	400	399.41	438.06		
Aroclor-1016 {3}	9.150	9.167	-0.016	10.462	10.476	-0.014	400	392.50	451.26		
Aroclor-1016 {4}	9.193	9.210	-0.017	10.602	10.616	-0.014	400	381.34	426.46		
Aroclor-1016 {5}	9.905	9.922	-0.017	10.797	10.810	-0.013	400	407.83	421.65		
Aroclor-1016 {6}	10.018	10.034	-0.016	11.077	11.090	-0.013	400	404.59	426.40		
Aroclor-1016 {7}	10.333	10.351	-0.018	11.314	11.326	-0.013	400	337.36	429.54		
Aroclor-1016 {8}	10.617	10.634	-0.018	11.418	11.433	-0.015	400	389.58	419.83		
Aroclor-1016 Total							3200	3112.641	3458.424	2.73	8.08
Aroclor-1260	12.904	12.927	-0.023	15.248	15.274	-0.026	400	386.73	450.62		
Aroclor-1260 {2}	13.567	13.591	-0.025	15.650	15.673	-0.023	400	399.84	423.84		
Aroclor-1260 {3}	13.901	13.928	-0.026	16.244	16.263	-0.019	400	393.66	397.87		
Aroclor-1260 {4}	14.667	14.697	-0.030	16.894	16.911	-0.018	400	395.12	390.78		
Aroclor-1260 {5}	14.814	14.845	-0.031	17.008	17.025	-0.017	400	386.68	389.96		
Aroclor-1260 {6}	15.463	15.493	-0.030	17.585	17.599	-0.014	400	395.35	389.03		
Aroclor-1260 {7}	16.308	16.330	-0.023	17.909	17.922	-0.013	400	403.37	390.39		
Aroclor-1260 {8}	16.947	16.967	-0.019	18.652	18.664	-0.012	400	405.13	384.20		
Aroclor-1260 Total							3200	3165.872	3216.688	1.07	0.52
Decachlorobiphenyl	18.863	18.879	-0.017	20.948	20.966	-0.018	40	41.57	41.14	3.93	2.84

Column #1: RTX-1701

Column #2: RTX-50

Calibration Verification Summary

000092

Paragon Analytics, Inc.

Inst. ID: ECD2

Sample: CCV PEST MX-C37-03 20%

Date Aquired:11 Jul 98 05:48 PM

Data File #1: C:\HPCHEM\6\DATA\980710\0710EA42.D
Data File #2: C:\HPCHEM\6\DATA\980710\0710EA42.D\0710EB42.D

	Column #1			Column #2				Col. #1	Col.#2	Col. #1	Col.#2
COMPOUND	Exp. RT (min)	Found RT (min)	Dev (min)	Exp. RT (min)	Found RT (min)	Dev (min)	Nom Conc ng/ml	Conc ng/ml	Conc ng/ml	%D	%D
Tetrachloro-m-xylene (surr	7.374	7.378	-0.005	8.041	8.042	-0.002	50	53.99	58.64	7.98	17.28
alpha-BHC	8.518	8.522	-0.004	9.398	9.399	-0.001	25	25.43	27.30	1.70	9.19
gamma-BHC (Lindane)	9.135	9.139	-0.005	10.201	10.202	-0.001	25	25.26	26.72	1.05	6.88
Heptachlor	10.017	10.021	-0.005	10.721	10.722	-0.001	25	25.59	29.11	2.34	16.44
Aldrin	10.555	10.560	-0.004	11.323	11.325	-0.002	25	24.16	26.69	3.35	6.76
beta-BHC	9.309	9.312	-0.003	10.648	10.648	0.000	25	25.37	27.36	1.50	9.45
delta-BHC	9.639	9.643	-0.003	11.127	11.126	0.001	25	24.97	26.33	0.14	5.32
Heptachlor Epoxide	11.628	11.632	-0.004	12.561	12.562	-0.001	25	24.84	27.55	0.64	10.21
Endosulfan I	12.403	12.407	-0.004	13.443	13.443	0.000	25	23.97	27.18	4.12	8.70
gamma-Chlordane	11.862	11.866	-0.004	12.991	12.992	-0.001	25	24.73	25.10	1.07	0.41
alpha-Chlordane	12.121	12.124	-0.004	13.359	13.360	-0.001	25	24.59	27.43	1.62	9.71
4,4'-DDE	12.278	12.280	-0.002	14.015	14.013	0.002	50	50.65	55.79	1.29	11.58
Dieldrin	12.925	12.929	-0.005	14.395	14.396	-0.001	50	49.92	55.82	0.15	11.65
Endrin	13.480	13.484	-0.004	15.538	15.537	0.001	50	51.85	55.51	3.70	11.03
4,4'-DDD	13.658	13.659	-0.002	15.951	15.948	0.003	50	50.77	53.75	1.54	7.49
Endosulfan II	14.073	14.076	-0.004	16.293	16.291	0.002	50	50.44	51.21	0.87	2.42
4,4'-DDT	14.430	14.432	-0.002	16.686	16.685	0.001	50	49.79	50.15	0.43	0.30
Endrin Aldehyde	15.347	15.350	-0.003	17.371	17.370	0.001	50	50.33	50.16	0.66	0.31
Methoxychlor	15.957	15.959	-0.002	18.396	18.396	0.000	250	271.65	258.84	8.66	3.54
Endosulfan Sulfate	16.516	16.519	-0.003	17.371	17.370	0.001	50	48.62	50.16	2.77	0.31
Endrin Ketone	17.107	17.110	-0.002	18.631	18.631	0.000	50	53.35	51.86	6.71	3.72
Decachlorobiphenyl (surr)	18.865	18.867	-0.003	20.951	20.951	0.000	100	107.94	105.33	7.94	5.33

