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Occidental Chemical Corporation

PHASE II REPORT

Love Canal Bagged Wastes
Occidental Chemical Corporation

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PHASE II REPORT

Love Canal Bagged Wastes
Occidental Chemical Corporation

JUNE 1998

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CRA SERVICES

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1.0 EXECUTIVE SUMMARY

This report has been prepared by Occidental Chemical Corporation (OxyChem) to describe the Phase II activities performed in support of the characterization of the Love Canal Bagged Wastes currently stored at OxyChem's Niagara Plant in Niagara Falls, New York. The Phase II sampling and analysis program was described in the "Phase I Report, Love Canal Bagged Wastes, Occidental Chemical Corporation", February 26, 1998.

OxyChem has completed Phase II of the SAP. In accordance with the SAP, the report describes the characterization of the bagged materials for disposal. A total of 11,151 bags were represented in the Phase II sampling program. Four categories (Creek Sediment 1, Creek Sediment 2, Haul Roads, and Facility Cleanup) were characterized.

The Phase II results showed that no category qualified in its entirety for direct landfill disposal.

The Creek Sediment 1 category had three groups of bags which met the current land disposal restrictions (LDRs), 12 groups of bags which exceeded the current LDRs but which would be landfilled with the petitioned for Dioxin variance limit of 10 ppb, and one group of bags which exceeded the petitioned for Dioxin variance limit and will be incinerated. The Dioxin variance refers to the OxyChem petition for a variance limit of 10 ppb for total tetra- through hexa-dioxins and furans regulated under F039 LDRs, as detailed in Section 4.0 of this report.

The Creek Sediment 2 category had three groups of bags which met the current LDRs and one group of bags which exceeded the current LDRs but would be landfilled under the Dioxin variance.

The Haul Roads category had three groups of bags which met the current LDRs and 11 groups which would be landfilled under the Dioxin variance.

The Facility Cleanup category had an exceedance for BHCs which requires the incineration of 10 groups of bags. Of the remaining groups in this category, one group met the current LDRs and nine groups exceeded the current LDRs but would be landfilled under the Dioxin variance.

All sampling was performed as outlined in the Phase I report. Additional sampling was performed for the Creek Sediment 1 category for the bag series 724 to 1,447 to further characterize the dioxins/furans content. This sampling was described in letters sent to

USEPA on March 25 and May 22, 1998. Six additional samples were collected to better represent the bag series.

The Phase II sampling program has been used by OxyChem to determine which groups of bags can be directly landfilled, which groups can be landfilled with the Dioxin variance, and which groups of bags require incineration. The results are in agreement with the projections made based on the Phase I data.

Sampling in Phase I and Phase II has shown that 3,672 bags can be landfilled under the current LDRs, and an additional 6,745 bags can be landfilled under a Dioxin variance to the LDRs. A total of 691 bags do not qualify for landfill disposal with or without the variance, and will be incinerated prior to disposal.

Previously, it was agreed that 751 Sewer Sediment bags and 60 Carbon bags would be incinerated prior to disposal. Phase I sampling showed that 3,811 Creek Debris bags did not qualify for direct disposal even with the Dioxin variance. Phase II sampling showed that an additional 691 bags did not qualify for direct disposal even with the Dioxin variance. Thus, by prior agreement and as the result of Phase I and Phase II sampling, a total of 5,313 bags have been or will be incinerated prior to disposal.

2.0 INTRODUCTION

This report has been prepared by Occidental Chemical Corporation (OxyChem) to describe the Phase II activities performed in support of the characterization of the Love Canal Bagged Wastes currently stored at OxyChem's Niagara Plant in Niagara Falls, New York. The Phase II sampling and analysis program was originally described in the "Phase I Report, Love Canal Bagged Wastes, Occidental Chemical Corporation", February 26, 1998.

The original Love Canal Partial Consent Decree provided that OxyChem would dispose of the Love Canal remediation wastes by incineration at a thermal destruction unit to be constructed at the Niagara Plant or at alternative thermal destruction facilities approved in advance by the USEPA and NYSDEC. The waste was subsequently reclassified as F039 waste and the decree was modified in 1997 to allow landfilling of certain remediation wastes where chemical levels in the wastes were shown to be less than the LDRs for F039 waste materials, using the SW-846 statistical test to determine the appropriate parameters and number of samples for testing.

The Phase I and II sampling programs were set forth in the USEPA/NYSDEC approved "Sampling and Analysis Plan (SAP), Love Canal Wastes", dated June 3, 1996. Phase I of the SAP was performed from September to November 1996 and consisted of an initial comprehensive characterization of approximately one percent of the bagged materials. A summary of the bagged waste identification is presented in Table 2.0. The bags were separated into five categories (Creek Sediment 1, Creek Sediment 2, Haul Roads, Creek Debris, and Facility Cleanup). Each bag chosen for sampling was analyzed for complete F039 LDR list testing.

The Phase I characterization was designed to provide the data needed to determine what additional statistically based sampling and analysis (Phase II) was needed to determine treatment and disposal in accordance with the LDRs. The Phase I data were used to define the number of samples to be collected in Phase II and the parameters to be analyzed for Phase II sampling and analysis.

Based on the Phase I results and previous agreements, bags for the Sewer Sediment, Carbon, and Debris categories are being incinerated. At the current rate of disposal, shipments of these materials to incineration facilities will be completed in September 1998. The Creek Sediment 1, Creek Sediment 2, Haul Roads, and Facility Cleanup categories were included in the Phase II program. The Phase II sampling program has provided the results which have been used to determine which groups of

bags can be directly landfilled, which groups would be landfilled with a Dioxin variance, and which groups of bags require incineration.

3.0 SAMPLING AND ANALYTICAL PROGRAM

Sixty-one samples (including seven field duplicates) were collected and submitted for analysis for the Phase II program. All sampling was performed in accordance with Phase II Sampling, Section 6.0 of the Phase I Report, which was approved by USEPA verbally on January 29, 1998 and formally on May 7, 1998. The Phase I report was based on the approved SAP of June 3, 1996. Sample collection began on February 4, 1998, and concluded on April 1, 1998.

3.1 GROUP SELECTION PROCEDURE

The number of samples required for each category in the Phase II sampling was obtained from the Phase I analytical results. Pages five (5) and six (6) of the SAP present the criteria used for determining the number of samples and analyses required for each category. A summary of the sampling requirements is presented in Table 3.1.

For the Creek Sediment 1 category, ten samples were required for the Phase II sampling. Table 2.0 specifies that there are 7,232 Creek Sediment 1 bags. The category was divided into ten groups of approximately 723 bags. A sample from each group was analyzed for dioxins/furans and phenanthrene/fluoranthene. One group was also selected for TCLP lead analysis. Based on the Phase I and Phase II sample results, it was evident that the total dioxins/furans concentration was significantly higher in the 801 to 1,000 bag series. These bags are within the 724 to 1,447 bag group. To better represent the bag group, additional Phase II sampling was performed. The bags surrounding the 801 to 1,000 bag series were sampled by collecting one sample from each sub-grouping as follows:

Sub-Group	*Number of Samples In Composite*
724-800	3
1,001-1,100	4
1,101-1,200	4
1,201-1,300	4
1,301-1,400	4
1,401-1,447	2

Less than four grab samples were collected for sub-groups of less than 100 bags because it was difficult to find more than one bag for every 25 bags in a group without physically moving the bags.

The results of the additional Phase II sampling have been used to characterize the sub-groups for disposal. The bags in the 801 to 1,000 bag series will be incinerated, as the Phase I and Phase II results exceeded the proposed variance limit for dioxins/furans.

The Creek Sediment 2 category required four Phase II samples. Table 2.0 specifies that there are 1,512 bags in this category. The category was divided into four groups of 378 bags. A sample from each group was analyzed for dioxins/furans.

The Haul Roads category Phase II sampling required 14 samples. Table 2.0 specifies that there are 1,450 bags in this category. The category was divided into 14 groups of approximately 103 bags. A sample from each group was analyzed for dioxins/furans. One group was also selected for aldrin analysis.

The Facility Cleanup category required 21 Phase II samples. Table 2.0 specifies that there are approximately 957 bags in this category. The category was divided in 21 groups of approximately 41 bags. A sample from each group was analyzed for dioxins/furans. Two groups (one from each half of the category) were also selected for BHCs analyses. No sample was collected from the Facility Cleanup 14,990 to 15,032 bag series. This bag series could not be located during sample collection. If the bags are located during shipping activities, either additional Phase II sampling and analysis will be performed, or the bags will be incinerated.

3.2 SAMPLE COLLECTION

A sample collection and analysis summary with the bag groups represented is provided in Appendix A. No bags sampled in Phase I were used in Phase II.

3.3 SAMPLING PROCEDURE

Each Phase II sample consisted of grab samples from four individual bags (except where previously noted) chosen at random within each group in a category. The individual grab samples were laboratory composited into one sample, and the composite sample was analyzed. Laboratory compositing was used in the Phase II sampling because VOCs were no longer part of the analytical program and because this procedure was the same as used by the receiving disposal company's Waste Analysis Plan (WAP) for landfill disposal.

The selected bags were on the edge or surface of the pile. A sample was obtained by opening the bag, inserting a clean polystyrene scoop at least six inches below the surface of the material, and collecting a grab sample. The samples were placed directly into clean sample jars and sealed with teflon caps, and the bags were resealed.

A sample log was used to record pertinent information as samples were collected. The log included the sample date and the bag numbers for each composite.

3.4 CHAIN OF CUSTODY FORMS

Chain of custody forms were used to track all samples from the time of sampling to the arrival of samples at the laboratories.

Copies of the executed chain of custody forms are located in the quality assurance/quality control (QA/QC) review of the data (see Appendix C).

3.5 SAMPLE CONTAINERS AND HANDLING

All samples were placed in appropriate sample containers, labeled, and properly sealed. The sample labels included bag sample number, place of collection, date and time of collection, and analyses to be performed. Samples were cushioned within the shipping coolers by the use of bubble pack. Samples were kept cool by the use of plastic bags of ice or cooler packs, as required. Samples were shipped priority overnight by commercial courier on a daily basis to the project laboratories.

3.6 LABORATORY COMPOSITING

Each of the individual grab samples collected within a given group were homogenized and composited at the laboratory. Compositing was accomplished by mixing equal volumes of each of the grab samples.

The composite sample was homogenized by removing any large rocks present in the sample. The sample was thoroughly mixed in the stainless steel pan using a stainless steel spoon. The sample was scraped from the sides, corners, and bottom of the pan, rolled to the middle of the pan, and initially mixed. The sample was quartered and moved to the four corners of the pan. Each quarter of the sample was mixed

individually, and then rolled to the center of the pan and the entire sample mixed again. The mixed sample was placed directly into a clean sample jar and sealed with a teflon-lined cap. Any remaining sample was archived for possible future use.

3.7 ANALYTICAL PROGRAM

Samples were analyzed for the F039 LDR list of parameters obtained from the Phase I data. Site specific matrix spike/matrix spike duplicate (MS/MSD) analyses were performed at a minimum frequency of one in twenty samples. All analyses were performed in accordance with the June 1996 SAP and the Phase I Report.

An analytical results summary with the associated LDRs is provided in Appendix B. All laboratory results were validated and any required sample qualifications have been included in the table. A full discussion of the QA/QC Review can be found in the validation report, located in Appendix C of this report.

All data were judged to be acceptable for their intended use.

4.0 REGULATORY VARIANCE

OxyChem has petitioned for a Dioxin (dioxins/furans) LDR treatability variance, pursuant to 40 CFR 268.44 for the Creek Sediment 1, Creek Sediment 2, Haul Roads, and Facility Cleanup categories. The petition was originally submitted to USEPA on November 4, 1997, revised, and re-submitted on June 4, 1998. The proposed variance would establish alternative treatment standards for dioxins/furans of 10 ppb (see Table 4.0). Materials meeting the alternative standard can be disposed of in a RCRA Subtitle C permitted landfill.

5.0 DISCUSSION OF RESULTS

A review of the analytical results in Appendix B showed that no samples exceeded the LDR limits for phenanthrene, fluoranthene, TCLP lead, or aldrin. One group of Facility Cleanup bags (15,291 to 15,774) exceeded the LDR limits for BHCs. These bags will be incinerated.

All remaining LDR exceedances were dioxins/furans. A summary of the LDR evaluations for the Phase II results for each category follows. Field duplicate results are not included in this discussion.

5.1 CREEK SEDIMENT 1 (7,232 BAGS - 10 BAG GROUPS)

A summary of the LDR exceedances is presented in Table 5.1. There were no LDR exceedances for phenanthrene, fluoranthene, or TCLP lead. Three bag series had no LDR exceedances. One bag series had dioxins/furans results which exceeded ten parts per billion (ppb) and will be incinerated. The results for the sub-groups collected as additional Phase II samples (described in Section 3.1) all exceeded the current 1 ppb LDR but were less than or equal to the proposed Dioxin variance limit of 10 ppb. The remaining bag series had dioxins/furans results which exceeded the current 1 ppb LDR but were less than or equal to the proposed Dioxin variance limit of 10 ppb.

5.2 CREEK SEDIMENT 2 (1,512 BAGS - FOUR BAG GROUPS)

A summary of the LDR exceedances is presented in Table 5.2. Three bag series had no LDR exceedances. The remaining bag series had dioxins/furans results which exceeded the current 1 ppb LDR but were less than the proposed Dioxin variance limit of 10 ppb.

5.3 HAUL ROADS (1,450 BAGS - 14 BAG GROUPS)

A summary of the LDR exceedances is presented in Table 5.3. There were no LDR exceedances for aldrin. Three bag series had no LDR exceedances. The remaining bag series had dioxins/furans results which exceeded the current LDR of 1 ppb but were less than the proposed Dioxin variance limit of 10 ppb.

5.4 FACILITY CLEANUP (957 BAGS - 21 BAG GROUPS)

A summary of the LDR exceedances is presented in Table 5.4. No sample was obtained for bag groups 14,990 to 15,032. There was an LDR exceedance for BHCs, and the bags in the associated groups will be incinerated. Three bag series had no dioxins/furans LDR exceedances. The remaining bag series had dioxins/furans results which exceeded the current LDR of 1 ppb but were less than the proposed Dioxin variance limit of 10 ppb.

6.0 FINAL BAG DISPOSITION - PHASE I AND PHASE II SAMPLING

The disposition of each bag for each of the four categories is presented in Tables 6.1 (Creek Sediment 1), 6.2 (Creek Sediment 2), 6.3 (Haul Roads), and 6.4 (Facility Cleanup). The disposition is based on both Phase I and Phase II sample results.

The disposal of the bags sampled in Phase I was based solely on the individual bag's Phase I sample results previously presented in Section 5.0 of the Phase I Report. All remaining bags will be disposed of based on the Phase II sample results presented in Appendix B and summarized in Section 5.0 of this report.

If a Phase I bag's disposal characterization agreed with its Phase II bag grouping, it was included in the grouping. If a Phase I bag's disposal characterization differed from its Phase II bag grouping, it is listed on the tables individually.

Bags designated for landfill had no results detected above the current LDRs for samples collected in Phase I or Phase II. Bags designated for landfill with the variance had dioxins/furans results greater than the current LDR of 1 ppb but equal to or less than the proposed Dioxin variance limit of 10 ppb, and had no results detected above the LDR for any other regulated F039 parameter for samples collected in Phase I or Phase II. Bags designated for incineration had results detected above the Dioxin variance limit of 10 ppb for dioxins/furans or had an LDR exceedance for any other regulated F039 parameter for samples collected in Phase I or Phase II. Bags requiring stabilization exceeded the LDR for TCLP lead in Phase I sampling.

7.0 CONCLUSION

OxyChem has completed Phase I and Phase II sampling as required by the SAP for the Love Canal Bagged Wastes. In accordance with the SAP, the Phase I data were used to develop the sampling frequency and analyte list for Phase II of the program. The Phase II data were used to characterize the waste material for disposal, and are the definitive data used to determine the final disposal method as stated and agreed to in the approved SAP of June 3, 1996 and the approved Phase I report of February 26, 1998.

A summary of the disposal quantities is presented in Table 7.0. Each waste category will be disposed as follows.

7.1 CREEK SEDIMENT 1 (7,232 BAGS)

Based on the Phase I and Phase II data, 2,177 bags will be landfilled. One of these bags requires stabilization for metals prior to landfill disposal. An additional 4,854 bags will qualify for landfill disposal with the Dioxin variance. One of these bags requires stabilization for metals prior to landfill disposal. These 4,854 bags will be stored until the ruling on OxyChem's petition for a variance from the 1 ppb dioxin LDR standard is final. A total of 201 bags will be incinerated in accordance with the analytical results from the sampling and analysis programs.

7.2 CREEK SEDIMENT 2 (1,512 BAGS)

Based on the Phase I and Phase II data, 1,132 bags will be landfilled. An additional 379 bags will qualify for landfill disposal with the Dioxin variance. These bags will be stored until the ruling on OxyChem's petition for a variance from the 1 ppb dioxin LDR standard is final. One bag will be incinerated in accordance with the analytical results from the sampling and analysis programs.

