IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY
HAZARDOUS WASTE DETERMINATION RECORD
for the
ARA-I Building ARA-626 Hot Cells 1 and 2
Concrete Floors and Soils Beneath the Floors
April 22, 1999

1.0 WASTE STREAM

The waste stream is concrete floor slabs and contaminated soils beneath the floor. The waste is from ARA-I building ARA-626 hot cells 1 and 2.

2.0 WASTE QUANTITY

There are three concrete slabs (8 x 8 x 0.5 ft, weighing 8,540 lbs each). The volume of contaminated soil remaining beneath the hot cells is unknown but is estimated as 96 ft^3 based on an area size of 8 x 24 x 0.5 ft.

3.0 WASTE STORAGE LOCATION

The three floor slabs that were removed are currently in storage at the ARA-I TAA (PBF-ARA1-CON1-B). The contaminated soil remains in place where it was discovered beneath the hot cells 1 and 2 floors.

4.0 WASTE DESCRIPTION

The concrete floor of the ARA-626 hot cells 1 and 2 was sectioned into three concrete slabs. The concrete was saw cut by D&D during June 1998. The intended purpose was to cut the concrete floor into manageable sections and dispose of the bulk waste as LLW at the RWMC. The work was performed in accordance with an approved Hazardous Waste Determination (ARA10002) for the demolition of the hot cell concrete ceiling, walls and floor. Work had proceeded according to plan for the ceilings and walls. In addition to cutting the floor into manageable sized slabs, the concrete was cored around floor drains in the hot cells. The drains were to remain intact and are part of the ARA-729 (ARA-16) hot waste tank WAG 5 CERCLA site.

D&D removed three hot cell floor slabs in June 1998. During removal of these slabs, it was noted that radionuclide contamination was present in the soils beneath the floor and on the underside of the concrete floor. This radionuclide contamination on the underside of the floor slabs was not anticipated and represented a change in conditions for the hot cell floors. The source of this radionuclide contamination is unknown.

A CERCLA new site identification form was initiated and submitted to the agencies on June 25, 1998. The new site was identified as WAG 5 site ARA-25. The new site ARA-25 was approved for inclusion in the FFA/CO by the Agency project managers on October 19, 1998. The new site identification form clearly identifies the soils beneath hot cells 1 and 2 as being

part of the new site. It is not clear as to whether the three concrete slabs are included in the new site or not. An argument could be made either way based on the new site identification. However, the INEEL has managed the concrete slabs as D&D waste since June 1998 as described below.

The concrete slabs were wrapped and placed in the ARA-I TAA (PBF-ARA1-CON1-B) on June 30, 1998 and managed as unknown waste pending sampling and analysis. They are still stored at the TAA and managed as unknowns at this time. They have been reported as exceeding the 90 day TAA storage limit since September 27, 1998.

The sampling of the floor slabs and soil contamination was outside the original D&D and CERCLA work scope at ARA-I. Per agreement of the CERCLA and D&D project manager's, D&D initiated planning for sampling and sampling of the site because the new site identification had not been approved by all the Agencies yet and an existing D&D sampling plan could be modified to incorporate the new work scope. A baseline change package was prepared to incorporate the sampling into the D&D work scope. Extensive negotiations with DOE-ID for approval of the change control document, resulted delaying the sampling by approximately 2 months. This was followed by additional delays because the INEEL was placed in a safety standdown mode as a result of the July 1998 TRA accident. The concrete and soils were finally sampled October 8, 1998. Unvalidated data were received in December 1998. Validated data were received by the end of March 1999.

5.0 ARA-626 HOT CELLS HISTORICAL INFORMATION

The ARA-626 hot cells 1 and 2 floors were constructed of cast in place concrete. The hot cells had a separate foundation poured to a depth of 5 ft around the entire perimeter of each cell that effectively isolated them from the rest of the ARA-626 building. The exterior walls of the hot cells were 3-ft thick with a 1.5-ft thick interior wall between the two cells. On the north side of the hot cells there was a door into each cell from an isolation room area (one isolation room for each cell). On the south side of the hot cells were leaded glass windows and the operating area.

Each cell had one floor drain that lead to the ARA-729 hot waste tank (CERCLA site ARA-16). The floor drains were welded to the carbon steel floor cladding in the hot cells. The 4 in stainless steel hot waste line from the hot cells ran from the cell 1 drain to the cell 2 drain and then continued east under the facility. Once outside the facility perimeter, the line continued east for a short distance before turning north. The hot waste line from the hot cells was isolated from the hot waste drains from the rest of the facility until it was outside the facility (near the northeast corner of ARA-626) where the lines joined and continued north and east to the ARA-729 tank. There were modifications to the hot waste system in about 1967, but they were external to the hot cells (addition of drains in the isolation rooms and high bay and modifications in the decontamination room) and should have had no affect on the hot cell drains and lines (DWG NO. 1230-ARA-626-A-P-[further lettering/numbering is not legible]). See Attachment 1 for a copy of the drawing.

ARA-626 operated from the late 1950s (constructed in approximately 1957) until it was shut down in 1988. At the time the facility was shut down, the ARA-729 tank inlet pipe was cut just outside the concrete bunker and both ends of the line were capped. The facility drains were not

apparently capped or covered at the time of shutdown (NMEO Program ARA-I Shutdown Final Report, D.C. Sparks, 1988).

Decontamination and Decommissioning of ARA-626 began in 1996 and was in the final stage of D&D in June 1998. The bulk of the building had been removed. The roof and walls were removed and flooring was removed from all but the hot cells, isolation rooms, high bay, and decontamination room.

Beginning in 1997, the hot cells were dismantled by saw cutting the concrete into slabs. The slabs were then bulk packaged and shipped for disposal at the RWMC as LLW. The first roof sections were dismantled and disposed of in September 1997. All the roof and wall slabs were dispositioned in this manner. Before saw cutting started, the drains were plugged (or checked to see that they were plugged).

The concrete sawing used water as part of the process. During D&D of the hot cells, the water accumulated on the floor of the hot cells and was recycled through the saw. During times of prolonged inactivity (e.g. winter shutdown), the water was collected in drums, solidified, and disposed of as LLW (HWD: ARA10006). The hot cells 1 and 2 floors were sectioned into 3 pieces total. The floor slabs were saw cut on the outside edges first and then cored around the floor drains. This allowed removal of the concrete without disturbing the drains. During removal of the slabs, radionuclide contamination was noted as being present on the soils adhering to the base of the concrete.

Following removal of the three concrete floor slabs, the D&D of ARA-626 floor area ceased. Part of the floor (decontamination room, high bay, and isolation rooms) remains in place today. It will be investigated to determine if there is any radionuclide contamination beneath the concrete before it is removed. If radionuclide contamination is detected with field screening instrumentation, then samples will be collected for analysis.

6.0 POTENTIAL CONTAMINATION SOURCES AND TYPES

Potential Sources:

The source of the contamination beneath the hot cell flooring is unknown. Based on the information available at this time, several possibilities are postulated and discussed below:

(a) The contamination was in place at the time the hot cells were constructed in the late 1950s.

The floor was cast in place. Historical information does not indicate the presence of a source of radionuclide contamination in the area before the floor was constructed. This scenario is not plausible.

(b) The contamination resulted from drain overflow associated with line blockage or over filling the ARA-729 tank.

Overflow from the line to the ARA-729 tank is possible, but not likely. Other drain lines and drains to the ARA-729 tank have been removed or exposed with no contamination being present. The hot waste lines from building ARA-627 to the tank have been removed and no contamination was found beneath the structure. The floor for ARA-626 room 125, a

laboratory with a hot floor drain in the northeast corner of the building, has been removed and no contamination was found. Most of these lines and drains are downstream from the ARA-626 hot cell drains. If the cause of contamination was from tank overflow or line stoppage, it is likely that contamination would have been present surrounding these drains. However, this scenario cannot be ruled out because there may have been blockage in the hot cell drain line at a location upstream from where it tied in with the other lines going to ARA-729.

(c) Contamination migration from activities in adjacent rooms in ARA-626.

This is considered a very unlikely scenario because the hot cells had a separate foundation and a separate hot waste drain line. There are not any known conduits for contamination to have passed beneath the hot cell foundation as a result of activities in adjacent rooms. The ARA-626 floor has been removed in the hot cell operations area, hallway and laboratories on the opposite (east) side of the building. The hot waste line ran from the hot cells to the east under the hallway and laboratory across the hall. No radionuclide contamination was found in these locations. The isolation rooms floors remain in place. All other floors adjacent to the hot cells have been removed. It is unknown if contamination is present beneath the isolation room floors.

(d) The contamination resulted from cracks in the hot cell steel cladding and concrete floor and/or improper sealing of joints (wall and/or drain) in the floor.

The hot cells were constructed of concrete with carbon steel cladding. D&D noted several radiological hot spots on the steel cladding. In hot cell 2, the radiological activity required that a portion of the steel cladding (thought to be radiologically contaminated at levels of approximately 10 R/hr) be removed so that D&D work could continue in the hot cell. Radionuclide contamination was noted as being present under the steel cladding on the concrete floor near the transfer door where the hotspot on the cladding was removed (personal communication with Rod Nelson, D&D Project Manager, 4/12/99). Hot cell 1 also had an area of significant contamination on the floor cladding near where a lead wall had been put into place at some point during the hot cell operation. Contamination had migrated through to the concrete in this location also (personal communication with Rod Nelson, D&D Project Manager, 4/12/99). The floor drain is a stainless steel pipe with a flange embedded in the concrete floor and welded to the carbon steel floor cladding. The possibility exists that a failure in the carbon steel to stainless steel weld could have resulted in leakage that over time would have migrated through cracks in the concrete. The flange embedded in the concrete should have stopped or significantly slowed any migration of contamination through concrete cracks in the vicinity of the drain. There is no historical/process information that indicates leakage from the hot cells or any drain stoppage and overflow in the hot cell area. The presence of contamination under the floor cladding indicates that several locations in the hot cells provided a source of radionuclide contamination that may have migrated through cracks in the concrete to the soils below.

(e) Precipitation over the years resulted in leaks through the floor in the hot cells.

It is unlikely that significant precipitation could have entered the hot cells. The hot cells were covered by a 2-ft thick concrete roof, with the facility roof over the top. There is the possibility that small quantities of precipitation could have infiltrated into the hot cells

however, there has never been any evidence of such infiltration noted. During D&D, the roof of the hot cells was removed and covered with a tarp for approximately one week before a temporary roof was put in place over the cells. During this week, a rainstorm and heavy snowstorm occurred. It is possible that some infiltration into the cells may have occurred. It is unlikely that it was a significant factor in driving radionuclide contamination to the soils beneath the hot cells.

(f) The contamination was a result of D&D saw cutting operations and water leakage associated with it.

The cutting of the floor provided a transport mechanism to carry LLW radioactive contaminated water through the cut. It is very likely that radionuclide contamination was carried through the cut and into the soils below. The slabs were cut around the perimeter first and then cored around the drains. It is estimated that a minimal quantity of water was lost during cutting around the floor edges. The bulk of the water would have been caught by the floor, which sloped inward toward the drain. Approximately 5 to 10 gallons of water maximum are estimated to have been lost to the soil below during the coring around the drains. The water that was solidified and disposed of from the saw cutting operations had very low radioactivity associated with it. Strontium-90 and cesium-137 were present in the solidified water at very low levels (INEEL Waste Stream ID 2910). It is unlikely, given the estimated volume of water lost and the concentration of radionuclides in similar water, that the saw cutting contributed significantly to contamination levels beneath the hot cell floors. (Personal communication with Rod Nelson, D&D Project Manager, 4/12/99.)

Summary of Potential Sources: The possible causes of contamination are from items (d), (e), and/or (f): migration through cracks in the floor or around the drain and/or improper sealing of joints, precipitation migration, and/or D&D saw cutting water. Of these item (d), migration through cracks in the floor or around the drain and/or improper sealing of joints, is the most probable cause of most of the contamination beneath the hot cell floors.

Potential Contaminants:

Potential chemical usage at the ARA-626 hot cells and in other areas at ARA-I that had drains feeding to the ARA-729 hot waste tank is summarized in Table 1. The summary table was developed based on researching available employee interviews and from available documents. Information supplied by personnel who worked at ARA-I is given more credibility than that summarized from documents with no source cited. There is conflicting information that was gleaned from numerous documents; however, no source is cited and the information is considered to be of questionable value.

TABLE 1

ARA-729 Hot Waste Tank: Received Discharges from ARA-626 (1957-1988) and ARA-627 (1955-1988) Hot Drains From tank installation to 1988.

INFORMATION	REFERENCE
ARA-626 - Hot Cells: The auxiliary area behind the hot cells flooded by broken water lines at least once and was drained into the septic system (ARA-02). This area was normally radiologically contaminated. Depending on which "auxiliary area" is being referred to, hot drains may have also received this contaminated water.	Interview with Dean Mandiloff by Jim Crandall on 10/28/93.
ARA-626 - Hot Cells: Cleaning and degreasing in the hot cells was done with cleaning products such as Turco, Ajax, and Tide. A concentrated liquid soap was used also. When asked about specific chemicals (1,1,1-trichloroethane, trichloroethene, toluene, 1,1,2-trichloroethane) the individual did not recall them being used in the hot cells.	Interview with Gordon Rigby summarized in 4/28/95 D&D report "Evaluation Of Chemicals Used At ARA-I".
ARA-626 - Hot Cells: The individual recalled using dichloroethene, trichloroethane, trichloroethene, and methyl chloride (probably methylene chloride) for cleaning contaminated tools, tables, and equipment in the hot cells. The individual also remembered using etching solutions, but could not remember the chemicals involved. The individual wrote down "methyl chloride" in both this interview and the letter discussed below. However, it is unlikely that methyl chloride was used for the purpose discussed because of its very low boiling point (-24°C). It is likely that the chemical used was methylene chloride.	Interview with Gene Cook summarized in 4/28/95 D&D report "Evaluation Of Chemicals Used At ARA-I".
ARA-626 – Hot Cells: Dichloroethene, Trichloroethane, Trichloroethene, and methyl chloride (probably methylene chloride) were used mainly for the cleaning of the contaminated tools, tables and various pieces of equipment. Toluene was used for flushing of the hot cell windows when the mineral oil was replaced. ARA-626 – Metallography Lab: Some solvents were used for the washing of metallography specimens. Alcohol being one of the many used. Although the "alcohol" type is not specified in the letter, other evidence supports that it likely would have been methanol. The solvents used in both applications discussed above were used straight out of the container.	EG&G Idaho Notegram from Gene Cook to K.L. Hoffman, July 26, 1994
ARA-626 – Hot Cells: Degreasing and decontamination were performed in the hot cells, but the individual could not remember what was used. High-pressure water was used to wash down the hot cell walls.	Interview with Maurice Lindstrom summarized in 4/28/95 D&D report "Evaluation Of Chemicals Used At ARA-I".

TABLE 1

ARA-729 Hot Waste Tank: Received Discharges from ARA-626 (1957-1988) and ARA-627 (1955-1988) Hot Drains From tank installation to 1988.

INFORMATION	REFERENCE
ARA-627 Radiochemistry Laboratory (interview time period covered 1980-1986): The hot floor drain had plutonium contamination. It was not specified whether this was from previous use, but the way it was explained would lead one to believe that it was.	Interview with Claude Sill by Jim Crandall on 11/1/93.
ARA-627: The RI Report for ARA-01 pond states that "radioactively contaminated acids (from metal etching operations) were put into the radioactive waste sewer and retained in the radioactive waste tank (ARA-729)."	OU 5-10 RI (EGG-WM-10001)
ARA-626: "The hazardous chemicals used at the hot cell were limited to small quantities of organic solvents and acids. When organic solvents were used, either methanol or acetone was used because of their high vapor pressures. Occasionally, nitric acid was used in the hot cell laboratory. The effluents generated during hot cell operations were passed through a hot sewer to a radioactive holding tank. Periodically, this tank was emptied and the contents shipped to the Idaho Chemical Processing Plant for processing and disposal. Hot cell wastes were probably not disposed of in the sanitary septic system." No source reference is provided for this information.	OU 5-07 Track 2 Summary Report (EGG-ER-10592)
"the following listed waste codes may apply to the ARA-16 tank wastes: F002 ... and F005..." No justification is provided for this assignment of codes.	FSP for WAG 5 RI/FS (DOE/ID-10556)
It is estimated that 150 gallons of acetone and methanol were disposed of to the tank from ARA-626 Hot Cell operations. No source reference is provided for this information.	Initial Assessment Report for ARA-16
Hot Cells: About 5 L per year each of methanol, acetone, chlorinated/paraffin, and mixed acids were flushed to a hot sewer and subsequently to ARA-729. This is estimated for the time period of 1957 to 1988. No source reference is provided for this information.	Track 1 for ARA-16

TABLE 1

ARA-729 Hot Waste Tank: Received Discharges from ARA-626 (1957-1988) and ARA-627 (1955-1988) Hot Drains From tank installation to 1988.

