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November 17, 2005

The purpose of these replacement pages is to revise information contained in the FY2004 HRR in response to regulatory agency comments.

The following Pages and Figures are enclosed:

- Pages i, ii, and iii,
- Pages 205 through 219,
- Pages 225 and 226,
- Pages 327 and 328,
- Page 346,
- and Figure 2.2.

Please use the enclosed pages to update your copy of this document. If you have any questions, please contact Susan Serreze at 303-966-2677 or Karen Griggs at 303-966-4743.

Thank you.

Kaiser-Hill Company, L.L.C.
Rocky Flats Environmental Technology Site, 12101 Airport Way, Unit B, Broomfield, CO 80021-2583, 303- 966-7000

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PAC REFERENCE NUMBER: 700-1101

IHSS Number: Not Applicable

Operable Unit: Industrial Area

IHSS Group: 700-10

Unit Name: Laundry Tank Overflow - Building 732

Approximate Location: N750,000; E2,084,000

Date(s) of Operation or Occurrence

June 26, 1979

Description of Operation or Occurrence

IHSS Group 700-10 (PAC 700-1101) consists of Building 732. Building 732 consists of two parts, including a reinforced-concrete stairwell approximately 7 by 17.6 ft (ft) in area and 8 ft high. The stairwell descends to the south and then opens to the east into an underground, reinforced-concrete room 14 by 27.7 ft in extent. Undisturbed soil below the room is approximately 13.7 ft below current grade. Within the room is a 1,000-gallon fiberglass holding tank (T-4), two pumps, and two banks of particulate filters. In the southeastern corner of the room is a sump that is 1.5 by 1.5 ft in area and 2 ft deep. There are no process lines or foundation drains under the building. At the time of construction, the walls of Building 732 were waterproofed on the inside and outside. In the early 1990s additional sealant was applied to all exterior-wall, ceiling, and floor joints (DOE 2004a).

In the past, under normal operations laundry water and water from floor drains in Building 778 were pumped to Building 732, filtered, and then passed on to Valve Vault 9, eventually reaching Building 374 for treatment. Water collected in the Building 732 sump was pumped back to a secondary containment sump in Building 778. From there it was returned to the tank in Building 732 (DOE 2004a).

In June 1979 laundry wastewater in Tank T-4 overflowed onto the room floor because of malfunctioning pumps that normally send the wastewater through the filters. Records do not indicate whether the sump was able to pump the overflow back to Building 778 or whether additional secondary pumping was necessary. It is possible that laundry wastewater was released to the environment (DOE 2004a).

Physical/Chemical Description of Constituents Released

Because of the nature of building activities, it is probable that laundry water released to the environment may have been a low-level waste (DOE 1992).

Responses to Operation or Occurrence

Accelerated action characterization activities were conducted at IHSS Group 700-10, which consists of PAC 700-1101, to characterize the nature and extent of contamination in soil. Characterization activities were conducted in accordance with the IASAP Addendum #IA-04-07 (DOE 2004b).

Fate of Constituents Released to Environment

Based on the 700-1101 site history, radionuclides, and VOCs were identified as COCs. No COCs were detected at concentrations or activities greater than WRW ALs. The characterization results and the rationale for NFAA at PAC 700-1101 are discussed in detail in the Data Summary Report for IHSS Group 700-10 (DOE 2004a). The rationale for NFAA at PAC 700-1101 is summarized below.

Action/No Further Accelerated Action Recommendation

Based on the analytical results and the SSRS, action is not required. An NFAA determination is justified for IHSS Group 700-10, PAC 700-1101, given the following:

Contaminant concentrations were less than WRW ALs.

Migration of contaminants to surface water through erosion is unlikely because the area is not in an area prone to landslides or erosion and because potential contamination would be on the order of 10 to 12 ft below ground surface.

Migration of contaminants in groundwater will not likely impact surface water because of the low levels of soil contamination detected in IHSS Group 700-10. The groundwater is considered part of the IA Plume, which will be further evaluated in the groundwater IM/IRA.