7.3 HAUL ROADS (1,450 BAGS)

Based on the Phase I and Phase II data, 318 bags will be landfilled. An additional 1,128 bags will qualify for landfill disposal with the Dioxin variance. These bags will be stored until the ruling on OxyChem's petition for a variance from the 1 ppb dioxin LDR standard is final. Four bags will be incinerated in accordance with the analytical results from the sampling and analysis programs.

7.4 FACILITY CLEANUP (957 BAGS)

Based on the Phase I and Phase II data, 45 bags will be landfilled. An additional 384 bags will qualify for direct landfill disposal with the Dioxin variance. These bags will be stored until the ruling on OxyChem's petition for a variance from the 1 ppb dioxin LDR standard is final A total of 485 bags will be incinerated in accordance with the analytical results from the sampling and analysis programs. One group of 43 bags has not yet been characterized in Phase II because it was not found. If it is found during the bag loading for disposal, it will be characterized prior to disposal or incinerated.

TABLES

TABLE 2.0

BAGGED WASTE IDENTIFICATION
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

Waste	*Date Bagged*	*Category*	*Number of Bags*	*Initial Bag Number*	*Final Bag Number*
Creek Sediment 1	8/1 - 9/11	B-1	7,232	0	7,232
Sewer Sediment (1)	9/12 - 9/14	S	751	7,233	7,983
Creek Sediment 2	9/15 - 9/25	B-2	1,512	7,984	9,495
Haul Roads	9/25 - 10/3	HR	1,450	9,496	10,945
Small Debris (1)	10/5 - 10/31	B-3	1,593	10,946	12,538
Carbon (1)	11/8 - 11/9	C	60	12,539	12,598
Small Debris (1)	11/9 - 11/30	B-3	1,284	12,599	13,882
Debris (1)	12/1 - 12/13	B-3	934	13,883	14,816
Facility Cleanup	6/90 - 7/90	F	957 (2)	14,817	15,774 (2)

Notes:
(1) These categories were not included in the Phase II sampling program and are currently being shipped for incineration.
(2) Estimated based on bag building inspection.

TABLE 3.1

PHASE II ANALYTICAL PROGRAM
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

Category	*Total Number of Investigative Samples*	*Analyses*
Creek Sediment 1	10	PCDD/PCDF
	10	Fluoranthene, Phenanthrene
	1	TCLP Lead
	6 (1)	PCDD/PCDF
Creek Sediment 2	4	PCDD/PCDF
Haul Roads	14	PCDD/PCDF
	1	Aldrin
Facility Cleanup	20	PCDD/PCDF
	2	BHCs

Notes:

(1) Additional Phase II sampling performed to further characterize the 724 to 1,447 bag series.
BHCs Benzene Hexachlorocyclohexanes.
PCDD Polychlorinated Dibenzo-p-dioxins.
PCDF Polychlorinated Dibenzofurans.
TCLP Toxicity Characteristic Leaching Procedure.

TABLE 4.0

PROPOSED VARIANCE LIMITS
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

Parameter	*F039 LDR Limit (mg/Kg)*	*Proposed Variance Limit (mg/Kg)*
Total TCDD	0.001	0.010
Total PeCDD	0.001	0.010
Total HxCDD	0.001	0.010
Total TCDF	0.001	0.010
Total PeCDF	0.001	0.010
Total HxCDF	0.001	0.010

TABLE 5.1

LDR EXCEEDANCE SUMMARY - CREEK SEDIMENT 1 PHASE II SAMPLE RESULTS
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

Bag Groups	*PCDDs/ PCDFs (1) (μg/Kg)*	*Phenanthrene/ Fluoranthene (1) (mg/Kg)*	*TCLP Lead (1) (mg/L)*
1-723	-	-	-
724-800	1.2	-	-
801-1000	19	-	-
1001-1100	5.5	-	-
1101-1200	10	-	-
1201-1300	7.1	-	-
1301-1400	9.0	-	-
1401-1447	10	-	-
1448-2171	7.4	-	-
2172-2895	2.7	-	-
2896-3619	2.1	-	-
3620-4343	-	-	-
4344-5067	-	-	-
5068-5791	3.1	-	-
5792-6515	8.0	-	-
6516-7232	1.5	-	-

Notes:

(1) LDR exceedances reflect the highest value of any individual compound/ congener within a given analytical category.

\- No values detected above LDR regulatory limits for any individual compound/congener in this category.

LDR Land Disposal Restriction.

PCDDs Polychlorinated Dibenzo-p-dioxins.

PCDFs Polychlorinated Dibenzofurans.

TABLE 5.2

LDR EXCEEDANCE SUMMARY - CREEK SEDIMENT 2
PHASE II SAMPLE RESULTS
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

Bag Groups	*PCDDs/ PCDFs (1) (µg/Kg)*
7984-8362	-
8363-8741	1.5
8742-9120	-
9121-9495	-

Notes:

(1) LDR exceedances reflect the highest value of any individual compound/congener within a given analytical category.

\- No values detected above LDR regulatory limits for any individual compound/congener in this category.

LDR Land Disposal Restriction.

PCDDs Polychlorinated Dibenzo-p-dioxins.

PCDFs Polychlorinated Dibenzofurans.

TABLE 5.3

LDR EXCEEDANCE SUMMARY - HAUL ROADS PHASE II SAMPLE RESULTS
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

Bag Groups	*PCDDs/ PCDFs (1) (µg/Kg)*	*Aldrin (1) (mg/Kg)*
9496-9599	-	-
9600-9703	4.1	-
9704-9807	1.8	-
9808-9911	1.7	-
9912-10015	1.4	-
10016-10119	-	-
10120-10224	-	-
10225-10327	5.4	-
10328-10431	1.3	-
10432-10533	5.5	-
10534-10639	4.4	-
10640-10743	2.0	-
10744-10847	1.4	-
10848-10945	4.1	-

Notes:

(1) LDR exceedances reflect the highest value of any individual compound/ congener within a given analytical category.

\- No values detected above LDR regulatory limits for any individual compound/congener in this category.

LDR Land Disposal Restriction.

PCDDs Polychlorinated Dibenzo-p-dioxins.

PCDFs Polychlorinated Dibenzofurans.

TABLE 5.4

LDR EXCEEDANCE SUMMARY - FACILITY CLEANUP PHASE II SAMPLE RESULTS
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

Bag Groups	*PCDDs/ PCDFs (1) (μg/Kg)*	*BHCs (1) (mg/Kg)*
14817-14860	1.9	-
14861-14903	2.1	-
14904-14946	-	-
14947-14989	1.9	-
14990-15032	No Sample	No Sample
15033-15075	2.3	-
15076-15118	1.9	-
15119-15161	1.1	-
15162-15204	1.4	-
15205-15247	2.0	-
15248-15290	2.5	-
15291-15333	1.1	0.11
15334-15376	2.0	0.11
15377-15419	1.8	0.11
15420-15462	2.0	0.11
15463-15505	-	0.11
15506-15548	1.8	0.11
15549-15591	1.2	0.11
15592-15634	-	0.11
15635-15677	1.4	0.11
15678-15774	1.4	0.11

Notes:

(1) LDR exceedances reflect the highest value of any individual compound/ congener within a given analytical category.

\- No values detected above LDR regulatory limits for any individual compound/congener in this category.

BHCs Benzene Hexachlorocyclohexanes.

LDR Land Disposal Restriction.

PCDDs Polychlorinated Dibenzo-p-dioxins.

PCDFs Polychlorinated Dibenzofurans.

TABLE 6.1

FINAL BAG DISPOSITION - CREEK SEDIMENT 1 (1)
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

Bag Number	*Stabilization*	*Landfill*	*Landfill with Variance*	*Incineration*
1-630		X		
631			X	
632-723		X		
724-800			X	
801-1000				X
1001-1447			X	
1448-2784			X	
2785		X		
2786-2867			X	
2868		X		
2869-3253			X	
3254				X
3255-3525			X	
3526		X		
3527-3619			X	
3620-3692		X		
3693			X	
3694-3736		X		
3737			X	
3738-4071		X		
4072			X	
4073-4168		X		
4169			X	
4170-4221		X		
4222			X	
4223-4835		X		
4836			X	
4837-5067		X		
5068-5086			X	
5087		X		
5088-5182			X	
5183		X		
5184-5260			X	
5261		X		
5262-6144			X	
6145	X		X	
6146-6470			X	
6471	X	X		
6472-6669			X	
6670		X		
6671-6721			X	

TABLE 6.1

FINAL BAG DISPOSITION - CREEK SEDIMENT 1 (1)
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

Bag Number	*Stabilization*	*Landfill*	*Landfill with Variance*	*Incineration*
6722		X		
6723-6800			X	
6801		X		
6802-6909			X	
6910		X		
6911-7077			X	
7078		X		
7079-7108			X	
7109		X		
7110-7232			X	

Notes:

(1) In accordance with the approved SAP and Phase I report, the disposal of bags sampled in Phase I was based solely on the individual Phase I bag data, not on its Phase II bag grouping. If a Phase I bag's disposal characterization agreed with its Phase II bag grouping, it was included in the grouping. If a Phase I bag's disposal characterization differed from its Phase II bag grouping, it is listed on the table individually.

TABLE 6.2

FINAL BAG DISPOSITION - CREEK SEDIMENT 2 (1)
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

Bag Number	*Stabilization*	*Landfill*	*Landfill with Variance*	*Incineration*
7984		X		
7985			X	
7986-8010		X		
8011			X	
8012-8220		X		
8221			X	
8222-8337		X		
8338				X
8339-8362		X		
8363-8431			X	
8432		X		
8433-8528			X	
8529		X		
8530-8601			X	
8602		X		
8603-8741			X	
8742-9495		X		

Notes:

(1) In accordance with the approved SAP and Phase I report, the disposal of bags sampled in Phase I was based solely on the individual Phase I bag data, not on its Phase II bag grouping. If a Phase I bag's disposal characterization agreed with its Phase II bag grouping, it was included in the grouping. If a Phase I bag's disposal characterization differed from its Phase II bag grouping, it is listed on the table individually.

TABLE 6.3

FINAL BAG DISPOSITION - HAUL ROADS (1)
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

Bag Number	*Stabilization*	*Landfill*	*Landfill with Variance*	*Incineration*
9496-9599		X		
9600-9669			X	
9670				X
9671-9704			X	
9705				X
9706-9837			X	
9838		X		
9839-9903			X	
9904		X		
9905-10015			X	
10016-10224		X		
10225-10240			X	
10241				X
10242-10391			X	
10392		X		
10393-10424			X	
10425		X		
10426-10534			X	
10535				X
10536-10711			X	
10712		X		
10713-10945			X	

Notes:

(1) In accordance with the approved SAP and Phase I report, the disposal of bags sampled in Phase I was based solely on the individual Phase I bag data, not on its Phase II bag grouping. If a Phase I bag's disposal characterization agreed with its Phase II bag grouping, it was included in the grouping. If a Phase I bag's disposal characterization differed from its Phase II bag grouping, it is listed on the table individually.

TABLE 6.4

FINAL BAG DISPOSITION - FACILITY CLEANUP (1)
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

Bag Number	*Stabilization*	*Landfill*	*Landfill with Variance*	*Incineration*
14817-14857			X	
14858		X		
14859-14903			X	
14904-14946		X		
14947-14948			X	
14949		X		
14950-14989			X	
14990-15032			No Sample	
15033-15277			X	
15278				X
15279-15290			X	
15291-15774				X

Notes:

(1) In accordance with the approved SAP and Phase I report, the disposal of bags sampled in Phase I was based solely on the individual Phase I bag data, not on its Phase II bag grouping. If a Phase I bag's disposal characterization agreed with its Phase II bag grouping, it was included in the grouping. If a Phase I bag's disposal characterization differed from its Phase II bag grouping, it is listed on the table individually.

TABLE 7.0

FINAL DISPOSAL QUANTITIES (1)
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

	Total Number of Bags for		
	Landfill Now	*Landfill When Variance is Approved*	*Incineration*
Creek Sediment 1 (7,232 Bags)	2,177 (2)	4,854 (2)	201
Creek Sediment 2 (1,512 Bags)	1,132	379	1
Haul Roads (1,450 Bags)	318	1,128	4
Facility Cleanup (957 Bags) (3)	45	384	485
TOTAL	**3,672**	**6,745**	**691**

Notes:

(1) Categories included in the Phase II sampling program. Bags from the Sewer Sediment, Creek Debris, and Carbon waste categories have been previously designated for incineration prior to landfill disposal.

(2) Includes one bag that requires stabilization for lead prior to disposal.

(3) One group of 43 bags could not be located during Phase II sampling.

APPENDIX A

SAMPLE COLLECTION AND ANALYSIS SUMMARY

SAMPLE COLLECTION AND ANALYSIS SUMMARY

LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

Composite Sample Location	*Category*	*Bag Sample Identification*	*Collection Date*	*Chemical Analysis*	*Bag Group Represented*	*Comments*
CS1 Comp 1	Creek Sediment 1	B1-95, 124, 191, 707	02/04/98	Phenanthrene, Fluoranthene, PCDDs/PCDFs	1-723	
CS1 Comp 2	Creek Sediment 1	B1-896, 1165, 956, 1244	02/04/98	Phenanthrene, Fluoranthene	724-1447	
CS1 Comp 2	Creek Sediment 1	B1-896, 1165, 956, 1244	02/04/98	PCDDs/PCDFs	801-1000	
CS1 Comp 2A	Creek Sediment 1	B1-896, 1165, 956, 1244	02/04/98	PCDDs/PCDFs	801-1000	Field dup of CS1 Comp 2 (PCDDs/PCDFs Only)
CS1 Comp 50	Creek Sediment 1	B1-729, 760, 792	04/01/98	PCDDs/PCDFs	724-800	Additional Phase II Sampling
CS1 Comp 51	Creek Sediment 1	B1-1010, 1039, 1053, 1087	04/01/98	PCDDs/PCDFs	1001-1100	Additional Phase II Sampling
CS1 Comp 52	Creek Sediment 1	B1-1125, 1137, 1178, 1200	04/01/98	PCDDs/PCDFs	1101-1200	Additional Phase II Sampling
CS1 Comp 53	Creek Sediment 1	B1-1208, 1263, 1274, 1289	04/01/98	PCDDs/PCDFs	1201-1300	Additional Phase II Sampling
CS1 Comp 54	Creek Sediment 1	B1-1302, 1312, 1322, 1398	04/01/98	PCDDs/PCDFs	1301-1400	Additional Phase II Sampling
CS1 Comp 55	Creek Sediment 1	B1-1419, 1437	04/01/98	PCDDs/PCDFs	1401-1447	Additional Phase II Sampling
CS1 Comp 3	Creek Sediment 1	B1-1469, 1737, 1801, 1918	02/04/98	Phenanthrene, Fluoranthene, PCDDs/PCDFs	1448-2171	
CS1 Comp 3A	Creek Sediment 1	B1-11102, 11112, 11122, 11132	02/04/98	Phenanthrene, Fluoranthene	1448-2171	Field dup of CS1 Comp 3 (Phenanthrene, Fluoranthene Only)
CS1 Comp 4	Creek Sediment 1	BI-2610, 2201, 2689, 2672	02/05/98	Phenanthrene, Fluoranthene, PCDDs/PCDFs	2172-2895	
CS1 Comp 5	Creek Sediment 1	B1-2955, 3134, 3276, 3562	02/05/98	Phenanthrene, Fluoranthene, PCDDs/PCDFs	2896-3619	
CS1 Comp 6	Creek Sediment 1	B1-3763, 3942, 4172, 4312	02/05/98	Phenanthrene, Fluoranthene, PCDDs/PCDFs	3620-4343	
CS1 Comp 7	Creek Sediment 1	B1-4397, 4580, 4728, 4865	02/05/98	Phenanthrene, Fluoranthene, PCDDs/PCDFs	4344-5067	
CS1 Comp 8	Creek Sediment 1	B1-5109, 5255, 5457, 5744	02/06/98	Phenanthrene, Fluoranthene, PCDDs/PCDFs	5068-5791	MS/MSD (Phenanthrene, Fluoranthene Only)
CS1 Comp 8	Creek Sediment 1	B1-5109, 5255, 5457, 5744	02/06/98	TCLP Lead	1-7232	MS/MSD
CS1 Comp 8A	Creek Sediment 1	B1-5109, 5255, 5457, 5744	02/06/98	TCLP Lead	1-7232	Field dup of CS1 Comp 8 (TCLP Lead Only)
CS1 Comp 9	Creek Sediment 1	B1-5828, 6045, 6251, 6500	02/06/98	Phenanthrene, Fluoranthene, PCDDs/PCDFs	5792-6515	
CS1 Comp 10	Creek Sediment 1	B1-6642, 6844, 7054, 7147	02/10/98	Phenanthrene, Fluoranthene, PCDDs/PCDFs	6516-7232	
CS2 Comp 27	Creek Sediment 2	B2-7988, 8147, 8264, 8330	02/24/98	PCDDs/PCDFs	7984-8362	
CS2 Comp 28	Creek Sediment 2	B2-8508, 8561, 8616, 8740	02/24/98	PCDDs/PCDFs	8363-8741	
CS2 Comp 29	Creek Sediment 2	B2-8765, 8921, 9046, 9101	02/24/98	PCDDs/PCDFs	8742-9120	
CS2 Comp 26	Creek Sediment 2	B2-9125, 9404, 9338, 9158	02/24/98	PCDDs/PCDFs	9121-9495	
HR Comp 17	Haul Roads	HR-9500, 9538, 9557, 9579	02/12/98	PCDDs/PCDFs	9496-9599	
HR Comp 11	Haul Roads	HR-9651, 9639, 9615, 9688	02/10/98	PCDDs/PCDFs	9600-9703	
HR Comp 20	Haul Roads	HR-9719, 9744, 9765, 9799	02/12/98	PCDDs/PCDFs	9704-9807	
HR Comp 18	Haul Roads	HR-9811, 9822, 9882, 9859	02/12/98	PCDDs/PCDFs	9808-9911	
HR Comp 19	Haul Roads	HR-9917, 9935, 9983, 9990	02/12/98	PCDDs/PCDFs	9912-10015	
HR Comp 30	Haul Roads	HR-10028, 10049, 10076, 10105	02/25/98	PCDDs/PCDFs	10016-10119	
HR Comp 31	Haul Roads	HR-10205, 10219, 10224, 10213	02/25/98	PCDDs/PCDFs	10120-10224	
HR Comp 33	Haul Roads	HR-10257, 10275, 10295, 10308	02/25/98	PCDDs/PCDFs	10225-10327	
HR Comp 32	Haul Roads	HR-10329, 10385, 10395, 10361	02/25/98	PCDDs/PCDFs	10328-10431	
HR Comp 34	Haul Roads	HR-10523, 10462, 10485, 10447	02/25/98	PCDDs/PCDFs	10432-10533	
HR Comp 35	Haul Roads	HR-10534, 10544, 10559, 10551	02/25/98	PCDDs/PCDFs	10534-10639	
HR Comp 38	Haul Roads	HR-10713, 10654, 10693, 10677	02/26/98	PCDDs/PCDFs	10640-10743	
HR Comp 38	Haul Roads	HR-10713, 10654, 10693, 10677	02/26/98	Aldrin	9496-10945	MS/MSD
HR Comp 38A	Haul Roads	HR-38001, 38002, 38003, 38004	02/26/98	Aldrin	9496-10945	Field dup of HR Comp 38 (Aldrin Only)
HR Comp 37	Haul Roads	HR-10751, 10828, 10780, 10840	02/26/98	PCDDs/PCDFs	10744-10847	
HR Comp 37A	Haul Roads	HR-10751, 10828, 10780, 10840	02/26/98	PCDDs/PCDFs	10744-10847	Field dup of HR Comp 37
HR Comp 36	Haul Roads	HR-10944, 10854, 10901, 10887	02/25/98	PCDDs/PCDFs	10848-10945	