INFORMATION	REFERENCE
ARA-729 Tank: "Stoddard solvents may have been disposed of at ARA-I" This statement is made in the evaluation document, with no supporting evidence provided. The document goes on to state that "Stoddard solvents are light diesel fuels that contain benzene, toluene, ethylbenzene and xylene." The document's evaluation is largely based on the summary of interviews attached. However, none of the individuals interviewed appear to have mentioned the presence of Stoddard solvents based on the summaries provided. It should be noted that several of the original interview sheets have not been found.	4/28/95 D&D report "Evaluation Of Chemicals Used At ARA-I"
ARA-626 decontamination shop: Tools were decontaminated with water, Turco, radiac wash (hydrochloric acid), alcohols, and other chemicals the individual could not remember the name of. The "alcohol" used was likely methanol based on other available information. The time period covered by this interview was from 1979 to 1985.	Interview with Randy Sayer by Donna Nicklaus, 9/16/97

RCRA F-listed solvents: trichloroethene, 1,1,1-trichloroethane, methylene chloride, methanol, acetone, and toluene were used in the ARA-626 hot cells based on the information provided in Table 1. Trichloroethene, 1,1,1-trichloroethane, and methylene chloride were used in degreasing and cleaning of parts, equipment, tools, and tables; and therefore are assigned the F001 RCRA listed waste code. Acetone and methanol were used for general cleaning at full strength or near full strength. Acetone and methanol are RCRA F003 listed solvents because of their ignitability. Toluene was used for cleaning/flushing the hot cell windows. The use of toluene in the hot cells makes it a RCRA F005 listed solvent. The interviews and information provided in Table 1 provides sufficient proof that F001, F003, and F005 solvents were used in the ARA-626 hot cells. However, the frequency of use, volumes used, and time periods of use cannot be established. Given the approximately 30 year operating span of the hot cells, it is impossible to establish this information based on interviews and review of available information.

In addition to the information summarized in Table 1, sampling and analysis was performed on the ARA-729 tank in 1997 by the CERCLA program. A formal hazardous waste determination has not been completed for the tank at this time. However, based on the information in the Table 1, the tank likely contains F001 (trichloroethene, 1,1,1-trichloroethane, and methylene chloride), and F005 (toluene). Additionally, F003 waste (acetone and methanol) was discharged to the tank. The waste is also characteristic hazardous (D040) based on the trichloroethene concentrations. The tank sludge contains PCBs > 50 ppm. The tank is radionuclide contaminated.

Because of the chemicals that were used in ARA-626, hazardous waste present in the ARA-729 tank, and the unknown source of the radionuclide contamination beneath the hot cell floor, it was determined to sample the soil and concrete to determine the nature of the contamination. The constituents present in the ARA-729 tank and used in the hot cells were considered in development of the sampling strategy.

7.0 DATA SUMMARY

Initial radiation surveys (taken June 11 or June 15, 1998) of the soil adhering to the bottom of the concrete measured about 50,000 dpm. It should be noted that the purpose of this reading was to provide an estimate of contamination present. The reading was difficult to obtain because of shine from the topside of the floor slabs.

Subsequently on June 22, 1998, soil from under the concrete was collected, moved away from the general radiation field to eliminate the interference, and counted. Samples were collected near the hot cell 1 drain, near the hot cell 2 drain, and at several locations further away from the drains.

The results of the June 22, 1998 survey showed soil next to the floor drain in cell 1 was greater than 500,000 dpm beta/gamma as determined with the Ludlum 2A gamma detector, and greater than 15 mR/hr at contact as determined with the Eberline ion chamber RO 20 instrument. Outlying soils (i.e. away from the drain area) beneath hot cell 1 were determined to be 8,000 to 12,000 dpm.

Contamination levels in the soils beneath hot cell 2 were determined to be up to 12,000 dpm near the floor drain, and about 5,000 dpm in soils away from the floor drain.

On June 24, 1998, radiation readings were collected at 1 m above the soils under the hot cell floors. The readings in cell 1 varied from 5 to 10 mR/hr beta/gamma. The readings in cell 2 varied from 10 to 20 mR/hr beta/gamma.

On October 8, 1998, sampling was performed to gather analytical information on the soils and bottom of the concrete slabs. Samples were obtained by collecting surface soil and concrete scrapings within a 1-ft radius of the floor drains in hot cells 1 and 2. One sample was collected from soil and concrete for each hot cell, and hot cell 1 had a duplicate sample collected from both the soil and concrete. All samples were submitted for Appendix IV VOA, gamma spectroscopy, gross alpha spectroscopy, strontium-90, metals (TAL), and PCB analyses. Additionally, the soil samples were submitted for TCLP SVOCs, TCLP VOCs, and TCLP metals analyses.

The analytical results are summarized in Attachment 2. The following discussion summarizes data results by sample location, sample media, and analysis type.

Hot Cell #1, Soils, Sample Numbers ARA50001 and ARA50101 (duplicate):

Metals (Total and TCLP) Analytical Results: The only detected TCLP metals were barium (827 and 892 µg/L, B-flagged, present in the blank), cadmium (6.3 and 5.0 µg/L B-flagged, present in the blank), and silver (5.3 and 5.3 µg/L, UJ-flagged as undetected estimates). All of these detections were below the RCRA Toxicity Characteristic Limits in 40 CFR 261.24. Similarly, the detection limits for the non-detected RCRA metals were below the 40 CFR 261.24 limits. Refer to the data summary for the total metals data; they are not further discussed because of the available TCLP data.

PCB Analytical Results: Both samples were analyzed and then reanalyzed by the laboratory because of low surrogate recovery in the Laboratory Control Sample (LCS). All data points are used in this summary. The only positive detection reported by the laboratory was for Aroclor-1254 (32 to 44 µg/kg). All of these data points except one (39 µg/kg) were J-flagged by the validator as estimates. All other aroclors were reported by the laboratory as non-detections. However, they were subsequently given an UJ-flag (undetected estimates) by the validator. For all other aroclors, the reported concentration was ≤ 67 µg/kg (UJ).

SVOC (Total and TCLP) Analytical Results: All the TCLP data were U-flagged by the laboratory as non-detections. The data validator assigned U and J flags to all the TCLP SVOC data, indicating that the results were undetected estimates. Reported detection limits ranged between 10 and 50 µg/L depending on the constituent. For all compounds, the detection limit is less than the associated 40 CFR 261.24 limits. There were no constituents requiring explanation detected in the total SVOC analysis. Therefore, the totals data is not further discussed. Refer to the data summary.

VOC (Total and TCLP) Analytical Results: All the TCLP data were U-flagged as non-detections. The reported detection limits were 5 µg/L for all compounds except 2-butanone, which had a 10 µg/L detection limit. These detection limits are all less than the associated 40 CFR 261.24 limits. The only constituents detected in the totals analysis were 4-methyl-2-pentanone (14 µg/kg), toluene (22 and 5 µg/kg), ethylbenzene (4 µg/kg, J-flag), m- and p-

xylenes (7 µg/kg), and o-xylene (5 µg/kg, J-flag). Of these compounds, only toluene was detected in both samples (ARA50001 and ARA50101). The remainder were only detected in sample number ARA50001.

In the totals analysis acrolein, acetone, acetonitrile, acrylonitrile, propionitrile, isobutanol, and 1,4-dioxane results were rejected because of a low (<0.05) relative response factor (RRF). The laboratory narrative states that low response is common for these compounds. These polar compounds are highly water soluble and purge poorly from solution, which results in poor instrument response. A general rule of thumb for these compounds is that if they were present at concentrations within a factor of 10x the reported detection limit, they would be detected. None of these compounds were detected; therefore, it is unlikely that they are present in the soil at concentrations that would be of regulatory concern.

Radionuclide Analytical Results: Cesium-137 and strontium-90 are the primary radionuclides present in these soil samples. The cesium-137 activity ranged from 435 to 449 pCi/g. The strontium-90 activity ranged from 71.0 to 72.8 pCi/g. Gross alpha measurements were between 11.0 and 12.6 pCi/g. Additionally, radium-226 was detected at 29.7 pCi/g in the duplicate sample.

Hot Cell #2, Soils, Sample Number ARA50201:

Metals (Total and TCLP) Analytical Results: The only detected TCLP metals were barium (706 µg/L, B-flagged, present in the blank), cadmium (9.8 µg/L B-flagged, present in the blank), mercury (0.26 µg/L, B-flagged, present in the blank), and silver (5.3 µg/L, UJ-flagged as undetected estimates). All of these detections were below the RCRA Toxicity Characteristic Limits in 40 CFR 261.24. Similarly, the detection limits for the non-detected RCRA metals were below the 40 CFR 261.24 limits. Refer to the data summary for the total metals data; they are not further discussed because of the available TCLP data.

PCB Analytical Results: The sample was analyzed and then reanalyzed by the laboratory because of low surrogate recovery in the LCS. All data points are used in this summary. The only detection reported by the laboratory was for Aroclor-1254 (13 to 23 µg/kg, both J-flagged as estimated values). All other aroclors were reported by the laboratory as non-detections. However, the reanalyzed sample values were subsequently given an UJ-flag (undetected estimates) by the validator. For all other aroclors, the reported concentration was ≤ 67 µg/kg (UJ).

SVOC (Total and TCLP) Analytical Results: All the TCLP data were U-flagged by the laboratory as non-detections. The data validator assigned U and J flags to all the TCLP SVOC data, indicating that the results were undetected estimates. Reported detection limits ranged between 10 and 50 µg/L depending on the constituent. For all compounds, the detection limit is less than the associated 40 CFR 261.24 limits. There were no constituents requiring explanation detected in the total SVOC analysis. Therefore, the totals data is not further discussed. Refer to the data summary.

VOC (Total and TCLP) Analytical Results: All the TCLP data were U-flagged as non-detections. The reported detection limits were 5 µg/L for all compounds except 2-butanone, which had a 10 µg/L detection limit. These detection limits are all less than the associated 40 CFR 261.24 limits. The only constituent detected in the totals analysis was toluene (6 µg/kg and

5 μg/kg, J-flagged in the reanalysis). Several other constituents (1,2-, 1,3- and 1,4-dichlorobenzene and 1,2-dibromo-3-chloropropane) were UJ-flagged at the detection limit (5 to 10 μg/kg) and then were U-flagged only in the reanalyzed sample.

In the totals analysis acrolein, acetone, acetonitrile, acrylonitrile, propionitrile, isobutanol, and 1,4-dioxane results were rejected because of a low (<0.05) RRF. The laboratory narrative states that low response is common for these compounds. These polar compounds are highly water soluble and purge poorly from solution, which results in poor instrument response. A general rule of thumb for these compounds is that if they were present at concentrations within a factor of 10x the reported detection limit, they would be detected. None of these compounds were detected; therefore, it is unlikely that they are present in the soils at concentrations that would be of regulatory concern.

Radionuclide Analytical Results: Cesium-137 is the primary radionuclide present in this soil sample. The cesium-137 activity was 226 pCi/g. The strontium-90 activity was 9.62 pCi/g. Gross alpha measurements were 11.8 pCi/g. Additionally, radium-226 was detected at 14.3 pCi/g in the sample.

Hot Cell #1, Concrete, Sample Numbers ARA50901 and ARA51001 (duplicate):

Metals (Total) Analytical Results: Based on the totals analysis and application of the 20x Rule of Thumb, the arsenic, barium, cadmium, chromium, and mercury concentrations are less than the Toxicity Characteristic limits specified in 40 CFR 261.24.

Analytical results for lead, selenium, and silver were rejected during data validation. The lead results were rejected because of poor Matrix Spike/Matrix Spike Duplicate (MS/MSD) precision (58.8%). The selenium data were rejected because of low MS/MSD recoveries (13.0% and 65.9%). The silver data were rejected because of low LCS recovery (69.6%).

Adjustment of the lead data (using the highest lead concentration of 8.1 mg/kg) for the poor MS/MSD precision would in effect raise the concentration by a factor of 41.2%. Therefore, the lead concentration could be as much as 11.4 mg/kg. Adjustment of the selenium data (using the highest selenium concentration of 0.39 mg/kg) for the low MS/MSD recoveries would in effect raise the concentration by a factor of 87%. Therefore, the selenium concentration could be as much as 0.73 mg/kg. Adjustment of the silver data (using the highest silver concentration of 0.94 mg/kg, U-flagged as a non-detection) for the low LCS recovery would in effect raise the Instrument Detection Limit (IDL) by a factor of 30.4%. Therefore, the silver IDL could be as much as 1.22 mg/kg. The adjusted concentrations for lead, selenium, and silver are all less than the 40 CFR 261.24 limits. Additionally, these metals are not present in the soil samples at levels that cause regulatory concern.

PCB Analytical Results: Both samples were analyzed and then reanalyzed by the laboratory because of low surrogate recovery in the LCS. All data points are used in this summary. The only positive detection reported by the laboratory was for Aroclor-1254 (21 to 34 μg/kg, both J-flagged). All other aroclors were reported by the laboratory as non-detections, except for one data point that was rejected during validation. For all other aroclors (excluding the rejected data point), the reported detection limit was ≤ 69 μg/kg.

SVOC (Total) Analytical Results: The SVOC analyses were run with high sample dilutions; therefore, resulting in high detection limits reported. The laboratory ran the high dilutions because they experienced interference from the concrete matrix. No SVOCs were detected in the hot cell 1 concrete samples. However, very little information can be concluded from these data because the detection limits ranged from 34,000 to 170,000 µg/kg.

VOC (Total) Analytical Results: All the concrete sample VOC data were qualified during data validation. Most of the data were rejected during validation. However, useful conclusions can still be made from the data. The following discussion documents the reason for data rejection and states conclusions that can be drawn from the data.

Acrolein, acetone, acetonitrile, acrylonitrile, propionitrile, isobutanol, and 1,4-dioxane results were qualified during data validation because of a low (<0.05) RRF. Non-detected results were qualified as rejected (R). Positive results for acetone and isobutanol were qualified as estimated (J). The laboratory narrative states that low response is common for these compounds. These polar compounds are highly water soluble and purge poorly from solution, which results in poor instrument response. A general rule of thumb for the compounds that were not detected (and rejected) is that if they were present at concentrations within a factor of 10x the reported detection limit, they would be detected. None of these compounds were detected; therefore, it is unlikely that they are present in the concrete at concentrations that would be of regulatory concern. Acetone is discussed separately below.

In sample ARA50901, the initial analysis resulted in 78 µg/kg (J-flagged) acetone. The sample was reanalyzed and no acetone was detected in ARA50901RE (10 µg/kg U-flagged by the laboratory, and rejected [R-flagged] by the validator as described above). The data validation report states that the re-analyzed sample should be used because the surrogate and internal standard recoveries were improved; therefore, the reanalysis data were used for validation purposes. Sample ARA51001 had 68 µg/kg (J-flagged) acetone in the analysis. This sample was not reanalyzed. The results of this sample are similar to the first analysis of ARA50901; however, because the sample was not reanalyzed it is unknown if the improved recoveries would have resulted in similar (non-detection) results. Acetone is a common laboratory contaminant. The concentrations that were found in the samples are consistent with that commonly seen from laboratory contamination. There was no acetone found in the associated blank. However, the fact that it was present in the first analysis of ARA50901, and then was not found in the reanalysis is indicative of laboratory contamination.