Column #1: RTX-CLPesticides

Column #2: RTX-50

Calibration Verification Summary

000093

Paragon Analytics, Inc.

Inst. ID: ECD2
Date Aquired:12 Jul 98 00:26 AM

Sample: CCV 1016/1260 MX-C25-04 20%

Data File #1: C:\HPCHEM\6\DATA\980710\0710EA54.D
Data File #2: C:\HPCHEM\6\DATA\980710\0710EA54.D\0710EB54.D

	Column #1			Column #2				Col. #1	Col.#2	Col. #1	Col.#2
COMPOUND	Exp. RT (min)	Found RT (min)	Dev (min)	Exp. RT (min)	Found RT (min)	Dev (min)	Nom Conc ng/ml	Conc ng/ml	Conc ng/ml	%D	%D
TCMX	7.370	7.367	0.003	8.037	8.030	0.007	40	40.94	42.58	2.35	6.44
Aroclor-1016	8.123	8.118	0.005	9.247	9.237	0.010	400	389.03	431.55		
Aroclor-1016 {2}	8.809	8.805	0.004	10.069	10.061	0.008	400	389.45	419.95		
Aroclor-1016 {3}	9.150	9.146	0.004	10.462	10.453	0.009	400	379.08	434.46		
Aroclor-1016 {4}	9.193	9.189	0.004	10.602	10.593	0.009	400	368.89	415.20		
Aroclor-1016 {5}	9.905	9.900	0.005	10.797	10.787	0.010	400	395.72	411.78		
Aroclor-1016 {6}	10.018	10.013	0.005	11.077	11.067	0.010	400	390.00	416.68		
Aroclor-1016 {7}	10.333	10.330	0.003	11.314	11.302	0.012	400	313.77	421.61		
Aroclor-1016 {8}	10.617	10.613	0.003	11.418	11.409	0.009	400	378.91	408.43		
Aroclor-1016 Total							3200	3004.846	3359.657	6.10	4.99
Aroclor-1260	12.904	12.898	0.006	15.248	15.231	0.018	400	369.99	435.44		
Aroclor-1260 {2}	13.567	13.559	0.008	15.650	15.635	0.016	400	388.15	414.99		
Aroclor-1260 {3}	13.901	13.893	0.008	16.244	16.232	0.013	400	380.46	384.55		
Aroclor-1260 {4}	14.667	14.658	0.008	16.894	16.884	0.010	400	379.33	376.74		
Aroclor-1260 {5}	14.814	14.805	0.009	17.008	16.998	0.010	400	367.52	378.77		
Aroclor-1260 {6}	15.463	15.454	0.009	17.585	17.576	0.009	400	378.65	376.90		
Aroclor-1260 {7}	16.308	16.301	0.007	17.909	17.901	0.008	400	391.30	382.38		
Aroclor-1260 {8}	16.947	16.941	0.006	18.652	18.643	0.009	400	389.96	376.53		
Aroclor-1260 Total							3200	3045.363	3126.296	4.83	2.30
Decachlorobiphenyl	18.863	18.859	0.003	20.948	20.938	0.010	40	40.93	40.54	2.33	1.34

Column #1: RTX-1701

Column #2: RTX-50

Calibration Verification Summary

000094

Paragon Analytics, Inc.