SAMPLE COLLECTION AND ANALYSIS SUMMARY

LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

Composite Sample Location	*Category*	*Bag Sample Identification*	*Collection Date*	*Chemical Analysis*	*Bag Group Represented*	*Comments*
F Comp 39	Facility Cleanup	F-14855, 14818, 14828, 14845	02/26/98	PCDDs/PCDFs	14817-14860	
F Comp 40	Facility Cleanup	F-14865, 14875, 14885, 14901	02/26/98	PCDDs/PCDFs	14861-14903	
F Comp 40	Facility Cleanup	F-14865, 14875, 14885, 14901	02/26/98	BHCs	14817-15290	
F Comp 40A	Facility Cleanup	F-14865, 14875, 14885, 14901	02/26/98	BHCs	14817-15290	Field dup of F Comp 40 (BHCs Only)
F Comp 41	Facility Cleanup	F-14942, 14920, 14931, 14908	02/26/98	PCDDs/PCDFs	14904-14946	
F Comp 46	Facility Cleanup	F-14956, 14952, 14950, 14948	04/01/98	PCDDs/PCDFs	14947-14989	
F Comp 47	Facility Cleanup	F-15063, 15067, 15069, 15073	04/01/98	PCDDs/PCDFs	15033-15075	
F Comp 42	Facility Cleanup	F-15077, 15083, 15091, 15097	02/27/98	PCDDs/PCDFs	15076-15118	
F Comp 48	Facility Cleanup	F-15161, 15159, 15153, 15157	04/01/98	PCDDs/PCDFs	15119-15161	
F Comp 44	Facility Cleanup	F-15199, 15180, 15169, 15190	02/27/98	PCDDs/PCDFs	15162-15204	
F Comp 25	Facility Cleanup	F-15215, 15223, 15236, 15244	02/18/98	PCDDs/PCDFs	15205-15247	
F Comp 43	Facility Cleanup	F-15255, 15266, 15275, 15286	02/27/98	PCDDs/PCDFs	15248-15290	
F Comp 24	Facility Cleanup	F-15293, 15310, 15320, 15330	02/18/98	PCDDs/PCDFs	15291-15333	
F Comp 21	Facility Cleanup	F-15336, 15351, 15360, 15368	02/13/98	PCDDs/PCDFs	15334-15376	
F Comp 12	Facility Cleanup	F-15383, 15411, 15417, 15393	02/11/98	PCDDs/PCDFs	15377-15419	
F Comp 12	Facility Cleanup	F-15383, 15411, 15417, 15393	02/11/98	BHCs	15291-15774	MS/MSD
F Comp 22	Facility Cleanup	F-15431, 15442, 15424, 15458	02/13/98	PCDDs/PCDFs	15420-15462	
F Comp 22A	Facility Cleanup	F-15431, 15442, 15424, 15458	02/13/98	PCDDs/PCDFs	15420-15462	Field dup of F Comp 22
F Comp 45	Facility Cleanup	F-15469, 15483, 15494, 15504	02/27/98	PCDDs/PCDFs	15463-15505	
F Comp 13	Facility Cleanup	F-15509, 15520, 15530, 15540	02/11/98	PCDDs/PCDFs	15506-15548	
F Comp 23	Facility Cleanup	F-15552, 15573, 15564, 15588	02/13/98	PCDDs/PCDFs	15549-15591	
F Comp 16	Facility Cleanup	F-15597, 15610, 15622, 15630	02/12/98	PCDDs/PCDFs	15592-15634	
F Comp 14	Facility Cleanup	F-15636, 15645, 15653, 15674	02/11/98	PCDDs/PCDFs	15635-15677	
F Comp 15	Facility Cleanup	F-15680, 15745, 15774, 15716	02/11/98	PCDDs/PCDFs	15678-15774	

Notes:

BHCs	Benzene Hexachlorides.
Dup	Duplicate.
MS	Matrix Spike.
MSD	Matrix Spike Duplicate.
PCDDs	Polychlorinated Dibenzo-p-dioxins.
PCDFs	Polychlorinated Dibenzofurans.
TCLP	Toxicity Characteristic Leaching Procedure.

APPENDIX B

ANALYTICAL RESULTS SUMMARY

ANALYTICAL RESULTS SUMMARY
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

		Location ID:	CS1 Comp 1	CS1 Comp 2	CS1 Comp 2A	CS1 Comp 50	CS1 Comp 51	CS1 Comp 52	CS1 Comp 53	CS1 Comp 54
		Sample Date:	02/04/98	02/04/98	02/04/98 (Dup of CS1 Comp 2)	04/01/98	04/01/98	04/01/98	04/01/98	04/01/98
	Units	LDR Regulatory Limits								
LDR Semi-Volatile Organics										
Fluoranthene	mg/Kg	3.4	1.3	ND 1.0	-	-	-	-	-	-
Phenanthrene	mg/Kg	5.6	ND 1.0	ND 1.0	-	-	-	-	-	-
LDR Chlorinated Pesticides										
Aldrin	mg/Kg	0.066	-	-	-	-	-	-	-	-
delta-BHC	mg/Kg	0.066	-	-	-	-	-	-	-	-
beta-BHC	mg/Kg	0.066	-	-	-	-	-	-	-	-
alpha-BHC	mg/Kg	0.066	-	-	-	-	-	-	-	-
gamma-BHC (Lindane)	mg/Kg	0.066	-	-	-	-	-	-	-	-
LDR TCLP Metals										
Lead	mg/L	0.37	-	-	-	-	-	-	-	-
PCDDs/PCDFs										
Total TCDD	µg/Kg	1.0	0.19	19	13	1.2	5.5	10	7.1	9.0
Total PeCDD	µg/Kg	1.0	0.0078J	0.35	0.32	0.036J	0.12J	0.20	0.16	0.42
Total HxCDD	µg/Kg	1.0	0.042J	0.84J	0.48J	0.10J	0.21J	0.36J	0.38	0.67
Total TCDF	µg/Kg	1.0	0.10J	1.3J	0.86J	0.13J	0.33J	0.58J	0.41J	0.58J
Total PeCDF	µg/Kg	1.0	0.043J	0.38J	0.24J	0.064J	0.10J	0.16J	0.14J	0.22J
Total HxCDF	µg/Kg	1.0	0.031J	0.15J	0.091J	0.063J	0.062J	0.10J	0.098J	0.15J

ANALYTICAL RESULTS SUMMARY
LOVE CANAL BAGGED WASTES
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NIAGARA FALLS, NEW YORK

	Units	LDR Regulatory Limits	Location ID: CS1 Comp 55 Sample Date: 04/01/98	CS1 Comp 3 02/04/98	CS1 Comp 3A 02/04/98 (Dup of CS1 Comp 3)	CS1 Comp 4 02/05/98	CS1 Comp 5 02/05/98	CS1 Comp 6 02/05/98	CS1 Comp 7 02/06/98	CS1 Comp 8 02/06/98
LDR Semi-Volatile Organics										
Fluoranthene	mg/Kg	3.4	-	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 2.5	1.2
Phenanthrene	mg/Kg	5.6	-	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 2.5	ND 1.0
LDR Chlorinated Pesticides										
Aldrin	mg/Kg	0.066	-	-	-	-	-	-	-	-
delta-BHC	mg/Kg	0.066	-	-	-	-	-	-	-	-
beta-BHC	mg/Kg	0.066	-	-	-	-	-	-	-	-
alpha-BHC	mg/Kg	0.066	-	-	-	-	-	-	-	-
gamma-BHC (Lindane)	mg/Kg	0.066	-	-	-	-	-	-	-	-
LDR TCLP Metals										
Lead	mg/L	0.37	-	-	-	-	-	-	-	ND 0.10
PCDDs/PCDFs										
Total TCDD	µg/Kg	1.0	10	7.4J	-	2.7	2.1	1.0	0.86	3.1J
Total PeCDD	µg/Kg	1.0	0.24	0.29J	-	0.077	0.064	0.039	0.043	0.078J
Total HxCDD	µg/Kg	1.0	0.50J	0.49J	-	0.21	0.19	0.14	0.13	0.21J
Total TCDF	µg/Kg	1.0	0.61J	0.58J	-	0.19J	0.18J	0.12J	0.099J	0.20J
Total PeCDF	µg/Kg	1.0	0.19J	0.20J	-	0.059	0.063J	0.060J	0.045	0.066J
Total HxCDF	µg/Kg	1.0	0.12J	0.096J	-	0.053	0.048	0.052	0.044	0.054J

ANALYTICAL RESULTS SUMMARY
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	Units	LDR Regulatory Limits	Location ID: / Sample Date:	CS1 Comp 8A 02/06/98 (Dup of CS1 Comp 8)	CS1 Comp 9 02/06/98	CS1 Comp 10 02/10/98	CS2 Comp 27 02/24/98	CS2 Comp 28 02/24/98	CS2 Comp 29 02/24/98	CS2 Comp 26 02/24/98	HR Comp 17 02/12/98
LDR Semi-Volatile Organics											
Fluoranthene	mg/Kg	3.4		-	ND 1.0	ND 1.0	-	-	-	-	-
Phenanthrene	mg/Kg	5.6		-	ND 1.0	ND 1.0	-	-	-	-	-
LDR Chlorinated Pesticides											
Aldrin	mg/Kg	0.066		-	-	-	-	-	-	-	-
delta-BHC	mg/Kg	0.066		-	-	-	-	-	-	-	-
beta-BHC	mg/Kg	0.066		-	-	-	-	-	-	-	-
alpha-BHC	mg/Kg	0.066		-	-	-	-	-	-	-	-
gamma-BHC (Lindane)	mg/Kg	0.066		-	-	-	-	-	-	-	-
LDR TCLP Metals											
Lead	mg/L	0.37		ND 0.10	-	-	-	-	-	-	-
PCDDs/PCDFs											
Total TCDD	µg/Kg	1.0		-	**8.0J**	**1.5**	0.70	1.0	0.82	0.75	0.41
Total PeCDD	µg/Kg	1.0		-	0.21J	0.064	0.24	0.42	0.29	0.27	0.26
Total HxCDD	µg/Kg	1.0		-	0.48J	0.20	0.81	**1.5**	0.99	0.88	0.69
Total TCDF	µg/Kg	1.0		-	0.49J	0.14J	0.33	0.42	0.40	0.36	0.23J
Total PeCDF	µg/Kg	1.0		-	0.16	0.063J	0.30	0.37	0.27	0.35	0.18
Total HxCDF	µg/Kg	1.0		-	0.086J	0.055	0.17	0.25	0.20	0.16	0.11

ANALYTICAL RESULTS SUMMARY
LOVE CANAL BAGGED WASTES
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	Units	LDR Regulatory Limits	Location ID: HR Comp 11 Sample Date: 02/10/98	HR Comp 20 02/12/98	HR Comp 18 02/12/98	HR Comp 19 02/12/98	HR Comp 30 02/25/98	HR Comp 31 02/25/98	HR Comp 33 02/25/98	HR Comp 32 02/25/98
LDR Semi-Volatile Organics										
Fluoranthene	mg/Kg	3.4	-	-	-	-	-	-	-	-
Phenanthrene	mg/Kg	5.6	-	-	-	-	-	-	-	-
LDR Chlorinated Pesticides										
Aldrin	mg/Kg	0.066	-	-	-	-	-	-	-	-
delta-BHC	mg/Kg	0.066	-	-	-	-	-	-	-	-
beta-BHC	mg/Kg	0.066	-	-	-	-	-	-	-	-
alpha-BHC	mg/Kg	0.066	-	-	-	-	-	-	-	-
gamma-BHC (Lindane)	mg/Kg	0.066	-	-	-	-	-	-	-	-
LDR TCLP Metals										
Lead	mg/L	0.37	-	-	-	-	-	-	-	-
PCDDs/PCDFs										
Total TCDD	µg/Kg	1.0	1.7	0.93	1.7	0.75J	0.25	0.43	2.9	0.89
Total PeCDD	µg/Kg	1.0	0.84	0.71	0.60	0.58J	0.11	0.24	1.8	0.40
Total HxCDD	µg/Kg	1.0	4.1	1.8	1.3	1.4J	0.37	0.83	5.4	1.3
Total TCDF	µg/Kg	1.0	1.2J	0.54	0.69J	0.43J	0.10	0.22	1.8J	0.46
Total PeCDF	µg/Kg	1.0	1.0J	0.46	0.40	0.37J	0.12	0.22	1.8J	0.48
Total HxCDF	µg/Kg	1.0	0.59J	0.28	0.19	0.23J	0.081	0.14	0.86	0.25

ANALYTICAL RESULTS SUMMARY
LOVE CANAL BAGGED WASTES
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OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

	Units	LDR Regulatory Limits	Location ID: HR Comp 34 Sample Date: 02/25/98	HR Comp 35 02/25/98	HR Comp 38 02/26/98	HR Comp 38A 02/26/98 (Dup of HR Comp 38)	HR Comp 37 02/26/98	HR Comp 37A 02/26/98 (Dup of HR Comp 37)	HR Comp 36 02/25/98	F Comp 39 02/26/98
LDR Semi-Volatile Organics										
Fluoranthene	mg/Kg	3.4	-	-	-	-	-	-	-	-
Phenanthrene	mg/Kg	5.6	-	-	-	-	-	-	-	-
LDR Chlorinated Pesticides										
Aldrin	mg/Kg	0.066	-	-	ND 0.025	ND 0.025	-	-	-	-
delta-BHC	mg/Kg	0.066	-	-	-	-	-	-	-	-
beta-BHC	mg/Kg	0.066	-	-	-	-	-	-	-	-
alpha-BHC	mg/Kg	0.066	-	-	-	-	-	-	-	-
gamma-BHC (Lindane)	mg/Kg	0.066	-	-	-	-	-	-	-	-
LDR TCLP Metals										
Lead	mg/L	0.37	-	-	-	-	-	-	-	-
PCDDs/PCDFs										
Total TCDD	µg/Kg	1.0	2.7	2.4	1.5	-	0.83	0.86	2.2	1.9
Total PeCDD	µg/Kg	1.0	1.6	1.5	1.0	-	0.56	0.59	1.3	0.74
Total HxCDD	µg/Kg	1.0	5.5	4.4	2.0	-	1.4	1.4	4.1	1.7
Total TCDF	µg/Kg	1.0	1.5J	1.5J	1.1	-	0.37	0.39	1.2	0.50
Total PeCDF	µg/Kg	1.0	1.6	1.5J	0.75J	-	0.38	0.41J	1.3	0.44
Total HxCDF	µg/Kg	1.0	0.80	0.77	0.37	-	0.22	0.23	0.67	0.22

