Department of Energy
Albuquerque Operations Office
Los Alamos Area Office
Los Alamos, New Mexico 87544

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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Lou Roberts
Acting PCB Spill Coordinator
TSCA Program
Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Dear Ms. Roberts:

Subject: Status of Investigations of PCB Contamination Detected at the Sanitary Wastewater Systems Consolidation (SWSC) Plant

The purpose of this letter is to provide the status of Los Alamos National Laboratory's (LANL) investigations of the potential PCB spill into its SWSC Plant that was reported to the U.S. Environmental Protection Agency (EPA) on May 15, 1996. This letter also provides certain information you requested about the sampling methods and notifications. In brief, LANL believes that the 130 ppm PCB concentration was a discrete piece of PCB-contaminated material that may have been dislodged during routine line-cleaning operations. While LANL's initial actions focused on identifying the source of the high concentration, further actions focused on moving upstream from the SWSC Plant to target specific Technical Areas (TA) or clusters of TAs where PCB transformers and capacitors historically have been used to determine if a specific source or source area could be identified.

BACKGROUND

In 1992, LANL consolidated its various site sanitary collection systems into the SWSC Plant. Prior to 1992, sanitary waste went to eight site sanitary systems and various septic tanks which were pumped routinely. Since 1994, grit and screenings samples from the SWSC Plant have been characterized to meet the disposal requirements at the Los Alamos County Landfill under the New Mexico Solid Waste Management Regulations (NMSWMR). To comply with the sludge land application requirements at 40 CFR Part 503, sludge samples are taken and analyzed prior to land application of the sludge. LANL now characterizes each dumpster of grit and screenings, and each wasted sludge bed separately.

LANL discovered a potential spill at the SWSC Plant on May 13, 1996, when it reviewed the data from a sample of grit and screenings taken on April 9, 1996, which indicated elevated PCB concentrations. Preliminary analytical data was received on May 13, 1996 and was verified by the morning of May 14, 1996.

The PCB concentration in the grit and screenings sample was 130 mg/kg Aroclor 1260. The prior sampling event on December 13, 1995 detected low levels of PCBs ranging from non-detectable to 5.4 ppm. This was consistent with the levels of PCBs detected in grit and screenings over the previous two years.

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After the elevated PCB concentration (130 ppm) was discovered, LANL took the following actions:

1. On May 13, 1996, the SWSC Plant was notified to hold the grit and screenings in the dumpster until further notice.

2. On May 15, 1996, land application of sludge was suspended until additional analytical data from each dried sludge pile could be obtained; the National Response Center (NRC) was notified by telephone; and Lou Roberts of EPA Region 6 was notified by voice mail.

3. On May 16, 1996, the New Mexico Surface Water Quality Bureau was notified.

4. On May 17, 1996, Lou Roberts was contacted by telephone.

5. On May 20, 1996, the San Ildefonso Pueblo was notified because it is downstream of the SWSC Plant and the discharge point, even though there was no evidence of PCB concentrations in the SWSC Plant's liquid effluent.

LANL took several steps to determine if the 130 ppm PCB concentration was valid. As stated earlier, LANL requested the contract laboratory to verify the original analytical data. This validation was received on May 14, 1996. Because grit and screenings are very heterogeneous, LANL took two actions to further verify the concentration of the material: (1) The dumpster from which the 130 ppm PCBs grit and screening material was collected was sampled on May 22, 1996, and the analyses were consistent with the previously detected low levels of PCBs (ranging from 0.21 to 5.4 ppm) measured in the grit and screenings at the SWSC Plant; and (2) the original sample extract was reanalyzed and a concentration of 120 ppm was detected, which is reasonably comparable with the 130 ppm originally detected. The laboratory retained the remainder of the original sample; this was analyzed although holding times on this material had been exceeded. The concentration of PCBs in the remainder of the sample material was 15 ppm. These results were received on October 1, 1996 from the contract laboratory and validated internally on October 17, 1996. PCB analysis was conducted in accordance with EPA method SW846-8080A.

RESULTS OF INVESTIGATIONS

LANL took the following actions to investigate the event and determine the source of the PCBs: (1) A more rigorous sampling program was initiated at the SWSC Plant, specifically focused on characterizing the PCBs at the plant to determine if a release could be occurring; (2) a records review of recent sewer line maintenance activities, daily SWSC Plant inspections, and PCB spill reports was initiated; (3) existing programs to control discharges into the SWSC were reviewed; and (4) a sanitary collection system manhole sampling program was initiated to identify a potential source(s) area for the elevated PCB concentration.

SWSC SAMPLING PROGRAM

The more rigorous PCB sampling program at the SWSC Plant focused on sampling grit and screenings and influent and effluent weekly for three weeks, then monthly through September 1996. Each of the 19 piles of stockpiled sludge awaiting land application were sampled. Attachment 1, entitled *Final Report; Special Monitoring Project for PCBs; SWSC Plant Sanitary Treatment Solids,* summarizes the sampling program and includes tables which identify the analytical results. Table 3.0 summarizes the analytical results of the grit and screenings samples; Table 4.0 summarizes the analytical results of the sludge samples; and Table 5.0 summarizes the analytical results of the influent and effluent samples. An abbreviated sampling program continued through the end of 1996, influent and effluent were sampled and analyzed monthly,

and sludge beds wasted after August, 1996, were sampled and analyzed. Results obtained from the abbreviated sampling program are tabulated in Attachment 2.