After review of the Data Summary Report by the regulatory agencies, DOE received concurrence from CDPHE (the lead regulatory agency) of the NFAA status for IHSS Group 700-10 (PAC 700-1101) on September 21, 2004 (CDPHE 2004).

References

CDPHE, 2004, Correspondence to J. Legare, DOE RFO, from S. Gunderson, CDPHE, RE: Approval, Draft Data Summary Report for IHSS Group 700-10, PAC 700-1101 Laundry Tank Overflow – Building 732, dated September 2004, September 21, 2004.

DOE, 1992, Historical Release Report for the Rocky Flats Plant, Rocky Flats Plant, Golden, Colorado, August.

DOE, 2004a, Data Summary Report for IHHS Group 700-10, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

DOE, 2004b, Industrial Area Sampling and Analysis Plan Addendum #IA-04-07, IHSS Group 700-10, PAC 700-1101 (Laundry Tank Overflow – Building 732), Rocky Flats Environmental Technology Site, Golden, Colorado, January.

PAC REFERENCE NUMBER: 700-1102

IHSS Number: Not Applicable

Operable Unit: Industrial Area

IHSS Group: Not Applicable

Unit Name: Transformer Leak - 776-4

Approximate Location: N750,500; E2,083,500

Date(s) of Operation or Occurrence

Prior to January 1986

Description of Operation or Occurrence

Prior to January 1986, Transformer 776-4 was located approximately 100 ft west of the northwestern corner of Building 776. The transformer pad at this location was positioned on an incline with drainage toward an access road 15 ft east. In January 1986, a Plant employee reported that a leak was observed from Transformer 776-4. In February 1986, the transformer was again reported to be leaking on the radiator and around the gauges, valves, and bushing compartment. There was an oily film on most of the transformer surfaces and the transformer pad. In an August 1986 photograph, staining was visible on the concrete pad beneath the transformer. Further leaking was reported in August and September 1986. Samples collected in November 1986 of the concrete under the transformer drain valve as well as soil at the southern edge of the transformer pad, were found to be contaminated with PCBs (DOE 1992). The transformer was moved to a new pad several ft north in 1987 (DOE 1996).

Physical/Chemical Description of Constituents Released

In September 1976, the oil in Transformer 776-4 had a PCB concentration of approximately 5 percent (using a PCB test kit). Samples of the oil collected in November 1977 indicated the fluid in the transformer had a PCB concentration of approximately 3 percent. In October 1985, the oil was reported to have a PCB concentration greater than 500 ppm (test method unknown). In November 1986, wipe samples collected from a valve, sidewall, and the concrete pad were found to contain 29.8, 5.0, and 417.5 ppm PCBs, respectively. Also in November 1986, a wipe sample collected from the concrete pad beneath the drain valve was found to contain 498 $\mu g/cm^2$ PCBs. Soil samples collected in November 1986 from the south edge of the original transformer pad indicated 14,900 ppm PCB contamination (DOE 1992).

Responses to Operation or Occurrence

In September 1976, Transformer 776-4 was documented as being drained and refilled with non PCB silicone oil. The transformer was scheduled for replacement under the PCB Fire Hazard Elimination Project in FY 1988. The transformer was removed for retrofilling and relocated several ft north in 1987. The original transformer pad surface was partially removed (scabbled) to a depth of 4 inches and left in place. In March 1989, it was reported that Transformer 776-4 was replaced under the Environmental Hazards Elimination Project. Further cleanup of the site was scheduled on August 10, 1989 (DOE 1992).

As part of the Sitewide Evaluation of Known, Suspect, and Potential Environmental Releases of PCBs conducted in July 1991, soil samples were collected in accordance with approved EPA sampling protocol and analyzed for PCBs using EPA Method 8080. The highest PCB concentration found in soil adjacent to the old concrete transformer pad was 480 ppm (DOE 1995).