ANALYTICAL RESULTS SUMMARY
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

	Units	LDR Regulatory Limits	Location ID: F Comp 40 Sample Date: 02/26/98	F Comp 40A 02/26/98 (Dup of F Comp 40)	F Comp 41 02/26/98	F Comp 46 04/01/98	F Comp 47 04/01/98	F Comp 42 02/27/98	F Comp 48 04/01/98	F Comp 44 02/27/98
LDR Semi-Volatile Organics										
Fluoranthene	mg/Kg	3.4	-	-	-	-	-	-	-	-
Phenanthrene	mg/Kg	5.6	-	-	-	-	-	-	-	-
LDR Chlorinated Pesticides										
Aldrin	mg/Kg	0.066	-	-	-	-	-	-	-	-
delta-BHC	mg/Kg	0.066	ND 0.025	ND 0.025	-	-	-	-	-	-
beta-BHC	mg/Kg	0.066	0.040J	0.036J	-	-	-	-	-	-
alpha-BHC	mg/Kg	0.066	ND 0.025	ND 0.025	-	-	-	-	-	-
gamma-BHC (Lindane)	mg/Kg	0.066	ND 0.025	ND 0.025	-	-	-	-	-	-
LDR TCLP Metals										
Lead	mg/L	0.37	-	-	-	-	-	-	-	-
PCDDs/PCDFs										
Total TCDD	µg/Kg	1.0	**1.3**	-	0.52	**1.9**	**2.3**	**1.9**	**1.1**	**1.4**
Total PeCDD	µg/Kg	1.0	0.81	-	0.20	0.50	0.53	0.77	0.31	0.60
Total HxCDD	µg/Kg	1.0	**2.1**	-	0.49	**1.6**	**1.7**	**1.5**	1.0	**1.1**
Total TCDF	µg/Kg	1.0	0.47J	-	0.14	0.54J	0.59J	0.56J	0.33	0.46J
Total PeCDF	µg/Kg	1.0	0.51J	-	0.12	0.47J	0.49J	0.37J	0.30J	0.33J
Total HxCDF	µg/Kg	1.0	0.28	-	0.062	0.24	0.27	0.22	0.18	0.17

ANALYTICAL RESULTS SUMMARY
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

	Units	LDR Regulatory Limits	Location ID: F Comp 25 / Sample Date: 02/18/98	F Comp 43 02/27/98	F Comp 24 02/18/98	F Comp 21 02/13/98	F Comp 12 02/11/98	F Comp 22 02/13/98	F Comp 22A 02/13/98 (Dup of F Comp 22)	F Comp 45 02/27/98
LDR Semi-Volatile Organics										
Fluoranthene	mg/Kg	3.4	-	-	-	-	-	-	-	-
Phenanthrene	mg/Kg	5.6	-	-	-	-	-	-	-	-
LDR Chlorinated Pesticides										
Aldrin	mg/Kg	0.066	-	-	-	-	-	-	-	-
delta-BHC	mg/Kg	0.066	-	-	-	-	0.044J	-	-	-
beta-BHC	mg/Kg	0.066	-	-	-	-	0.11J	-	-	-
alpha-BHC	mg/Kg	0.066	-	-	-	-	ND 0.025	-	-	-
gamma-BHC (Lindane)	mg/Kg	0.066	-	-	-	-	ND 0.025	-	-	-
LDR TCLP Metals										
Lead	mg/L	0.37	-	-	-	-	-	-	-	-
PCDDs/PCDFs										
Total TCDD	µg/Kg	1.0	2.0	2.5	1.1	2.0	1.8	2.0	1.7	0.83
Total PeCDD	µg/Kg	1.0	0.65	1.2	0.43	0.86	0.72	0.76	0.45	0.34
Total HxCDD	µg/Kg	1.0	1.6	2.1	0.97	1.8	1.6	1.6	1.4	0.71
Total TCDF	µg/Kg	1.0	0.68J	0.79J	0.42	0.80J	0.66J	0.72J	0.66J	0.25J
Total PeCDF	µg/Kg	1.0	0.43J	0.53J	0.32	0.50J	0.15J	0.42J	0.42J	0.18J
Total HxCDF	µg/Kg	1.0	0.23	0.28	0.18	0.25	0.22	0.20	0.21J	0.11

ANALYTICAL RESULTS SUMMARY
LOVE CANAL BAGGED WASTES
PHASE II REPORT
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK

	Units	LDR Regulatory Limits	Location ID: F Comp 13 Sample Date: 02/11/98	F Comp 23 02/13/98	F Comp 16 02/12/98	F Comp 14 02/11/98	F Comp 15 02/11/98
LDR Semi-Volatile Organics							
Fluoranthene	mg/Kg	3.4	-	-	-	-	-
Phenanthrene	mg/Kg	5.6	-	-	-	-	-
LDR Chlorinated Pesticides							
Aldrin	mg/Kg	0.066	-	-	-	-	-
delta-BHC	mg/Kg	0.066	-	-	-	-	-
beta-BHC	mg/Kg	0.066	-	-	-	-	-
alpha-BHC	mg/Kg	0.066	-	-	-	-	-
gamma-BHC (Lindane)	mg/Kg	0.066	-	-	-	-	-
LDR TCLP Metals							
Lead	mg/L	0.37	-	-	-	-	-
PCDDs/PCDFs							
Total TCDD	µg/Kg	1.0	1.8	1.2	0.083	1.4	1.4
Total PeCDD	µg/Kg	1.0	0.70	0.48	0.035	0.55	0.46
Total HxCDD	µg/Kg	1.0	1.4	1.0	0.10	1.1	1.0
Total TCDF	µg/Kg	1.0	0.72J	0.41J	0.049	0.66J	0.49J
Total PeCDF	µg/Kg	1.0	0.12J	0.27J	0.044	0.36J	0.30J
Total HxCDF	µg/Kg	1.0	0.20	0.15	0.036	0.18	0.15

Notes:
- Not Applicable.
J Estimated.
LDR Land Disposal Restriction.
ND x Not detected at or above x.
PCDD Polychlorinated Dibenzo-p-dioxins.
PCDFs Polychlorinated Dibenzofurans.
TCLP Toxicity Characteristic Leaching Procedure.

APPENDIX C

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) REVIEW

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) REVIEW
OCCIDENTAL CHEMICAL CORPORATION
LOVE CANAL BAGGED WASTES
PHASE II SAMPLING PROGRAM
NIAGARA FALLS, NEW YORK
FEBRUARY -APRIL 1998

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LIST OF ATTACHMENTS

1.0 EXECUTIVE SUMMARY

Solid samples of Love Canal waste material were collected from bags stored in buildings located at the Occidental Chemical Corporation (OxyChem) Niagara Plant in Niagara Falls, New York from February through April 1998. All sampling and analyses were performed in accordance with Section 6.0 of the "Phase I Report - Love Canal Bagged Wastes, Occidental Chemical Corporation, February 1998" and the June 1996 Sampling and Analysis Plan (SAP), both approved by the United States Environmental Protection Agency (USEPA). All samples were submitted for Phase II F039 Land Disposal Restriction (LDR) list analyses, which included polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDDs/PCDFs), toxicity characteristic leaching procedure (TCLP) lead, phenanthrene, fluoranthene, BHCs, and aldrin.

CONCLUSION

Based on the assessment and validation of the analytical data provided, these data have been judged acceptable for their intended use with the qualifications noted.

2.0 INTRODUCTION

Sixty-one samples (including seven field duplicates) were submitted for analysis in support of Phase II Sampling Program for the Love Canal bagged waste materials. Each sample consisted of two to four individual grab samples which were collected in the field and sent to the analytical laboratories for compositing. The bagged materials are stored at OxyChem's Niagara Plant in Niagara Falls, New York. Sample collection was performed from February 1998 to April 1998. The samples were analyzed by Encotec Laboratory (Encotec) in Ann Arbor, Michigan and Alta Analytical Laboratory, Inc. in El Dorado Hills, California. Samples were submitted for the Phase II F039 LDR analyses of PCDDs/PCDFs, TCLP lead, fluoranthene, phenanthrene, BHCs, and aldrin.

Copies of the chain of custody forms are included in Attachment A.

Summaries of the sampling and analysis program and the analytical results are provided in the Phase II report.

Samples were analyzed in accordance with the methods referenced in Table 1. All laboratory reports included summary reports and the accompanying raw data. The Quality Assurance/Quality Control (QA/QC) criteria by which these data have been assessed are outlined in the analytical methods. Additional validation guidance was referenced from the following documents:

i) "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" EPA 5400/R-94/012, February 1994;

ii) "USEPA Contact Laboratory Program National Functional Guidelines for Inorganic Data Review", EPA-5400/R-94-013, February 1994;

iii) "CLP Organics Data Review and Preliminary Review", SOP No. HW-6, Revision #11, May 1996;

iv) "Evaluation of Metals Data for the Contract Laboratory Program (CLP)", SOP Revision XI, January 1992;

v) "USEPA Region II Data Validation SOP for SW-846 Method 8290, PCDDs and PCDFs by HRGC/HRMS", SOP No. HW-19, Revision 1, October 1994; and

vi) "TCLP Data Validation", SOP No. HW-7, Revision #3, March 1993.

3.0 QA/QC REVIEW

HOLDING TIMES

The holding time criteria specified in the analytical methods are noted in Table 1. Table 2 presents a summary of all collection, extraction, and analysis dates. All samples were extracted and analyzed within the recommended holding times.

All samples were chilled, transported, and stored by the laboratory at 4°C (±2°C).

INSTRUMENT CALIBRATION

PCDDs/PCDFs

High resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS) instrumentation was properly tuned prior to sample analysis. Overall, calibration data showed adequate instrument sensitivity and calibration curves showed acceptable linearity. All ion abundance ratios were within the method-specified control limits.

All native and labeled analyte concentrations were acceptable for the calibration verification standards. All ion abundance ratios were within the method-specified control limits for each PCDD/PCDF.

Gas Chromatograph/Mass Spectrometer (GC/MS) - Phenanthrene, Fluoranthene

The GC/MS instrumentation was properly tuned prior to sample analyses. Calibration data showed adequate instrument sensitivity, and calibration curves showed acceptable linearity.

Gas Chromatograph (GC) - Aldrin, BHCs

All GC instrument evaluation standards demonstrated acceptable performance. All initial calibration data for the GC analyses showed adequate instrument sensitivity and linearity.

Most continuing calibration standard results were acceptable.

The continuing calibration standard results for the March 14, 1998 analysis indicated slight variability in instrument response for the pesticide analyses, and all associated positive results were qualified as estimated. Associated non-detect results were judged to be acceptable based on adequate instrument response for the standards.

TCLP Lead - Inductively Coupled Plasma-Atomic Emission Spectrometer (ICP)

Calibration curves and initial calibration verification (ICV) and continuing calibration verification (CCV) standards were analyzed at the proper frequency.

The calibration curves were acceptable and all ICV and CCV recoveries were within the required control limits.

Interference check standards were analyzed at the proper frequency and all recoveries were acceptable.

INTERNAL STANDARD RECOVERIES - PHENANTHRENE, FLUORANTHENE

The proper internal standard (IS) compound was added to all samples, blanks, standards, and spike samples prior to analysis. A summary of the recoveries is presented in Table 3. All IS recoveries and retention times were acceptable.

INTERNAL STANDARD RECOVERIES - PCDDs/PCDFs

A summary of the internal standard recoveries is presented in Table 4.

The proper internal standard compounds were added to all samples, matrix spike samples, and blanks prior to extraction. Internal standards were used to quantify the 2,3,7,8-substituted PCDDs/PCDFs present in the samples (isotope-dilution mass spectrometry) as well as to determine the overall method efficiency. All internal standard recoveries for the analytes of interest were acceptable except for sample HR Comp 19, which had several low recoveries. All sample results were qualified as estimated based on the low recoveries.

CLEANUP STANDARD RECOVERIES - PCDDs/PCDFs

A summary of the cleanup standard recoveries is presented in Table 4.

The proper cleanup standard compound was added to all samples and blanks subsequent to extraction, but prior to fractionation. All recoveries showed acceptable analytical efficiency.

RECOVERY STANDARDS - PCDDs/PCDFs

Recovery standards were added to each sample prior to analysis.

The recovery standard area counts were assessed with respect to the associated continuing calibration standard. Most area counts were acceptable. Some high area counts were reported for samples CS1 Comp 1, CS1 Comp 2, CS1 Comp 2A, CS1 Comp 3, CS1 Comp 8, CS1 Comp 9, CS1 Comp 51, CS1 Comp 52, and CS1 Comp 55. All affected sample results were qualified as estimated.

SURROGATE COMPOUND ANALYSES - ORGANICS

Surrogate were added to all samples, blanks, and QC samples prior to extraction and/or analysis.

A summary of surrogate recoveries is presented in Table 5. All surrogate were acceptable except for one high pesticide surrogate recovery for sample F Comp 12. Associated positive sample results were qualified as estimated. Non-detect results were not impacted by the indicated high bias.

METHOD BLANK ANALYSES

Method blanks were analyzed and/or extracted at the proper frequency for all parameters, and the results are summarized in Table 6. All method blank results were non-detect.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) ANALYSES

Matrix spikes were prepared and/or analyzed in duplicate with each batch of samples. The MS/MSD analysis for phenanthrene and fluoranthene consisted of representative semi-volatile organic compounds (SVOCs). A summary of the spike results is presented in Table 7.

The TCLP lead and SVOC spike recoveries demonstrated acceptable analytical accuracy and precision. No aldrin spike recoveries were available for sample HR Comp 38 due to laboratory dilution. Accuracy for this analysis was based on the blank spike recoveries.

The pesticide MS/MSD analysis for sample F Comp 12 resulted in high recoveries for all parameters of interest. All associated positive results were qualified as estimated. Associated non-detect results were not impacted by the indicated high bias.

DUPLICATE ANALYSIS - TCLP LEAD

One sample submitted for TCLP lead analysis was digested and analyzed in duplicate. A summary of the results is presented in Table 8. The duplicate results demonstrated acceptable agreement.

BLANK SPIKE/BLANK SPIKE DUPLICATE (BS/BSD) ANALYSES

BS samples were prepared in duplicate and analyzed with each batch of samples. The results are summarized in Table 9. All BS/BSD analyses were acceptable except for slightly low recoveries for phenanthrene. All associated sample results were non-detect and were judged acceptable based on sufficient analyte recovery.

ANALYTE IDENTIFICATION AND QUANTITATION

Analyte identification and quantitation were performed according to the methods.

In addition, total PCDD and total PCDF concentrations represent the sum of all analytes which meet the identification criteria and may include non-2,3,7,8-substituted PCDD/PCDF analytes for which the instrument was not calibrated. Total PCDD/PCDF concentrations in these cases are identified in the analytical results summary by the total

PCDD/PCDF concentration being greater than the total concentration for the corresponding 2,3,7,8-substituted analyte(s), and should be considered estimated.

Diphenyl ether interferences were observed in the PCDF analyses for some samples. Based on a potential high bias, the associated sample results were qualified as estimated.

FIELD QA/QC

Field Duplicate Analyses

Seven samples were collected in duplicate and submitted to the laboratory for analysis. A comparison of the field duplicate results is presented in Table 10. The results showed acceptable analytical and sampling precision.

4.0 CONCLUSION

Based on the assessment and validation of the analytical data provided, these data have been judged acceptable for their intended use with the qualifications noted.

TABLE 1

ANALYTICAL METHODS AND HOLDING TIME CRITERIA
LOVE CANAL BAGGED WASTES
PHASE II SAMPLING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK
FEBRUARY - APRIL 1998

Parameter	*Analytical Method (1)*	*Collection to TCLP Extraction*	*Holding Time Criteria*	
			Collection to Extraction (days)	*Extraction to Analysis (days)*
TCLP Lead	1311/6010A	180	-	180
Aldrin, BHCs	8081	-	14	40
Phenanthrene, Fluoranthene	8270B	-	14	40
PCDDs/PCDFs	8290	-	30	45

Notes:

Methodology References:

(1) USEPA SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", 3rd Edition, September, 1986 and subsequent revisions.