Inst. ID: ECD2

Sample: CCV PEST MX-C37-03 20%

Date Aquired:12 Jul 98 00:57 AM

Data File #1: C:\HPCHEM\6\DATA\980710\0710EA55.D
Data File #2: C:\HPCHEM\6\DATA\980710\0710EA55.D\0710EB55.D

	Column #1			Column #2				Col. #1	Col.#2	Col. #1	Col.#2
COMPOUND	Exp. RT (min)	Found RT (min)	Dev (min)	Exp. RT (min)	Found RT (min)	Dev (min)	Nom Conc ng/ml	Conc ng/ml	Conc ng/ml	%D	%D
Tetrachloro-m-xylene (surr	7.374	7.366	0.007	8.041	8.029	0.012	50	50.48	52.92	0.97	5.85
alpha-BHC	8.518	8.510	0.008	9.398	9.386	0.012	25	23.61	24.87	5.57	0.52
gamma-BHC (Lindane)	9.135	9.127	0.008	10.201	10.189	0.012	25	23.05	25.02	7.81	0.07
Heptachlor	10.017	10.010	0.007	10.721	10.710	0.011	25	23.39	27.10	6.46	8.40
Aldrin	10.555	10.548	0.007	11.323	11.312	0.011	25	22.05	24.79	11.78	0.83
beta-BHC	9.309	9.301	0.009	10.648	10.636	0.012	25	23.26	25.10	6.96	0.39
delta-BHC	9.639	9.631	0.009	11.127	11.114	0.014	25	23.06	24.80	7.76	0.78
Heptachlor Epoxide	11.628	11.620	0.008	12.561	12.546	0.015	25	22.52	24.62	9.91	1.52
Endosulfan I	12.403	12.393	0.009	13.443	13.425	0.018	25	21.42	24.66	14.32	1.37
gamma-Chlordane	11.862	11.854	0.008	12.991	12.974	0.017	25	21.45	22.91	14.18	8.37
alpha-Chlordane	12.121	12.112	0.009	13.359	13.342	0.017	25	21.66	24.80	13.36	0.81
4,4'-DDE	12.278	12.267	0.011	14.015	13.993	0.022	50	46.73	50.39	6.54	0.78
Dieldrin	12.925	12.915	0.010	14.395	14.376	0.019	50	45.40	50.36	9.21	0.71
Endrin	13.480	13.468	0.011	15.538	15.518	0.020	50	48.81	51.76	2.37	3.52
4,4'-DDD	13.658	13.644	0.014	15.951	15.929	0.021	50	48.12	49.27	3.76	1.46
Endosulfan II	14.073	14.059	0.013	16.293	16.275	0.018	50	46.07	47.50	7.86	5.00
4,4'-DDT	14.430	14.415	0.014	16.686	16.670	0.016	50	44.91	45.14	10.18	9.72
Endrin Aldehyde	15.347	15.332	0.015	17.371	17.359	0.013	50	45.64	44.58	8.71	10.83
Methoxychlor	15.957	15.945	0.011	18.396	18.386	0.010	250	256.69	242.87	2.68	2.85
Endosulfan Sulfate	16.516	16.506	0.010	17.371	17.359	0.013	50	40.46	44.58	19.08	10.83
Endrin Ketone	17.107	17.099	0.009	18.631	18.620	0.011	50	49.91	49.27	0.18	1.45
Decachlorobiphenyl (surr)	18.865	18.859	0.006	20.951	20.937	0.014	100	101.27	98.97	1.27	1.03

Column #1: RTX-CLPesticides

Column #2: RTX-50

Pesticides Breakdown Report

Paragon Analytics, Inc.

Sample: PEM MX-A20-16 20%

Inst. ID: ECD2
Date: 12 Jul 98 12:00 PM

Data file #1: C:\HPCHEM\6\DATA\980710\0710EA56.D
Data file #2: C:\HPCHEM\6\DATA\980710\0710EA56.D\0710EB56.D

$$\text{\% breakdown for 4,4'-DDT} = \frac{\text{Total DDT degradation peak area (DDE + DDD)}}{\text{Total DDT peak area (DDT + DDE + DDD)}} \times 100$$

Compound	Column #1 Area	Column #2 Area
4,4'-DDT	5375365	6501176
4,4'-DDE	93514	236014
4,4'-DDD	82505	155781
% breakdown	3.17	5.68

$$\text{\% breakdown for Endrin} = \frac{\text{Total endrin degradation peak area (endrin aldehyde + endrin ketone)}}{\text{Total endrin peak area (endrin + endrin aldehyde + endrin ketone)}} \times 100$$

Compound	Column #1 Area	Column #2 Area
Endrin	2744862	4240789
Endrin Aldehyde	147153	0
Endrin Ketone	107820	144842
% breakdown	8.50	3.30

Calibration Verification Summary

960000

Paragon Analytics, Inc.