Surrogate and internal standard recovery problems (on one of three surrogates) caused all the rest of the data to be qualified in some manner by the validator. All concrete samples were reanalyzed because of low (<10%) recovery of the surrogate difluorochloromethane (DFM). Repeat analysis confirmed the initial results and indicates a matrix-related cause for the low DFM surrogate recovery. Surrogates are compounds of similar physical and chemical characteristics to the target analytes. Low recovery of the surrogate compound indicates a potential problem in recovering similar target compounds from the samples. The validator qualified the data for low surrogate recovery since the results of the target analytes may also be biased low.

Positive results for sample ARA51001 were qualified "J" as estimated and non-detected results were rejected, for DFM recovery of less than 10%. Positive results for sample ARA50901(RE)

were qualified "J" as estimates and non-detected results were qualified "UJ" as undetected estimates for DFM results less than the 80% lower control limit.

Despite the problems with the low DFM surrogate recovery, some pertinent information is still available from the data. The other two surrogates were within range. DFM would have been a surrogate for similar compounds, such as dichlorodifluoromethane and trichlorofluoromethane on the target analyte list. The other two laboratory surrogates would have been more representative of target analytes like benzene, toluene, chloroform, trichloroethene, etc. Therefore, despite the fact that the validator qualified all the data for the low DFM recovery, the majority of the analytes were probably not adversely affected by the matrix interference that caused the low DFM recovery. Given the worst case of DFM recovery of less than 10%, it is still safe to assume that the data would not be more than a factor of 10x off. This would in effect raise the detection limit from 5 µg/kg to 50 µg/kg or from 10 µg/kg to 100 µg/kg for the analytes. None of the target analytes were detected at these concentrations. Based on this information and the lack of VOCs in the soils, the probability that they are present at significant concentrations in the concrete is very low.

Radionuclide Analytical Results: Cesium-137 and strontium-90 are the primary radionuclides present in these concrete samples. The cesium-137 activity ranged from 201 to 1,270 pCi/g. The strontium-90 activity ranged from non-detectable to 168 pCi/g. Gross alpha measurements were between 4.84 and 5.48 pCi/g. Additionally, radium-226 and uranium-235 were detected in one sample at concentrations of 44.6 and 2.72 pCi/g, respectively.

Hot Cell #2, Concrete, Sample Number ARA51101:

Metals (Total) Analytical Results: Based on the totals analysis and application of the 20x Rule of Thumb, the arsenic, barium, cadmium, chromium, and mercury concentrations are less than the Toxicity Characteristic limits specified in 40 CFR 261.24.

Analytical results for lead, selenium, and silver were rejected during data validation. The lead results were rejected because of poor MS/MSD precision (58.8%). The selenium data were rejected because of low MS/MSD recoveries (13.0% and 65.9%). The silver data were rejected because of low LCS recovery (69.6%). The IDL for lead = 1.0 µg/L, selenium = 0.7 µg/L, and silver = 4.8 µg/L.

Adjustment of the lead data (8.3 mg/kg) for the poor MS/MSD precision would in effect raise the concentration by a factor of 41.2%. Therefore, the lead concentration could be as much as 11.7 mg/kg. Adjustment of the selenium data (0.43 mg/kg) for the low MS/MSD recoveries would in effect raise the concentration by a factor of 87%. Therefore, the selenium concentration could be as much as 0.80 mg/kg. Adjustment of the silver data (0.88 mg/kg, U-flagged as a non-detection) for the low LCS recovery would in effect raise the IDL by a factor of 30.4%. Therefore, the silver IDL could be as much as 1.15 mg/kg. The adjusted concentrations for lead, selenium, and silver are all less than the 40 CFR 261.24 limits. Additionally, these metals are not present in the soil samples at levels that cause regulatory concern.

PCB Analytical Results: The sample was analyzed and then reanalyzed by the laboratory because of low surrogate recovery in the LCS. All data points are used in this summary. Aroclor-1254 and Aroclor-1260 were both reported as detected in the sample. The Aroclor-1254 concentration was measured as 21 and 29 µg/kg, both J-flagged as estimated. The Aroclor-1260

concentration was measured as 15 and 27 µg/kg, both J-flagged as estimated. All other aroclors were reported by the laboratory as non-detections. For all other aroclors, the reported detection limit was ≤ 68 µg/kg.

SVOC (Total) Analytical Results: The SVOC analyses were run with high sample dilutions; therefore, resulting in high detection limits reported. The laboratory ran the high dilutions because they experienced interference from the concrete matrix. No SVOCs were detected in the hot cell 1 concrete samples. However, very little information can be concluded from these data because the detection limits ranged from 34,000 to 170,000 µg/kg.

VOC (Total) Analytical Results: All the concrete sample VOC data were qualified during data validation. Most of the data were rejected during validation. However, useful conclusions can still be made from the data. The following discussion documents the reason for data rejection and states conclusions that can be drawn from the data.

Acrolein, acetone, acetonitrile, acrylonitrile, propionitrile, isobutanol, and 1,4-dioxane results were qualified during data validation because of a low (<0.05) RRF. Non-detected results were qualified as rejected (R). Positive results for acetone and isobutanol were qualified as estimated (J). The laboratory narrative states that low response is common for these compounds. These polar compounds are highly water soluble and purge poorly from solution, which results in poor instrument response. A general rule of thumb for these compounds is that if they were present at concentrations within a factor of 10x the reported detection limit, they would be detected. A general rule of thumb for the compounds that were not detected (and rejected) is that if they were present at concentrations within a factor of 10x the reported detection limit, they would be detected. None of these compounds were detected; therefore, it is unlikely that they are present in the concrete at concentrations that would be of regulatory concern. Acetone is discussed separately below.

In sample ARA51101, the initial analysis resulted in 86 µg/kg (J-flagged) acetone. The sample was reanalyzed and acetone was detected in ARA50901RE at 65 µg/kg (J-flagged). The data validation report states that the re-analyzed sample should be used because the surrogate and internal standard recoveries were improved; therefore, the reanalysis were used for validation purposes. Acetone is a common laboratory contaminant. The concentrations that were found in the samples are consistent with that commonly seen from laboratory contamination. There was no acetone found in the associated blank. However, the fact that it was present in the first analysis of ARA50901 (as described above for hot cell 1), and then was not found in the reanalysis is indicative of laboratory contamination.

Surrogate and internal standard recovery problems (on one of three surrogates) caused all the rest of the data to be qualified in some manner by the validator. All concrete samples were reanalyzed because of low (<10%) recovery of the surrogate DFM. Repeat analysis confirmed the initial results and indicates a matrix-related cause for the low DFM surrogate recovery. Surrogates are compounds of similar physical and chemical characteristics to the target analytes. Low recovery of the surrogate compound indicates a potential problem in recovering similar target compounds from the samples. The validator qualified the data for low surrogate recovery since the results of the target analytes may also be biased low.

Positive results for sample ARA51101(RE) were qualified "J" as estimated and non-detected results were rejected, for DFM recovery of less than 10%. Despite the problems with the low

DFM surrogate recovery, some pertinent information is still available from the data. The other two surrogates were within range. DFM would have been a surrogate for similar compounds, such as dichlorodifluoromethane and trichlorofluoromethane on the target analyte list. The other two laboratory surrogates would have been more representative of target analytes like benzene, toluene, chloroform, trichloroethene, etc. Therefore, despite the fact that the validator qualified all the data for the low DFM recovery, the majority of the analytes were probably not adversely affected by the matrix interference that caused the low DFM recovery. Given the worst case of DFM recovery of less than 10%, it is still safe to assume that the data would not be more than a factor of 10x off. This would in effect raise the detection limit from 5 µg/kg to 50 µg/kg or from 10 µg/kg to 100 µg/kg for the analytes. None of the target analytes were detected at these concentrations. Based on this information and the lack of VOCs in the soils, the probability that they are present at significant concentrations in the concrete is very low.

Radionuclide Analytical Results: Cesium-137 and cesium-134 are the primary radionuclides present in this concrete sample. The cesium-137 activity was 12,400 pCi/g. The cesium-134 activity was 33.2 pCi/g. Gross alpha measurements were 9.63 pCi/g. Additionally, cobalt-60 was detected at 6.9 pCi/g.

8.0 HAZARDOUS WASTE DETERMINATION

8.1. SOLID WASTE?: Yes the concrete and contaminated soils are solid wastes per the definition in 40 CFR 261.2.

8.2. EXCLUDED UNDER 40 CFR 261.4?: No, this waste is not excluded under 40 CFR 261.4.

8.3. LISTED RCRA WASTE UNDER 40 CFR 261 SUBPART D?: No

It is known that RCRA listed solvents F001 (trichloroethene, 1,1,1-trichloroethane, and methylene chloride), F003 (acetone and methanol), and F005 (toluene) were used in the ARA-626 hot cells. The time period of usage and quantities used are unknown and unknowable. It is also known that acids, water, and other liquids were used in the ARA-626 hot cells. The radionuclide contamination underneath the concrete foundation likely came from inside the hot cells based on the limited information available.

It is known that in several locations that the radionuclide contamination penetrated through the carbon steel cladding. Once the radionuclide contamination reached the concrete floor it could have migrated to the soil through cracks in the concrete. There is no information available on what activity occurred in the hot cells that lead to these releases of radioactivity. There is no direct correlation between the release of radionuclide contamination and the use of solvents in the hot cells. The solvents were used for degreasing, cleaning, and flushing windows. It is unlikely (because of the magnitude of the release that would have resulted in 10 R/hr radionuclide contamination in hot cell 2 and the area in cell 1 with the lead wall for examples) that radioactivity associated with the contamination that migrated through the floor cladding is directly attributable to the usage of solvents removing grease or cleaning parts.

The possibility of radionuclide contamination migrating to the soils around the floor drain is also possible. If leakage around the drain occurred, it is unknowable when during the hot cell operation it would have occurred. Because the time periods and volumes of both the leakage and solvent usage are unknown and unknowable, the presence of radionuclide contamination cannot be equated to the presence of F-listed solvents based solely on this information.

The analytical data supports the determination that the presence of radionuclide contamination beneath the ARA-626 hot cells does not equate to the presence of F-listed solvent contamination. Trichloroethene, 1,1,1-trichloroethane,and methylene chloride were not detected in any of the samples analyzed.

Toluene was detected in the soil and concrete samples. It was detected at concentrations ranging from 5 to 22 µg/kg in the soils (three of the four results were between 5 and 6 µg/kg). Toluene was detected in the concrete at concentrations ranging from 4 to 12 µg/kg (all UJ- or J-flagged, as undetected estimates or estimated values). The detected concentrations of toluene (near the instrument detection limit) are indicative of infrequent usage and not of solvent usage in large quantities.

Acetone was not detected in any of the soil samples. All acetone data were reported by the laboratory as not detected with a 10 to 11 µg/kg detection limit. These data were subsequently rejected during data validation (see the discussion in Section 7). Despite the rejected data, one can conclude that no acetone was present in the soils at concentrations above 100 µg/kg. Acetone was detected in several of the concrete samples. It was detected in sample ARA50901, but was not detected in the subsequent reanalysis. All reported concrete detections of acetone were less than 100 µg/kg (J-flagged – see Section 7 for a discussion of QA/QC problems). The low concentration of acetone detected in the concrete and the fact that is was not detected in the reanalysis of sample ARA50901(RE) indicate that the acetone reported in the concrete was from laboratory contamination. Acetone is a common laboratory contaminant. Based on the lack of any positive detections in the soil, and the likelihood that the concrete results are from laboratory contamination, it can be concluded that acetone is not present at concentrations that would make it a F003 regulated waste.

8.4. WASTE IDENTIFIED UNDER 40 CFR 261 SUBPART C?: No

D001: The waste is not ignitable per the criteria in 40 CFR 261.21(a)(2).

D002: The waste is solid and therefore not corrosive per 40 CFR 261.22.

D003: The waste is not reactive per the criteria in 40 CFR 261.23. The waste is concrete and soil, which are not reactive by construction. Process knowledge does not support the use of any reactive waste in the ARA-626 hot cells.

D004 – D043: Based on the data summary provided in Section 7 and Attachment 2, the waste is not Toxicity Characteristic per the criteria in 40 CFR 261.24. This determination for SVOCs is based on the soil data because the concrete samples were run at too high of a dilution to be of regulatory use. However, the absence of

SVOCs at levels of regulatory concern in the soils indicates that it is unlikely that they would be present on the bottom side of the concrete slabs. The top of the concrete has been previously analyzed and found to be non-hazardous.

9.0 WASTE TREATMENT/DISPOSAL DETERMINATION

The ARA-626 hot cell floor concrete and soils beneath the floor are non-hazardous. The three concrete slabs are radionuclide contaminated and should be disposed of to the RWMC. The disposition of the non-hazardous radionuclide contaminated soils will be determined through the WAG 5 CERCLA process.

WASTE DETERMINATION PREPARED BY: 4/22/99
D.M. Nicklaus, Parsons I&T Group, Inc.

WASTE DETERMINATION APPROVED BY: 4/22/99
R.A. Lupez, Waste Generator Services

ARA10011

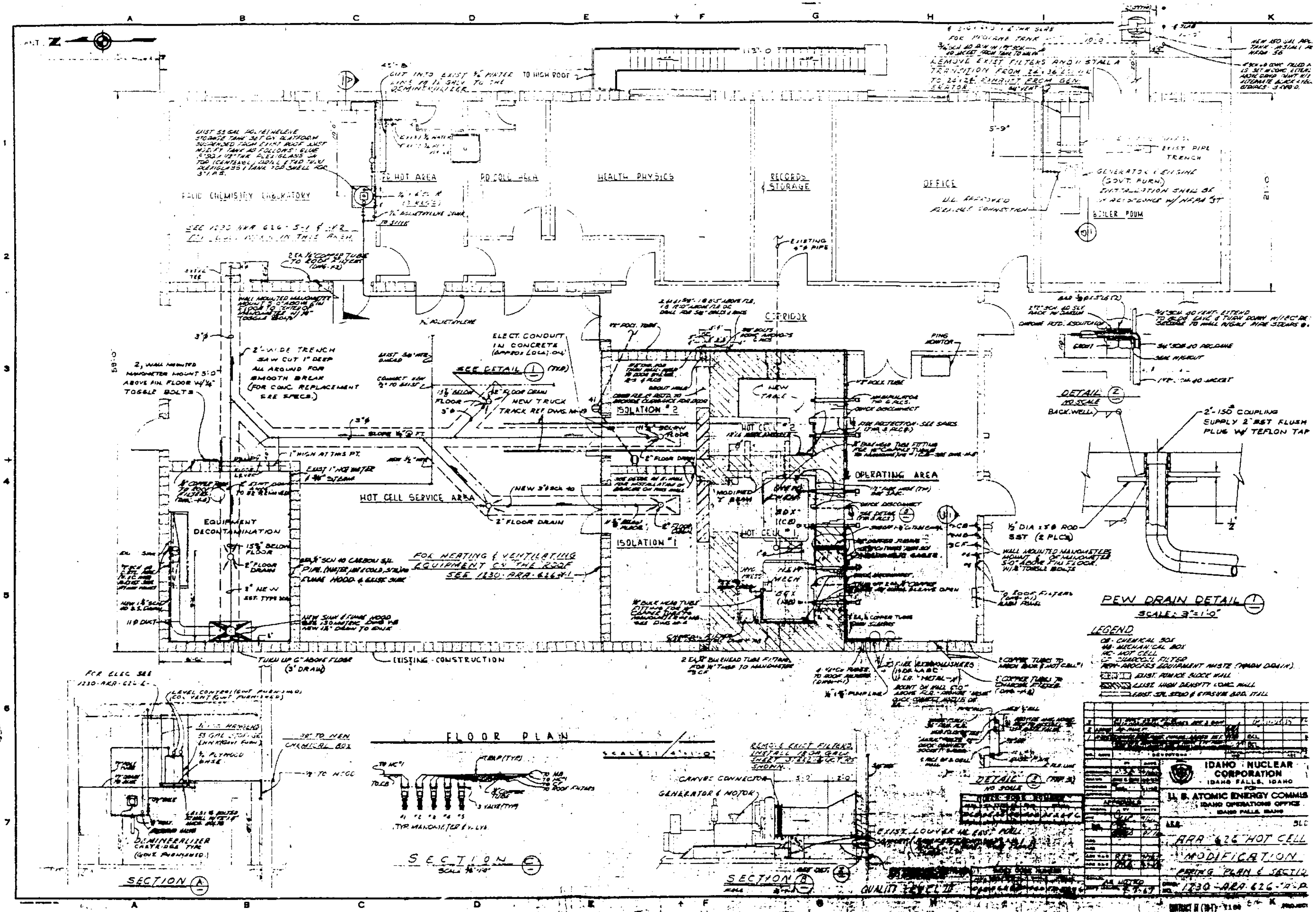
WASTE DETERMINATION APPROVED BY: 4/22/99
R.K. Jones, EM Compliance Manager
Waste Characterization Team Member