TCLP Toxicity Characteristic Leaching Procedure.

PCDDs Polychlorinated Dibenzo-p-dioxins.

PCDFs Polychlorinated Dibenzofurans.

TABLE 2

HOLDING TIME SUMMARY
LOVE CANAL BAGGED WASTES
PHASE II SAMPLING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK
FEBRUARY - APRIL 1998

Sample Name	Sample Date	TCLP Extraction Date	Sample Extraction Date	Sample Analysis Date	Holding Time Exceedance (Days) to TCLP Extraction	Holding Time Exceedance (Days) to Sample Extraction	Holding Time Exceedance (Days) to Sample Analysis
Phenanthrene, Fluoranthene							
CS1 Comp 1	02/04/98	-	02/13/98	02/16/98	-	0	0
CS1 Comp 2	02/04/98	-	02/13/98	02/16/98	-	0	0
CS1 Comp 3	02/04/98	-	02/13/98	02/16/98	-	0	0
CS1 Comp 3A	02/04/98	-	02/13/98	02/16/98	-	0	0
CS1 Comp 4	02/05/98	-	02/13/98	02/16/98	-	0	0
CS1 Comp 5	02/05/98	-	02/13/98	02/16/98	-	0	0
CS1 Comp 6	02/05/98	-	02/13/98	02/16/98	-	0	0
CS1 Comp 7	02/05/98	-	02/13/98	02/17/98	-	0	0
CS1 Comp 8	02/06/98	-	02/13/98	02/16/98	-	0	0
CS1 Comp 9	02/06/98	-	02/13/98	02/16/98	-	0	0
CS1 Comp 10	02/10/98	-	02/13/98	02/17/98	-	0	0
Aldrin, BHCs							
F Comp 12	02/11/98	-	02/18/98	03/15/98	-	0	0
HR Comp 38	02/26/98	-	03/02/98	03/15/98	-	0	0
HR Comp 38A	02/26/98	-	03/02/98	03/15/98	-	0	0
F Comp 40	02/26/98	-	03/02/98	03/15/98	-	0	0
F Comp 40A	02/26/98	-	03/02/98	03/15/98	-	0	0
PCDDs/PCDFs							
CS1 Comp 1	02/04/98	-	02/12/98	02/14/98	-	0	0
CS1 Comp 2	02/04/98	-	02/12/98	02/14 & 15/98	-	0	0
CS1 Comp 2A	02/04/98	-	02/12/98	02/14 & 15/98	-	0	0
CS1 Comp 3	02/04/98	-	02/12/98	02/14 & 16/98	-	0	0
CS1 Comp 4	02/05/98	-	02/18/98	02/24/98	-	0	0
CS1 Comp 5	02/05/98	-	02/18/98	02/24/98	-	0	0
CS1 Comp 6	02/05/98	-	02/18/98	02/24/98	-	0	0
CS1 Comp 7	02/05/98	-	02/18/98	02/24/98	-	0	0
CS1 Comp 8	02/06/98	-	02/12/98	02/14/98	-	0	0
CS1 Comp 9	02/06/98	-	02/12/98	02/14 & 16/98	-	0	0
CS1 Comp 10	02/10/98	-	02/18/98	02/24/98	-	0	0
CS1 Comp 50	04/01/98	-	04/15/98	04/20/98	-	0	0
CS1 Comp 51	04/01/98	-	04/15/98	04/21/98	-	0	0
CS1 Comp 52	04/01/98	-	04/15/98	04/21/98	-	0	0
CS1 Comp 53	04/01/98	-	04/15/98	04/21/98	-	0	0
CS1 Comp 54	04/01/98	-	04/15/98	04/21/98	-	0	0
CS1 Comp 55	04/01/98	-	04/15/98	04/21/98	-	0	0
CS2 Comp 26	02/24/98	-	03/10/98	03/14/98	-	0	0
CS2 Comp 27	02/24/98	-	03/10/98	03/14/98	-	0	0
CS2 Comp 28	02/24/98	-	03/10/98	03/14/98	-	0	0
CS2 Comp 29	02/24/98	-	03/10/98	03/14/98	-	0	0
HR Comp 11	02/10/98	-	02/18/98	02/24/98	-	0	0
HR Comp 17	02/12/98	-	02/23/98	02/26/98	-	0	0
HR Comp 18	02/12/98	-	02/23/98	02/26/98	-	0	0
HR Comp 19	02/12/98	-	02/23/98	02/26/98	-	0	0

TABLE 2

HOLDING TIME SUMMARY
LOVE CANAL BAGGED WASTES
PHASE II SAMPLING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK
FEBRUARY - APRIL 1998

Sample Name	Sample Date	TCLP Extraction Date	Sample Extraction Date	Sample Analysis Date	Holding Time Exceedance (Days) to TCLP Extraction	Holding Time Exceedance (Days) to Sample Extraction	Holding Time Exceedance (Days) to Sample Analysis
PCDDs/PCDFs (Cont'd.)							
HR Comp 20	02/12/98	-	02/23/98	02/26/98	-	0	0
HR Comp 30	02/25/98	-	03/10/98	03/14/98	-	0	0
HR Comp 31	02/25/98	-	03/10/98	03/14/98	-	0	0
HR Comp 32	02/25/98	-	03/10/98	03/14/98	-	0	0
HR Comp 33	02/25/98	-	03/10/98	03/14/98	-	0	0
HR Comp 34	02/25/98	-	03/10/98	03/15/98	-	0	0
HR Comp 35	02/25/98	-	03/10/98	03/15/98	-	0	0
HR Comp 36	02/25/98	-	03/10/98	03/15/98	-	0	0
HR Comp 37	02/26/98	-	03/17/98	03/23/98	-	0	0
HR Comp 37A	02/26/98	-	03/17/98	03/23/98	-	0	0
HR Comp 38	02/26/98	-	03/17/98	03/24/98	-	0	0
F Comp 12	02/11/98	-	02/23/98	02/25/98	-	0	0
F Comp 13	02/11/98	-	02/23/98	02/25/98	-	0	0
F Comp 14	02/11/98	-	02/23/98	02/25/98	-	0	0
F Comp 15	02/11/98	-	02/23/98	02/25/98	-	0	0
F Comp 16	02/12/98	-	02/23/98	02/26/98	-	0	0
F Comp 21	02/13/98	-	02/18/98	02/24/98	-	0	0
F Comp 22	02/13/98	-	02/18/98	02/24/98	-	0	0
F Comp 22A	02/13/98	-	02/18/98	02/24/98	-	0	0
F Comp 23	02/13/98	-	02/18/98	02/24/98	-	0	0
F Comp 24	02/18/98	-	02/26/98	02/28/98	-	0	0
F Comp 25	02/18/98	-	02/26/98	02/28/98	-	0	0
F Comp 39	02/26/98	-	03/17/98	03/24/98	-	0	0
F Comp 40	02/26/98	-	03/17/98	03/24/98	-	0	0
F Comp 41	02/26/98	-	03/17/98	03/24/98	-	0	0
F Comp 42	02/27/98	-	03/17/98	03/24/98	-	0	0
F Comp 43	02/27/98	-	03/17/98	03/24/98	-	0	0
F Comp 44	02/27/98	-	03/17/98	03/24/98	-	0	0
F Comp 45	02/27/98	-	03/17/98	03/24/98	-	0	0
F Comp 46	04/01/98	-	04/15/98	04/20/98	-	0	0
F Comp 47	04/01/98	-	04/15/98	04/20/98	-	0	0
F Comp 48	04/01/98	-	04/15/98	04/20/98	-	0	0
TCLP Lead							
CS1 Comp 8	02/06/98	02/12/98	-	02/13/98	0	-	0
CS1 Comp 8A	02/06/98	02/12/98	-	02/13/98	0	-	0

Notes:
- Not Applicable.
PCDDs Polchlorinated Dibenzo-p-dioxins.
PCDFs Polychlorinated Dibenzofurans.
TCLP Toxicity Characteristic Leaching Procedure.

TABLE 3

INTERNAL STANDARD RECOVERY SUMMARY (PERCENT) -
PHENANTHRENE/FLUORANTHENE
LOVE CANAL BAGGED WASTES
PHASE II SAMPLING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK
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Internal Standard Control Limits:	*PHN 50-200*
Sample ID	
CS1 Comp 1	102
CS1 Comp 2	106
CS1 Comp 3	105
CS1 Comp 3A	105
CS1 Comp 4	111
CS1 Comp 5	98
CS1 Comp 6	115
CS1 Comp 7	124
CS1 Comp 8	104
CS1 Comp 9	116
CS1 Comp 10	99

Notes:
PHN Phenanthrene-d10.

INTERNAL/CLEANUP STANDARD RECOVERIES (PERCENT) - PCDDs/PCDFs
LOVE CANAL BAGGED WASTES
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Location ID:	*Control Limits*	*CS1 Comp 1*	*CS1 Comp 2*	*CS1 Comp 2A*	*CS1 Comp 3*	*CS1 Comp 4*	*CS1 Comp 5*	*CS1 Comp 6*	*CS1 Comp 7*
Internal Standards									
13C-2,3,7,8-TCDD	40-135	82	90	85	90	88	91	89	87
13C-1,2,3,7,8-PeCDD	40-135	93	114	109	105	92	104	85	86
13C-1,2,3,4,7,8-HxCDD	40-135	88	98	93	96	95	95	95	97
13C-1,2,3,6,7,8-HxCDD	40-135	87	98	94	96	93	94	95	95
13C-2,3,7,8-TCDF	40-135	86	88	87	90	90	90	89	90
13C-1,2,3,7,8-PeCDF	40-135	89	103	98	99	88	91	83	84
13C-2,3,4,7,8-PeCDF	40-135	93	98	96	98	91	94	87	88
13C-1,2,3,4,7,8-HxCDF	40-135	75	84	80	82	96	92	90	97
13C-1,2,3,6,7,8-HxCDF	40-135	76	87	82	84	96	93	90	95
13C-2,3,4,6,7,8-HxCDF	40-135	77	88	84	85	93	89	89	91
13C-1,2,3,7,8,9-HxCDF	40-135	76	92	86	87	88	89	94	89
Cleanup Standard									
37Cl-2,3,7,8-TCDD	40-135	100	110	100	114	108	107	106	104

INTERNAL/CLEANUP STANDARD RECOVERIES (PERCENT) - PCDDs/PCDFs
LOVE CANAL BAGGED WASTES
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Location ID:		*CS1 Comp 8*	*CS1 Comp 9*	*CS1 Comp 10*	*CS1 Comp 50*	*CS1 Comp 51*	*CS1 Comp 52*	*CS1 Comp 53*	*CS1 Comp 54*
	Control Limits								
Internal Standards									
13C-2,3,7,8-TCDD	40-135	94	90	93	52	93	87	86	62
13C-1,2,3,7,8-PeCDD	40-135	103	95	89	76	97	111	104	63
13C-1,2,3,4,7,8-HxCDD	40-135	95	100	101	70	98	97	97	78
13C-1,2,3,6,7,8-HxCDD	40-135	95	98	96	74	100	106	102	77
13C-2,3,7,8-TCDF	40-135	95	95	95	52	92	89	90	60
13C-1,2,3,7,8-PeCDF	40-135	96	97	88	63	86	91	89	64
13C-2,3,4,7,8-PeCDF	40-135	100	99	92	69	92	99	93	65
13C-1,2,3,4,7,8-HxCDF	40-135	79	86	97	63	87	88	87	66
13C-1,2,3,6,7,8-HxCDF	40-135	80	87	97	65	87	89	88	66
13C-2,3,4,6,7,8-HxCDF	40-135	83	88	95	67	90	91	90	71
13C-1,2,3,7,8,9-HxCDF	40-135	84	88	95	63	95	99	94	78
Cleanup Standard									
37Cl-2,3,7,8-TCDD	40-135	116	108	110	88	116	109	109	124

INTERNAL/CLEANUP STANDARD RECOVERIES (PERCENT) - PCDDs/PCDFs
LOVE CANAL BAGGED WASTES
PHASE II SAMPLING PROGRAM
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Location ID:	*Control Limits*	*CS1 Comp 55*	*CS2 Comp 26*	*CS2 Comp 27*	*CS2 Comp 28*	*CS2 Comp 29*	*HR Comp 11*	*HR Comp 17*	*HR Comp 18*
Internal Standards									
13C-2,3,7,8-TCDD	40-135	91	86	87	89	88	82	92	83
13C-1,2,3,7,8-PeCDD	40-135	106	79	83	84	85	101	108	106
13C-1,2,3,4,7,8-HxCDD	40-135	98	86	90	88	89	94	97	103
13C-1,2,3,6,7,8-HxCDD	40-135	101	95	99	101	98	93	97	100
13C-2,3,7,8-TCDF	40-135	91	81	85	85	82	72	82	63
13C-1,2,3,7,8-PeCDF	40-135	89	76	79	79	73	80	86	71
13C-2,3,4,7,8-PeCDF	40-135	94	74	79	78	75	81	91	77
13C-1,2,3,4,7,8-HxCDF	40-135	89	92	95	96	94	89	86	90
13C-1,2,3,6,7,8-HxCDF	40-135	90	102	104	106	104	90	89	92
13C-2,3,4,6,7,8-HxCDF	40-135	90	94	99	100	98	92	95	100
13C-1,2,3,7,8,9-HxCDF	40-135	96	91	94	98	97	94	108	108
Cleanup Standard									
37Cl-2,3,7,8-TCDD	40-135	114	87	91	90	89	100	108	102

INTERNAL/CLEANUP STANDARD RECOVERIES (PERCENT) - PCDDs/PCDFs
LOVE CANAL BAGGED WASTES
PHASE II SAMPLING PROGRAM
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Location ID:		*HR Comp 19*	*HR Comp 20*	*HR Comp 30*	*HR Comp 31*	*HR Comp 32*	*HR Comp 33*	*HR Comp 34*	*HR Comp 35*
	Control Limits								
Internal Standards									
13C-2,3,7,8-TCDD	40-135	32*	94	89	89	89	88	89	90
13C-1,2,3,7,8-PeCDD	40-135	39*	110	85	83	86	79	86	81
13C-1,2,3,4,7,8-HxCDD	40-135	39*	101	91	92	90	88	91	92
13C-1,2,3,6,7,8-HxCDD	40-135	38*	96	96	101	93	90	96	97
13C-2,3,7,8-TCDF	40-135	32*	78	87	88	84	69	76	75
13C-1,2,3,7,8-PeCDF	40-135	32*	80	78	81	78	65	68	70
13C-2,3,4,7,8-PeCDF	40-135	35*	87	80	81	76	62	67	67
13C-1,2,3,4,7,8-HxCDF	40-135	36*	97	96	100	96	94	92	94
13C-1,2,3,6,7,8-HxCDF	40-135	37*	99	102	104	99	99	99	101
13C-2,3,4,6,7,8-HxCDF	40-135	39*	101	97	102	93	100	102	99
13C-1,2,3,7,8,9-HxCDF	40-135	43	113	95	96	93	113	115	110
Cleanup Standard									
37Cl-2,3,7,8-TCDD	40-135	104	110	93	91	93	94	93	93

INTERNAL/CLEANUP STANDARD RECOVERIES (PERCENT) - PCDDs/PCDFs
LOVE CANAL BAGGED WASTES
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Location ID:	*Control Limits*	*HR Comp 36*	*HR Comp 37*	*HR Comp 37A*	*HR Comp 38*	*F Comp 12*	*F Comp 13*	*F Comp 14*	*F Comp 15*
Internal Standards									
13C-2,3,7,8-TCDD	40-135	75	89	89	88	85	83	87	90
13C-1,2,3,7,8-PeCDD	40-135	71	75	76	68	102	94	114	107
13C-1,2,3,4,7,8-HxCDD	40-135	78	87	89	89	93	98	96	96
13C-1,2,3,6,7,8-HxCDD	40-135	81	102	102	102	95	91	95	91
13C-2,3,7,8-TCDF	40-135	65	86	84	108	100	98	97	94
13C-1,2,3,7,8-PeCDF	40-135	60	64	67	58	80	73	86	86
13C-2,3,4,7,8-PeCDF	40-135	59	70	68	58	83	77	96	90
13C-1,2,3,4,7,8-HxCDF	40-135	83	85	86	86	86	90	90	85
13C-1,2,3,6,7,8-HxCDF	40-135	86	95	95	95	90	93	92	88
13C-2,3,4,6,7,8-HxCDF	40-135	87	94	95	94	96	97	95	94
13C-1,2,3,7,8,9-HxCDF	40-135	96	88	90	86	108	105	104	106
Cleanup Standard									
37Cl-2,3,7,8-TCDD	40-135	80	111	110	111	100	99	103	104