Sample: CCV 1016/1260 MX-C25-04 20%

Inst. ID: ECD2
Date Aquired:12 Jul 98 12:31 PM

Data File #1: C:\HPCHEM\6\DATA\980710\0710EA57.D
Data File #2: C:\HPCHEM\6\DATA\980710\0710EA57.D\0710EB57.D

	Column #1			Column #2				Col. #1	Col.#2	Col. #1	Col.#2
COMPOUND	Exp. RT (min)	Found RT (min)	Dev (min)	Exp. RT (min)	Found RT (min)	Dev (min)	Nom Conc ng/ml	Conc ng/ml	Conc ng/ml	%D	%D
TCMX	7.370	7.375	-0.004	8.037	8.036	0.001	40	40.88	45.99	2.21	14.99
Aroclor-1016	8.123	8.126	-0.003	9.247	9.245	0.002	400	404.42	499.18		
Aroclor-1016 {2}	8.809	8.812	-0.003	10.069	10.067	0.001	400	405.59	474.19		
Aroclor-1016 {3}	9.150	9.153	-0.003	10.462	10.460	0.002	400	408.91	494.81		
Aroclor-1016 {4}	9.193	9.196	-0.003	10.602	10.600	0.002	400	411.18	475.26		
Aroclor-1016 {5}	9.905	9.907	-0.003	10.797	10.795	0.002	400	403.71	462.63		
Aroclor-1016 {6}	10.018	10.020	-0.002	11.077	11.074	0.003	400	396.61	465.22		
Aroclor-1016 {7}	10.333	10.336	-0.003	11.314	11.310	0.003	400	393.38	464.80		
Aroclor-1016 {8}	10.617	10.619	-0.003	11.418	11.416	0.002	400	401.20	456.71		
Aroclor-1016 Total							3200	3225.01	3792.805	0.78	18.53
Aroclor-1260	12.904	12.907	-0.004	15.248	15.243	0.005	400	400.15	469.34		
Aroclor-1260 {2}	13.567	13.570	-0.003	15.650	15.647	0.004	400	405.69	466.23		
Aroclor-1260 {3}	13.901	13.905	-0.003	16.244	16.240	0.004	400	400.64	447.97		
Aroclor-1260 {4}	14.667	14.671	-0.004	16.894	16.892	0.002	400	403.92	448.59		
Aroclor-1260 {5}	14.814	14.818	-0.004	17.008	17.006	0.002	400	395.06	447.73		
Aroclor-1260 {6}	15.463	15.468	-0.005	17.585	17.583	0.002	400	404.23	428.40		
Aroclor-1260 {7}	16.308	16.311	-0.003	17.909	17.908	0.001	400	406.02	428.75		
Aroclor-1260 {8}	16.947	16.950	-0.003	18.652	18.650	0.002	400	402.73	419.64		
Aroclor-1260 Total							3200	3218.431	3556.67	0.58	11.15
Decachlorobiphenyl	18.863	18.866	-0.003	20.948	20.945	0.003	40	41.16	43.13	2.89	7.82

Column #1: RTX-1701

Column #2: RTX-50

Calibration Verification Summary

Paragon Analytics, Inc.

Sample: CCV PEST MX-C37-03 20%

Inst. ID: ECD2
Date Aquired:12 Jul 98 01:02 PM

Data File #1: C:\HPCHEM\6\DATA\980710\0710EA58.D
Data File #2: C:\HPCHEM\6\DATA\980710\0710EA58.D\0710EB58.D

	Column #1			Column #2				Col. #1	Col.#2	Col. #1	Col.#2
COMPOUND	Exp. RT (min)	Found RT (min)	Dev (min)	Exp. RT (min)	Found RT (min)	Dev (min)	Nom Conc ng/ml	Conc ng/ml	Conc ng/ml	%D	%D
Tetrachloro-m-xylene (surr	7.374	7.371	0.002	8.041	8.033	0.007	50	52.68	61.83	5.36	23.65
alpha-BHC	8.518	8.515	0.003	9.398	9.390	0.008	25	24.42	28.75	2.34	15.01
gamma-BHC (Lindane)	9.135	9.132	0.003	10.201	10.193	0.008	25	24.60	28.54	1.61	14.15
Heptachlor	10.017	10.014	0.003	10.721	10.714	0.007	25	25.18	29.58	0.72	18.33
Aldrin	10.555	10.552	0.003	11.323	11.316	0.007	25	24.79	28.57	0.82	14.29
beta-BHC	9.309	9.305	0.004	10.648	10.641	0.008	25	24.80	29.29	0.78	17.14
delta-BHC	9.639	9.636	0.004	11.127	11.119	0.008	25	23.13	27.00	7.48	7.99
Heptachlor Epoxide	11.628	11.625	0.003	12.561	12.552	0.009	25	25.03	29.77	0.12	19.10
Endosulfan I	12.403	12.399	0.004	13.443	13.433	0.010	25	24.51	30.20	1.97	20.79
gamma-Chlordane	11.862	11.859	0.003	12.991	12.981	0.010	25	24.74	29.25	1.05	16.99
alpha-Chlordane	12.121	12.117	0.003	13.359	13.349	0.010	25	24.64	30.07	1.45	20.27
4,4'-DDE	12.278	12.274	0.004	14.015	14.002	0.013	50	51.12	60.90	2.23	21.80
Dieldrin	12.925	12.921	0.004	14.395	14.384	0.012	50	50.10	61.20	0.21	22.40
Endrin	13.480	13.475	0.005	15.538	15.525	0.012	50	52.44	64.14	4.88	28.29
4,4'-DDD	13.658	13.652	0.005	15.951	15.939	0.012	50	50.17	59.67	0.33	19.34
Endosulfan II	14.073	14.067	0.005	16.293	16.282	0.011	50	50.89	57.89	1.79	15.79
4,4'-DDT	14.430	14.424	0.006	16.686	16.677	0.009	50	49.13	55.55	1.74	11.11
Endrin Aldehyde	15.347	15.340	0.006	17.371	17.363	0.008	50	51.90	53.36	3.79	6.72
Methoxychlor	15.957	15.952	0.004	18.396	18.390	0.006	250	266.59	272.23	6.63	8.89
Endosulfan Sulfate	16.516	16.512	0.005	17.371	17.363	0.008	50	48.36	53.36	3.29	6.72
Endrin Ketone	17.107	17.103	0.004	18.631	18.625	0.007	50	47.22	49.36	5.56	1.27
Decachlorobiphenyl (surr)	18.865	18.862	0.003	20.951	20.942	0.009	100	106.10	108.95	6.10	8.95