WASTE DETERMINATION APPROVED BY: 4/22/99
R.M. Davis, ER Environmental Compliance Officer

THE CONTENTS OF THIS DOCUMENT
ARE THE HIGHEST QUALITY AVAILABLE

INITIAL gj DATE 11/22/99

ATTACHMENT 1



RADIO CHEMISTRY LABORATORY
HOT AREA
COLD AREA
HEALTH PHYSICS
RECORDS STORAGE
OFFICE
BOILER ROOM
CORRIDOR
EXIST PIPE TRENCH
GENERATOR & ENGINE (GOVT. FURN.)
ELECT. CONDUIT IN CONCRETE (APPROX LOCATION)
SEE DETAIL 1 (TYP)
NEW TRUCK TRACK REF DWG.
ISOLATION #2
HOT CELL #2
OPERATING AREA
HOT CELL SERVICE AREA
HOT CELL #1
ISOLATION #1
EQUIPMENT DECONTAMINATION
2" FLOOR DRAIN
FOR HEATING & VENTILATING EQUIPMENT ON THE ROOF SEE 1230-ARA-626-4-1
EXISTING CONSTRUCTION
PEW DRAIN DETAIL 1
SCALE: 3"=1'-0"
DETAIL 2
NO SCALE
LEGEND
FLOOR PLAN
SECTION A
SECTION B
SECTION C
DEMINERALIZER CARTRIDGE TYPE (GOVT FURNISHED)
GENERATOR & MOTOR
CANVAS CONNECTOR
TYP. MANOMETER & VALVE
QUALITY LEVEL III
IDAHO NUCLEAR CORPORATION
IDAHO FALLS, IDAHO
FOR
U. S. ATOMIC ENERGY COMMISSION
IDAHO OPERATIONS OFFICE
IDAHO FALLS, IDAHO
ARA 626 HOT CELL MODIFICATION
PIPING PLAN & SECTION
1230-ARA-626-4-P

24X

ATTACHMENT 2

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	SOIL	Q	Q	SOIL	Q	Q
SAMPLE NUMBER	ARA50001	F	F	ARA50001(re)	F	F
METALS (mg/kg)						
Aluminum	3310	N*	J			
Antimony	5.3	UN	R			
Arsenic	10.9					
Barium	51.1					
Beryllium	0.15	B	U			
Cadmium	0.71	U				
Calcium	30200					
Chromium	71.7	N	J			
Cobalt	44.7	N	J			
Copper	156	N*	J			
Iron	16200					
Lead	36.5					
Magnesium	5510					
Manganese	300					
Mercury	0.09	B	U			
Nickel	25.4					
Potassium	904					
Selenium	0.32	BN	UJ			
Silver	4.2	BN	R			
Sodium	180		J			
Thallium	0.79	U	R			
Vanadium	79.8					
Zinc	584		R			
% Solids	98.9					
TCLP METALS (ug/L)						
Arsenic	12.0	U				
Barium	827	B				
Cadmium	6.3	B				
Chromium	6.6	U				
Lead	41.6	U				
Mercury	0.20	U				
Selenium	17.7	U				
Silver	5.3	UN	UJ			
% Solids	100					
PCBs (ug/kg)						
Aroclor-1016	34	U	UJ	34	U	UJ
Aroclor-1221	67	U	UJ	67	U	UJ
Aroclor-1232	34	U	UJ	34	U	UJ
Aroclor-1242	34	U	UJ	34	U	UJ
Aroclor-1248	34	U	UJ	34	U	UJ
Aroclor-1254	35		J	32	J	J
Aroclor-1260	34	U	UJ	34	U	UJ

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	SOIL	Q	Q	SOIL	Q	Q
SAMPLE NUMBER	ARA50001	F	F	ARA50001(re)	F	F
SVOCs (ug/kg)						
N-nitrosodimethylamine	340 U					
Pyridine	340 U					
bis (2-Chloroethyl) ether	340 U					
Aniline	340 U					
Phenol	340 U					
2-Chlorophenol	340 U					
1,3-Dichlorobenzene	340 U					
1,4-Dichlorobenzene	340 U					
1,2-Dichlorobenzene	340 U					
Benzyl Alcohol	340 U					
2,2'-oxybis (1-chloropropane)	340 U					
2-Methylphenol	340 U					
Hexachloroethane	340 U					
N-Nitroso-di-n-propylamine	340 U					
4-Methylphenol	340 U					
Nitrobenzene	340 U					
Isophorone	340 U					
2-Nitrophenol	340 U					
2,4-Dimethylphenol	340 U					
bis (2-Chloroethoxy) methane	340 U					
Benzoic Acid	1700 U					
2,4-Dichlorophenol	340 U					
1,2,4-Trichlorobenzene	340 U					
Naphthalene	340 U					
4-Chloroaniline	340 U					
Hexachlorobutadiene	340 U					
4-Chloro-3-methylphenol	340 U					
2-Methylnaphthalene	340 U					
Hexachlorocyclopentadiene	340 U					
2,4,6-Trichlorophenol	340 U					
2,4,5-Trichlorophenol	1700 U					
2-Chloronaphthalene	340 U					
2-Nitroaniline	1700 U					
Acenaphthylene	340 U					
Dimethylphthalate	340 U					
2,6-Dinitrotoluene	340 U					
Acenaphthene	340 U					
3-Nitroaniline	1700 U					
2,4-Dinitrophenol	1700 U					
Dibenzofuran	340 U					
2,4-Dinitrotoluene	340 U					
4-Nitrophenol	1700 U					
Fluorene	340 U					
4-Chlorophenyl-phenylether	340 U					
Diethylphthalate	32 J					
4-Nitroaniline	1700 U					

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	SOIL	Q	Q	SOIL	Q	Q
SAMPLE NUMBER	ARA50001	F	F	ARA50001(re)	F	F
Azobenzene	340	U				
4,6-Dinitro-2-methylphenol	1700	U				
n-Nitrosodiphenylamine	340	U				
4-Bromophenyl-phenylether	340	U				
Hexachlorobenzene	340	U				
Pentachlorophenol	1700	U				
Phenanthrene	100	J				
Anthracene	340	U				
Carbazol	340	U				
Di-n-butylphthalate	3400		D			
Fluoranthene	86	J				
Benzidine	1700		R			
Pyrene	69	J				
Butylbenzylphthalate	270	J				
3,3'-Dichlorobenzidine	340	U				
Benzo [a] anthracene	340	U				
Chrysene	340	U				
bis (2-Ethylhexyl) phthalate	190	J				
Di-n-octylphthalate	27	J				
Benzo [b] fluoranthene	340	U				
Benzo [k] fluoranthene	340	U				
Benzo [a] pyrene	340	U				
Indeno [1,2,3-cd] pyrene	340	U				
Dibenz [a,h] anthracene	340	U				
Benzo [g,h,I] perylene	340	U				
2-Picoline	340	U				
N-nitrosomethylethylamine	340	U				
Methylmethanesulfonate	340	U				
N-nitrosodiethylamine	340	U				
Ethylmethanesulfonate	340	U				
Pentachloroethane	340	U				
Acetophenone	340	U				
N-nitrosophyrrolidine	340	U				
N-nitrosomorpholine	340	U				
o-Toluidine	340	U				
o,o,o-Triethylphosphorothioate	340	U				
N-nitrosopiperidine	340	U				
Phentermine	340	U				
2,6-Dichlorophenol	340	U				
Hexachloropropene	340	U				
p-Phenylenediamine	340	U				
N-nitroso-di-n-butylamine	340	U				
Safrole	340	U				
1,2,4,5-Tetrachlorobenzene	340	U				
Isosafrole	340	U				
1,4-Naphthoquinone	340	U				
m-Dinitrobenzene	340	U				

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	SOIL	Q	Q	SOIL	Q	Q
SAMPLE NUMBER	ARA50001	F	F	ARA50001(re)	F	F
Pentachlorobenzene	340	U				
1-Naphthylamine	340	U				
2-Naphthylamine	340	U				
2,3,4,6-Tetrachlorophenol	340	U				
Thionazin	340	U				
5-Nitro-o-toluidine	340	U				
Diphenylamine	340	U				
sym-Trinitrobenzene	340	U				
Phenacetin	340	U				
4-Aminobiphenyl	340	U				
Pentachloronitrobenzene	340	U				
Pronamide	340	U				
Dinoseb	340	U				
4-Nitroquinoline-1-oxide	340	U				
Methyapyriline	340	U				
Isodrin	340	U				
Aramite	670		R			
p-Dimethylaminoazobenzene	340	U				
Famfur	340		R			
3,3'-Dimethylbenzidine	340	U				
2-Acetoaminofluorene	340	U				
7,12-Dimethylbenz [a] anthracene	340	U				
3-Methylcholanthrene	340	U				
TCLP SVOCs (ug/L)						
Pyridine	25	U	UJ			
1,4-Dichlorobenzene	10	U	UJ			
2-Methylphenol	10	U	UJ			
Hexachloroethane	10	U	UJ			
4-Methylphenol	10	U	UJ			
Nitrobenzene	10	U	UJ			
Hexachlorobutadiene	10	U	UJ			
2,4,6-Trichlorophenol	10	U	UJ			
2,4,5-Trichlorophenol	50	U	UJ			
2,4-Dinitrotoluene	10	U	UJ			
Hexachlorobenzene	10	U	UJ			
Pentachlorophenol	50	U	UJ			
VOCs (ug/kg)						
Dichlorodifluoromethane	10	U				
Chloromethane	10	U				
Vinyl Chloride	10	U				
Bromomethane	10	U				
Chloroethane	10	U				
Trichlorofluoromethane	5	U				
Acrolein	51	U	R			
Acetone	10	U	R			

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	SOIL	Q	Q	SOIL	Q	Q
SAMPLE NUMBER	ARA50001	F	F	ARA50001(re)	F	F
1,1-Dichloroethene	5	U				
Acetonitrile	100	U	R			
Allyl Chloride	10	U				
Iodomethane	5	U				
Methylene Chloride	5	U				
Carbon Disulfide	5	U				
Acrylonitrile	51	U	R			
trans-1,2-Dichloroethene	5	U				
Vinyl Acetate	5	U				
1,1-Dichloroethane	5	U				
Chloroprene	5	U				
Propionitrile	100	U	R			
2-Butanone	10	U				
Methacrylonitrile	10	U				
cis-1,2-Dichloroethene	5	U				
Isobutanol	100	U	R			
Chloroform	5	U				
1,1,1-Trichloroethane	5	U				
Carbon Tetrachloride	5	U				
1,2-Dichloroethane	5	U				
Benzene	5	U				
Trichloroethene	5	U				
Methyl Methacrylate	5	U				
1,2-Dichloropropane	5	U				
Dibromomethane	5	U				
1,4-Dioxane	100	U	R			
Bromodichloromethane	5	U				
4-Methyl-2-pentanone	14					
cis-1,3-Dichloropropene	5	U				
Toluene	22					
trans-1,3-Dichloropropene	5	U				
1,1,2-Trichloroethane	5	U				
1,2-Dibromoethane	10	U				
Ethyl Methacrylate	5	U				
2-Hexanone	10	U				
Tetrachloroethene	5	U				
Dibromochloromethane	5	U				
Chlorobenzene	5	U				
1,1,1,2-Tetrachloroethane	5	U				
Ethylbenzene	4	J				
m and p-Xylenes	7					
o-Xylene	5	J				

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	SOIL	Q	Q	SOIL	Q	Q
SAMPLE NUMBER	ARA50001	F	F	ARA50001(re)	F	F
Styrene		5 U				
Bromoform		5 U				
trans-1,4-Dichloro-2-butene		10 U				
1,1,2,2-Tetrachloroethane		5 U				
1,2,3-Trichloropropane		10 U				
1,3-Dichlorobenzene		5 U				
1,4-Dichlorobenzene		5 U				
1,2-Dichlorobenzene		5 U				
1,2-Dibromo-3-Chloropropane		10 U				
TCLP VOCs (ug/L)						
Vinyl Chloride		5 U	U			
1,1-Dichloroethene		5 U	U			
2-Butanone		10 U	U			
Chloroform		5 U	U			
Carbon Tetrachloride		5 U	U			
1,2-Dichloroethane		5 U	U			
Benzene		5 U	U			
Trichloroethene		5 U	U			
Tetrachloroethene		5 U	U			
Chlorobenzene		5 U	U			
1,4-Dichlorobenzene		5 U	U			
RADIONUCLIDES (pCi/g)						
Gross Alpha	1.10E+01 ± 2.36E+00					
Strontium-90	7.28E+01 ± 2.54E+01		J			
Americium-241	1.35E+00 ± 7.11E-02		U			
Antimony-125	1.11E+00 ± 5.40E-02		U			
Cerium-144	1.42E+00 ± 6.07E-02		U			
Cesium-134	1.04E+00 ± 7.91E-02					
Cesium-137	4.49E+02 ± 3.10E+01					
Cobalt-58	6.38E-02 ± 3.69E-03		U			
Cobalt-60	1.95E+00 ± 1.09E-01					
Europium-152	6.06E-01 ± 3.27E-01		U			
Europium-154	1.94E-01 ± 9.04E-03		U			
Europium-155	7.55E-01 ± 3.59E-02		U			
Manganese-54	6.51E-02 ± 3.59E-03		U			
Niobium-95	8.99E-02 ± 3.93E-02		J			
Radium-226	5.41E+00 ± 2.47E-01		U			
Ruthenium-103	4.28E-01 ± 2.37E-02		U			
Ruthenium-106	2.13E+00 ± 1.41E-01		U			
Silver-108m	2.25E-01 ± 1.48E-02		U			
Silver-110m	5.08E-01 ± 3.49E-02		U			
Uranium-235	3.29E-01 ± 1.50E-02		U			
Zinc-65	1.60E-01 ± 7.60E-03		U			
Zirconium-95	1.34E-01 ± 8.45E-03		U			

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	SOIL - Duplicate	Q	Q	SOIL - Duplicate	Q	Q
SAMPLE NUMBER	ARA50101	F	F	ARA50101 (re)	F	F
METALS (mg/kg)						
Aluminum	2900	N*	J			
Antimony	5.3	UN	R			
Arsenic	40.6					
Barium	42.0					
Beryllium	0.19	B	U			
Cadmium	0.70	U				
Calcium	30000					
Chromium	98.4	N	J			
Cobalt	104	N	J			
Copper	227	N*	J			
Iron	33700					
Lead	1430					
Magnesium	30400					
Manganese	1400					
Mercury	0.06	B	U			
Nickel	38.8					
Potassium	724					
Selenium	0.65	BN	UJ			
Silver	7.2	BN	R			
Sodium	191		J			
Thallium	0.78	U	R			
Vanadium	104					
Zinc	855		R			
% Solids	98.8					
TCLP METALS (ug/L)						
Arsenic	12.0	U				
Barium	892	B				
Cadmium	5.0	B				
Chromium	6.6	U				
Lead	41.6	U				
Mercury	0.20	U				
Selenium	17.7	U				
Silver	5.3	UN	UJ			
% Solids	100					
PCBs (ug/kg)						
Aroclor-1016	34	U	U	34	U	UJ
Aroclor-1221	67	U	U	67	U	UJ
Aroclor-1232	34	U	U	34	U	UJ
Aroclor-1242	34	U	U	34	U	UJ
Aroclor-1248	34	U	U	34	U	UJ
Aroclor-1254	39			44		J
Aroclor-1260	34	U	U	34	U	UJ