INTERNAL/CLEANUP STANDARD RECOVERIES (PERCENT) - PCDDs/PCDFs
LOVE CANAL BAGGED WASTES
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Location ID:		*F Comp 16*	*F Comp 21*	*F Comp 22*	*F Comp 22A*	*F Comp 23*	*F Comp 24*	*F Comp 25*	*F Comp 39*
	Control Limits								
Internal Standards									
13C-2,3,7,8-TCDD	40-135	90	82	82	87	89	83	94	92
13C-1,2,3,7,8-PeCDD	40-135	102	104	117	103	111	109	124	76
13C-1,2,3,4,7,8-HxCDD	40-135	93	97	90	100	99	87	99	92
13C-1,2,3,6,7,8-HxCDD	40-135	92	96	90	97	99	84	93	101
13C-2,3,7,8-TCDF	40-135	83	84	80	80	92	89	82	77
13C-1,2,3,7,8-PeCDF	40-135	86	95	96	87	106	105	90	58
13C-2,3,4,7,8-PeCDF	40-135	92	96	99	89	106	100	94	58
13C-1,2,3,4,7,8-HxCDF	40-135	85	93	82	94	95	88	98	88
13C-1,2,3,6,7,8-HxCDF	40-135	86	95	85	97	98	87	100	99
13C-2,3,4,6,7,8-HxCDF	40-135	92	96	91	97	97	90	104	100
13C-1,2,3,7,8,9-HxCDF	40-135	99	102	96	104	101	97	110	93
Cleanup Standard									
37Cl-2,3,7,8-TCDD	40-135	105	99	103	106	109	99	116	109

TABLE 4

INTERNAL/CLEANUP STANDARD RECOVERIES (PERCENT) - PCDDs/PCDFs
LOVE CANAL BAGGED WASTES
PHASE II SAMPLING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION
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	Location ID:	*F Comp 40*	*F Comp 41*	*F Comp 42*	*F Comp 43*	*F Comp 44*	*F Comp 45*	*F Comp 46*	*F Comp 47*	*F Comp 48*
	Control Limits									
Internal Standards										
13C-2,3,7,8-TCDD	40-135	89	90	91	91	93	94	90	91	85
13C-1,2,3,7,8-PeCDD	40-135	74	77	77	77	78	81	103	117	96
13C-1,2,3,4,7,8-HxCDD	40-135	87	91	93	94	98	98	97	100	99
13C-1,2,3,6,7,8-HxCDD	40-135	100	102	104	104	107	109	98	103	105
13C-2,3,7,8-TCDF	40-135	77	89	82	79	88	93	82	77	83
13C-1,2,3,7,8-PeCDF	40-135	59	67	73	71	77	79	84	84	84
13C-2,3,4,7,8-PeCDF	40-135	61	71	74	70	78	82	87	86	86
13C-1,2,3,4,7,8-HxCDF	40-135	84	88	86	89	88	93	92	95	97
13C-1,2,3,6,7,8-HxCDF	40-135	92	96	90	93	93	94	96	100	98
13C-2,3,4,6,7,8-HxCDF	40-135	91	97	93	96	95	98	96	99	97
13C-1,2,3,7,8,9-HxCDF	40-135	90	89	94	93	95	97	90	92	91
Cleanup Standard										
37Cl-2,3,7,8-TCDD	40-135	109	112	113	111	119	114	108	109	104

Notes:
* QC outlier.
PCDDs Polychlorinated Dibenzo-p-dioxins.
PCDFs Polychlorinated Dibenzofurans.

TABLE 5

SURROGATE RESULTS SUMMARY (PERCENT)
LOVE CANAL BAGGED WASTES
PHASE II SAMPLING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK
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	NBZ (23-120)	*FBP (30-115)*	*TPH (18-137)*
Phenanthrene/Fluoranthene			
CS1 Comp 1	72	68	71
CS1 Comp 2	73	72	82
CS1 Comp 3	69	65	78
CS1 Comp 3A	70	67	76
CS1 Comp 4	70	64	76
CS1 Comp 5	73	76	79
CS1 Comp 6	66	65	74
CS1 Comp 7	68	69	74
CS1 Comp 8	72	65	84
CS1 Comp 9	65	67	76
CS1 Comp 10	72	65	83

	DCB (32-136)	*TCMX (40-130)*
Aldrin, BHCs		
HR Comp 38	110	97
HR Comp 38A	119	92
F Comp 40	126	122
F Comp 40A	121	100
F Comp 12	156*	120

Notes:
* QC outlier.

Surrogates:
DCB Decachlorobiphenyl.
FBP 2-Fluorobiphenyl.
NBZ Nitrobenzene-d5.
TCMX Tetrachloro-m-xylene.
TPH Terphenyl-d14.

TABLE 6

METHOD BLANK RESULTS SUMMARY
LOVE CANAL BAGGED WASTES
PHASE II SAMPLING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK
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Parameters	*Units*							
	Extraction Date:	*02/13/98*						
LDR Semi-Volatile Organics								
Fluoranthene	mg/Kg	ND 1.0						
Phenanthrene	mg/Kg	ND 1.0						
	Extraction Date:	*02/18/98*	*03/02/98*					
LDR Chlorinated Pesticides								
Aldrin	mg/Kg	ND 0.010	ND 0.010					
delta-BHC	mg/Kg	ND 0.010	ND 0.010					
beta-BHC	mg/Kg	ND 0.010	ND 0.010					
alpha-BHC	mg/Kg	ND 0.010	ND 0.010					
gamma-BHC (Lindane)	mg/Kg	ND 0.010	ND 0.010					
	Extraction Date:	*02/12/98*						
LDR TCLP Lead	mg/L	ND 0.10						
	Extraction Date:	*02/12/98*	*02/18/98*	*02/23/98*	*02/26/98*	*03/10/98*	*03/17/98*	*04/15/98*
PCDDs/PCDFs								
Total TCDD	µg/Kg	ND 0.0012	ND 0.0020	ND 0.0035	ND 0.0023	ND 0.0035	ND 0.0026	ND 0.0022
Total PeCDD	µg/Kg	ND 0.0011	ND 0.0014	ND 0.0046	ND 0.0012	ND 0.0037	ND 0.0012	ND 0.0013
Total HxCDD	µg/Kg	ND 0.0018	ND 0.0012	ND 0.0050	ND 0.0022	ND 0.0067	ND 0.0017	ND 0.0016
Total TCDF	µg/Kg	ND 0.0010	ND 0.0032	ND 0.0014	ND 0.0012	ND 0.0049	ND 0.0011	ND 0.0011
Total PeCDF	µg/Kg	ND 0.0012	ND 0.00083	ND 0.0028	ND 0.0015	ND 0.0051	ND 0.0021	ND 0.0011
Total HxCDF	µg/Kg	ND 0.0010	ND 0.00057	ND 0.0021	ND 0.0011	ND 0.0026	ND 0.00090	ND 0.0015

Notes:
LDR Land Disposal Restriction.
NDx Not detected at or above x.
PCDDs Polychlorinated Dibenzo-p-dioxins.
PCDFs Polychlorinated Dibenzofurans.
TCLP Toxic Characteristic Leaching Procedure.

TABLE 7

MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD) RESULTS SUMMARY (PERCENT)
LOVE CANAL BAGGED WASTES
PHASE II SAMPLING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK
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	Laboratory Control Limits	*Laboratory RPD Limits*						
		Extraction Date:	*02/13/98 CS1 Comp 8*					
			MS	*MSD*	*RPD*			
LDR Semi-Volatile Organics								
1,2,4-Trichlorobenzene	43-113	23	77	79	3			
Acenaphthene	45-124	19	67	73	9			
2,4-Dinitrotoluene	44-109	47	70	78	11			
Pyrene	24-142	36	55	55	0			
n-Nitroso-di-n-propylamine	44-115	38	95	79	18			
1,4-Dichlorobenzene	40-108	27	74	70	6			
		Extraction Date:	*02/18/98 F Comp 12*			*03/02/98 HR Comp 38*		
			MS	*MSD*	*RPD*	*MS*	*MSD*	*RPD*
LDR Chlorinated Pesticides								
alpha-BHC	37-134	15	703*	455*	43*	-	-	-
gamma-BHC (Lindane)	32-127	23	508*	410*	21	-	-	-
beta-BHC	17-147	14	376*	551*	38*	-	-	-
delta-BHC	19-140	22	143*	840*	142*	-	-	-
Aldrin	42-122	15	-	-	-	NA	NA	NA
		TCLP Date:	*02/12/98 CS1 Comp 8*					
			MS	*MSD*	*RPD*			
LDR TCLP Metals								
Lead	50-150	20	94	94	0			

Notes:

*	Value outside of quality control limits.
-	Not Analyzed.
LDR	Land Disposal Regulation.
MS	Matrix Spike.
MSD	Matrix Spike Duplicate.
NA	Not Available.
RPD	Relative Percent Difference.
TCLP	Toxicity Characteristic Leaching Procedure.

TABLE 8
LABORATORY DUPLICATE SUMMARY
LOVE CANAL BAGGED WASTES
PHASE II SAMPLING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK
FEBRUARY - APRIL 1998

	Location ID:	*CS1 Comp 8*		
		Original	*Duplicate*	*RPD*
Parameters	*Units*			
LDR TCLP Lead	mg/L	ND 0.10	ND 0.10	*

Notes:
* Value cannot be calculated due to non-detect results.
LDR Land Disposal Restriction.
ND Not detected at or above x.
RPD Relative Percent Difference.
TCLP Toxicity Characteristic Leaching Procedure.

TABLE 9

BLANK SPIKE/BLANK SPIKE DUPLICATE (BS/BSD) RECOVERY SUMMARY (PERCENT)
LOVE CANAL BAGGED WASTES
PHASE II SAMPLING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK
FEBRUARY - APRIL 1998

	Laboratory Control Limits	*Laboratory RPD Limits*						
		Extraction Date:	*02/13/98*					
			BS	*BSD*	*RPD*			
LDR Semi-Volatile Organics								
Fluoranthene	69-141	25	71	76	7			
Phenanthrene	74-126	25	71*	73*	2			
		Extraction Date:	*02/18/98*			*03/02/98*		
			BS	*BSD*	*RPD*	*BS*	*BSD*	*RPD*
LDR Chlorinated Pesticides								
alpha-BHC	37-134	15	98	103	5	100	100	1
gamma-BHC (Lindane)	32-127	23	102	108	5	102	100	2
beta-BHC	17-147	14	100	106	5	101	102	1
delta-BHC	19-140	22	107	112	5	106	105	2
Aldrin	42-122	15	99	104	5	98	99	1
		Extraction Date:	*02/12/98*					
			BS	*BSD*	*RPD*			
LDR TCLP Metals								
Lead	80-120		98	97	1			

TABLE 9

BLANK SPIKE/BLANK SPIKE DUPLICATE (BS/BSD) RECOVERY SUMMARY (PERCENT)
LOVE CANAL BAGGED WASTES
PHASE II SAMPLING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION
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	Laboratory Control Limits	*Laboratory RPD Limits*	*Extraction Date:*	*02/12/98*			*02/18/98*			*02/23/98*			*02/26/98*		
				BS	*BSD*	*RPD*	*BS*	*BSD*	*RPD*	*BS*	*BSD*	*RPD*	*BS*	*BSD*	*RPD*
PCDD/PCDF															
2,3,7,8-TCDD	50-150	30		98	97	1	102	100	2	102	100	2	99	101	2
1,2,3,7,8-PeCDD	50-150	30		104	102	2	110	111	1	110	111	1	104	108	4
1,2,3,4,7,8-HxCDD	50-150	30		102	103	1	113	113	0	113	113	0	109	113	4
1,2,3,6,7,8-HxCDD	50-150	30		105	101	4	112	117	4	112	117	4	111	113	2
1,2,3,7,8,9-HxCDD	50-150	30		101	100	1	104	106	2	108	109	1	106	105	1
2,3,7,8-TCDF	50-150	30		97	95	2	109	109	0	109	109	0	95	100	5
1,2,3,7,8-PeCDF	50-150	30		96	95	1	107	108	1	107	108	1	98	95	3
2,3,4,7,8-PeCDF	50-150	30		94	94	0	107	110	3	107	110	3	94	98	4
1,2,3,4,7,8-HxCDF	50-150	30		95	93	2	107	109	2	107	109	2	102	107	5
1,2,3,6,7,8-HxCDF	50-150	30		95	94	1	106	109	3	106	109	3	102	106	4
2,3,4,6,7,8-HxCDF	50-150	30		95	94	1	107	109	2	107	109	2	101	106	5
1,2,3,7,8,9-HxCDF	50-150	30		96	93	3	105	108	3	105	108	3	103	106	3

TABLE 9

BLANK SPIKE/BLANK SPIKE DUPLICATE (BS/BSD) RECOVERY SUMMARY (PERCENT)
LOVE CANAL BAGGED WASTES
PHASE II SAMPLING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK
FEBRUARY - APRIL 1998

	Laboratory Control Limits	*Laboratory RPD Limits*									
		Extraction Date:	*03/10/98*			*03/17/98*			*04/15/98*		
			BS	*BSD*	*RPD*	*BS*	*BSD*	*RPD*	*BS*	*BSD*	*RPD*
PCDDs/PCDFs											
2,3,7,8-TCDD	50-150	30	102	104	2	103	105	2	95	94	1
1,2,3,7,8-PeCDD	50-150	30	105	108	3	105	104	1	99	99	0
1,2,3,4,7,8-HxCDD	50-150	30	104	106	2	114	114	0	105	107	2
1,2,3,6,7,8-HxCDD	50-150	30	107	108	1	118	118	0	109	108	1
1,2,3,7,8,9-HxCDD	50-150	30	102	105	3	109	109	0	100	101	1
2,3,7,8-TCDF	50-150	30	106	109	3	90	89	1	98	97	1
1,2,3,7,8-PeCDF	50-150	30	109	111	2	94	95	1	100	98	2
2,3,4,7,8-PeCDF	50-150	30	108	110	2	95	93	2	99	98	1
1,2,3,4,7,8-HxCDF	50-150	30	106	110	4	102	104	2	102	101	1
1,2,3,6,7,8-HxCDF	50-150	30	110	112	2	104	104	0	102	100	2
1,2,3,7,8,9-HxCDF	50-150	30	109	111	2	104	105	1	101	101	0
1,2,3,7,8,9-HxCDF	50-150	30	111	112	1	104	101	3	103	102	1

Notes:
* QC outlier.
LDR Land Disposal Restriction.
PCDDs Polychlorinated Dibenzo-p-dioxins.
PCDFs Polychlorinated Dibenzofurans.
RPD Relative Percent Difference.

TABLE 10

FIELD DUPLICATE SUMMARY
LOVE CANAL BAGGED WASTES
PHASE II SAMPLING PROGRAMS
OCCIDENTAL CHEMICAL CORPORATION
NIAGARA FALLS, NEW YORK
FEBRUARY - APRIL 1998

Parameters	*Units*	*Location ID:*	*CS1 Comp 3*		
			Original	*Duplicate*	*RPD*
LDR Semi-Volatile Organics					
Fluoranthene	mg/Kg		ND 1.0	ND 1.0	*
Phenanthrene	mg/Kg		ND 1.0	ND 1.0	*

		HR Comp 38			*F Comp 40*		
		Original	*Duplicate*	*RPD*	*Original*	*Duplicate*	*RPD*
LDR Chlorinated Pesticides							
Aldrin	mg/Kg	ND 0.025	ND 0.025	*	-		-
delta-BHC	mg/Kg	-	-	-	ND 0.025	ND 0.025	*
beta-BHC	mg/Kg	-	-	-	0.040J	0.036J	22
alpha-BHC	mg/Kg	-	-	-	ND 0.025	ND 0.025	*
gamma-BHC (Lindane)	mg/Kg	-	-	-	ND 0.025	ND 0.025	*

		CS1 Comp 8		
		Original	*Duplicate*	*RPD*
LDR TCLP Metals				
Lead	mg/L	ND 0.10	ND 0.10	*

		CS1 Comp 2			*HR Comp 37*			*F Comp 22*		
		Original	*Duplicate*	*RPD*	*Original*	*Duplicate*	*RPD*	*Original*	*Duplicate*	*RPD*
PCDDs/PCDFs										
Total TCDD	µg/Kg	19	13	38	0.83	0.86	4	2.0	1.7	16
Total PeCDD	µg/Kg	0.35	0.32	9	0.56	0.59	5	0.76	0.45	51
Total HxCDD	µg/Kg	0.84J	0.48J	55	1.4	1.4	0	1.6	1.4	13
Total TCDF	µg/Kg	1.3J	0.86J	41	0.37	0.39	5	0.72J	0.66J	9
Total PeCDF	µg/Kg	0.38J	0.24J	45	0.38	0.41J	8	0.42J	0.42J	0
Total HxCDF	µg/Kg	0.15J	0.091J	49	0.22	0.23	4	0.20	0.21J	5

Notes:

* Not Applicable.
J Estimated.
LDR Land Disposal Restriction.
NDx Not detected at or above x.
PCDD Polychlorinated Dibenzo-p-dioxins.
PCDFs Polychlorinated Dibenzofurans.
TCLP Toxicity Characteristic Leaching Procedure.
RPD Relative Percent Difference.