Grit and screenings were sampled and analyzed separately to determine if PCBs were differentially present. Concentrations of total PCBs in the grit ranged from nondetectable to 7.2 ppm, and in the screenings ranged from nondetectable to 0.7 ppm. Analysis of each bed of dried sludge indicated that very low concentrations of total PCBs ranging from 0.49 to 4.38 ppm are consistently present in the sludge. EPA method SW846-8080A was used for analysis of the grit, screenings, and sludge. PCBs were detected in the influent on three occasions ranging from 0.00028 to 0.0026 ppm. PCBs were not detected in the effluent. EPA Test Method 608 was used for the analysis of both the influent and effluent.

RECORDS REVIEW

Sewer line maintenance records review did not identify any event that could be correlated to the 130 ppm PCB concentration detected at the entrance works of the SWSC Plant. Sewer line maintenance records from fall, 1995 through April, 1996 were reviewed to determine if routine maintenance activities could have dislodged legacy PCB contamination. No obvious relationships between the time of maintenance activities and the occurrence of the elevated PCB concentration were identified, although several of the maintenance activities were in the areas where historical spills of PCBs had occurred.

Daily inspection records from the SWSC Plant were reviewed to determine if any unusual events were observed just prior to April 9, 1996. The Daily Walkthrough and Maintenance Schedule reports were reviewed, and no unusual discolorations or observations were recorded.

PCB Spill Reports for 1995 through March, 1996 were reviewed, and no potential avenues to the sanitary collection lines were identified. An historical spill at TA-53 -3A was reported to the EPA in January, 1996, and cleaned up by March, 1996. During cleanup, no discharge of PCBs to a drain occurred.

Historical PCB spill records and transformer records were reviewed to determine if there could have been any contributions from historical sources. PCB spills have occurred throughout the TAs where PCB transformers and capacitors have been historically used. PCB-containing equipment, such as transformers and capacitors, have been located near floor drains, and spills have occurred in proximity to floor drains. Spill reports indicate cleanups were completed; however, PCBs could potentially have made their way into the sewer lines in the past and could have been recently dislodged by routine sewer line cleaning operations.

EXISTING PROGRAMS

LANL has undertaken several major projects since the early 1990s to improve the characterization of and define which waste streams may enter the SWSC Plant, including completion of a Waste Stream Characterization (WSC) and remediation project, and development and implementation of a Waste Acceptance Criteria (WAC) document. LANL has completed a WSC survey which identified 7,600 findings. A finding was as specific as a floor drain, a sink, a collection system, or an outfall. The WSC survey identified potential contaminates from a drain, sink, pipe, or other type of discharge point and recommended changes to conform to the NPDES permit requirements. The changes included replumbing systems, plugging drains, or properly permitting the discharge. Corrective activities for all 7,600 findings were completed by March 31, 1997.

LANL's waste profile system has been modified to include sanitary waste streams as well as hazardous and radioactive waste streams. A WAC document has been developed defining the types of waste streams and constituents that are acceptable for disposal into the SWSC Plant.

The acceptable concentration for PCBs is nondetectable, which is correlated to the minimum quantitation limit for EPA Test Method 608 and which is 0.001 ppm according to EPA Region 6 Surface Water Branch policy. The WAC has been finalized and is being implemented; final approval by LANL management is expected by early summer 1997. Administrative controls in place include LANL's *Spill Prevention Control and Countermeasures Plan,* which requires secondary containment for transformers located near a source of potential for release to the environment, including floor drains, and administrative controls instituted through laboratory standard procedures that specify that hazardous constituents or chemicals may not be disposed of through sinks or drains.

MANHOLE SAMPLING PROGRAM

LANL initiated a survey of the sanitary collection system in order to identify potential sources of PCBs already in the system or entering the system. Strategically located manholes were sampled and analyzed for PCBs in order to obtain a "snapshot" view of PCB concentrations within the system, and were coordinated to include the summer, 1996 line maintenance activities. Manholes were chosen to isolate TAs where historically cleaned-up spills of significant volumes of PCB fluids could have contributed PCBs to the SWSC collection system. The goal of the survey was to determine which additional strategically located manholes should be sampled and analyzed to further pinpoint any potential source area(s) and, if possible, to isolate a TA or group of TAs as a potential source(s). LANL planned that each subsequent strategic manhole sampling event would further isolate portions of collection system lines or buildings with significant concentrations of PCBs in the system that are comparable to or higher than the low levels detected in the SWSC Plant grit and screenings. If such areas are identified, LANL would attempt to trace back to known spill events or areas where PCB equipment has been or is still located. At each step of the investigation, the collected data will be reviewed to determine what further activities are necessary.

Three separate sampling events were conducted. Samples were collected and analyzed from the summer, 1996 jet rodding activities. The lines were cleaned by running the jet rodder against the flow in the line so that material scoured from the pipe walls would flow down-line to a collection point. A video camera was then run through the line to determine if the line had been cleaned out. If the lines were not clean enough, the workers would go back through the line with the jet rodder to scour the line until it was clean. Samples of the scoured material were collected and analyzed for PCBs. The TAs where lines were cleaned during the summer, 1996 activities included TAs 3, 9, 15, 16, 21, 35, 46, 48, 52, 53, and 63. After the maintenance activities were complete, the samples were analyzed and the data reviewed to determine if additional locations were needed. The additional two sampling events focused on filling in data gaps to obtain an overall picture of the potential dissemination of PCBs in the sanitary collection system.