Column #1: RTX-CLPesticides Column #2: RTX-50

000097

Calibration Verification Summary

Paragon Analytics, Inc.

Sample: CCV 1016/1260 MX-C25-04 20%

Inst. ID: ECD2
Date Aquired:12 Jul 98 06:19 PM

000098

Data File #1: C:\HPCHEM\6\DATA\980710\0710EA67.D
Data File #2: C:\HPCHEM\6\DATA\980710\0710EA67.D\0710EB67.D

	Column #1			Column #2				Col. #1	Col.#2	Col. #1	Col.#2
COMPOUND	Exp. RT (min)	Found RT (min)	Dev (min)	Exp. RT (min)	Found RT (min)	Dev (min)	Nom Conc ng/ml	Conc ng/ml	Conc ng/ml	%D	%D
TCMX	7.370	7.378	-0.008	8.037	8.031	0.006	40	40.91	47.40	2.28	18.50
Aroclor-1016	8.123	8.129	-0.007	9.247	9.239	0.008	400	405.85	494.97		
Aroclor-1016 {2}	8.809	8.816	-0.007	10.069	10.062	0.007	400	402.88	479.92		
Aroclor-1016 {3}	9.150	9.156	-0.006	10.462	10.454	0.008	400	354.49	508.32		
Aroclor-1016 {4}	9.193	9.200	-0.006	10.602	10.594	0.008	400	365.92	505.32		
Aroclor-1016 {5}	9.905	9.910	-0.005	10.797	10.789	0.008	400	405.37	454.39		
Aroclor-1016 {6}	10.018	10.023	-0.005	11.077	11.068	0.008	400	400.56	481.64		
Aroclor-1016 {7}	10.333	10.339	-0.006	11.314	11.304	0.009	400	352.81	497.66		
Aroclor-1016 {8}	10.617	10.622	-0.006	11.418	11.411	0.007	400	395.36	466.15		
Aroclor-1016 Total							3200	3083.25	3888.368	3.65	21.51
Aroclor-1260	12.904	12.910	-0.006	15.248	15.236	0.013	400	398.14	507.98		
Aroclor-1260 {2}	13.567	13.571	-0.005	15.650	15.640	0.011	400	408.25	492.20		
Aroclor-1260 {3}	13.901	13.907	-0.005	16.244	16.235	0.009	400	401.91	480.50		
Aroclor-1260 {4}	14.667	14.674	-0.007	16.894	16.888	0.006	400	405.08	435.51		
Aroclor-1260 {5}	14.814	14.821	-0.007	17.008	17.002	0.006	400	390.90	433.74		
Aroclor-1260 {6}	15.463	15.471	-0.007	17.585	17.579	0.005	400	405.89	424.47		
Aroclor-1260 {7}	16.308	16.313	-0.005	17.909	17.904	0.005	400	413.13	425.07		
Aroclor-1260 {8}	16.947	16.951	-0.004	18.652	18.646	0.006	400	416.09	410.24		
Aroclor-1260 Total							3200	3239.408	3609.701	1.23	12.80
Decachlorobiphenyl	18.863	18.867	-0.004	20.948	20.942	0.006	40	42.42	44.18	6.06	10.44

Column #1: RTX-1701

Column #2: RTX-50

Calibration Verification Summary

Paragon Analytics, Inc.