In accordance with the agency-approved Final PAM for Remediation of Polychlorinated Biphenyls (DOE 1995), additional samples were collected in 1995 and 1996 to verify the lateral and vertical extent of PCB migration. Soil samples were analyzed using EPA Draft Method 4020, and concrete samples were analyzed using EPA Method 8080. Based upon analytical results for the concrete samples, the highest PCB level on the concrete pad was 56 ppm. In accordance with the PAM (DOE 1995), approximately 177 cy of PCB-contaminated soil and 10.7 cy of PCB-contaminated concrete were excavated to a depth of 17 ft, containerized, and shipped to an EPA-licensed TSCA landfill in Kettleman, California, for disposal (DOE 1997). An area of soil approximately 20 (ft^2), at a depth of 17 ft PCB contaminated at levels of approximately 70 ppm (EPA Method 8080 results) as documented in the Closeout Report for the Source Removal of Polychlorinated Biphenyls (DOE 1997). Excavation was stopped due to health and safety concerns and equipment limitations. The excavation was filled with clean structural backfill in 1996.

This site was recommended for NFA in 1997; however, comments received from the regulatory agencies on July 19, 1999, concluded that additional groundwater samples should be collected to ensure that PCB contamination is not mobilized in the subsurface. Groundwater samples were collected for PCBs during FY2001 at two down-gradient locations: well 22696 and the Building 771/776 tunnel. The underground tunnel connecting Buildings 776 and 771 is immediately east of PAC 700-1102 and approximately 23 ft in depth. Groundwater samples did not contain detectable concentrations of PCBs.

Fate of Constituents Released to Environment

PAC 700-1102 was remediated from an initial PCB contaminant level of 480 ppm Aroclor-1260 in the soil to 70 ppm. Because the residual contamination is 17 ft bgs, and PCBs have not leached into the groundwater, the source removal significantly reduced risk to human health and the environment.

Recently, there has been much toxicological research pertaining to dioxins and other compounds with dioxin-like properties. Although Aroclors (a mixture of PCB congeners) do not contain dioxins, they do contain a few PCB congeners with dioxin-like properties. A White Paper (DOE 2004) was prepared and submitted to CDPHE that evaluates whether cleanup of PCB-contaminated soil at a transformer site to less than 10 ppm Aroclor is sufficiently protective to render PCB sites NFAA in light of recent studies showing that a few PCB congeners have dioxin-like properties. The evaluation presented in the paper demonstrates that the past cleanup of the PCB sites at RFETS to achieve Aroclor levels less than 10 ppm, as well as the future cleanup of transformer sites to achieve the WRW AL of 12.4 ppm adequately protects human health. Although dioxin-like compounds are present in the Aroclors released to soil, the White Paper demonstrates that:

- The health risk posed by the dioxin-like compounds is not a concern at these cleanup levels;
- Weathering of the Aroclors released to the soil is unlikely to significantly alter the congener distribution or the toxicity of the Aroclors; and
- Congener-specific PCB analysis of soil samples, or analysis for dioxins and furans, is not required for characterizing transformer sites at RFETS.

Action/No Further Accelerated Action Recommendation

Although the residual Aroclor concentration at this PCB site is high as 70 ppm, well above the 10 ppm level noted above, the contamination is at a depth of 17 ft, which will preclude direct human exposure to the soil. Therefore, there is no human health risk associated with the residual contamination.

PAC 700-1102 was recommended for NFA in 1997 based upon removal of the contaminant source. Comments received from the regulatory agencies on July 19, 1999 concluded that NFA of this PAC would be granted if downgradient groundwater samples were collected verifying that PCB contamination is not mobilized in the subsurface which could affect surface water quality. The groundwater samples were collected and analyzed, and PCBs were not detected. Based on the site data and White Paper findings noted above, NFAA is appropriate for this PCB site. After review of the NFAA justification by the regulatory agencies, DOE received concurrence from CDPHE (the lead regulatory agency) on the NFAA status for the site on May 6, 2004 (CDPHE 2004).

References

CDPHE, 2004, Correspondence to J. Legare, DOE RFO, from S. Gunderson, CDPHE, RE: No Further Accelerated Action Justification PCB Potential Areas of Concern (April 15, 2004), May 6.

DOE, 1992, Historical Release Report for the Rocky Flats Plant, Rocky Flats Plant, Golden, Colorado, August.