PCB concentrations from the summer, 1996 sampling event ranged from 0.211 ppm to 5.86 ppm in the sediments, and ranged from nondetectable to 0.218 ppm in the liquid. These samples should have the highest concentrations because the lines were being scoured, and any sediment or oily sludge in the lines would be mobilized. PCB concentrations from the January and February, 1997 sampling events were nondetectable for liquids, and ranged from nondetectable to 2.52 ppm for sediments. Analytical results from the summer, 1996 sampling event, as well as the two subsequent sampling events in January and February, 1997, are presented in Attachment 2. LANL plans to collect and analyze samples from the summer, 1997 sewer line maintenance activities to further define its understanding of the presence of low concentrations of PCBs in the sanitary collection system.

CONCLUSIONS

At this time, we believe the source of continuing low concentrations of PCBs in grit and screenings and sludge to be legacy contamination from past PCB spill events to the sewage

collection system. The manhole sampling project identified low concentrations of PCBs, <1 ppm, are present virtually throughout the system. The areas with higher concentrations, between 1 ppm and 6 ppm PCBs, are located within TAs 3, 43, and 53, and previous sampling at TA-21 detected 7.6 ppm PCBs. PCB spill reports were reviewed and compared against the Wastewater Stream Characterization reports to identify if there were any direct correlations between spills inside buildings and nearby floor drain locations discharging to the sanitary collection system. While no direct connections could be identified, spills from PCB equipment have occurred near floor drains connected at one time to the sanitary collection system. In addition, some historical spill sites outside of buildings with known PCB contamination are in proximity to sanitary lines and could be a source of PCBs through infiltration into the lines. LANL has recently implemented programs to eliminate inappropriate discharges into the sanitary system, upgrade sewer line maintenance, and mandate annual characterization of each discharge to the sanitary system. These additional controls on the types of material which may be disposed of in the sanitary system should, over time, contribute to decreased chronic low concentrations of PCBs in the system. LANL's sewer line maintenance activities and continued use of its jet rodder equipment should further reduce the concentrations of PCBs in the sanitary collection system. During summer, 1996, eight-inch lines and larger were cleaned at TAs 3, 9, 15, 16, 21, 35, 46, 48, 52, 53, and 63. Some six-inch lines have been cleaned and more are scheduled for FY 1997. Lift stations are cleaned in accordance with a routine maintenance schedule.

Your past concurrence that we could seek disposal of the PCB-contaminated grit and screenings and sludge in a non-PCB landfill based on an unknown source with a PCB concentration as found below 10 ppm is appreciated. We are now, however, aware of historical spills of PCBs greater than 50 ppm in locations that could have possibly contaminated the sewage collection system. We are reasonably certain that the surface spill areas were cleaned up to EPA's standards. We have not confirmed that PCB spill material was able to spread from these spill sites to the sewer system, but we will inspect these locations, carefully review the spill cleanup reports, and if needed, sample these locations to confirm that PCBs did not enter the sewage system when these events occurred.

We recognize that this new information requires EPA to again consider our alternative disposal request to a non-regulated landfill. This is based on the fact that the concentration, as found, may have originated from a known spill of PCBs at concentrations above 50 ppm. We would like to continue to work with the EPA and the New Mexico Environment Department Solid Waste Bureau to identify the appropriate disposal scenario for the stockpiled grit and screenings and sludge contaminated with < 10 ppm PCBs, and grit and screenings and sludge which may be generated in the future and found to be contaminated with < 10 ppm PCBs.

We are requesting that you again approve disposal of the stockpiled grit and screenings and sludge with <10 ppm PCBs as non-PCB waste at a non-PCB landfill. With this approval, we would continue our efforts to obtain approval from the New Mexico Solid Waste Bureau for this disposal scenario.

The grit and screenings associated with the 130 ppm PCB concentration have been disposed as PCB waste. The sludge pile that corresponds to the period around April 9, 1996, that became waste in June, 1996, is scheduled for disposal as PCB waste by April 30, 1997. The grit and screenings and sludge now being generated will continue to be tested for PCBs as well as other constituents as required by LANL's procedures for handling, disposing, and reusing sanitary treatment solids, and will be held until an appropriate disposal scenario is approved if PCBs are determined to be present.

After your receipt of this letter, we would appreciate a discussion regarding appropriate disposal solutions for the remaining grit and screenings and sludge with <10 ppm PCBs and that which may be generated in the future. We must inform you, however, that the volume of sludge currently stored at the SWSC Plant is nearing the facility's capacity. Confirmation of your

earlier approval to dispose of the referenced sewage sludge in a non-PCB landfill is requested. Due to the capacity limitations at the SWSC Plant, your response by May 15, 1997, would be greatly appreciated.

In answer to one additional piece of information you requested, the contact at EPA for NPDES permitting is Everett Spencer.

If you have any questions or wish to discuss these issues in greater detail, please call me at (505) 665-5042.