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	SOIL - Duplicate	Q	Q	SOIL - Duplicate	Q	Q
SAMPLE NUMBER	ARA50101	F	F	ARA50101 (re)	F	F
SVOCs (ug/kg)						
N-nitrosodimethylamine	340 U					
Pyridine	340 U					
bis (2-Chloroethyl) ether	340 U					
Aniline	340 U					
Phenol	120 J					
2-Chlorophenol	340 U					
1,3-Dichlorobenzene	340 U					
1,4-Dichlorobenzene	340 U					
1,2-Dichlorobenzene	340 U					
Benzyl Alcohol	340 U					
2,2'-oxybis (1-chloropropane)	340 U					
2-Methylphenol	340 U					
Hexachloroethane	340 U					
N-Nitroso-di-n-propylamine	340 U					
4-Methylphenol	340 U					
Nitrobenzene	340 U					
Isophorone	24 J					
2-Nitrophenol	340 U					
2,4-Dimethylphenol	340 U					
bis (2-Chloroethoxy) methane	340 U					
Benzoic Acid	1700 U					
2,4-Dichlorophenol	340 U					
1,2,4-Trichlorobenzene	340 U					
Naphthalene	340 U					
4-Chloroaniline	340 U					
Hexachlorobutadiene	340 U					
4-Chloro-3-methylphenol	340 U					
2-Methylnaphthalene	340 U					
Hexachlorocyclopentadiene	340 U					
2,4,6-Trichlorophenol	340 U					
2,4,5-Trichlorophenol	1700 U					
2-Chloronaphthalene	340 U					
2-Nitroaniline	1700 U					
Acenaphthylene	340 U					
Dimethylphthalate	340 U					
2,6-Dinitrotoluene	340 U					
Acenaphthene	340 U					
3-Nitroaniline	1700 U					
2,4-Dinitrophenol	1700 U					
Dibenzofuran	340 U					
2,4-Dinitrotoluene	340 U					
4-Nitrophenol	1700 U					
Fluorene	340 U					
4-Chlorophenyl-phenylether	340 U					
Diethylphthalate	31 J					
4-Nitroaniline	1700 U					

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	SOIL - Duplicate	Q	Q	SOIL - Duplicate	Q	Q
SAMPLE NUMBER	ARA50101	F	F	ARA50101 (re)	F	F
Azobenzene	340	U				
4,6-Dinitro-2-methylphenol	1700	U				
n-Nitrosodiphenylamine	340	U				
4-Bromophenyl-phenylether	340	U				
Hexachlorobenzene	340	U				
Pentachlorophenol	1700	U				
Phenanthrene	100	J				
Anthracene	340	U				
Carbazol	63	J				
Di-n-butylphthalate	4500		D			
Fluoranthene	130	J				
Benzidine	1700		R			
Pyrene	110	J				
Butylbenzylphthalate	280	J				
3,3'-Dichlorobenzidine	340	U				
Benzo [a] anthracene	32	J				
Chrysene	44	J				
bis (2-Ethylhexyl) phthalate	1000					
Di-n-octylphthalate	44	J				
Benzo [b] fluoranthene	340	U				
Benzo [k] fluoranthene	340	U				
Benzo [a] pyrene	340	U				
Indeno [1,2,3-cd] pyrene	340	U				
Dibenz [a,h] anthracene	340	U				
Benzo [g,h,I] perylene	340	U				
2-Picoline	340	U				
N-nitrosomethylethylamine	340	U				
Methylmethanesulfonate	340	U				
N-nitrosodiethylamine	340	U				
Ethylmethanesulfonate	340	U				
Pentachloroethane	340	U				
Acetophenone	340	U				
N-nitrosophyrrolidine	340	U				
N-nitrosomorpholine	340	U				
o-Toluidine	340	U				
o,o,o-Triethylphosphorothioate	340	U				
N-nitrosopiperidine	340	U				
Phentermine	340	U				
2,6-Dichlorophenol	340	U				
Hexachloropropene	340	U				
p-Phenylenediamine	340	U				
N-nitroso-di-n-butylamine	340	U				
Safrole	340	U				
1,2,4,5-Tetrachlorobenzene	340	U				
Isosafrole	340	U				
1,4-Naphthoquinone	340	U				
m-Dinitrobenzene	340	U				

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L Q F	V Q F	HOT CELL #1	L Q F	V Q F
MEDIA	SOIL - Duplicate			SOIL - Duplicate		
SAMPLE NUMBER	ARA50101			ARA50101 (re)		
Pentachlorobenzene		340 U				
1-Naphthylamine		340 U				
2-Naphthylamine		340 U				
2,3,4,6-Tetrachlorophenol		340 U				
Thionazin		340 U				
5-Nitro-o-toluidine		340 U				
Diphenylamine		340 U				
sym-Trinitrobenzene		340 U				
Phenacetin		340 U				
4-Aminobiphenyl		340 U				
Pentachloronitrobenzene		340 U				
Pronamide		340 U				
Dinoseb		340 U				
4-Nitroquinoline-1-oxide		340 U				
Methyapyriline		340 U				
Isodrin		340 U				
Aramite		670	R			
p-Dimethylaminoazobenzene		340 U				
Famfur		340	R			
3,3'-Dimethylbenzidine		340 U				
2-Acetoaminofluorene		340 U				
7,12-Dimethylbenz [a] anthracene		340 U				
3-Methylcholanthrene		340 U				
TCLP SVOCs (ug/L)						
Pyridine		25 U	UJ			
1,4-Dichlorobenzene		10 U	UJ			
2-Methylphenol		10 U	UJ			
Hexachloroethane		10 U	UJ			
4-Methylphenol		10 U	UJ			
Nitrobenzene		10 U	UJ			
Hexachlorobutadiene		10 U	UJ			
2,4,6-Trichlorophenol		10 U	UJ			
2,4,5-Trichlorophenol		50 U	UJ			
2,4-Dinitrotoluene		10 U	UJ			
Hexachlorobenzene		10 U	UJ			
Pentachlorophenol		50 U	UJ			
VOCs (ug/kg)						
Dichlorodifluoromethane		11 U				
Chloromethane		11 U				
Vinyl Chloride		11 U				
Bromomethane		11 U				
Chloroethane		11 U				
Trichlorofluoromethane		5 U				
Acrolein		53 U	R			
Acetone		11 U	R			

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	SOIL - Duplicate	Q	Q	SOIL - Duplicate	Q	Q
SAMPLE NUMBER	ARA50101	F	F	ARA50101 (re)	F	F
1,1-Dichloroethene	5 U					
Acetonitrile	110 U		R			
Allyl Chloride	11 U					
Iodomethane	5 U					
Methylene Chloride	5 U					
Carbon Disulfide	5 U					
Acrylonitrile	53 U		R			
trans-1,2-Dichloroethene	5 U					
Vinyl Acetate	5 U					
1,1-Dichloroethane	5 U					
Chloroprene	5 U					
Propionitrile	110 U		R			
2-Butanone	11 U					
Methacrylonitrile	11 U					
cis-1,2-Dichloroethene	5 U					
Isobutanol	110 U		R			
Chloroform	5 U					
1,1,1-Trichloroethane	5 U					
Carbon Tetrachloride	5 U					
1,2-Dichloroethane	5 U					
Benzene	5 U					
Trichloroethene	5 U					
Methyl Methacrylate	5 U					
1,2-Dichloropropane	5 U					
Dibromomethane	5 U					
1,4-Dioxane	110 U		R			
Bromodichloromethane	5 U					
4-Methyl-2-pentanone	11 U					
cis-1,3-Dichloropropene	5 U					
Toluene	5					
trans-1,3-Dichloropropene	5 U					
1,1,2-Trichloroethane	5 U					
1,2-Dibromoethane	11 U					
Ethyl Methacrylate	5 U					
2-Hexanone	11 U					
Tetrachloroethene	5 U					
Dibromochloromethane	5 U					
Chlorobenzene	5 U					
1,1,1,2-Tetrachloroethane	5 U					
Ethylbenzene	5 U					
m and p-Xylenes	5 U					
o-Xylene	5 U					

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	SOIL - Duplicate	Q	Q	SOIL - Duplicate	Q	Q
SAMPLE NUMBER	ARA50101	F	F	ARA50101 (re)	F	F
Styrene		5 U				
Bromoform		5 U				
trans-1,4-Dichloro-2-butene		11 U				
1,1,2,2-Tetrachloroethane		5 U				
1,2,3-Trichloropropane		11 U				
1,3-Dichlorobenzene		5 U				
1,4-Dichlorobenzene		5 U				
1,2-Dichlorobenzene		5 U				
1,2-Dibromo-3-Chloropropane		11 U				
TCLP VOCs (ug/L)						
Vinyl Chloride		5 U	U			
1,1-Dichloroethene		5 U	U			
2-Butanone		10 U	U			
Chloroform		5 U	U			
Carbon Tetrachloride		5 U	U			
1,2-Dichloroethane		5 U	U			
Benzene		5 U	U			
Trichloroethene		5 U	U			
Tetrachloroethene		5 U	U			
Chlorobenzene		5 U	U			
1,4-Dichlorobenzene		5 U	U			
RADIONUCLIDES (pCi/g)						
Gross Alpha	1.26E+01 ± 2.69E+00					
Strontium-90	7.10E+01 ± 2.94E+01		J			
Americium-241	7.16E-01 ± 3.71E-02		U			
Antimony-125	7.86E-01 ± 3.83E-02		U			
Cerium-144	1.11E+00 ± 5.07E-02		U			
Cesium-134	9.61E-01 ± 6.76E-02					
Cesium-137	4.35E+02 ± 3.34E+01					
Cobalt-58	4.17E-02 ± 2.52E-03		U			
Cobalt-60	6.59E-01 ± 4.36E-03					
Europium-152	1.31E+00 ± 2.07E-01					
Europium-154	1.52E-01 ± 7.33E-02		U			
Europium-155	5.75E-01 ± 2.77E-02		U			
Manganese-54	4.09E-02 ± 2.32E-03		U			
Niobium-95	4.74E-02 ± 3.15E-03		U			
Radium-226	2.97E+01 ± 3.74E+00					
Ruthenium-103	2.99E-01 ± 1.70E-02		U			
Ruthenium-106	1.55E+00 ± 1.12E-01		U			
Silver-108m	1.62E-01 ± 1.15E-02		U			
Silver-110m	6.35E-01 ± 4.85E-02		U			
Uranium-235	2.62E-01 ± 1.24E-02		U			
Zinc-65	1.08E-01 ± 5.04E-03		U			
Zirconium-95	7.97E-02 ± 5.38E-03		U			

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #2	L	V	HOT CELL #2	L	V
MEDIA	SOIL	Q	Q	SOIL	Q	Q
SAMPLE NUMBER	ARA50201	F	F	ARA50201 (re)	F	F
METALS (mg/kg)						
Aluminum	2410	N*	J			
Antimony	5.0	UN	R			
Arsenic	9.0					
Barium	42.9					
Beryllium	0.11	B	U			
Cadmium	0.67	U				
Calcium	65300					
Chromium	69.3	N	J			
Cobalt	45.6	N	J			
Copper	115	N*	J			
Iron	11000					
Lead	3.5					
Magnesium	4820					
Manganese	231					
Mercury	0.05	B	U			
Nickel	22.2					
Potassium	657					
Selenium	0.51	BN	UJ			
Silver	1.9	BN	R			
Sodium	174		J			
Thallium	0.74	U	R			
Vanadium	77.1					
Zinc	404		R			
% Solids	98.9					
TCLP METALS (ug/L)						
Arsenic	12.0	U				
Barium	706	B				
Cadmium	9.8	B				
Chromium	6.6	U				
Lead	41.6	U				
Mercury	0.26	B				
Selenium	17.7	U				
Silver	5.3	UN	UJ			
% Solids	100					
PCBs (ug/kg)						
Aroclor-1016	34	U	U	34	U	UJ
Aroclor-1221	67	U	U	67	U	UJ
Aroclor-1232	34	U	U	34	U	UJ
Aroclor-1242	34	U	U	34	U	UJ
Aroclor-1248	34	U	U	34	U	UJ
Aroclor-1254	13	J	J	23	J	J
Aroclor-1260	34	U	U	34	U	UJ

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #2	L	V	HOT CELL #2	L	V
MEDIA	SOIL	Q	Q	SOIL	Q	Q
SAMPLE NUMBER	ARA50201	F	F	ARA50201 (re)	F	F
SVOCs (ug/kg)						
N-nitrosodimethylamine	340 U					
Pyridine	340 U					
bis (2-Chloroethyl) ether	340 U					
Aniline	340 U					
Phenol	20 J					
2-Chlorophenol	340 U					
1,3-Dichlorobenzene	340 U					
1,4-Dichlorobenzene	340 U					
1,2-Dichlorobenzene	340 U					
Benzyl Alcohol	340 U					
2,2'-oxybis (1-chloropropane)	340 U					
2-Methylphenol	340 U					
Hexachloroethane	340 U					
N-Nitroso-di-n-propylamine	340 U					
4-Methylphenol	340 U					
Nitrobenzene	340 U					
Isophorone	340 U					
2-Nitrophenol	340 U					
2,4-Dimethylphenol	340 U					
bis (2-Chloroethoxy) methane	340 U					
Benzoic Acid	1700 U					
2,4-Dichlorophenol	340 U					
1,2,4-Trichlorobenzene	340 U					
Naphthalene	340 U					
4-Chloroaniline	340 U					
Hexachlorobutadiene	340 U					
4-Chloro-3-methylphenol	340 U					
2-Methylnaphthalene	340 U					
Hexachlorocyclopentadiene	340 U					
2,4,6-Trichlorophenol	340 U					
2,4,5-Trichlorophenol	1700 U					
2-Chloronaphthalene	340 U					
2-Nitroaniline	1700 U					
Acenaphthylene	340 U					
Dimethylphthalate	340 U					
2,6-Dinitrotoluene	340 U					
Acenaphthene	340 U					
3-Nitroaniline	1700 U					
2,4-Dinitrophenol	1700 U					
Dibenzofuran	340 U					
2,4-Dinitrotoluene	340 U					
4-Nitrophenol	1700 U					
Fluorene	340 U					
4-Chlorophenyl-phenylether	340 U					
Diethylphthalate	17 J					
4-Nitroaniline	1700 U					

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #2	L	V	HOT CELL #2	L	V
MEDIA	SOIL	Q	Q	SOIL	Q	Q
SAMPLE NUMBER	ARA50201	F	F	ARA50201 (re)	F	F
Azobenzene	340 U					
4,6-Dinitro-2-methylphenol	1700 U					
n-Nitrosodiphenylamine	340 U					
4-Bromophenyl-phenylether	340 U					
Hexachlorobenzene	340 U					
Pentachlorophenol	1700 U					
Phenanthrene	64 J					
Anthracene	340 U					
Carbazol	340 U					
Di-n-butylphthalate	1800					
Fluoranthene	59 J					
Benzidine	1700		R			
Pyrene	36 J					
Butylbenzylphthalate	49 J					
3,3'-Dichlorobenzidine	340 U					
Benzo [a] anthracene	340 U					
Chrysene	340 U					
bis (2-Ethylhexyl) phthalate	250 J					
Di-n-octylphthalate	340 U					
Benzo [b] fluoranthene	340 U					
Benzo [k] fluoranthene	340 U					
Benzo [a] pyrene	340 U					
Indeno [1,2,3-cd] pyrene	340 U					
Dibenz [a,h] anthracene	340 U					
Benzo [g,h,i] perylene	340 U					
2-Picoline	340 U					
N-nitrosomethylethylamine	340 U					
Methylmethanesulfonate	340 U					
N-nitrosodiethylamine	340 U					
Ethylmethanesulfonate	340 U					
Pentachloroethane	340 U					
Acetophenone	340 U					
N-nitrosophyrrolidine	340 U					
N-nitrosomorpholine	340 U					
o-Toluidine	340 U					
o,o,o-Triethylphosphorothioate	340 U					
N-nitrosopiperidine	340 U					
Phentermine	340 U					
2,6-Dichlorophenol	340 U					
Hexachloropropene	340 U					
p-Phenylenediamine	340 U					
N-nitroso-di-n-butylamine	340 U					
Safrole	340 U					
1,2,4,5-Tetrachlorobenzene	340 U					
Isosafrole	340 U					
1,4-Naphthoquinone	340 U					
m-Dinitrobenzene	340 U					