Sample: CCV PEST MX-C37-03 20%

Inst. ID: ECD2
Date Aquired:12 Jul 98 06:50 PM

Data File #1: C:\HPCHEM\6\DATA\980710\0710EA68.D
Data File #2: C:\HPCHEM\6\DATA\980710\0710EA68.D\0710EB68.D

	Column #1			Column #2				Col. #1	Col.#2	Col. #1	Col.#2
COMPOUND	Exp. RT (min)	Found RT (min)	Dev (min)	Exp. RT (min)	Found RT (min)	Dev (min)	Nom Conc ng/ml	Conc ng/ml	Conc ng/ml	%D	%D
Tetrachloro-m-xylene (surr	7.374	7.371	0.003	8.041	8.031	0.009	50	53.54	64.53	7.07	29.07
alpha-BHC	8.518	8.514	0.004	9.398	9.388	0.010	25	24.95	29.97	0.22	19.88
gamma-BHC (Lindane)	9.135	9.131	0.004	10.201	10.191	0.010	25	25.06	29.89	0.23	19.57
Heptachlor	10.017	10.013	0.004	10.721	10.711	0.010	25	25.56	30.44	2.26	21.75
Aldrin	10.555	10.552	0.004	11.323	11.314	0.010	25	24.80	29.78	0.79	19.12
beta-BHC	9.309	9.304	0.005	10.648	10.638	0.010	25	25.40	30.39	1.59	21.55
delta-BHC	9.639	9.635	0.004	11.127	11.116	0.011	25	23.81	28.19	4.74	12.77
Heptachlor Epoxide	11.628	11.624	0.004	12.561	12.549	0.012	25	25.26	31.07	1.03	24.27
Endosulfan I	12.403	12.398	0.005	13.443	13.429	0.014	25	24.57	30.70	1.73	22.81
gamma-Chlordane	11.862	11.857	0.005	12.991	12.977	0.013	25	25.00	30.53	0.00	22.12
alpha-Chlordane	12.121	12.116	0.005	13.359	13.345	0.014	25	25.02	30.98	0.09	23.91
4,4'-DDE	12.278	12.273	0.005	14.015	13.998	0.017	50	51.30	63.42	2.60	26.84
Dieldrin	12.925	12.919	0.005	14.395	14.379	0.017	50	50.61	63.52	1.22	27.04
Endrin	13.480	13.473	0.007	15.538	15.520	0.018	50	52.04	65.91	4.08	31.81
4,4'-DDD	13.658	13.650	0.007	15.951	15.934	0.017	50	51.62	62.52	3.24	25.04
Endosulfan II	14.073	14.065	0.008	16.293	16.278	0.015	50	50.83	59.24	1.66	18.48
4,4'-DDT	14.430	14.422	0.008	16.686	16.673	0.013	50	49.44	56.54	1.13	13.08
Endrin Aldehyde	15.347	15.337	0.009	17.371	17.360	0.011	50	51.67	55.02	3.34	10.05
Methoxychlor	15.957	15.950	0.007	18.396	18.388	0.008	250	268.80	280.76	7.52	12.30
Endosulfan Sulfate	16.516	16.510	0.006	17.371	17.360	0.011	50	49.80	55.02	0.41	10.05
Endrin Ketone	17.107	17.102	0.005	18.631	18.622	0.010	50	50.09	52.56	0.18	5.12
Decachlorobiphenyl (surr)	18.865	18.862	0.003	20.951	20.939	0.012	100	108.44	111.81	8.44	11.81

Column #1: RTX-CLPesticides

Column #2: RTX-50

000099

Initial Calibration Summary

Paragon Analytics, Inc.

Method: C:\HPCHEM\5\METHODS\5A071398.M
Calibration Date: 07/13/98

Inst. ID: ECD1
Colunm #1: RTX-CLPesticides

000100

Calibration files
1 = 0713EE14.D 2 = 0713EE13.D 3 = 0713EE12.D
4 = 0713EE11.D 5 = 0713EE10.D 6 =

	Calibration Factors									
Compoumds	1	2	3	4	5	6	Ave. CF	%RSD	Corr Coef r2	Curve Fit Type
TCMX	30076	30068	29520	28488	27331		29096	4.1	0.999	Linear
Aroclor-1254	570	547	511	486	456		514	8.9	0.998	Linear
Aroclor-1254 {2}	1648	1521	1358	1205	1107		1368	16.2	0.996	Linear
Aroclor-1254 {3}	765	738	689	636	601		686	10.0	0.998	Linear
Aroclor-1254 {4}	1445	1377	1283	1188	1125		1284	10.2	0.998	Linear
Aroclor-1254 {5}	2253	2135	1976	1821	1714		1980	11.1	0.998	Linear
Aroclor-1254 {6}	1474	1221	1118	1007	939		1152	18.2	0.998	Linear
Aroclor-1254 {7}	2074	1947	1779	1609	1504		1783	13.2	0.997	Linear
Aroclor-1254 {8}	2577	2503	2365	2203	2101		2350	8.5	0.999	Linear
Decachlorobiphenyl	36989	35284	32540	29903	28097		32562	11.3	0.998	Linear

000101

Paragon Analytics, Inc.