Sincerely,

H. L. "Judy" Plum
Office of Environment and Projects

LAAMEP:3JP-038

Enclosures

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ATTACHMENT 1

FINAL REPORT
SPECIAL MONITORING PROJECT FOR PCBS
SWSC PLANT SANITARY TREATMENT SOLIDS

Prepared by Bob Beers
Water Quality and Hydrology Group, ESH-18
October 21, 1996

FINAL REPORT
SPECIAL MONITORING PROJECT FOR PCBs
SWSC PLANT SANITARY TREATMENT SOLIDS

INTRODUCTION

Since February of 1994, the Laboratory has routinely collected samples of sanitary treatment solids, sludge and grit/screenings, from the TA-46 Sanitary Wastewater Systems Consolidation (SWSC) plant in order to demonstrate that the concentrations of PCBs are below the Toxic Substances Control Act (TSCA) limit of 50 ppm. Routine samples have been collected three times per year by personnel from the Johnson Controls Environmental (JENV) Laboratory and analyzed at an EPA approved contract laboratory. All analytical data is reviewed and recorded in a database by the Laboratory's Water Quality and Hydrology Group (ESH-18).

On May 13, 1996, the Laboratory's contract analytical laboratory, Assaigai Analytical of Albuquerque, reported to ESH-18 a concentration of PCB Aroclor 1260 equal to 130 ppm in a routine grit and screenings sample collected on April 9, 1996. Previously, the highest concentration of PCBs detected in any SWSC plant treatment solid was 3.3 ppm and the highest concentration of Aroclor 1260 found was 0.94 ppm.

SPECIAL MONITORING PROJECT

In response to Assaigai's detection of PCBs greater than 50 ppm in grit and screenings, the Laboratory's Water Quality and Hydrology Group initiated the following corrective actions by May 20, 1996:

First, the dumpster containing grit and screenings collected since February 1, 1996, was tagged (hereafter, this dumpster will be referred to as the "Tagged Dumpster") and the SWSC plant superintendent was instructed to hold the dumpster pending the results of further sampling;

Second; the SWSC plant superintendent was instructed to refrain from land applying sludge until further notice;

Third; the Laboratory's Hazardous and Solid Waste Group (ESH-19) was informed of the analytical results and they, in turn, notified US Environmental Protection Agency (EPA) Dallas;

Fourth; a courtesy notification to the Surface Water Quality Bureau of the New Mexico Environment Department (NMED) was made;

Fifth; a sampling plan was developed which called for monthly sampling for PCBs in grit, screenings, sludge, influent, and effluent through FY 1996 and confirmation sampling of the Tagged Dumpster which contained the reportedly high PCB concentrations; and

Sixth, Assaigai Laboratories was asked to rerun the sample which yielded the 130 ppm of Aroclor 1260.

DISCUSSION OF RESULTS

Grit and Screenings

Reanalysis of Original Grit and Screenings Sample

At ESH-18's request, Assaigai Analytical Laboratories performed another extraction of the original sample and analyzed it along with the original extract. The re-extracted sample demonstrated approximately 15 mg/Kg of PCB AR-1260, while the original extract was 120 mg/Kg. This extreme variability in AR-1260 concentration was also seen in the MS/MSD (matrix spike/matrix spike duplicate) which Assaigai conducted for internal QA/QC.

A review of the Assaigai Laboratory's analytical data and QA/QC was conducted for ESH-18 by LANL's Chemical Science and Technology Division (CST). The CST reviewer's determination was consistent with that of Assaigai Laboratory; The detection of AR-1260 should be considered "real" but estimated with a high bias due to the highly non-homogenous nature of the sample matrix. Non-homogeneity is evident by the different levels detected in the original sample, second analysis, MS/MSD, and second extraction analysis. The results are summarized below:

•Original Sample and Extract	130 mg/Kg
•Reanalysis of Original Extract	120 mg/Kg
•MS	9.91 mg/kg (spike=0.0333 mg/Kg)
•MSD	1.17 mg/Kg (spike=0.0333 mg/Kg)
•Second Extraction of Original Sample	15 mg/Kg

Confirmation Sampling of Tagged Dumpster

On May 22, 1996, four samples were collected from the approximately 3 cubic yards of grit and screenings in the Tagged Dumpster. Each sample was composited vertically from the bottom, middle, and top of the dumpster's contents. The maximum, minimum and mean AR-1260 concentrations in the four samples were 2.2 mg/Kg, 0.46 mg/Kg, and 1.20 mg/Kg, respectively (See Table 3.0).

Special Monitoring of Grit and Screenings

During the months of May through September, 1996, monthly grit and screenings samples were collected from the SWSC plant's entrance works. In order to better characterize the contaminant's pathway, the normal practice of compositing grit and screenings into a single sample was changed and separate grit and screenings samples were collected. Table 1.0 below presents the maximum, minimum, and mean concentrations for PCB Aroclors 1254 and 1260 in SWSC plant grit and screenings.

Table 1.0. Maximum, Minimum, and Mean PCB Concentrations of SWSC Plant Grit and Screenings, May through September, 1996. (mg/Kg)

Sample Type	Maximum	Minimum	Mean
Aroclor 1254			
Grit*	5.4	<0.003	1.9
Screenings	0.24	<0.03	0.10
Aroclor 1260			
Grit*	2.3	<0.003	1.0
Screenings	0.46	<0.03	0.13

* TA-21 grit samples not included in this summary.

Sludge

In accordance with ESH-18's Special Monitoring Project, composite samples from each of the 19 sludge batches in storage at the SWSC plant were tested for PCBs. Table 2.0 below presents the maximum, minimum, and mean values. The complete record is presented in Table 4.0. The analytical results clearly show that PCB Aroclors 1254 and 1260 are consistently present in the SWSC plant's sludge at concentrations below 2 ppm.