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #2	L	V	HOT CELL #2	L	V
MEDIA	SOIL	Q	Q	SOIL	Q	Q
SAMPLE NUMBER	ARA50201	F	F	ARA50201 (re)	F	F
Pentachlorobenzene	340 U					
1-Naphthylamine	340 U					
2-Naphthylamine	340 U					
2,3,4,6-Tetrachlorophenol	340 U					
Thionazin	340 U					
5-Nitro-o-toluidine	340 U					
Diphenylamine	340 U					
sym-Trinitrobenzene	340 U					
Phenacetin	340 U					
4-Aminobiphenyl	340 U					
Pentachloronitrobenzene	340 U					
Pronamide	340 U					
Dinoseb	340 U					
4-Nitroquinoline-1-oxide	340 U					
Methyapyriline	340 U					
Isodrin	340 U					
Aramite	670		R			
p-Dimethylaminoazobenzene	340 U					
Famfur	340		R			
3,3'-Dimethylbenzidine	340 U					
2-Acetoaminofluorene	340 U					
7,12-Dimethylbenz [a] anthracene	340 U					
3-Methylcholanthrene	340 U					
TCLP SVOCs (ug/L)						
Pyridine	25 U		UJ			
1,4-Dichlorobenzene	10 U		UJ			
2-Methylphenol	10 U		UJ			
Hexachloroethane	10 U		UJ			
4-Methylphenol	10 U		UJ			
Nitrobenzene	10 U		UJ			
Hexachlorobutadiene	10 U		UJ			
2,4,6-Trichlorophenol	10 U		UJ			
2,4,5-Trichlorophenol	50 U		UJ			
2,4-Dinitrotoluene	10 U		UJ			
Hexachlorobenzene	10 U		UJ			
Pentachlorophenol	50 U		UJ			
VOCs (ug/kg)						
Dichlorodifluoromethane	10 U			10 U		
Chloromethane	10 U			10 U		
Vinyl Chloride	10 U			10 U		
Bromomethane	10 U			10 U		
Chloroethane	10 U			10 U		
Trichlorofluoromethane	5 U			5 U		
Acrolein	49 U		R	50		R
Acetone	10 U		R	10		R

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #2	L	V	HOT CELL #2	L	V
MEDIA	SOIL	Q	Q	SOIL	Q	Q
SAMPLE NUMBER	ARA50201	F	F	ARA50201 (re)	F	F
1,1-Dichloroethene	5 U			5 U		
Acetonitrile	97 U	R		100		R
Allyl Chloride	10 U			10 U		
Iodomethane	5 U			5 U		
Methylene Chloride	5 U			5 U		
Carbon Disulfide	5 U			5 U		
Acrylonitrile	49 U	R		50		R
trans-1,2-Dichloroethene	5 U			5 U		
Vinyl Acetate	5 U			5 U		
1,1-Dichloroethane	5 U			5 U		
Chloroprene	5 U			5 U		
Propionitrile	97 U	R		100		R
2-Butanone	10 U			10 U		
Methacrylonitrile	10 U			10 U		
cis-1,2-Dichloroethene	5 U			5 U		
Isobutanol	97 U	R		100		R
Chloroform	5 U			5 U		
1,1,1-Trichloroethane	5 U			5 U		
Carbon Tetrachloride	5 U			5 U		
1,2-Dichloroethane	5 U			5 U		
Benzene	5 U			5 U		
Trichloroethene	5 U			5 U		
Methyl Methacrylate	5 U			5 U		
1,2-Dichloropropane	5 U			5 U		
Dibromomethane	5 U			5 U		
1,4-Dioxane	97 U	R		100		R
Bromodichloromethane	5 U			5 U		
4-Methyl-2-pentanone	10 U			10 U		
cis-1,3-Dichloropropene	5 U			5 U		
Toluene	6			5 J		
trans-1,3-Dichloropropene	5 U			5 U		
1,1,2-Trichloroethane	5 U			5 U		
1,2-Dibromoethane	10 U			10 U		
Ethyl Methacrylate	5 U			5 U		
2-Hexanone	10 U			10 U		
Tetrachloroethene	5 U			5 U		
Dibromochloromethane	5 U			5 U		
Chlorobenzene	5 U			5 U		
1,1,1,2-Tetrachloroethane	5 U			5 U		
Ethylbenzene	5 U			5 U		
m and p-Xylenes	5 U			5 U		
o-Xylene	5 U			5 U		

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #2	L	V	HOT CELL #2	L	V
MEDIA	SOIL	Q	Q	SOIL	Q	Q
SAMPLE NUMBER	ARA50201	F	F	ARA50201 (re)	F	F
Styrene		5 U			5 U	
Bromoform		5 U			5 U	
trans-1,4-Dichloro-2-butene		10 U			10 U	
1,1,2,2-Tetrachloroethane		5 U	UJ		5 U	
1,2,3-Trichloropropane		10 U	UJ		10 U	
1,3-Dichlorobenzene		5 U	UJ		5 U	
1,4-Dichlorobenzene		5 U	UJ		5 U	
1,2-Dichlorobenzene		5 U	UJ		5 U	
1,2-Dibromo-3-Chloropropane		10 U	UJ		10 U	
TCLP VOCs (ug/L)						
Vinyl Chloride		5 U	U			
1,1-Dichloroethene		5 U	U			
2-Butanone		10 U	U			
Chloroform		5 U	U			
Carbon Tetrachloride		5 U	U			
1,2-Dichloroethane		5 U	U			
Benzene		5 U	U			
Trichloroethene		5 U	U			
Tetrachloroethene		5 U	U			
Chlorobenzene		5 U	U			
1,4-Dichlorobenzene		5 U	U			
RADIONUCLIDES (pCi/g)						
Gross Alpha	1.18E+01 ± 2.86E+00					
Strontium-90	9.62E+00 ± 6.52E+00		U			
Americium-241	1.08E+00 ± 5.71E-02		U			
Antimony-125	8.89E-01 ± 4.32E-02		U			
Cerium-144	1.10E+00 ± 4.70E-02		U			
Cesium-134	5.82E-01 ± 5.70E-02					
Cesium-137	2.26E+02 ± 1.56E+01					
Cobalt-58	8.22E-02 ± 4.75E-03		U			
Cobalt-60	3.09E-01 ± 4.11E-02					
Europium-152	4.93E+00 ± 4.57E-01					
Europium-154	2.88E-01 ± 9.80E-02					
Europium-155	6.03E-01 ± 2.87E-02		U			
Manganese-54	4.44E-02 ± 1.83E-02		UJ			
Niobium-95	8.65E-02 ± 5.37E-03		U			
Radium-226	1.43E+01 ± 2.22E+00					
Ruthenium-103	3.36E-01 ± 1.86E-02		U			
Ruthenium-106	1.76E+00 ± 1.16E-01		U			
Silver-108m	1.83E-01 ± 1.20E-02		U			
Silver-110m	3.91E-01 ± 2.69E-02		U			
Uranium-235	2.65E-01 ± 1.21E-02		U			
Zinc-65	2.09E-01 ± 9.60E-03		U			
Zirconium-95	1.49E-01 ± 9.35E-03		U			

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	CONCRETE	Q	Q	CONCRETE	Q	Q
SAMPLE NUMBER	ARA50901	F	F	ARA50901 (re)	F	F
METALS (mg/kg)						
Aluminum	6970					
Antimony	5.2	UN	R			
Arsenic	3.7		J			
Barium	134					
Beryllium	0.29	B	U			
Cadmium	0.70	U				
Calcium	93400		R			
Chromium	17.3					
Cobalt	9.7					
Copper	24.9	N	J			
Iron	9590					
Lead	6.3	N*	R			
Magnesium	5000		R			
Manganese	133		R			
Mercury	2.4					
Nickel	12.4	B				
Potassium	1200		R			
Selenium	0.39	BN	R			
Silver	0.93	U	R			
Sodium	400		R			
Thallium	0.77	U	R			
Vanadium	22.2					
Zinc	36.2	E				
% Solids	96.7					
TCLP METALS (ug/L)						
Arsenic						
Barium						
Cadmium						
Chromium						
Lead						
Mercury						
Selenium						
Silver						
% Solids						
PCBs (ug/kg)						
Aroclor-1016	34	U	U	34	U	U
Aroclor-1221	69	U	U	69	U	U
Aroclor-1232	34	U	U	34	U	U
Aroclor-1242	34	U	U	34	U	U
Aroclor-1248	34	U	U	34	U	U
Aroclor-1254	160		R	34	U	U
Aroclor-1260	34	U	U	34	U	U

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	CONCRETE	Q	Q	CONCRETE	Q	Q
SAMPLE NUMBER	ARA50901	F	F	ARA50901 (re)	F	F
SVOCs (ug/kg)						
N-nitrosodimethylamine	34000	UD	U			
Pyridine	34000	UD	U			
bis (2-Chloroethyl) ether	34000	UD	U			
Aniline	34000	UD	U			
Phenol	34000	UD	U			
2-Chlorophenol	34000	UD	U			
1,3-Dichlorobenzene	34000	UD	U			
1,4-Dichlorobenzene	34000	UD	U			
1,2-Dichlorobenzene	34000	UD	U			
Benzyl Alcohol	34000	UD	U			
2,2'-oxybis (1-chloropropane)	34000	UD	U			
2-Methylphenol	34000	UD	U			
Hexachloroethane	34000	UD	U			
N-Nitroso-di-n-propylamine	34000	UD	U			
4-Methylphenol	34000	UD	U			
Nitrobenzene	34000	UD	U			
Isophorone	34000	UD	U			
2-Nitrophenol	34000	UD	U			
2,4-Dimethylphenol	34000	UD	U			
bis (2-Chloroethoxy) methane	34000	UD	U			
Benzoic Acid	170000	UD	U			
2,4-Dichlorophenol	34000	UD	U			
1,2,4-Trichlorobenzene	34000	UD	U			
Naphthalene	34000	UD	U			
4-Chloroaniline	34000	UD	U			
Hexachlorobutadiene	34000	UD	U			
4-Chloro-3-methylphenol	34000	UD	U			
2-Methylnaphthalene	34000	UD	U			
Hexachlorocyclopentadiene	34000	UD	U			
2,4,6-Trichlorophenol	34000	UD	U			
2,4,5-Trichlorophenol	170000	UD	U			
2-Chloronaphthalene	34000	UD	U			
2-Nitroaniline	170000	UD	U			
Acenaphthylene	34000	UD	U			
Dimethylphthalate	34000	UD	U			
2,6-Dinitrotoluene	34000	UD	U			
Acenaphthene	34000	UD	U			
3-Nitroaniline	170000	UD	U			
2,4-Dinitrophenol	170000	UD	U			
Dibenzofuran	34000	UD	U			
2,4-Dinitrotoluene	34000	UD	U			
4-Nitrophenol	170000	UD	U			
Fluorene	34000	UD	U			
4-Chlorophenyl-phenylether	34000	UD	U			
Diethylphthalate	34000	UD	U			
4-Nitroaniline	170000	UD	U			

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	CONCRETE	Q	Q	CONCRETE	Q	Q
SAMPLE NUMBER	ARA50901	F	F	ARA50901 (re)	F	F
Azobenzene	34000 UD	U				
4,6-Dinitro-2-methylphenol	170000 UD	U				
n-Nitrosodiphenylamine	34000 UD	U				
4-Bromophenyl-phenylether	34000 UD	U				
Hexachlorobenzene	34000 UD	U				
Pentachlorophenol	170000 UD	U				
Phenanthrene	34000 UD	U				
Anthracene	34000 UD	U				
Carbazol	34000 UD	U				
Di-n-butylphthalate	34000 UD	U				
Fluoranthene	34000 UD	U				
Benzidine	170000 UD	U				
Pyrene	34000 UD	U				
Butylbenzylphthalate	34000 UD	U				
3,3'-Dichlorobenzidine	34000 UD	U				
Benzo [a] anthracene	34000 UD	U				
Chrysene	34000 UD	U				
bis (2-Ethylhexyl) phthalate	34000 UD	U				
Di-n-octylphthalate	34000 UD	U				
Benzo [b] fluoranthene	34000 UD	U				
Benzo [k] fluoranthene	34000 UD	U				
Benzo [a] pyrene	34000 UD	U				
Indeno [1,2,3-cd] pyrene	34000 UD	U				
Dibenz [a,h] anthracene	34000 UD	U				
Benzo [g,h,I] perylene	34000 UD	U				
2-Picoline	34000 UD	U				
N-nitrosomethylethylamine	34000 UD	U				
Methylmethanesulfonate	34000 UD	U				
N-nitrosodiethylamine	34000 UD	U				
Ethylmethanesulfonate	34000 UD	U				
Pentachloroethane	34000 UD	U				
Acetophenone	34000 UD	U				
N-nitrosophyrrolidine	34000 UD	U				
N-nitrosomorpholine	34000 UD	U				
o-Toluidine	34000 UD	U				
o,o,o-Triethylphosphorothioate	34000 UD	U				
N-nitrosopiperidine	34000 UD	U				
Phentermine	34000 UD	U				
2,6-Dichlorophenol	34000 UD	U				
Hexachloropropene	34000 UD	U				
p-Phenylenediamine	34000 UD	U				
N-nitroso-di-n-butylamine	34000 UD	U				
Safrole	34000 UD	U				
1,2,4,5-Tetrachlorobenzene	34000 UD	U				
Isosafrole	34000 UD	U				
1,4-Naphthoquinone	34000 UD	U				
m-Dinitrobenzene	34000 UD	U				

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	CONCRETE	Q	Q	CONCRETE	Q	Q
SAMPLE NUMBER	ARA50901	F	F	ARA50901 (re)	F	F
Pentachlorobenzene	34000	UD	U			
1-Naphthylamine	34000	UD	U			
2-Naphthylamine	34000	UD	U			
2,3,4,6-Tetrachlorophenol	34000	UD	U			
Thionazin	34000	UD	U			
5-Nitro-o-toluidine	34000	UD	U			
Diphenylamine	34000	UD	U			
sym-Trinitrobenzene	34000	UD	U			
Phenacetin	34000	UD	U			
4-Aminobiphenyl	34000	UD	U			
Pentachloronitrobenzene	34000	UD	U			
Pronamide	34000	U	U			
Dinoseb	34000	UD	U			
4-Nitroquinoline-1-oxide	34000	UD	U			
Methyapyriline	34000	UD	U			
Isodrin	34000	UD	U			
Aramite	69000	UD	UR			
p-Dimethylaminoazobenzene	34000	UD	U			
Famfur	34000	UD	UR			
3,3'-Dimethylbenzidine	34000	UD	U			
2-Acetoaminofluorene	34000	UD	U			
7,12-Dimethylbenz [a] anthracene	34000	UD	U			
3-Methylcholanthrene	34000	UD	U			
TCLP SVOCs (ug/L)						
Pyridine						
1,4-Dichlorobenzene						
2-Methylphenol						
Hexachloroethane						
4-Methylphenol						
Nitrobenzene						
Hexachlorobutadiene						
2,4,6-Trichlorophenol						
2,4,5-Trichlorophenol						
2,4-Dinitrotoluene						
Hexachlorobenzene						
Pentachlorophenol						
VOCs (ug/kg)	This sample was not used during validation.					
Dichlorodifluoromethane	10	U	See (re) for data flags.	10	U	UJ
Chloromethane	10	U		10	U	UJ
Vinyl Chloride	10	U		10	U	UJ
Bromomethane	10	U		10	U	UJ
Chloroethane	10	U		10	U	UJ
Trichlorofluoromethane	5	U		5	U	UJ
Acrolein	51	U		52	U	R
Acetone	78			10	U	R