ATTACHMENT A

CHAIN OF CUSTODY FORMS

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): ALTA

REFERENCE NUMBER: 7438

SAMPLER'S SIGNATURE: Wendy Herbst PRINTED NAME: Wendy Herbst

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS (PCBs / PCDF)	REMARKS
	2/4	1035	B1-95	Soil	1	✓	Lab B1 Composite #1
		1040	B1-124		1	✓	
		1050	B1-111		1	✓	
		1100	B1-107		1	✓	
		1115	B1-896		1	✓	Lab B2 Composite #2
		1145	B1-956		1	✓	
		1150	B1-1244		1	✓	
		1125	B1-11165		1		
		1150	B1-11133		1		Lab B2 composite 2A
		1145	B1-11123		1		
		1130	B1-1113		1		
		1125	B1-1103		1		Lab B1 Composite #3
		1425	B1-1918		1		
		1345	B1-1461		1		
		1410	B1-1801		1		
		1400	B1-1737		1		
		~~1435~~	~~B1-1518~~				
TOTAL NUMBER OF CONTAINERS					16	HEALTH/CHEMICAL HAZARDS	

RELINQUISHED BY: ① Wendy M. Herbst	DATE: 2/4/98 TIME: 4:05	RECEIVED BY: ② Tony manna	DATE: 2/4/98 TIME: 4:06
RELINQUISHED BY: ② Tony manna	DATE: 2/4/98 TIME: 5:00	RECEIVED BY: ③ Lou Fratt ALTA	DATE: 2-5-98 TIME: 1000
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: WAY BILL No.

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY:
DATE: TIME:
Nº NF-

1001 (D) OCT 31/94(NF) REV.0 (F-13)

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): [illegible]

REFERENCE NUMBER: 7136

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: David E. Bard

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS (MODIFIED)	REMARKS
	2/5/98	2145	B1-2201	Liq	1	✓	B1 Lab composite #4
		2210	B1-2610		1	✓	
		2215	B1-2689		1	✓	
		2225	B1-2612		1	✓	
		1135	B1-2955		1	✓	B1 Lab composite #5
		1140	B1-3134		1	✓	
		1155	B1-3276		1	✓	
		1215	B1-3562		1	✓	
		155	B1-3763		1	✓	B1 Lab Composite #6
		215	B1-3942		1	✓	
		230	B1-4172		1	✓	
		240	B1-4312		1	✓	
		310	B1-4580		1	✓	B1 Lab Composite #7
		320	B1-4397		1	✓	
		335	B1-4728		1	✓	
		350	B1-4865		1	✓	

TOTAL NUMBER OF CONTAINERS: 16 HEALTH/CHEMICAL HAZARDS:

RELINQUISHED BY: ①	DATE: TIME:	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④ [signature]	DATE: 2-6-98 TIME: 10:30

METHOD OF SHIPMENT: WAY BILL No.

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM: [signature] [signature]

RECEIVED FOR LABORATORY BY: [signature]
DATE: 2/6/98 TIME: 10:30

Nº NF- [illegible]

1001 (D) OCT 31/94(NF) REV 0 (E-13)

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): ALTA

REFERENCE NUMBER: 1438 Phase II Bag sampling

SAMPLER'S SIGNATURE: Dave Black / Wendy Herbst PRINTED NAME: Dave Black / Wendy Herbst

SEQ. No.	DATE	TIME	SAMPLE No.		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS ACDD/PCDF	REMARKS
	2/6/98	8:20	B1-5109	B1 Lab composite #8	Soil	1	✓	Lab composites
	2/6/98	9:40	B1-5255			1	✓	
	2/6/98	10:10	B1-5744			1	✓	
		10:05	B1-5457			1	✓	
		10:45	B1-5828	B1 Lab composite #9		1	✓	
		10:52	B1-6045			1	✓	
		11:02	B1-6251			1	✓	
		10:10	B1-6502			1	✓	
TOTAL NUMBER OF CONTAINERS						8	HEALTH/CHEMICAL HAZARDS	

RELINQUISHED BY: ① Dave Black	DATE: 2-6-98 TIME: 5:00 p.m.	RECEIVED BY: ② ALTA	DATE: 02/08 TIME: 2998 ? 2-7-98
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Federal Express WAY BILL No.

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM: Wendy Herbst, Dave Black

RECEIVED FOR LABORATORY BY: DATE: TIME: Nº NF-

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CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): ALTA

REFERENCE NUMBER: 7438 Phase II Bay Sampling

SAMPLER'S SIGNATURE: Dave Block / Wendy Herbst PRINTED NAME: Dave Block / Wendy Herbst

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS PCB's PCBs	REMARKS
	2/10/98	1:10	B1 - 68442 } B1 Composite #10	Soil	1	✓	Lab composite
		1:20	B1 - 6814		1	✓	
		1:40	B1 - 7054		1	✓	
		1:55	B1 - 7147		1	✓	
		3:00	~~B1~~ HR 9651 } ~~B1~~ HR Composite #11		1	✓	
		3:10	HR - 9639		1	✓	
		3:30	HR - 9615		1	✓	
		3:45	HR - 9688		1	✓	

TOTAL NUMBER OF CONTAINERS: 8 HEALTH/CHEMICAL HAZARDS:

RELINQUISHED BY: ① Dave Block	DATE: 2-10-98 TIME: 5:00 pm	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex WAY BILL No.

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM: Dave Block, Wendy M. Herbst

RECEIVED FOR LABORATORY BY: [signature] DATE: 2/11/98 TIME: 10:20

№ NF-

1001 (D) OCT 31/94(NF) REV.0 (F-13)

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): Alta

REFERENCE NUMBER: 7438

SAMPLER'S SIGNATURE: Dave Black PRINTED NAME: Dave Black

PARAMETERS: PCDF/PCDF

SEQ. No.	DATE	TIME	SAMPLE No.		SAMPLE TYPE	No. OF CONTAINERS		REMARKS
	2-11-98	9:20	F-15383	F composite #12	SOIL	1	/	Comp #12
		9:30	F-15393			1	/	
		9:45	F-15411			1	/	
		10:15	F-15417			1	/	
		11:00	F-15509	F composite #13		1	/	Comp #13
		11:15	F-15520			1	/	
		11:20	F-15530			1	/	
		11:30	F-15540			1	/	
		1:00	F-15638	F composite #14		1	/	Comp #14
		1:10	F-15645			1	/	
		1:20	F-15653			1	/	
		1:30	F-15674			1	/	
		2:00	F-15680	F composite #15		1	/	Comp #15
		2:30	F-15745			1	/	
		2:45	F-15774			1	/	
		2:10	F-15716			1	/	
TOTAL NUMBER OF CONTAINERS						16		HEALTH/CHEMICAL HAZARDS

RELINQUISHED BY: ① Dave Black 2-11-98	DATE: 2-11-98 TIME: 5:00	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: WAY BILL No.

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM: Dave Black

RECEIVED FOR LABORATORY BY: [signature] DATE: 2-12-98 TIME: 10:35

Nº NF-

1001 (D) OCT 31/94(NF) REV.0 (F-13)

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): ~~Conco~~ ALTA

REFERENCE NUMBER: 7438 Phase II
Low Level Bagged Waste

SAMPLER'S SIGNATURE: Dave Black / Wendy Hulbert
PRINTED NAME: Dave Black / Wendy Hulbert

SEQ. No.	DATE	TIME	SAMPLE No.		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: PCBs / PCDFs	REMARKS
	2/12/98	9:55	HR-9500	HR Composite #17	Soil	1	✓	
		10:10	HR-9538			1	✓	
		10:15	HR-9557			1	✓	
		10:30	HR-9579			1	✓	
		10:50	HR-9811	HR Composite #18		1	✓	
		11:10	HR-9822			1	✓	
		11:20	HR-9882			1	✓	
		11:45	HR-9859			1	✓	
						8		

TOTAL NUMBER OF CONTAINERS

HEALTH/CHEMICAL HAZARDS

RELINQUISHED BY: ① Dave Black	DATE: 2-12-98 TIME: 5:00	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT:

WAY BILL No.

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM: Dave Black
Wendy Hulbert

RECEIVED FOR LABORATORY BY: KnFAST ALTA
DATE: 2-12-98 TIME: 1000

Nº NF-

1001 (D) OCT 31/94(NF) REV.0 (F-13)

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): ~~En~~ ALTA

REFERENCE NUMBER: 7438
Phase II Investigation Bagged Waste

SAMPLER'S SIGNATURE: Dave Black / Wendy Hurbst PRINTED NAME: Dave Black / Wendy Hurbst

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE TYPE	No. CONTAINERS	PARAMETERS PCDD/PCDF	REMARKS
	2/12/98	7:10	F-15597 } F Composite	Soil	1	✓	Lab Composite
		7:20	F-15610 } #16		1	✓	
		7:30	F-15622		1	✓	
		7:45	F-15630		1	✓	
		1:10	HR-9917 } HR Composite		1	✓	
		1:20	HR-9935 } #19		1	✓	
		1:50	HR-9983		1	✓	
		2:10	HR-9990		1	✓	
		2:30	HR-9719 } HR Composite		1	✓	
		2:45	HR-9744 } #20		1	✓	
		3:00	HR-9765		1	✓	
		3:10	HR-9799		1	✓	
TOTAL NUMBER OF CONTAINERS					12	HEALTH/CHEMICAL HAZARDS	

RELINQUISHED BY: ① Dave Black	DATE: 2-12-98 TIME: 5:00	RECEIVED BY: ② Ken Pratt	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: WAY BILL No.

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM: 1. Dave Black
Wendy Hurbst

RECEIVED FOR LABORATORY BY: Ken Pratt ALTA
DATE: 2-13-98 TIME: 1000

№ NF-

1001 (D) OCT 31/94(NF) REV.0 (F-13)

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): Alta

REFERENCE NUMBER: 7438

SAMPLER'S SIGNATURE: Dave Black PRINTED NAME: Dave Black

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS PCB/PCDF	REMARKS
	2-13-98	6:00	FA 22104	Soil	1	-	
		6:10	FA 22205	composite 22A	1	-	
		6:20	FA 22306		1	-	
		6:30	FA 22407		1	-	
		11:20	F 15336		1	-	
		7:30	F 15351	composite 21	1	-	
		7:45	F 15360		1	-	
		8:00	F 15368		1	-	
		8:15	F 15424		1	-	
		8:25	F 15431	composite 22	1	-	
		9:00	F 15442		1	-	
		9:15	F 15458		1	-	
		10:40	F 15552		1	-	
		11:00	F 15564	composite 23	1	-	
		11:10	F 15573		1	-	
		11:20	F 15588		1	-	

TOTAL NUMBER OF CONTAINERS: 16 HEALTH/CHEMICAL HAZARDS

RELINQUISHED BY ① Dave Black	DATE: 2-13-98 TIME: 1:30	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: WAY BILL No.

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM: Dave Black

RECEIVED FOR LABORATORY BY: [illegible] DATE: 2-14-98 TIME: 1000

Nº NF-

1001 (D) OCT 31/94(NF) REV.0 (F-13)

CHAIN OF CUSTODY RECORD

TredTek - CRA COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): Alta

REFERENCE NUMBER: 7438

SAMPLER'S SIGNATURE: Dave Black PRINTED NAME: Dave Black

SEQ. No.	DATE	TIME	SAMPLE No.		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS PCDD/PCDF	REMARKS
	2-18-98	1:30	F 15293	Lab Composite #24	SOIL	1	✓	24
		1:45	F 15310			1	✓	
		2:00	F 15320			1	✓	
		2:15	F 15330			1	✓	
		3:00	F 15215	Lab Composite #25		1	✓	25
		3:10	F 15223			1	✓	
		3:20	F 15236			1	✓	
		3:30	F 15244			1	✓	
TOTAL NUMBER OF CONTAINERS						8	HEALTH/CHEMICAL HAZARDS	

RELINQUISHED BY: ① Dave Black	DATE: 2-18-98 TIME: 5:00	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: WAY BILL No.

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM: Dave Black

RECEIVED FOR LABORATORY BY:
DATE: 2-19-98 TIME: 1000

Nº NF-

1001 (D) OCT 31/94(NF) REV.0 (F-13)

CHAIN OF CUSTODY RECORD

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): Alta

REFERENCE NUMBER: 7438

SAMPLER'S SIGNATURE: Dave Black/Craig Hebbardt PRINTED NAME: Dave Black/Craig Hebbardt

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS PCDD/PCDF	REMARKS
	2-24-98	10:25	B2 9125 } Lab Composite #26	Soil	1	✓	
		10:35	B2 9404		1	✓	
		10:45	B2 9338		1	✓	
		10:55	B2 9158		1	✓	
		10:10	B2 7988 } Lab Composite #27		1	✓	
		10:25	B2 8147		1	✓	
		10:40	B2 8264		1	✓	
		10:50	B2 8330		1	✓	
		11:05	B2 8508 } Lab Composite #28		1	✓	
		11:30	B2 8561		1	✓	
		11:45	B2 8616		1	✓	
		12:10	B2 8740		1	✓	
		1:45	B2 8765 } Lab Composite #29		1	✓	
		2:00	B2 8921		1	✓	
		2:15	B2 9046		1	✓	
		2:30	B2 9101		1	✓	
TOTAL NUMBER OF CONTAINERS					16	HEALTH/CHEMICAL HAZARDS	

RELINQUISHED BY: ① Dave Black	DATE: 2-24-98 TIME: 5:20pm	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Federal Express WAY BILL No.

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM: Dave Black Craig Hebbardt

RECEIVED FOR LABORATORY BY: [illegible] for

DATE: 2-25-98 TIME: 1000

№ NF-

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304, (716)297-2160

SHIPPED TO (Laboratory Name): Alta

REFERENCE NUMBER: 7438 1 of 2

SAMPLER'S SIGNATURE: Dave Black/Craig Gebhardt PRINTED NAME: Dave Black Craig Gebhardt

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS (RCRA/PCB)	REMARKS
	5-25-98	7:45	HR 10028 } Lab	SOIL	1	✓	
		8:00	HR 10049 } Composite		1	✓	
		8:10	HR 10076 } #30		1	✓	
		8:20	HR 10105		1	✓	
		8:20	HR 10205 } Lab		1	✓	
		8:30	HR 10219 } Composite		1	✓	
		8:40	HR 10224 } #31		1	✓	
		9:02	HR 10213		1	✓	
		8:30	HR 10329 } Lab		1	✓	
		10:15	HR 10385 } composite		1	✓	
		10:30	HR 10395 } #32		1	✓	
		10:45	HR 10361		1	✓	
		11:00	HR 10257 } Lab		1	✓	
		11:15	HR 10275 } Composite		1	✓	
		11:30	HR 10295 } #33		1	✓	
		11:45	HR 10308		1	✓	
TOTAL NUMBER OF CONTAINERS					16	HEALTH/CHEMICAL HAZARDS	

RELINQUISHED BY: ① Dave Black	DATE: 5-25-98 TIME: 5:00 pm	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Federal Express WAY BILL No.