Table 2.0. Maximum, Minimum, and Mean PCB Concentrations of SWSC Plant Sludge in Storage, May through August, 1996. (mg/Kg)

Sample Type	Maximum	Minimum	Mean
Aroclor 1254 Sludge	1.9	<0.075	0.82
Aroclor 1260 Sludge	1.6	0.21	0.74

Influent and Effluent

As part of the Special Monitoring Project, 24-hr flow proportioned influent and effluent samples were collected from the SWSC plant and the TA-21 treatment plant. Of the 13 samples collected, only two samples contained PCBs at concentrations greater than the laboratory's detection limit. See Table 5.0 for results of influent and effluent monitoring.

CONCLUSIONS

Grit and Screenings

As discussed previously, the varying concentrations of PCBs detected in the original sample have been attributed, both by Assaigai Laboratory personnel (see attached letter from Daniel J. Moore to Bob Beers, October 1, 1996) and a CST-12 data reviewer (see attached memo from Laura Kelly to Robert S. Beers, October 17, 1996), to the non-homogenous nature of grit and screenings. As a result, no single, grab, sample can be expected to accurately reflect the mean concentration of the container or batch.

Resampling of the Tagged Dumpster using four (4) composite samples yielded no Aroclor concentrations over 2.2 ppm and provides a better representation of the PCB content of the dumpster than the original grab sample.

Based upon the above determinations, beginning in FY1997, ESH-18 will initiate the following changes to the Laboratory's grit and screenings management program:

(1) The current practice of sampling grit and screenings three (3) times per year for PCBs will be discontinued and each dumpster of grit and screenings generated at the SWSC plant will be tested for PCBs prior to disposal at the LA County Landfill;

(2) The following procedures will be followed for grit and screenings sampling:
- One (1) liter of grit and screenings will be vertically "cored" from each quadrant of the dumpster and composited into a four (4) liter sample;
- The four (4) liter composite sample will be homogenized by JENV, transferred to a sample splitter, and a one (1) liter representative sample will be prepared for submittal to Assaigai Analytical Laboratory; and

(3) A blank or spike sample will be submitted during each sampling round for quality control and assurance.

Sludge

The Special Monitoring Project for sludge demonstrated that PCB Aroclors 1254 and 1260 are consistently present at concentrations below 2 mg/Kg. Based upon these results, beginning in FY1997, ESH-18 will initiate the following changes to the Laboratory's sludge management program:

(1) The current practice of compositing multiple beds into a single sample will be discontinued and a single composite sample will be collected for batch of sludge generated at the SWSC plant; and

(2) A blank or spike sample will be submitted during each sampling round for quality control and assurance.

Additionally, ESH-18 will seek written guidance from NMED and the US EPA on the land application of sanitary sludge which contains PCB concentrations less than 50 ppm

Influent and Effluent

Due to the detection of PCBs in two influent samples, ESH-18 will continue to collect 24-hr flow proportioned influent and effluent samples from the SWSC plant through the remainder of CY1996.

Table 4.0

SWSC Plant Sludge Monitoring: EPA Method SW846 8080A

			Analytical Results PCB Aroclor (mg/Kg)							
Sample ID #	Sludge Bed #	Sample Date	1016	1221	1232	1242	1248	1254	1260	Detection Limit
96.00178	92.111209	5/22/96	ND	ND	ND	ND	ND	1.3	0.50	0.075
96.00179	92.111209	5/22/96	ND	ND	ND	ND	ND	1.0	0.40	0.075
96.00180	92.122410	5/22/96	ND	ND	ND	ND	ND	0.91	0.39	0.075
96.00181	93.121510	5/22/96	ND	ND	ND	ND	ND	0.62	0.45	0.075
96.00182	94.020113	5/22/96	ND	ND	ND	ND	ND	0.84	0.38	0.075
96.00183	94.022801	5/22/96	ND	ND	ND	ND	ND	0.63	0.34	0.075
96.00184	94.083014	5/22/96	ND	ND	ND	ND	ND	0.70	0.50	0.075
96.00185	94.112312	5/22/96	ND	ND	ND	ND	ND	0.42	0.40	0.075
96.00186	95.033111	5/22/96	ND	ND	ND	ND	ND	0.84	0.59	0.075
96.00187	95.080904	5/22/96	ND	ND	ND	ND	ND	1.9	1.6	0.075
96.00188	95.080905	5/22/96	ND	ND	ND	ND	ND	1.1	1.4	0.150
96.00189	95.122106	5/22/96	ND	ND	ND	ND	ND	0.77	0.77	0.075
96.00190	96.020507	5/22/96	ND	ND	ND	ND	ND	1.1	0.88	0.075
96.00191	96.032908	5/22/96	ND	ND	ND	ND	ND	0.42	0.84	0.075
96.00192	skimmings: bed #11	5/22/96	ND	ND	ND	ND	ND	0.77	1.2	0.075
96.00193	95.101112	5/22/96	ND	ND	ND	ND	ND	0.80	1.1	0.075
96.00194	95.101113	5/22/96	ND	ND	ND	ND	ND	1.1	1.2	0.075
96.00195	96.022514	5/22/96	ND	ND	ND	ND	ND	0.075	0.48	0.075
96.00196	96.032915	5/22/96	ND	ND	ND	ND	ND	0.78	1.3	0.075
96.00272	96.062001	8/13/96	ND	ND	ND	ND	ND	0.28	0.21	0.015
96.00273	96.072302	8/13/96	ND	ND	ND	ND	ND	0.82	0.56	0.03

ND = Analyte not detected in analysis at the sample specific detection limit.