DOE, 1995, Final Proposed Action Memorandum for Remediation of Polychlorinated Biphenyls, RF/ER-95-0066.UN, Rocky Flats Environmental Technology Site, Golden, Colorado, July.

DOE, 1996, Annual Update for the Historical Release Report, RF/ER-96-0046, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

DOE, 1997, Closeout Report for the Source Removal of PCBs, RF/RMRS-97-044, Revision 0, July.

DOE, 2004, Dioxin-Like Compounds in Transformer Oil: An Evaluation of their Potential Impact on Soil Cleanup Strategies at RFETS, Rocky Flats Environmental Technology Site, Golden, Colorado, April 15.

PAC REFERENCE NUMBER: 700-1103

IHSS Number: Not Applicable

Operable Unit: Industrial Area

IHSS Group: Not Applicable

Unit Name: Leaking Transformers - Building 707

Approximate Location: N750,000; E2,084,000

Date(s) of Operation or Occurrence

November 1986

Description of Operation or Occurrence

Transformers 707-1 through 707-6 were located on the eastern side of the Building 707 roof. Concrete under several of the transformer drain valves was found to be contaminated with PCBs in November 1986 (DOE 1992). A leak was discovered from Transformer 707-1 in 1987 during routine maintenance when the transformer was found to be low in dielectric coolant oil. Visible evidence of the leak was observed around the valve area and weld seams. Analytical data of soil and swipe samples confirmed that the pad on the roof and soil on the ground immediately east of Building 707 were contaminated with PCBs. The soil contamination resulted from rainwater collecting on the rooftop where the transformers were located, then being released through a downspout to the ground (DOE 1992).

The boundaries of the original PAC location were estimated. For this 2004 Annual Update to the HRR, the boundaries have been revised based on sampling location surveys and field reconnaissance.

Physical/Chemical Description of Constituents Released

Wipe samples collected from the concrete under several of the transformer drain valves were analyzed in November 1986. PCB concentrations ranged from 135 to 7,200 ppm. The concentration of PCBs in the soil immediately under the downspout was 1,600 ppm (DOE 1992).

Responses to Operation or Occurrence

In March 1991, surface soil samples were collected immediately east of Building 707 under a downspout suspected of being a migration pathway from the contaminated rooftop directly above. The analytical data from these soil samples indicated the contamination (1,600 ppm) was most evident under the downspout and decreased in concentration with distance outward from

the building to approximately 9.7 ppm. Subsurface soil samples collected at depths between 1.0 and 1.5 ft in the same locations measured 180 ppm and less than 1.0 ppm, respectively.

In 1992, an extensive TSCA cleanup of PCB contamination on the 707 rooftop was performed that included removal of the leaking 707-1 transformer, repair of the transformer, cleanup of the concrete rooftop to achieve a cleanup standard of 100 mg/100 cm (as required by EPA), and subsequent replacement of the repaired transformer. The 707-1 transformer was retrofilled with non-PCB dielectric oil and re-energized (DOE 1996).

Under the approved Final Proposed Action Memorandum for Remediation of Polychlorinated Biphenyls (DOE 1995), further sample screening was completed in July and August 1995 using MRI methods (EPA 1986) to verify the lateral and vertical extent of PCB migration. Approximately 67 cy of PCB-contaminated soil was excavated from the site. The soil was containerized and shipped to an EPA-licensed TSCA landfill in Kettleman, California, for disposal in September 1995 (DOE 1997). PCB levels remaining in the soil were less than 10 ppm using EPA Method 4020 (Immunoassay Field Technique) and less than 12 ppm (5 ppm Aroclor-1260 and 7 ppm Aroclor-1254) using EPA Method 8080. Split samples were analyzed using EPA Method 8080 to provide confirmation of the Method 4020 Immunoassay Field Technique. The excavation was backfilled and regraded upon receipt of Method 8080 cleanup confirmation sampling in August 1995.

Fate of Constituents Released to Environment

The extensive soil sampling that took place in March 1991 and August 1995 prove that PCB-contaminated rainwater from the Building 707 rooftop did not migrate to an existing storm drain over 100 ft. downgradient.