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	CONCRETE	Q	Q	CONCRETE	Q	Q
SAMPLE NUMBER	ARA50901	F	F	ARA50901 (re)	F	F
1,1-Dichloroethene	5 U			5 U		UJ
Acetonitrile	100 U			100 U		R
Allyl Chloride	10 U			10 U		UJ
Iodomethane	5 U			5 U		UJ
Methylene Chloride	5 U			5 U		UJ
Carbon Disulfide	5 U			5 U		UJ
Acrylonitrile	51 U			52 U		R
trans-1,2-Dichloroethene	5 U			5 U		UJ
Vinyl Acetate	5 U			5 U		UJ
1,1-Dichloroethane	5 U			5 U		UJ
Chloroprene	5 U			5 U		UJ
Propionitrile	100 U			100 U		R
2-Butanone	10 U			12		J
Methacrylonitrile	10 U			10 U		UJ
cis-1,2-Dichloroethene	5 U			5 U		UJ
Isobutanol	100 U			5 J		J
Chloroform	5 U			5 U		UJ
1,1,1-Trichloroethane	5 U			5 U		UJ
Carbon Tetrachloride	5 U			5 U		UJ
1,2-Dichloroethane	5 U			5 U		UJ
Benzene	5 U			5 U		UJ
Trichloroethene	5 U			5 U		UJ
Methyl Methacrylate	5 U			5 U		UJ
1,2-Dichloropropane	5 U			5 U		UJ
Dibromomethane	5 U			5 U		UJ
1,4-Dioxane	100 U			100 U		R
Bromodichloromethane	5 U			5 U		UJ
4-Methyl-2-pentanone	10 U			10 U		UJ
cis-1,3-Dichloropropene	5 U			5 U		UJ
Toluene	4 J			5 U		UJ
trans-1,3-Dichloropropene	5 U			5 U		UJ
1,1,2-Trichloroethane	5 U			5 U		UJ
1,2-Dibromoethane	10 U			10 U		UJ
Ethyl Methacrylate	5 U			5 U		UJ
2-Hexanone	10 U			10 U		UJ
Tetrachloroethene	5 U			5 U		UJ
Dibromochloromethane	5 U			5 U		UJ
Chlorobenzene	5 U			5 U		UJ
1,1,1,2-Tetrachloroethane	5 U			5 U		UJ
Ethylbenzene	5 U			5 U		UJ
m and p-Xylenes	5 U			5 U		UJ
o-Xylene	5 U			5 U		UJ

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L Q	V Q	HOT CELL #1	L Q	V Q
MEDIA	CONCRETE	F	F	CONCRETE	F	F
SAMPLE NUMBER	ARA50901			ARA50901 (re)		
Styrene		5 U			5 U	UJ
Bromoform		5 U			5 U	UJ
trans-1,4-Dichloro-2-butene		10 U			10 U	UJ
1,1,2,2-Tetrachloroethane		5 U			5 U	UJ
1,2,3-Trichloropropane		10 U			10 U	UJ
1,3-Dichlorobenzene		5 U			5 U	UJ
1,4-Dichlorobenzene		5 U			5 U	UJ
1,2-Dichlorobenzene		5 U			5 U	UJ
1,2-Dibromo-3-Chloropropane		10 U			10 U	UJ
TCLP VOCs (ug/L)						
Vinyl Chloride						
1,1-Dichloroethene						
2-Butanone						
Chloroform						
Carbon Tetrachloride						
1,2-Dichloroethane						
Benzene						
Trichloroethene						
Tetrachloroethene						
Chlorobenzene						
1,4-Dichlorobenzene						
RADIONUCLIDES (pCi/g)						
Gross Alpha	5.48E+00	±	2.27E+00	UJ		
Strontium-90	1.68E+02	±	4.33E+01	J		
Americium-241	1.46E+00	±	7.55E-02	U		
Antimony-125	1.72E+00	±	8.33E-02	U		
Cerium-144	2.15E+00	±	9.82E-02	U		
Cesium-134	2.28E+00	±	1.52E+00	U		
Cesium-137	1.27E+03	±	9.74E+01			
Cobalt-58	5.66E-02	±	3.42E-03	U		
Cobalt-60	2.47E-01	±	3.01E-02			
Europium-152	5.18E-01	±	2.41E-02	U		
Europium-154	1.34E-01	±	6.48E-03	U		
Europium-155	1.12E+00	±	5.38E-02	U		
Manganese-54	3.56E-02	±	1.48E-02	UJ		
Niobium-95	3.68E-02	±	1.44E-02	UJ		
Radium-226	4.46E+01	±	4.15E+00			
Ruthenium-103	6.58E-01	±	3.74E-02	U		
Ruthenium-106	3.12E+00	±	2.25E-01	U		
Silver-108m	3.30E-01	±	2.34E-02	U		
Silver-110m	1.33E+00	±	1.01E-01	U		
Uranium-235	2.72E+00	±	2.54E-01			
Zinc-65	1.24E-01	±	5.79E-03	U		
Zirconium-95	1.00E-01	±	6.75E-03	U		

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	CONCRETE-Duplicate	Q	Q	CONCRETE-Duplicate	Q	Q
SAMPLE NUMBER	ARA51001	F	F	ARA51001 (re)	F	F
METALS (mg/kg)						
Aluminum	7000					
Antimony	5.3	UN	R			
Arsenic	5.8		J			
Barium	146					
Beryllium	0.32	B	U			
Cadmium	0.71	U				
Calcium	90600		R			
Chromium	18.4					
Cobalt	15.1					
Copper	25.1	N	J			
Iron	9510					
Lead	8.1	N*	R			
Magnesium	4860		R			
Manganese	143					
Mercury	2.8					
Nickel	13.5	B				
Potassium	1350		R			
Selenium	0.34	BN	R			
Silver	0.94	U	R			
Sodium	577		R			
Thallium	0.78	U	R			
Vanadium	22.4					
Zinc	38.8	E				
% Solids	96.8					
TCLP METALS (ug/L)						
Arsenic						
Barium						
Cadmium						
Chromium						
Lead						
Mercury						
Selenium						
Silver						
% Solids						
PCBs (ug/kg)						
Aroclor-1016	34	U	U	34	U	U
Aroclor-1221	69	U	U	69	U	U
Aroclor-1232	34	U	U	34	U	U
Aroclor-1242	34	U	U	34	U	U
Aroclor-1248	34	U	U	34	U	U
Aroclor-1254	34	J	J	21	J	J
Aroclor-1260	34	U	U	34	U	U

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	CONCRETE-Duplicate	Q	Q	CONCRETE-Duplicate	Q	Q
SAMPLE NUMBER	ARA51001	F	F	ARA51001 (re)	F	F
SVOCs (ug/kg)						
N-nitrosodimethylamine	34000	UD	U			
Pyridine	34000	UD	U			
bis (2-Chloroethyl) ether	34000	UD	U			
Aniline	34000	UD	U			
Phenol	34000	UD	U			
2-Chlorophenol	34000	UD	U			
1,3-Dichlorobenzene	34000	UD	U			
1,4-Dichlorobenzene	34000	UD	U			
1,2-Dichlorobenzene	34000	UD	U			
Benzyl Alcohol	34000	UD	U			
2,2'-oxybis (1-chloropropane)	34000	UD	U			
2-Methylphenol	34000	UD	U			
Hexachloroethane	34000	UD	U			
N-Nitroso-di-n-propylamine	34000	UD	U			
4-Methylphenol	34000	UD	U			
Nitrobenzene	34000	UD	U			
Isophorone	2300	JD	U			
2-Nitrophenol	34000	UD	U			
2,4-Dimethylphenol	34000	UD	U			
bis (2-Chloroethoxy) methane	34000	UD	U			
Benzoic Acid	170000	UD	U			
2,4-Dichlorophenol	34000	UD	U			
1,2,4-Trichlorobenzene	34000	UD	U			
Naphthalene	34000	UD	U			
4-Chloroaniline	34000	UD	U			
Hexachlorobutadiene	34000	UD	U			
4-Chloro-3-methylphenol	34000	UD	U			
2-Methylnaphthalene	34000	UD	U			
Hexachlorocyclopentadiene	34000	UD	U			
2,4,6-Trichlorophenol	34000	UD	U			
2,4,5-Trichlorophenol	170000	UD	U			
2-Chloronaphthalene	34000	UD	U			
2-Nitroaniline	170000	UD	U			
Acenaphthylene	34000	UD	U			
Dimethylphthalate	34000	UD	U			
2,6-Dinitrotoluene	34000	UD	U			
Acenaphthene	34000	UD	U			
3-Nitroaniline	170000	UD	U			
2,4-Dinitrophenol	170000	UD	U			
Dibenzofuran	34000	UD	U			
2,4-Dinitrotoluene	34000	UD	U			
4-Nitrophenol	170000	UD	U			
Fluorene	34000	UD	U			
4-Chlorophenyl-phenylether	34000	UD	U			
Diethylphthalate	34000	UD	U			
4-Nitroaniline	170000	UD	U			

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	CONCRETE-Duplicate	Q	Q	CONCRETE-Duplicate	Q	Q
SAMPLE NUMBER	ARA51001	F	F	ARA51001 (re)	F	F
Azobenzene	34000	UD	U			
4,6-Dinitro-2-methylphenol	170000	UD	U			
n-Nitrosodiphenylamine	34000	UD	U			
4-Bromophenyl-phenylether	34000	UD	U			
Hexachlorobenzene	34000	UD	U			
Pentachlorophenol	170000	UD	U			
Phenanthrene	34000	UD	U			
Anthracene	34000	UD	U			
Carbazol	34000	UD	U			
Di-n-butylphthalate	34000	UD	U			
Fluoranthene	34000	UD	U			
Benzidine	170000	UD	U			
Pyrene	34000	UD	U			
Butylbenzylphthalate	34000	UD	U			
3,3'-Dichlorobenzidine	34000	UD	U			
Benzo [a] anthracene	34000	UD	U			
Chrysene	34000	UD	U			
bis (2-Ethylhexyl) phthalate	34000	UD	U			
Di-n-octylphthalate	34000	UD	U			
Benzo [b] fluoranthene	34000	UD	U			
Benzo [k] fluoranthene	34000	UD	U			
Benzo [a] pyrene	34000	UD	U			
Indeno [1,2,3-cd] pyrene	34000	UD	U			
Dibenz [a,h] anthracene	34000	UD	U			
Benzo [g,h,I] perylene	34000	UD	U			
2-Picoline	34000	UD	U			
N-nitrosomethylethylamine	34000	UD	U			
Methylmethanesulfonate	34000	UD	U			
N-nitrosodiethylamine	34000	UD	U			
Ethylmethanesulfonate	34000	UD	U			
Pentachloroethane	34000	UD	U			
Acetophenone	34000	UD	U			
N-nitrosophyrrolidine	34000	UD	U			
N-nitrosomorpholine	34000	UD	U			
o-Toluidine	34000	UD	U			
o,o,o-Triethylphosphorothioate	34000	UD	U			
N-nitrosopiperidine	34000	UD	U			
Phentermine	34000	UD	U			
2,6-Dichlorophenol	34000	UD	U			
Hexachloropropene	34000	UD	U			
p-Phenylenediamine	34000	UD	U			
N-nitroso-di-n-butylamine	34000	UD	U			
Safrole	34000	UD	U			
1,2,4,5-Tetrachlorobenzene	34000	UD	U			
Isosafrole	34000	UD	U			
1,4-Naphthoquinone	34000	UD	U			
m-Dinitrobenzene	34000	UD	U			

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	CONCRETE-Duplicate	Q	Q	CONCRETE-Duplicate	Q	Q
SAMPLE NUMBER	ARA51001	F	F	ARA51001 (re)	F	F
Pentachlorobenzene	34000	UD	U			
1-Naphthylamine	34000	UD	U			
2-Naphthylamine	34000	UD	U			
2,3,4,6-Tetrachlorophenol	34000	UD	U			
Thionazin	34000	UD	U			
5-Nitro-o-toluidine	34000	UD	U			
Diphenylamine	34000	UD	U			
sym-Trinitrobenzene	34000	UD	U			
Phenacetin	34000	UD	U			
4-Aminobiphenyl	34000	UD	U			
Pentachloronitrobenzene	34000	UD	U			
Pronamide	34000	UD	U			
Dinoseb	34000	UD	U			
4-Nitroquinoline-1-oxide	34000	UD	U			
Methyapyriline	34000	UD	U			
Isodrin	34000	UD	U			
Aramite	69000	UD	UR			
p-Dimethylaminoazobenzene	34000	UD	U			
Famfur	34000	UD	UR			
3,3'-Dimethylbenzidine	34000	UD	U			
2-Acetoaminofluorene	34000	UD	U			
7,12-Dimethylbenz [a] anthracene	34000	UD	U			
3-Methylcholanthrene	34000	UD	U			
TCLP SVOCs (ug/L)						
Pyridine						
1,4-Dichlorobenzene						
2-Methylphenol						
Hexachloroethane						
4-Methylphenol						
Nitrobenzene						
Hexachlorobutadiene						
2,4,6-Trichlorophenol						
2,4,5-Trichlorophenol						
2,4-Dinitrotoluene						
Hexachlorobenzene						
Pentachlorophenol						
VOCs (ug/kg)						
Dichlorodifluoromethane	10	U	R			
Chloromethane	10	U	R			
Vinyl Chloride	10	U	R			
Bromomethane	10	U	R			
Chloroethane	10	U	R			
Trichlorofluoromethane	5	U	R			
Acrolein	51	U	R			
Acetone	68		J			

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	CONCRETE-Duplicate	Q	Q	CONCRETE-Duplicate	Q	Q
SAMPLE NUMBER	ARA51001	F	F	ARA51001 (re)	F	F
1,1-Dichloroethene	5	U	R			
Acetonitrile	100	U	R			
Allyl Chloride	10	U	R			
Iodomethane	5	U	R			
Methylene Chloride	5	U	R			
Carbon Disulfide	5	U	R			
Acrylonitrile	51	U	R			
trans-1,2-Dichloroethene	5	U	R			
Vinyl Acetate	5	U	R			
1,1-Dichloroethane	5	U	R			
Chloroprene	5	U	R			
Propionitrile	100	U	R			
2-Butanone	9	J	J			
Methacrylonitrile	10	U	R			
cis-1,2-Dichloroethene	5	U	R			
Isobutanol	100	U	R			
Chloroform	5	U	R			
1,1,1-Trichloroethane	5	U	R			
Carbon Tetrachloride	5	U	R			
1,2-Dichloroethane	5	U	R			
Benzene	5	U	R			
Trichloroethene	5	U	R			
Methyl Methacrylate	5	U	R			
1,2-Dichloropropane	5	U	R			
Dibromomethane	5	U	R			
1,4-Dioxane	100	U	R			
Bromodichloromethane	5	U	R			
4-Methyl-2-pentanone	22		J			
cis-1,3-Dichloropropene	5	U	R			
Toluene	4	J	J			
trans-1,3-Dichloropropene	5	U	R			
1,1,2-Trichloroethane	5	U	R			
1,2-Dibromoethane	10	U	R			
Ethyl Methacrylate	5	U	R			
2-Hexanone	10	U	R			
Tetrachloroethene	5	U	R			
Dibromochloromethane	5	U	R			
Chlorobenzene	5	U	R			
1,1,1,2-Tetrachloroethane	5	U	R			
Ethylbenzene	5	U	R			
m and p-Xylenes	5	U	R			
o-Xylene	5	U	R			