Table 5.0

SWSC Plant Influent/Effluent Monitoring: EPA Method 608

			Analytical Results PCB Aroclor (ug/L)							
Sample ID #	Sample Type	Sample Date	1016	1221	1232	1242	1248	1254	1260	Detection Limit
NA	Influent	5/15/96	ND	ND	ND	ND	ND	ND	ND	0.53
NA	Effluent	5/14/96	ND	ND	ND	ND	ND	ND	ND	0.11
96.00176	Influent	5/21/96	ND	ND	ND	ND	ND	ND	ND	0.11
96.00177	Effluent	5/21/96	ND	ND	ND	ND	ND	ND	ND	0.11
96.00203	TA-21 Inf	5/24/96	ND	ND	ND	ND	ND	ND	ND	0.5
96.00205	Effluent	5/29/96	ND	ND	ND	ND	ND	ND	ND	0.11
96.00206	Influent	5/29/96	ND	ND	ND	ND	ND	0.2	0.3	0.11
96.00220	Influent	6/4/96	ND	ND	ND	ND	ND	ND	0.28	0.11
96.00221	Effluent	6/4/96	ND	ND	ND	ND	ND	ND	ND	0.12
96.00248	Influent	7/18/96	ND	ND	ND	ND	ND	ND	ND	0.99
96.00249	Effluent	7/18/96	ND	ND	ND	ND	ND	ND	ND	0.11
96.00275	Influent	8/14/96	ND	ND	ND	ND	ND	ND	ND	0.11
96.00276	Effluent	8/14/96	ND	ND	ND	ND	ND	ND	ND	0.11
96.00281	Influent	9/12/96	ND	ND	ND	ND	ND	ND	ND	0.11
96.00282	Effluent	9/12/96	ND	ND	ND	ND	ND	ND	ND	0.12

ND = Analyte not detected in analysis at the sample specific detection limit.

ASSAIGAI
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October 1, 1996

Mr. Bob Beers
Los Alamos National Labs
P.O. Box 1663-MSK497
Los Alamos, NM 87545

Re: Requested Information Regarding AAL Workorder #96-04-111

Dear Mr. Beers

This letter is being sent per your request regarding the PCB Data provided with workorder #96-04-111. AAL sample 96-04-111-O1A (LANL Sample: Grit Screenings) was determined to contain 130 mg/Kg of AR-1260.

However, the sample was utilized as the MS/MSD and varying levels of AR-1260 were found significantly lower than the sample. The sample was subsequently re-extracted and analyzed out of hold-time after discussions with LANL personnel. The re-extracted sample was analyzed with the original extract. The re-extracted sample demonstrated approximately 15 mg/Kg, while the original extract was 120 mg/Kg.

In conclusion, all the data indicates a matrix which was non-homogenous that contained varying levels of AR-1260. AAL's policy is to homogenize the entire container prior to subsampling for analysis which further verifies this theory.

If I can be of further assistance, do not hesitate to contact me at (505) 345-8964.

Sincerely

for Daniel J. Moore
Program Manager

Member: American Council of Independent Laboratories, Inc.

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ATTACHMENT 2

FINAL SWSC PLANT SLUDGE MONITORING: EPA METHOD SW846 8080A
AND
FINAL SWSC PLANT INFLUENT/EFFLEUNT MONITORING: EPA METHOD 608

Compiled by
Bob Beers, Water Quality and Hydrology Group
and
Suzanne Moore-Mayne, Hazardous and Solid Waste Group

Final SWSC Plant Sludge Monitoring: EPA Method SW846 8080A

Sample ID #	Sludge Bed #	Sample Date	Aroclor 1016 (ppm)	Aroclor 1221 (ppm)	Aroclor 1232 (ppm)	Aroclor 1242 (ppm)	Aroclor 1248 (ppm)	Aroclor 1254 (ppm)	Aroclor 1260 (ppm)	Total PCBs (ppm)	Detection Limit (ppm)
96.090503	96.090503	12/11/96	ND	ND	ND	0.33*	ND	1.5	1.7	**3.53**	0.075
96.090504	96.090504	12/11/96	ND	ND	ND	0.38*	ND	2	2	**4.38**	0.075
96.052011	96.052011	12/11/96	ND	ND	ND	0.15*	ND	1.4	0.99	**2.54**	0.075
96.032908	96.032908	12/11/96	ND	ND	ND	0.11*	ND	1.5	0.9	**2.51**	0.075
96.071710	96.071710	12/11/96	ND	ND	ND	0.26*	ND	1.1	0.69	**2.05**	0.075
96.032915	96.032915	12/11/96	ND	ND	ND	0.11*	ND	1.3	0.75	**2.16**	0.075
96.042516	96.042516	12/11/96	ND	ND	ND	ND*	ND	0.86	0.68	**1.54**	0.075