Recently, there has been much toxicological research pertaining to dioxins and other compounds with dioxin-like properties. Although Aroclors (a mixture of PCB congeners) do not contain dioxins, they do contain a few PCB congeners with dioxin-like properties. A White Paper (DOE 2004) was prepared and submitted to CDPHE that evaluates whether cleanup of PCB-contaminated soil at a transformer site to less than 10 ppm Aroclor is sufficiently protective to render PCB sites NFAA in light of recent studies showing that a few PCB congeners have dioxin-like properties. The evaluation presented in the paper demonstrates that the past cleanup of the PCB sites at RFETS to achieve Aroclor levels less than 10 ppm, and the future cleanup of transformer sites to achieve the WRW AL of 12.4 ppm, adequately protects human health. Although dioxin-like compounds are present in the Aroclors released to soil, the White Paper demonstrates that:

- The health risk posed by the dioxin-like compounds is not a concern at these cleanup levels.
- Weathering of the Aroclors released to the soil is unlikely to significantly alter the congener distribution or the toxicity of the Aroclors.
- Congener-specific PCB analysis of soil samples, or analysis for dioxins and furans, is not required for characterizing transformer sites at RFETS.

Action/No Further Accelerated Action Recommendation

Based on the site remediation and confirmation data, and the White Paper findings noted above, NFAA is appropriate for this PCB site. After review of the NFAA justification by the regulatory agencies, DOE received concurrence from CDPHE (the lead regulatory agency) on the NFAA status for the site on May 6, 2004 (CDPHE 2004).

References

CDPHE, 2004, Correspondence to J. Legare, DOE RFO, from S. Gunderson, CDPHE, RE: No Further Accelerated Action Justification PCB Potential Areas of Concern (April 15, 2004), May 6.

DOE, 1992, Historical Release Report for the Rocky Flats Plant, Rocky Flats Plant, Golden, Colorado, August.

DOE, 1995, Final Proposed Action Memorandum for Remediation of Polychlorinated Biphenyls, RF/ER-95-0066.UN, Rocky Flats Environmental Technology Site, Golden, Colorado, July.

DOE, 1996, Annual Update for the Historical Release Report, RF/ER-96-0046, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

DOE, 1997, Closeout Report for the Source Removal of PCBs, RF/RMRS-97-044, Revision 0, July.

DOE, 2004, Dioxin-Like Compounds in Transformer Oil: An Evaluation of their Potential Impact on Soil Cleanup Strategies at RFETS, Rocky Flats Environmental Technology Site, Golden, Colorado, April 15.

EPA, 1986, Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup, Office of Toxic Substances, EPA-560/5-86-017, Washington, D.C., May.

PAC REFERENCE NUMBER: 700-1104

IHSS Number: Not Applicable

Operable Unit: Industrial Area

IHSS Group: Not Applicable

Unit Name: Leaking Transformer - Building 708

Approximate Location: N750,000; E2,084,000

Date(s) of Operation or Occurrence

November 1986 through 1987.

Description of Operation or Occurrence

Transformer 708-1 is located on the western side of Building 708. In February 1987, concrete under the transformer 708-1 drain valve was found to be contaminated with PCBs. According to an interview with EG&G Utilities personnel, electrical equipment located west of Building 708 leaked PCB-contaminated oil prior to 1987 (DOE 1992).

Physical/Chemical Description of Constituents Released

Two wipe samples collected from the concrete under the transformer 708-1 drain valve were analyzed and found to contain 1,035 µg and 3,750 µg of PCBs (DOE 1992.

Responses to Operation or Occurrence

Four transformers were removed and retrofilled from this site in 1987. Rock and gravel fill were placed around the transformer pads prior to replacement of non-PCB transformers in 1987 or 1988. No historical documentation was found that further details response to this occurrence (DOE 1992).

As part of the Sitewide Evaluation of Known, Suspect, and Potential Environmental Releases of PCBs conducted in July 1991, soil samples were collected in accordance with approved EPA sampling protocols and analyzed for PCBs using EPA Method 8080. The highest PCB concentration was found in soil samples collected adjacent to the concrete transformer pads (860 ppm) (DOE 1995).