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Goldenrod –Sampler Copy

SAMPLE TEAM: Dave Black Craig Gebhardt

RECEIVED FOR LABORATORY BY: [illegible] DATE: 2/26/98 TIME: 12:00

№ NF- [illegible]

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): Alta

REFERENCE NUMBER: 7458 2 of 2

SAMPLER'S SIGNATURE: Dave Black Craig Gebhardt PRINTED NAME: Dave Black Craig Gebhardt

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS PCB/PCP	REMARKS
	2-25-98	1:00	HR 10523 } Lab	Soil	1	✓	
		1:15	HR 10462 } Composite		1	✓	
		1:30	HR 10485 } #34		1	✓	
		1:45	HR 10447		1	✓	
		2:00	HR 10534 } Lab		1	✓	
		2:15	HR 10544 } Composite		1	✓	
		2:30	HR 10559 } #35		1	✓	
		2:45	HR 10551		1	✓	
		3:00	HR 10944 } Lab		1	✓	
		3:15	HR 10854 } Composite		1	✓	
		3:30	HR 10901 } #36		1	✓	
		3:45	HR 10887		1	✓	

TOTAL NUMBER OF CONTAINERS: 12 HEALTH/CHEMICAL HAZARDS:

RELINQUISHED BY: ① Dave Black	DATE: 5-25-98 TIME: 5:02pm	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

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SAMPLE TEAM: Dave Black Craig Gebhardt

RECEIVED FOR LABORATORY BY: [signature] DATE: 2/26/98 TIME: 12:00

Nº NF-

1001 (D) OCT 31/94(NF) REV 0 (F-13)

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): Alta

REFERENCE NUMBER: 7438

SAMPLER'S SIGNATURE: Dave Black/Craig Gebhardt PRINTED NAME: Dave Black/Craig Gebhardt

SEQ. No.	DATE	TIME	SAMPLE No.		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS ACID/BDF	REMARKS
	2-26-98	6:45	HR 37001	Lab	SOIL	1	✓	
		7:00	HR 37002	composite		1	✓	
		7:15	HR 37003	# 37A		1	✓	
		7:30	HR 37004			1	✓	
		7:45	HR 10751	Lab		1	✓	
		8:00	HR 10828	composite		1	✓	
		8:15	HR 10780	# 37		1	✓	
		8:30	HR 10840			1	✓	
		9:30	HR 10713	Lab		1	✓	
		10:00	HR 10654	composite		1	✓	
		10:30	HR 10693	# 38		1	✓	
		11:02	HR 10677			1	✓	
		13:55	F 14855	Lab		1	✓	
		14:05	F 14818	composite		1	✓	
		15:15	F 14828	# 39		1	✓	
		14:20	F 14845			1	✓	
TOTAL NUMBER OF CONTAINERS						16	HEALTH/CHEMICAL HAZARDS	

RELINQUISHED BY: ① Dave Black	DATE: 2-26-98 TIME: 5:00	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed X

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SAMPLE TEAM: Dave Black, Craig Gebhardt

RECEIVED FOR LABORATORY BY:

DATE: 2-27-98 TIME: 11:00

Nº NF-

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): Alta

REFERENCE NUMBER: 7438

SAMPLER'S SIGNATURE: Dave Black/Craig Gebhardt PRINTED NAME: Dave Black/Craig Gebhardt

SEQ. No.	DATE	TIME	SAMPLE No.		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS RCRA PCBs	REMARKS
	2-26-98	2:00	F 14865	Lab Composite #40	SOIL	1	✓	
		2:15	F 14875			1	✓	
		2:30	F 14885			1	✓	
		2:45	F 14901			1	✓	
		3:30	F 14942	Lab Composite #41		1	✓	
		3:15	F 14920			1	✓	
		15:20	F 14931			1	✓	
		15:30	F 14908			1	✓	
TOTAL NUMBER OF CONTAINERS						8	HEALTH/CHEMICAL HAZARDS	

RELINQUISHED BY: ① Dave Black	DATE: 2-26-98 TIME: 5:02	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed X WAY BILL No.

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SAMPLE TEAM: Dave Black, Craig Gebhardt

RECEIVED FOR LABORATORY BY: DATE: 2-27-98 TIME: 11:00

Nº NF- 8

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): Alta

REFERENCE NUMBER: 7438

SAMPLER'S SIGNATURE: Dave Black PRINTED NAME: Dave Black

SEQ. No.	DATE	TIME	SAMPLE No.		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS RCRA RDF	REMARKS
	2-27-98	8:00	F 15077	Lab	SOIL	1	✓	
		8:15	F 15083	Composite		1	✓	
		8:30	F 15091	#42		1	✓	
		8:45	F 15097			1	✓	
		9:00	F 15255	Lab		1	✓	
		9:15	F 15266	composite		1	✓	
		9:30	F 15275	#43		1	✓	
		9:45	F 15286			1	✓	
		11:00	F 15199	Lab		1	✓	
		11:15	F 15180	Composite		1	✓	
		11:30	F 15169	#44		1	✓	
		11:45	F 15190			1	✓	
		12:00	F 15467	Lab		1	✓	
		12:10	F 15483	Composite		1	✓	
		12:20	F 15494	#45		1	✓	
		12:30	F 15504			1	✓	
TOTAL NUMBER OF CONTAINERS						16	HEALTH/CHEMICAL HAZARDS	

RELINQUISHED BY: ① Dave Black	DATE: 2-27-98 TIME: 5:00 pm	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed X WAY BILL No.

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SAMPLE TEAM: Dave Black

RECEIVED FOR LABORATORY BY: Ken Pratt
DATE: 2-28-98 TIME: 1000

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CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): ALTA

REFERENCE NUMBER: 7438 Occidental Chemical Corp

SAMPLER'S SIGNATURE: David Craig / Craig Gebhardt PRINTED NAME: David Craig / Craig Gebhardt

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE TYPE	No. CONTAINERS	PARAMETERS PCDD/PCDF	REMARKS
	4/1/98	9:30	F 14956	Soil	1	✓	
	4/1/98	9:35	F 14952	LAB COMPOSITE	1	✓	
	4/1/98	9:40	F 14950	#46	1	✓	
	4/1/98	9:45	F 14948		1	✓	
	4/1/98	9:50	F 15063		1	✓	
	4/1/98	10:10	F 15067	LAB COMPOSIT	1	✓	
	4/1/98	10:20	F 15069	#47	1	✓	
	4/1/98	10:30	F 15073		1	✓	
	4/1/98	10:40	F 15161		1	✓	
	4/1/98	10:50	F 15159	LAB COMPOSIT	1	✓	
	4/1/98	11:00	F 15153	#48	1	✓	
	4/1/98	11:05	F 15157		1	✓	
	4/1/98	1120	CSB-729	Lab composit	1	✓	
		1240	CSB-760	#50	1	✓	
		1230	CSB-792		1	✓	
		1570	CSB-1010	Lab composit	1	✓	
	↓	1450	CSB-1039	#51	1	✓	
TOTAL NUMBER OF CONTAINERS						HEALTH/CHEMICAL HAZARDS	

RELINQUISHED BY: ① Craig Gebhardt	DATE: 4/1/98 TIME: 5:00 PM	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

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SAMPLE TEAM: D. Craig C. Gebhardt

RECEIVED FOR LABORATORY BY: DATE: 4-2-98 TIME: 11:00

№ NF-

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): A/ta

REFERENCE NUMBER: 743t
Occidental Chemical Corp

SAMPLER'S SIGNATURE: David Gnage / Craig Gebhardt
PRINTED NAME: D. David Gnage C. Craig Gebhardt

SEQ. No.	DATE	TIME	SAMPLE No.		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS 8260/1020	REMARKS
	4/1/98	1210	CSB-1053	Lab Composit #51	soil	1	/	
		1345	CSB-1087			1	/	
		1425	CSB-1122			1	/	
		1155	CSB-1137	Lab Composit #52		1	/	
		1206	CSB-1178			1	/	
		1355	CSB-1200			1	/	
		1415	CSB-1208			1	/	
		1520	CSB-1265	Lab Composit #53		1	/	
		1525	CSB-1274			1	/	
		1515	CSB-1289			1	/	
		1500	CSB-1302			1	/	
		1445	CSB-1312	Lab Composit #54		1	/	
		1430	CSB-1322			1	/	
		1130	CSB-1398			1	/	
		1145	CSB-1419	Lab Composit #55		1	/	
	↓	1405	CSB-1437		↓	1	/	

TOTAL NUMBER OF CONTAINERS

HEALTH/CHEMICAL HAZARDS

RELINQUISHED BY: ① Craig Gebhardt	DATE: 4/1/98 TIME: 5:00 P.M.	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed-Ex

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SAMPLE TEAM: D. Gnage, C. Gebhardt

RECEIVED FOR LABORATORY BY:

DATE: 4-2-98 TIME: 11:00

Nº NF-

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CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY

2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716) 297-2180

SHIPPED TO (Laboratory Name): Encotec

REFERENCE NUMBER: 7438

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: David E. Black

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS	REMARKS
	02/04/98	10:25	BI-95 Comp 1	Soil	1		
	2/4/98	10:40	BI-124 Comp 1	"	1		
	2/4/98	10:50	BI-A1 Comp 1	"	1		
	2/4/98	11:00	BI-707 Comp 1	"	1		
	2/4/98	10:25	BI-95 MS/MSD	"	1		
	2/4/98	10:40	BI-124 MS/MSD Comp 1	"	1		
	2/4/98	10:50	BI-191 MS/MSD	"	1		
	2/4/98	11:00	BI-707 MS/MSD	"	1		
	2/4/98	11:20	BI-896 Comp 2	"	1		
	2/4/98	11:25	BI-1165 Comp 2	"	1		
	2/4/98	11:45	BI-956 Comp 2	"	1		
	2/4/98	11:50	BI-1247 Comp 2	"	1		
	2/4/98	13:35	BI-1469 Comp 3	"	1		
	2/4/98	14:00	BI-1737 Comp 3	"	1		
	2/4/98	14:10	BI-1801 Comp 3	"	1		
	2/4/98	14:25	BI-1918 Comp 3	"	1		
TOTAL NUMBER OF CONTAINERS					16	HEALTH/CHEMICAL HAZARDS	

RELINQUISHED BY: ① [signature]	DATE: 02/04/98 TIME: 5:00 pm	RECEIVED BY: ② [signature] M. Johnston	DATE: 2/5/98 TIME: 9am
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: BI Lab Comp #1 WAY BILL No.

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SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: [signature] M. Johnston
DATE: 2/5/98 TIME: 9am

Nº NF-2568

1001 (D) OCT 31/94(NF) REV.0 (F-13)

619

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): EncoTec

REFERENCE NUMBER: 7438

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: David C. Black

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: Fluoranthene, Phenanthrene	REMARKS
	2/4/98	13:45	B1-11102 Comp 3A	Soil	1		
	2/4/98	14:00	B1-11112 Comp 3A	"	1		
	2/4/98	14:10	B1-11122 Comp 3A	"	1		
	2/4/98	14:25	B1-11132 Comp 3A	"	1		

TOTAL NUMBER OF CONTAINERS: 4 HEALTH/CHEMICAL HAZARDS:

RELINQUISHED BY: ① [signature]	DATE: 2/04/98 TIME: 5:00pm	RECEIVED BY: ② [signature] M. Johnston	DATE: 2/5/98 TIME: 9 am
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: WAY BILL No.

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SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: [signature] M. Johnston NF-2572
DATE: 2/5/98 TIME: 9 am

1001 (D) OCT 31/94(NF) REV.0 (F-13)

020

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): Enetec

REFERENCE NUMBER: 7438

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: [illegible] / David E Black

PARAMETERS: Fluorenthene/Phenanthrene

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE TYPE	No. OF CONTAINERS		REMARKS
	2/5/98	0900	B1-2610	Soil	1	-	B1 Lab Composite #4
		0945	B1-2201	#4	1	-	
		0915	B1-2689		1	-	
		0925	B1-2672		1	✓	
		1105	B1-2165		1	-	B1 Lab Composite #5
		1140	B1-3134	#5	1	-	
		1155	B1-3276		1	-	
		1215	B1-3502		1	✓	
		1:55	B1-3763		1	✓	B1 Lab Composite #6
		2:15	B1-3942	#6	1	✓	
		2:30	B1-4172		1	✓	
		2:40	B1-4312		1	✓	
		300	B1-4397		1	✓	B1 Lab Composite #7
		310	B1-4580	#7	1	✓	
		335	B1-4728		1	✓	
		350	B1-4865		1	✓	

TOTAL NUMBER OF CONTAINERS: 16 HEALTH/CHEMICAL HAZARDS

RELINQUISHED BY:	DATE: / TIME:	RECEIVED BY:	DATE: / TIME:
①		②	
RELINQUISHED BY: ②	DATE: / TIME:	RECEIVED BY: ③	DATE: / TIME:
RELINQUISHED BY: ③	DATE: / TIME:	RECEIVED BY: ④	DATE: / TIME:

229

METHOD OF SHIPMENT: WAY BILL No.

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SAMPLE TEAM: [signature] / Dan E Black

RECEIVED FOR LABORATORY BY: S Dawkins
DATE: 2-6-98 TIME: 9:15 am
Nº NF-

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CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): EncoTec

REFERENCE NUMBER: 7438 Love Canal Phase II

SAMPLER'S SIGNATURE: Dave Black / Wendy Hulsat PRINTED NAME: Dave Black / Wendy Hulsat

SEQ. No.	DATE	TIME	SAMPLE No.		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: Fluoranthene / Phenanthrene / TCLP Lead	REMARKS
	2/6/98	~~8:55~~ 9:20	B1-5709		Soil	3	1 2	Lab Composited
		9:40	B1-5255	B1 Composite #8		3	1 2	
		10:05	B1-5457	MS/Dup		3	1 2	
		10:10	B1-5744			3	1 2	
		8:35	B1-14666	B1-Composite 8A		1	1	
		8:55	B1-36608			1	1	
		9:00	B1-41669			1	1	
		8:50	B1-26667			1	1	
		10:45	B1-5828	B1 Composite #9		1	1	
		10:50	B1-6045			1	1	
		11:00	B1-6251			1	1	
		12:10	B1-6500			1	1	

TOTAL NUMBER OF CONTAINERS: 20 HEALTH/CHEMICAL HAZARDS

RELINQUISHED BY: ① Dave Black	DATE: 2-6-98 TIME: 5:00pm	RECEIVED BY: ② Erma M. Johnston	DATE: 2/7/98 TIME: 9:30am
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Federal Express WAY BILL No.

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SAMPLE TEAM: Wendy Hulsat, Dave Black

RECEIVED FOR LABORATORY BY: Erma M. Johnston Nº NF-
DATE: 2/7/98 TIME: 9:30am

1001 (D) OCT 31/94(NF) REV.0 (F-13)

623

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): EnCoTec

REFERENCE NUMBER: 7438
Phase II Bay Sampling

SAMPLER'S SIGNATURE: Dave Black / Wendy Herbst
PRINTED NAME: Dave Black / Wendy Herbst

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS	REMARKS
	2-10-98	1:10	B1-6642 B1 Composite	Soil	1		Lab composite
	"	1:20	B1-6644 thru 10	"	"	"	
	"	1:40	B1-7054	"	"	"	
	"	1:55	B1-7147	"	"	"	
TOTAL NUMBER OF CONTAINERS					4	HEALTH/CHEMICAL HAZARDS	

RELINQUISHED BY: ① Dave Black 2-10-98	DATE: ~~2-10-98~~ 2-10-98 TIME: 5:00 pm	RECEIVED BY: ② Erin M. Johnston	DATE: 2/11/98 TIME: 9 am
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: WAY BILL No.

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM: Dave Black, Wendy Herbst

RECEIVED FOR LABORATORY BY: Erin M. Johnston
DATE: 2/11/98 TIME: 9 am
Nº NF-

624

CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): Encotec

REFERENCE NUMBER: 7438

SAMPLER'S SIGNATURE: Dave Black / Craig Gebhardt PRINTED NAME: Dave Black / Craig Gebhardt

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: Aldrin	Aldrin MS/MSD	BHCs	REMARKS
	2-26-98	9:30	HR 10713	Lab Composite #38	SOIL 2	✓	✓		
		10:00	HR 10654		2	✓	✓		
		10:30	HR 10693		2	✓	✓		
		11:00	HR 10677		2	✓	✓		
		8:40	HR 38001	Lab Composite #38A	1	✓		✓	
		8:50	HR 38002		1	✓		✓	
		9:00	HR 38003		1	✓		✓	
		9:15	HR 38004		1	✓		✓	
		2:00	F 14865	Lab Composite #40	1			✓	
		2:15	F 14875		1			✓	
		2:30	F 14855		1			✓	
		2:45	F 14901		1			✓	
		1:00	F 40001	Lab Composite #40A	1			✓	
		1:15	F 40002		1			✓	
		1:30	F 40003		1			✓	
		1:45	F 40004		1			✓	

TOTAL NUMBER OF CONTAINERS: 20 HEALTH/CHEMICAL HAZARDS:

RELINQUISHED BY: ① Dave Black	DATE: 2-26-98 TIME: 5:00 p.m.	RECEIVED BY: ②	DATE: 2/27/98 TIME: 0900
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Federal Express. WAY BILL No.

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Goldenrod -Sampler Copy

SAMPLE TEAM: Dave Black, Craig Gebhardt

RECEIVED FOR LABORATORY BY: DATE: 2/27/98 TIME: 0900

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CHAIN OF CUSTODY RECORD

TreaTek - CRA™ COMPANY
2055 Niagara Falls Blvd. Suite Three
Niagara Falls, NY 14304 (716)297-2160

SHIPPED TO (Laboratory Name): EncoTec

REFERENCE NUMBER: 7438 Phase II

SAMPLER'S SIGNATURE: Dave Black PRINTED NAME: Dave Black

SEQ. No.	DATE	TIME	SAMPLE No.		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: Btex	REMARKS
	2/11/98	9:20	F - 15383	F Composite #2 + MS/MSD	Soil	2	✓	Lab composite
		9:45	F - 15411			2	✓	
		10:15	F - 15417			2	✓	
		9:30	F - 15393		1	2	✓	

TOTAL NUMBER OF CONTAINERS: 8 HEALTH/CHEMICAL HAZARDS:

RELINQUISHED BY: ① Dave Black	DATE: 2-11-98 TIME: 5:00	RECEIVED BY: ② Erin M. Johnston	DATE: 2/12/98 TIME: 9am
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: WAY BILL No.

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: Dave Black

RECEIVED FOR LABORATORY BY: Erin M Johnston DATE: 2/12/98 TIME: 9am

Nº NF-

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