Method: C:\HPCHEM\5\METHODS\5A071398.M
Calibration Date: 07/13/98

Inst. ID: ECD1
Colunm #2: RTX-50

Calibration files
1 = 0713EE14.D 2 = 0713EE13.D 3 = 0713EE12.D
4 = 0713EE11.D 5 = 0713EE10.D 6 =

	Calibration Factors								Corr Coef	Curve Fit
Compoumds	1	2	3	4	5	6	Ave. CF	%RSD	r2	Type
TCMX	31851	31545	30995	29858	28751		30600	4.2	0.999	Linear
Aroclor-1254	547	543	510	473	447		504	8.6	0.998	Linear
Aroclor-1254 {2}	1927	1770	1692	1505	1400		1659	12.6	0.997	Linear
Aroclor-1254 {3}	2096	1917	1838	1631	1519		1800	12.7	0.997	Linear
Aroclor-1254 {4}	701	659	734	663	633		678	5.8	0.997	Linear
Aroclor-1254 {5}	1142	1094	1014	941	923		1023	9.3	1.000	Linear
Aroclor-1254 {6}	2698	2533	2307	2113	2041		2339	11.8	0.999	Linear
Aroclor-1254 {7}	1366	1349	1212	1083	1092		1220	11.1	0.999	Linear
Aroclor-1254 {8}	2910	2766	2682	2526	2378		2652	7.8	0.998	Linear
Decachlorobiphenyl	40739	38338	35465	32528	30479		35510	11.7	0.998	Linear

Initial Calibration Summary

Paragon Analytics, Inc.

Method: C:\HPCHEM\5\METHODS\5A071398.M
Calibration Date: 07/13/98

Inst. ID: ECD1

000102

Calibration files
1 = 0713EE14.D 2 = 0713EE13.D 3 = 0713EE12.D
4 = 0713EE11.D 5 = 0713EE10.D 6 =

Compoumds	Linear Equation Column #1 Area = Slope X Concentration + Intercept	Linear Equation Column #2 Area = Slope X Concentration + Intercept
TCMX	Y = (27104) X + (32351)	Y = (28484) X + (33725)
Aroclor-1254	Y = (446) X + (10144)	Y = (436) X + (10443)
Aroclor-1254 {2}	Y = (1052) X + (46388)	Y = (1349) X + (46601)
Aroclor-1254 {3}	Y = (584) X + (15260)	Y = (1463) X + (50688)
Aroclor-1254 {4}	Y = (1092) X + (28414)	Y = (628) X + (9021)
Aroclor-1254 {5}	Y = (1661) X + (47331)	Y = (896) X + (17997)
Aroclor-1254 {6}	Y = (893) X + (36071)	Y = (1966) X + (52995)
Aroclor-1254 {7}	Y = (1445) X + (49878)	Y = (1046) X + (24291)
Aroclor-1254 {8}	Y = (2050) X + (45158)	Y = (2335) X + (48755)
Decachlorobiphenyl	Y = (27192) X + (79925)	Y = (29470) X + (89544)

Y = area
Colunm #1: RTX-CLPesticides

X = Concentration
Colunm #2: RTX-50

Paragon Analytics, Inc.

Method: C:\HPCHEM\5\METHODS\5A071398.M
Calibration Date: 07/13/98

Inst. ID: ECD1

Calibration files
1 = 0713EE14.D 2 = 0713EE13.D 3 = 0713EE12.D
4 = 0713EE11.D 5 = 0713EE10.D 6 =

	Initial Calibration Concentration Levels (ng/ml)					
Compoumds	1	2	3	4	5	6
TCMX	5	10	20	40	60	
Aroclor-1254	50	100	200	400	600	
Aroclor-1254 {2}	50	100	200	400	600	
Aroclor-1254 {3}	50	100	200	400	600	
Aroclor-1254 {4}	50	100	200	400	600	
Aroclor-1254 {5}	50	100	200	400	600	
Aroclor-1254 {6}	50	100	200	400	600	
Aroclor-1254 {7}	50	100	200	400	600	
Aroclor-1254 {8}	50	100	200	400	600	
Decachlorobiphenyl	5	10	20	40	60	

000103

Initial Calibration Summary

Paragon Analytics, Inc.