Under the approved Final Proposed Action Memorandum for Remediation of Polychlorinated Biphenyls (DOE 1995), additional sample screening was completed in 1995 to verify the lateral and vertical extent of PCB migration. Soil samples were analyzed using EPA Method 4020. In

accordance with the PAM (DOE 1995), approximately 21 cubic yards of PCB-contaminated soil were excavated, containerized, and shipped to an EPA licensed TSCA landfill in Kettleman, California for disposal (DOE 1997). The cleanup verification analytical results for PCBs in the soil were less than 10 ppm using EPA Method 4020, and less than 3.2 ppm using EPA Method 8080. Split samples were analyzed using EPA Method 8080 to provide confirmation of the EPA Method 4020 (Immunoassay Field Technique) analytical results. There were no detections of PCBs on the concrete transformer pad using EPA Method 8080.

Fate of Constituents Released to Environment

Recently, there has been much toxicological research pertaining to dioxins and other compounds with dioxin-like properties. Although Aroclors (a mixture of PCB congeners) do not contain dioxins, they do contain a few PCB congeners with dioxin-like properties. A White Paper (DOE 2004) was prepared and submitted to CDPHE that evaluates whether cleanup of PCB-contaminated soil at a transformer site to less than 10 ppm Aroclor is sufficiently protective to render PCB sites NFAA in light of recent studies showing that a few PCB congeners have dioxin-like properties. The evaluation presented in the paper demonstrates that the past cleanup of the PCB sites at RFETS to achieve Aroclor levels less than 10 ppm, as well as the future cleanup of transformer sites to achieve the WRW AL of 12.4 ppm, adequately protects human health. Although dioxin-like compounds are present in the Aroclors released to soil, the White Paper demonstrates that:

- The health risk posed by the dioxin-like compounds is not a concern at these cleanup levels.
- Weathering of the Aroclors released to the soil is unlikely to significantly alter the congener distribution or the toxicity of the Aroclors.
- Congener-specific PCB analysis of soil samples, or analysis for dioxins and furans, is not required for characterizing transformer sites at RFETS.

Action/No Further Accelerated Action Recommendation

Based on the site remediation and confirmation data, and the White Paper findings noted above, NFAA is appropriate for this PCB site. After review of the NFAA justification by the regulatory agencies, DOE received concurrence from CDPHE (the lead regulatory agency) on the NFAA status for the site on May 6, 2004 (CDPHE 2004).

References

CDPHE, 2004, Correspondence to J. Legare, DOE RFO, from S. Gunderson, CDPHE, RE: No Further Accelerated Action Justification PCB Potential Areas of Concern (April 15, 2004), May 6.

DOE, 1992, Historical Release Report for the Rocky Flats Plant, Rocky Flats Plant, Golden, Colorado, August.

DOE, 1995, Final Proposed Action Memorandum for Remediation of Polychlorinated Biphenyls, RF/ER-95-0066.UN, Rocky Flats Environmental Technology Site, Golden, Colorado, July.

DOE, 1996, Annual Update for the Historical Release Report, RF/ER-96-0046, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

DOE, 1997, Closeout Report for the Source Removal of PCBs, RF/RMRS-97-044, Revision 0, Rocky Flats Environmental Technology Site, Golden, Colorado July.

DOE, 2004, Dioxin-Like Compounds in Transformer Oil: An Evaluation of Their Potential Impact on Soil Cleanup Strategies at RFETS, Rocky Flats Environmental Technology Site, Golden, Colorado, April 15.

PAC REFERENCE NUMBER: 700-1105

IHSS Number: 700-1105

Operable Unit: Industrial Area

IHSS Group: 700-7

Unit Name: Transformer Leak - 779-1/779-2

Approximate Location: N750,500; E2,084,500

Date(s) of Operation or Occurrence

Prior to June 1986.