* Blank had 0.007 ppm Aroclor 1242

Final SWSC Plant Influent/Effluent Monitoring: EPA Method 608

Sample ID #	Sample Type	Sample Date	Aroclor 1016 (ppm)	Aroclor 1221 (ppm)	Aroclor 1232 (ppm)	Aroclor 1242 (ppm)	Aroclor 1248 (ppm)	Aroclor 1254 (ppm)	Aroclor 1260 (ppm)	Total PCBs (ppm)	Detection Limit (ppm)
96.003060	Effluent	10/24/97	ND	ND	ND	ND	ND	ND	ND	**ND**	0.00017
96.003070	Influent	10/24/96	ND	ND	ND	ND	ND	ND	ND	**ND**	0.00011
96.003100	Effluent	11/08/96	ND	ND	ND	ND	ND	ND	ND	**ND**	0.001
96.003110	Influent	11/08/96	ND	ND	ND	ND	ND	ND	0.0026	**0.0026**	0.001
96.003160	Influent	12/11/96	ND	ND	ND	ND	ND	ND	ND	**ND**	0.001
96.003170	Effluent	12/11/96	ND	ND	ND	ND	ND	ND	ND	**ND**	0.001

ATTACHMENT 3

SANITARY COLLECTION SYSTEM MANHOLE SAMPLING PROJECT

Compiled by
Suzanne Moore-Mayne, Hazardous and Solid Waste Group

SANITARY COLLECTION SYSTEM MANHOLE SAMPLING PROJECT

Technical Area	Area Covered/ Manhole(s) Sampled	Sample Number	Date Sampled	Matrix	Aroclor	Concentration (ppm)	Total PCBs (ppm)
TA-03	Building 29 (CMR) undefined	960730SM	7/30/96	Sediment	1248	0.3*	**0.353***
TA-03	Building 29 (CMR) undefined	960730SM	7/30/96	Sediment	1260	0.053*	
TA-03	Building 29 (CMR) undefined	960730SM	7/30/96	Liquid	1254	0.033*	**0.033***
TA-03	Manhole 606	960108SM	7/8/96	Sediment	1254	0.54*	**1.09***
TA-03	Manhole 606	960108SM	7/8/96	Sediment	1260	0.55*	
TA-03	Manhole 606	960108SM	7/8/96	Liquid	1260	0.019*	**0.019***
TA-03	Manholes 608, 604, 607	960722SM	7/22/96	Sediment	1254	0.051*	**0.211***
TA-03	Manholes 608, 604, 607	960722SM	7/22/96	Sediment	1260	0.16*	
TA-03	Manholes 608, 604, 607	960722SM	7/22/96	Liquid	1260	0.045*	**0.045***
TA-03	29 (Manholes 640, 639, 635, MEC)	960726SM	7/26/96	Sediment	1254	1.1*	**1.1***
TA-03	39	960731SM	7/31/96	Liquid	1254	0.017*	**0.017***
TA-03	29 (Manholes 648, 644, 645, MEC)	960723SM	7/23/96	Liquid	1260	0.046*	**0.046***
TA-03	Manhole 618	970717SM	7/12/96	Sediment	1260	0.37*	**0.37***
TA-03	Manholes 649, 651	960718SM	7/18/96	Liquid	NA	ND*	**ND***
TA-03	Manhole 649	960712SM	7/12/96	Sediment	1254	0.25*	**0.58***
TA-03	Manhole 649	960712SM	7/12/96	Sediment	1260	0.33*	
TA-03	Manholes 655, 650	960716SM	7/16/96	Liquid	1254	0.068*	**0.218***
TA-03	Manholes 655, 650	960716SM	7/16/96	Liquid	1260	0.15*	
TA-03	Manhole 604	97010703	1/7/97	Liquid	NA	ND	**ND**

* Analyzed past holding time

SANITARY COLLECTION SYSTEM MANHOLE SAMPLING PROJECT

Technical Area	Area Covered/ Manhole(s) Sampled	Sample Number	Date Sampled	Matrix	Aroclor	Concentration (ppm)	Total PCBs (ppm)
TA-03	Manhole 604	97010703	1/7/97	Sediment	NA	ND	**ND**
TA-03	Manhole 690	97010805	1/8/97	Liquid	NA	ND	**ND**
TA-03	Manhole 690	97010805	1/8/97	Sediment	1260	0.14	**0.14**
TA-03	Manhole 692	97021904	2/19/97	Liquid	NA	ND	**ND**
TA-03	Manhole 692	97021904	2/19/97	Sediment	NA	ND	**ND**
TA-03/TA-43	Roads & Grounds/ Salvage Area	960807SM	8/7/96	Sediment	1254	5.5*	**5.86***
TA-03/TA-43	Roads & Grounds/ Salvage Area	960807SM	8/7/96	Sediment	1260	0.36*	
TA-03/TA-43	Roads & Grounds/ Salvage Area	960807SM	8/7/96	Liquid	1254	0.0033*	**0.0033***
TA-09	Manhole 244	97010904	1/9/07	Liquid	NA	ND	**ND**
TA-09	Manhole 244	97010904	1/9/07	Sediment	NA	ND	**ND**
TA-16	Manhole 724	97010901	1/9/97	Liquid	NA	ND	**ND**
TA-16	Manhole 724	97010901	1/9/97	Sediment	1254	0.35	**0.35**
TA-16	Manhole 725	97010902	1/9/97	Liquid	NA	ND	**ND**
TA-16	Manhole 725	97010902	1/9/97	Sediment	1260	0.088	**0.088**
TA-16	Manhole 739	97010903	1/9/97	Liquid	NA	ND	**ND**
TA-16	Manhole 739	97010903	1/9/97	Sediment	NA	ND	**ND**
TA-18	Manhole 159	97010804	1/8/97	Liquid	NA	ND	**ND**
TA-18	Manhole 159	97010804	1/8/97	Sediment	NA	ND	**ND**
TA-21	Holding tank	960905SM	8/5/96	Liquid	1254	0.0013*	**0.0024***
TA-21	Holding tank	960905SM	8/5/96	Liquid	1260	0.0011*	
TA-21	Grit channel	97010701	1/7/97	Liquid	NA	ND	**ND**
TA-21	Grit channel	97010701	1/7/97	Sediment	1254	0.53	**0.64**
TA-21	Grit channel	97010701	1/7/97	Sediment	1260	0.11	