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #1	L	V	HOT CELL #1	L	V
MEDIA	CONCRETE-Duplicate	Q	Q	CONCRETE-Duplicate	Q	Q
SAMPLE NUMBER	ARA51001	F	F	ARA51001 (re)	F	F
Styrene	5	U	R			
Bromoform	5	U	R			
trans-1,4-Dichloro-2-butene	10	U	R			
1,1,2,2-Tetrachloroethane	5	U	R			
1,2,3-Trichloropropane	10	U	R			
1,3-Dichlorobenzene	5	U	R			
1,4-Dichlorobenzene	5	U	R			
1,2-Dichlorobenzene	5	U	R			
1,2-Dibromo-3-Chloropropane	10	U	R			
TCLP VOCs (ug/L)						
Vinyl Chloride						
1,1-Dichloroethene						
2-Butanone						
Chloroform						
Carbon Tetrachloride						
1,2-Dichloroethane						
Benzene						
Trichloroethene						
Tetrachloroethene						
Chlorobenzene						
1,4-Dichlorobenzene						
RADIONUCLIDES (pCi/g)						
Gross Alpha	4.84E+00 ± 2.06E+00			UJ		
Strontium-90	-3.13E+00 ± -1.86E+00			UJ		
Americium-241	5.96E-01 ± 3.18E-02			U		
Antimony-125	7.26E-01 ± 3.69E-02			U		
Cerium-144	7.91E-01 ± 3.50E-02			U		
Cesium-134	3.43E-01 ± 3.92E-02					
Cesium-137	2.01E+02 ± 1.33E+01					
Cobalt-58	5.19E-02 ± 2.92E-03			U		
Cobalt-60	6.67E-02 ± 3.23E-03			U		
Europium-152	4.16E-01 ± 1.90E-02			U		
Europium-154	1.55E-01 ± 7.29E-03			U		
Europium-155	4.09E-01 ± 2.05E-02			U		
Manganese-54	4.93E-02 ± 2.66E-03			U		
Niobium-95	5.38E-02 ± 3.23E-03			U		
Radium-226	3.32E+00 ± 1.63E-01			U		
Ruthenium-103	2.81E-01 ± 1.58E-02			U		
Ruthenium-106	1.79E+00 ± 1.15E-01			U		
Silver-108m	1.80E-01 ± 1.15E-02			U		
Silver-110m	2.74E-01 ± 1.80E-02			U		
Uranium-235	2.01E-01 ± 9.88E-03			U		
Zinc-65	1.03E-01 ± 4.70E-03			U		
Zirconium-95	9.46E-02 ± 5.75E-03			U		

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #2	L	V	HOT CELL #2	L	V
MEDIA	CONCRETE	Q	Q	CONCRETE	Q	Q
SAMPLE NUMBER	ARA51101	F	F	ARA51101 (re)	F	F
METALS (mg/kg)						
Aluminum	5690					
Antimony	5.0	UN	R			
Arsenic	8.5					
Barium	101					
Beryllium	0.28	B	U			
Cadmium	0.66	U				
Calcium	76700		R			
Chromium	13.5					
Cobalt	8.8					
Copper	18.5	N	J			
Iron	10500					
Lead	8.3	N*	R			
Magnesium	4290		R			
Manganese	149					
Mercury	0.05	B				
Nickel	12.6	B				
Potassium	1290		R			
Selenium	0.43	BN	R			
Silver	0.88	U	R			
Sodium	480		R			
Thallium	0.73	U	R			
Vanadium	18.3					
Zinc	62.5	E				
% Solids	97.5					
TCLP METALS (ug/L)						
Arsenic						
Barium						
Cadmium						
Chromium						
Lead						
Mercury						
Selenium						
Silver						
% Solids						
PCBs (ug/kg)						
Aroclor-1016	34	U	U	34	U	U
Aroclor-1221	68	U	U	68	U	U
Aroclor-1232	34	U	U	34	U	U
Aroclor-1242	34	U	U	34	U	U
Aroclor-1248	34	U	U	34	U	U
Aroclor-1254	21	J	J	29	J	J
Aroclor-1260	15	J	J	27	J	J

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #2	L	V	HOT CELL #2	L	V
MEDIA	CONCRETE	Q	Q	CONCRETE	Q	Q
SAMPLE NUMBER	ARA51101	F	F	ARA51101 (re)	F	F
SVOCs (ug/kg)						
N-nitrosodimethylamine	34000	UD	U			
Pyridine	34000	UD	U			
bis (2-Chloroethyl) ether	34000	UD	U			
Aniline	34000	UD	U			
Phenol	34000	UD	U			
2-Chlorophenol	34000	UD	U			
1,3-Dichlorobenzene	34000	UD	U			
1,4-Dichlorobenzene	34000	UD	U			
1,2-Dichlorobenzene	34000	UD	U			
Benzyl Alcohol	34000	UD	U			
2,2'-oxybis (1-chloropropane)	34000	UD	U			
2-Methylphenol	34000	UD	U			
Hexachloroethane	34000	UD	U			
N-Nitroso-di-n-propylamine	34000	UD	U			
4-Methylphenol	34000	UD	U			
Nitrobenzene	34000	UD	U			
Isophorone	34000	UD	U			
2-Nitrophenol	34000	UD	U			
2,4-Dimethylphenol	34000	UD	U			
bis (2-Chloroethoxy) methane	34000	UD	U			
Benzoic Acid	170000	UD	U			
2,4-Dichlorophenol	34000	UD	U			
1,2,4-Trichlorobenzene	34000	UD	U			
Naphthalene	34000	UD	U			
4-Chloroaniline	34000	UD	U			
Hexachlorobutadiene	34000	UD	U			
4-Chloro-3-methylphenol	34000	UD	U			
2-Methylnaphthalene	34000	UD	U			
Hexachlorocyclopentadiene	34000	UD	U			
2,4,6-Trichlorophenol	34000	UD	U			
2,4,5-Trichlorophenol	170000	UD	U			
2-Chloronaphthalene	34000	UD	U			
2-Nitroaniline	170000	UD	U			
Acenaphthylene	34000	UD	U			
Dimethylphthalate	34000	UD	U			
2,6-Dinitrotoluene	34000	UD	U			
Acenaphthene	34000	UD	U			
3-Nitroaniline	170000	UD	U			
2,4-Dinitrophenol	170000	UD	U			
Dibenzofuran	34000	UD	U			
2,4-Dinitrotoluene	34000	UD	U			
4-Nitrophenol	170000	UD	U			
Fluorene	34000	UD	U			
4-Chlorophenyl-phenylether	34000	UD	U			
Diethylphthalate	34000	UD	U			
4-Nitroaniline	170000	UD	U			

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #2	L	V	HOT CELL #2	L	V
MEDIA	CONCRETE	Q	Q	CONCRETE	Q	Q
SAMPLE NUMBER	ARA51101	F	F	ARA51101 (re)	F	F
Azobenzene	34000 UD		U			
4,6-Dinitro-2-methylphenol	170000 UD		U			
n-Nitrosodiphenylamine	34000 UD		U			
4-Bromophenyl-phenylether	34000 UD		U			
Hexachlorobenzene	34000 UD		U			
Pentachlorophenol	170000 UD		U			
Phenanthrene	34000 UD		U			
Anthracene	34000 UD		U			
Carbazol	34000 UD		U			
Di-n-butylphthalate	1800 JD		U			
Fluoranthene	34000 UD		U			
Benzidine	170000 UD		U			
Pyrene	34000 UD		U			
Butylbenzylphthalate	34000 UD		U			
3,3'-Dichlorobenzidine	34000 UD		U			
Benzo [a] anthracene	34000 UD		U			
Chrysene	34000 UD		U			
bis (2-Ethylhexyl) phthalate	34000 UD		U			
Di-n-octylphthalate	34000 UD		U			
Benzo [b] fluoranthene	34000 UD		U			
Benzo [k] fluoranthene	34000 UD		U			
Benzo [a] pyrene	34000 UD		U			
Indeno [1,2,3-cd] pyrene	34000 UD		U			
Dibenz [a,h] anthracene	34000 UD		U			
Benzo [g,h,I] perylene	34000 UD		U			
2-Picoline	34000 UD		U			
N-nitrosomethylethylamine	34000 UD		U			
Methylmethanesulfonate	34000 UD		U			
N-nitrosodiethylamine	34000 UD		U			
Ethylmethanesulfonate	34000 UD		U			
Pentachloroethane	34000 UD		U			
Acetophenone	34000 UD		U			
N-nitrosophyrrolidine	34000 UD		U			
N-nitrosomorpholine	34000 UD		U			
o-Toluidine	34000 UD		U			
o,o,o-Triethylphosphorothioate	34000 UD		U			
N-nitrosopiperidine	34000 UD		U			
Phentermine	34000 UD		U			
2,6-Dichlorophenol	34000 UD		U			
Hexachloropropene	34000 UD		U			
p-Phenylenediamine	34000 UD		U			
N-nitroso-di-n-butylamine	34000 UD		U			
Safrole	34000 UD		U			
1,2,4,5-Tetrachlorobenzene	34000 UD		U			
Isosafrole	34000 UD		U			
1,4-Naphthoquinone	34000 UD		U			
m-Dinitrobenzene	34000 UD		U			

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #2	L	V	HOT CELL #2	L	V
MEDIA	CONCRETE	Q	Q	CONCRETE	Q	Q
SAMPLE NUMBER	ARA51101	F	F	ARA51101 (re)	F	F
Pentachlorobenzene	34000	UD	U			
1-Naphthylamine	34000	UD	U			
2-Naphthylamine	34000	UD	U			
2,3,4,6-Tetrachlorophenol	34000	UD	U			
Thionazin	34000	UD	U			
5-Nitro-o-toluidine	34000	UD	U			
Diphenylamine	34000	UD	U			
sym-Trinitrobenzene	34000	UD	U			
Phenacetin	34000	UD	U			
4-Aminobiphenyl	34000	UD	U			
Pentachloronitrobenzene	34000	UD	U			
Pronamide	34000	UD	U			
Dinoseb	34000	UD	U			
4-Nitroquinoline-1-oxide	34000	UD	U			
Methyapyriline	34000	UD	U			
Isodrin	34000	UD	U			
Aramite	68000	UD	UR			
p-Dimethylaminoazobenzene	34000	UD	U			
Famfur	34000	UD	UR			
3,3'-Dimethylbenzidine	34000	UD	U			
2-Acetoaminofluorene	34000	UD	U			
7,12-Dimethylbenz [a] anthracene	34000	UD	U			
3-Methylcholanthrene	34000	UD	U			
TCLP SVOCs (ug/L)						
Pyridine						
1,4-Dichlorobenzene						
2-Methylphenol						
Hexachloroethane						
4-Methylphenol						
Nitrobenzene						
Hexachlorobutadiene						
2,4,6-Trichlorophenol						
2,4,5-Trichlorophenol						
2,4-Dinitrotoluene						
Hexachlorobenzene						
Pentachlorophenol						
VOCs (ug/kg)	This sample was not used during validation.					
Dichlorodifluoromethane	10	U	See (re) for data flags.	21	U	R
Chloromethane	10	U		21	U	R
Vinyl Chloride	10	U		21	U	R
Bromomethane	10	U		21	U	R
Chloroethane	10	U		21	U	R
Trichlorofluoromethane	5	U		10	U	R
Acrolein	51	U		100	U	R
Acetone	86			65		J

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #2	L	V	HOT CELL #2	L	V
MEDIA	CONCRETE	Q	Q	CONCRETE	Q	Q
SAMPLE NUMBER	ARA51101	F	F	ARA51101 (re)	F	F
1,1-Dichloroethene	5	U		10	U	R
Acetonitrile	100	U		210	U	R
Allyl Chloride	10	U		21	U	R
Iodomethane	5	U		10	U	R
Methylene Chloride	5	U		10	U	R
Carbon Disulfide	5	U		10	U	R
Acrylonitrile	51	U		100	U	R
trans-1,2-Dichloroethene	5	U		10	U	R
Vinyl Acetate	5	U		10	U	R
1,1-Dichloroethane	5	U		10	U	R
Chloroprene	5	U		10	U	R
Propionitrile	100	U		210	U	R
2-Butanone	17			26		J
Methacrylonitrile	10	U		21	U	R
cis-1,2-Dichloroethene	5	U		10	U	R
Isobutanol	100	U		210	U	R
Chloroform	5	U		10	U	R
1,1,1-Trichloroethane	5	U		10	U	R
Carbon Tetrachloride	5	U		10	U	R
1,2-Dichloroethane	5	U		10	U	R
Benzene	5	U		10	U	R
Trichloroethene	5	U		10	U	R
Methyl Methacrylate	5	U		10	U	R
1,2-Dichloropropane	5	U		10	U	R
Dibromomethane	5	U		10	U	R
1,4-Dioxane	100	U		210	U	R
Bromodichloromethane	5	U		10	U	R
4-Methyl-2-pentanone	10	U		21	U	R
cis-1,3-Dichloropropene	5	U		10	U	R
Toluene	12			12		J
trans-1.3-Dichloropropene	5	U		10	U	R
1,1,2-Trichloroethane	5	U		10	U	R
1,2-Dibromoethane	10	U		21	U	R
Ethyl Methacrylate	5	U		10	U	R
2-Hexanone	10	U		21	U	R
Tetrachloroethene	5	U		10	U	R
Dibromochloromethane	5	U		10	U	R
Chlorobenzene	5	U		10	U	R
1,1,1,2-Tetrachloroethane	5	U		10	U	R
Ethylbenzene	5	U		10	U	R
m and p-Xylenes	2	J		10	U	R
o-Xylene	5	U		10	U	R

AREA	ARA I, II, III			ARA I, II, III		
LOCATION	ARA I BLDG 626			ARA I BLDG 626		
TYPE OF LOCATION	HOT CELL #2	L	V	HOT CELL #2	L	V
MEDIA	CONCRETE	Q	Q	CONCRETE	Q	Q
SAMPLE NUMBER	ARA51101	F	F	ARA51101 (re)	F	F
Styrene	7			6	J	J
Bromoform	5	U		10	U	R
trans-1,4-Dichloro-2-butene	10	U		21	U	R
1,1,2,2-Tetrachloroethane	5	U		10	U	R
1,2,3-Trichloropropane	10	U		21	U	R
1,3-Dichlorobenzene	5	U		10	U	R
1,4-Dichlorobenzene	5	U		10	U	R
1,2-Dichlorobenzene	5	U		10	U	R
1,2-Dibromo-3-Chloropropane	10	U		21	U	R
TCLP VOCs (ug/L)						
Vinyl Chloride						
1,1-Dichloroethene						
2-Butanone						
Chloroform						
Carbon Tetrachloride						
1,2-Dichloroethane						
Benzene						
Trichloroethene						
Tetrachloroethene						
Chlorobenzene						
1,4-Dichlorobenzene						
RADIONUCLIDES (pCi/g)						
Gross Alpha	9.63E+00	±	2.14E+00			
Strontium-90	1.20E+01	±	6.28E+00	U		
Americium-241	4.56E+00	±	2.43E-01	U		
Antimony-125	5.83E+00	±	2.96E-01	U		
Cerium-144	6.14E+00	±	2.71E-01	U		
Cesium-134	3.32E+01	±	1.93E+00			
Cesium-137	1.24E+04	±	8.19E+02			
Cobalt-58	2.54E-01	±	1.43E-02	U		
Cobalt-60	6.90E+00	±	3.58E-01			
Europium-152	1.89E+00	±	8.63E-02	U		
Europium-154	4.03E-01	±	1.90E-02	U		
Europium-155	3.13E+00	±	1.57E-01	U		
Manganese-54	2.25E-01	±	1.21E-02	U		
Niobium-95	2.75E-01	±	1.62E-02	U		
Radium-226	2.51E+01	±	1.23E+00	U		
Ruthenium-103	1.19E+00	±	6.00E-01	U		
Ruthenium-106	1.39E+01	±	8.93E-01	U		
Silver-108m	1.43E+00	±	9.13E-02	U		
Silver-110m	2.30E+00	±	1.51E-01	U		
Uranium-235	1.53E+00	±	7.50E-02	U		
Zinc-65	4.83E-01	±	2.21E-02	U		
Zirconium-95	4.95E-01	±	3.01E-02	U		