Description of Operation or Occurrence

Prior to 1987, dielectric fluid containing polychlorinated biphenyls (PCBs) leaked from Transformers 779-1 and 779-2. The transformers were located on the northeastern side of Building 779 and adjacent to the southern side of the 779 loading dock (DOE 2004). In 1987, the transformers were retro-filled and then moved several ft east and north (DOE 1992).

Physical/Chemical Description of Constituents Released

Soil samples collected from around the transformer pads contained Aroclor-1260 concentrations ranging from 15,000 to 680,000 µg/kg. Plutonium-239/240 was detected in all the samples; the highest activity was 115 pCi/g (DOE 2004).

Responses to Operation or Occurrence

Accelerated action characterization activities were conducted at IHSS Group 700-7, which includes IHSS 700-1105, to characterize the nature and extent of contamination in soil. Characterization activities were conducted in accordance with the IASAP Addendum #IA-03-15 (DOE 2003a). Accelerated action soil removal activities were conducted at IHSS 700-1105 in accordance with the ER RSOP Notification #03-10 (DOE 2003b).

Fate of Constituents Released to Environment

Based on IHSS 700-1105 site history and historical soil sampling results, PCBs and radionuclides were identified as COCs. Surface (0-0.5 ft bgs) and subsurface (0.5-4.5 ft bgs) soil samples were analyzed for COCs during characterization activities. Based on sampling results, Aroclor-1260 in surface and subsurface soil located in IHSS-1105 was identified as a potential source of contamination that required removal. Accelerated action soil removal activities were

conducted at four sampling locations to remove surface and subsurface soil with concentrations exceeding the Aroclor-1260 WRW AL. Based on the results of confirmation sampling, removal objectives were accomplished (DOE 2004). Accelerated action activities (characterization and soil removal) and the rationale for NFAA at IHSS 700-1105 are discussed in detail in the Draft Closeout Report for IHSS Group 700-7 (DOE 2004). The rationale for NFAA at IHSS 700-1105 is summarized below.

Action/No Further Accelerated Action Recommendation

NFAA was recommended for IHSS 700-1105 based on the following:

- All residual contaminant concentrations in surface and subsurface soil are less than WRW ALs.
- The results of the SSRS showing acceptable residual risk

Based on the SSRS and stewardship evaluation, no additional accelerated actions are required, and no additional near- and long-term management actions are recommended beyond those generally applicable to the Site as follows: restrict access to the site, control soil excavation, and prohibit groundwater pumping. These management actions will be achieved through imposition of the physical and institutional controls generally applied to sites located in the IA Site. Additional environmental engineering or monitoring activities are not recommended for IHSS 700-138 (DOE 2004).

After review of the Closeout Report by the regulatory agencies, DOE received concurrence from CDPHE (the lead regulatory agency) of the NFAA status for IHSS Group 700-7, including PAC 700-1105, on October 1, 2004 (CDPHE 2004).

References

CDPHE, 2004, Correspondence to J. Legare, DOE RFO, from S. Gunderson, CDPHE, RE: Closeout Report for IHSS Group 700-7 (B779) - Approval, October 1, 2004.

DOE, 1992, Historical Release Report for the Rocky Flats Plant, Rocky Flats Plant, Golden, Colorado, August.

DOE, 2003a, Industrial Area Sampling and Analysis Plan Addendum #IA-03-15, Rocky Flats Environmental Technology Site, Golden, Colorado, October.

DOE, 2003b, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation Notification #03-10, Rocky Flats Environmental Technology Site, Golden, Colorado, July.

DOE, 2004, Draft Closeout Report for IHHS Group 700-7, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

PAC REFERENCE NUMBER: 700-1115

IHSS Number: No Applicable

Operable Unit: Industrial Area

IHSS Group: 700-1

Unit Name: Identification of Diesel Fuel in Subsurface Soil

Approximate Location: N749, 08; E2,083,887

Date(s) of Operation or Occurrence

Discovered May 31, 1997

Description of Operation or Occurrence

PAC 700-1115 is a subsurface diesel fuel spill of unknown origin that was discovered near the northeastern corner of Building 708. On May 31, 1997, diesel fuel was observed in the soil dug from a 2-ft-deep trench (DOE 1997). Samples were collected from the trench and analyzed for benzene, toluene, ethylbenzene, xylene (BTEX), and total recoverable petroleum hydrocarbons (TRPH). None of the BTEX constituents were detected at concentrations greater than applicable soil ALs. TRPH was detected at a concentration of 2,435.9 mg/kg, less than one-half of the 5,000 mg/kg total petroleum hydrocarbon (TPH) cleanup threshold outlined in the RFCA Attachment 13, Underground Storage Tank (UST) Closure Letter Agreement (DOE 1996).