* Analyzed past holding time

SANITARY COLLECTION SYSTEM MANHOLE SAMPLING PROJECT

Technical Area	Area Covered/ Manhole(s) Sampled	Sample Number	Date Sampled	Matrix	Aroclor	Concentration (ppm)	Total PCBs (ppm)
TA-21	Manhole 240	97010702	1/7/97	Liquid	NA	ND	ND
TA-21	Manhole 240	97010702	1/7/97	Sediment	NA	ND	ND
TA-35	402 (lift station)	97010705	1/7/97	Liquid	NA	ND	ND
TA-35	402 (lift station)	97010705	1/7/97	Sediment	1260	0.53	0.53
TA-43	10 (lift station)	97010707	1/7/97	Liquid	NA	ND	ND
TA-43	10 (lift station)	97010707	1/7/97	Sediment	1254	2.2	2.5
TA-43	10 (lift station)	97010707	1/7/97	Sediment	1260	0.3	
TA-46	Terminal Manhole	97010704	1/7/97	Liquid	NA	ND	ND
TA-46	Terminal Manhole	97010704	1/7/97	Sediment	NA	ND	ND
TA-48	Terminal Manhole	97010706	1/7/97	Liquid	NA	ND	ND
TA-48	Terminal Manhole	97010706	1/7/97	Sediment	NA	ND	ND
TA-53	Manholes #109, 111, 105, MEC	960813SM	8/13/96	Sediment	1254	2.2*	2.52*
TA-53	MANHOLES #109, 111, 105, MEC	960813SM	8/13/96	Sediment	1260	0.32*	
TA-53	MANHOLES #109, 111, 105, MEC	960813SM	8/13/96	Liquid	NA	ND*	ND*
TA-53	1049	97010801	1/8/97	Liquid	NA	ND	ND
TA-53	1049	97010801	1/8/97	Sediment	1260	0.07	0.07
TA-53	Manhole 304	97010802	1/8/97	Liquid	NA	ND	ND
TA-53	Manhole 304	97010802	1/8/97	Sediment	NA	ND	ND
TA-53	Manhole 158	97010803	1/8/97	Liquid	NA	ND	ND
TA-53	Manhole 158	97010803	1/8/97	Sediment	NA	ND	ND
TA-53	Manhole 105	97021901	2/19/97	Liquid	NA	ND	ND
TA-53	Manhole 105	97021901	2/19/97	Sediment	1248	0.37	0.93
TA-53	Manhole 105	97021901	2/19/97	Sediment	1254	0.39	
TA-53	Manhole 105	97021901	2/19/97	Sediment	1260	0.17	

* Analyzed past holding time

SANITARY COLLECTION SYSTEM MANHOLE SAMPLING PROJECT

Technical Area	Area Covered/ Manhole(s) Sampled	Sample Number	Date Sampled	Matrix	Aroclor	Concentration (ppm)	Total PCBs (ppm)
TA-53	Manhole 134	97021902	2/19/97	Liquid	NA	ND	**ND**
TA-53	Manhole 134	97021902	2/19/97	Sediment	1248	0.76	**1.08**
TA-53	Manhole 134	97021902	2/19/97	Sediment	1254	0.32	
TA-53	Manhole 155	97021903	2/19/97	Liquid	NA	ND	**ND**
TA-53	Manhole 155	97021903	2/19/97	Sediment	1260	0.045	**0.045**
Blank	Blank	97010806	1/8/97	Liquid	NA	ND	**ND**
Blank	Blank	97010806	1/8/97	Sediment	NA	ND	**ND**

* Analyzed past holding time

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ROUTING/TRACKING SLIP

Incoming Document(s)

RE: LANL: Status of Investigations of PCB Contamination Detected at the Sanitary Wastewater Systems Consolidation (SWSC) Plant

Date Rec: 4/28/97 Date Out: 5/5/97

Forward to: DOE Supervisor ✓ DOD Supervisor _____

Date Rec: 5-5-97

Comments/Instructions to Supervisor(s):

Fwd to FM for Action.

Date Out: 5-5-97

JB FOR DOE Supervisor

D DOD Supervisor

Comments/Instructions to Staff:

Forward to: LANL FM ✓ SNL FM _____ WIPP FM _____ DOD FM _____ Other _____

Date Rec: _____

gr 5/5/97 LANL FM

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_____ DOD FM

_____ Individual Project Manager

Comments back to Supervisor and Program Manager

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2/18/97

Other Comments or Response as Necessary:

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Thanks, John K.