Method: C:\HPCHEM\5\METHODS\5A071398.M
Calibration Date: 07/13/98

Inst. ID: ECD1

Calibration files
1 = 0713EE14.D 2 = 0713EE13.D 3 = 0713EE12.D
4 = 0713EE11.D 5 = 0713EE10.D 6 =

	Column #1	RT Window		Column #2	RT Window	
Compoumds	RT	From	To	RT	From	To
TCMX	7.329	7.229	7.429	7.893	7.793	7.993
Aroclor-1254	10.590	10.490	10.690	11.827	11.727	11.927
Aroclor-1254 {2}	11.240	11.140	11.340	12.558	12.458	12.658
Aroclor-1254 {3}	12.064	11.964	12.164	12.709	12.609	12.809
Aroclor-1254 {4}	12.135	12.035	12.235	12.805	12.705	12.905
Aroclor-1254 {5}	12.335	12.235	12.435	13.416	13.316	13.516
Aroclor-1254 {6}	12.631	12.531	12.731	13.625	13.525	13.725
Aroclor-1254 {7}	12.788	12.688	12.888	14.219	14.119	14.319
Aroclor-1254 {8}	13.568	13.468	13.668	15.198	15.098	15.298
Decachlorobiphenyl	18.680	18.580	18.780	22.010	21.910	22.110

Colunm #1: RTX-CLPesticides Colunm #2: RTX-50

000104

Calibration Verification Summary

Paragon Analytics, Inc.

Sample: 1254 ICV MX-A54-10 20%

Inst. ID: ECD1
Date Aquired:13 Jul 98 07:21 PM

000105

Data File #1: C:\HPCHEM\5\DATA\980713\0713EE15.D
Data File #2: C:\HPCHEM\5\DATA\980713\0713EE15.D\0713EF15.D

	Column #1			Column #2				Col. #1	Col.#2	Col. #1	Col.#2
COMPOUND	Exp. RT (min)	Found RT (min)	Dev (min)	Exp. RT (min)	Found RT (min)	Dev (min)	Nom Conc ng/ml	Conc ng/ml	Conc ng/ml	%D	%D
TCMX											
Aroclor-1254	10.590	10.590	0.000	11.827	11.827	0.000	400	398.33	397.94		
Aroclor-1254 {2}	11.240	11.239	0.000	12.558	12.558	0.000	400	388.87	385.63		
Aroclor-1254 {3}	12.064	12.064	0.000	12.709	12.709	0.000	400	399.21	389.10		
Aroclor-1254 {4}	12.135	12.135	0.000	12.805	12.804	0.000	400	385.01	406.15		
Aroclor-1254 {5}	12.335	12.335	0.000	13.416	13.416	0.000	400	400.03	384.03		
Aroclor-1254 {6}	12.631	12.630	0.001	13.625	13.625	0.000	400	343.23	380.91		
Aroclor-1254 {7}	12.788	12.788	0.001	14.219	14.219	0.000	400	390.58	325.69		
Aroclor-1254 {8}	13.568	13.567	0.001	15.198	15.197	0.001	400	339.19	337.66		
Total Aroclor-1254							3200	3044.445	3007.101	4.86	6.03
Decachlorobiphenyl											

Colunm #1: RTX-CLPesticides

Column #2: RTX-50

Calibration Verification Summary

Paragon Analytics, Inc.

Sample: 1254 MX-C28-04 20% CCV

Inst. ID: ECD1
Date Aquired:14 Jul 98 04:53 AM

Data File #1: C:\HPCHEM\5\DATA\980713\0713EE33.D
Data File #2: C:\HPCHEM\5\DATA\980713\0713EE33.D\0713EF33.D

	Column #1			Column #2				Col. #1	Col.#2	Col. #1	Col.#2
COMPOUND	Exp. RT (min)	Found RT (min)	Dev (min)	Exp. RT (min)	Found RT (min)	Dev (min)	Nom Conc ng/ml	Conc ng/ml	Conc ng/ml	%D	%D
TCMX	7.329	7.324	0.005	7.893	7.887	0.005	40	40.89	41.60	2.23	3.99
Aroclor-1254	10.590	10.586	0.005	11.827	11.822	0.005	400	416.60	423.02		
Aroclor-1254 {2}	11.240	11.235	0.004	12.558	12.553	0.005	400	420.45	420.58		
Aroclor-1254 {3}	12.064	12.061	0.004	12.709	12.705	0.005	400	417.42	423.36		
Aroclor-1254 {4}	12.135	12.131	0.004	12.805	12.799	0.005	400	417.57	419.77		
Aroclor-1254 {5}	12.335	12.331	0.004	13.416	13.411	0.005	400	418.42	412.37		
Aroclor-1254 {6}	12.631	12.626	0.004	13.625	13.619	0.006	400	419.41	413.33		
Aroclor-1254 {7}	12.788	12.784	0.004	14.219	14.213	0.007	400	418.77	398.88		
Aroclor-1254 {8}	13.568	13.564	0.004	15.198	15.190	0.008	400	415.41	420.35		
Total Aroclor-1254							3200	3344.06	3331.674	4.50	4.11
Decachlorobiphenyl	18.680	18.673	0.007	22.010	21.998	0.011	40	41.96	41.91	4.90	4.76

Colunm #1: RTX-CLPesticides

Column #2: RTX-50

000106

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