Physical/Chemical Description of Constituents Released

A subsurface diesel fuel spill of unknown origin was discovered near the northeastern corner of Building 708. Samples collected at the time the diesel fuel spill was discovered contained very low concentrations of BTEX, and TRPH below that were below the TPH ALs established in the RFCA Attachment 13, Underground Storage Tank (UST) Closure Letter Agreement (DOE 1996). Residual TRPH concentrations in soil for this historic spill would be close to TPH values.

Responses to Operation or Occurrence.

Accelerated action activities were conducted at IHSS Group 700-1 to characterize the nature and extent of contamination in soil. PAC 1115 is the only member of this IHSS Group. Characterization activities were conducted in accordance with the IASAP Addendum #IA-04-15 (DOE 2004a).

Fate of Constituents Released to Environment

VOCs were identified as COCs, and were sampled and analyzed for during characterization activities.

Because VOCs were not detected in soil at concentrations greater than RLs, no remedial action was required. Accelerated action characterization activities and the rationale for NFAA at PAC 1115 are discussed in detail in the Draft Data Summary Report for IHSS Group 700-1 (DOE 2004b). The rationale for NFAA at PAC 1115 is summarized below.

Action/No Further Accelerated Action Recommendation

NFAA was recommended for PAC 1115 based on the following:

- COCs were not detected at any of the sampling locations for IHSS Group 700-1.
- Migration of contaminants to surface water through erosion is unlikely because IHSS Group 700-1 is not located in an area prone to landslides or erosion.
- Migration of contaminants in groundwater will not likely impact surface water because COCs were not detected in soil at any of the sampling locations for IHSS Group 700-1

After review of the Data Summary Report by the regulatory agencies, DOE received concurrence from CDPHE (the lead regulatory agency) of the NFAA status for IHSS Group 700-1 (PAC 1115) on September 14, 2004 (CDPHE 2004).

References

CDPHE, 2004, Correspondence to J. Legare, DOE RFO, from S. Gunderson, CDPHE, RE: Approval, Draft Data Summary Report for IHSS Group 700-1 PAC 700-1115 – Identification of Diesel Fuel in Subsurface Soil, dated August 2004, September 14, 2004.

DOE, 1996, Final Rocky Flats Cleanup Agreement, Rocky Flats Environmental Technology Site, Golden, Colorado, July.

DOE, 1997, Annual Update to the Historical Release Reports for the Rocky Flats Plant, Golden, Colorado, September.

DOE, 2004a, Industrial Area Sampling and Analysis Plan Addendum #IA-04-15, Rocky Flats Environmental Technology Site, Golden, Colorado, May.

DOE, 2004b, Draft Data Summary Report for IHHS Group 700-1, Rocky Flats Environmental Technology Site, Golden, Colorado, August.

PIC REFERENCE NUMBER: 41

IHSS Number: Not Applicable

Operable Unit: Not Applicable

IHSS Group: Not Applicable

Unit Name: Leaking Transformer - 777-1

Approximate Location: N751,000; E2,084,000

Date(s) of Operation or Occurrence

1980 to August 1989

Description of Operation or Occurrence

In 1980 it was reported that transformer 771-1 was leaking at the drain valve. In November 1985 and again in June and September 1986, transformer 771-1 was reported as leaking (DOE 1992). It was determined that the transformer number was 777-1.

Physical/Chemical Description of Constituents Released

The dielectric fluid of transformer 777-1 contains 56 ppm PCBs (DOE 1992).

Responses to Operation or Occurrence

In October 1986, the drain valve and case near the valve of transformer 771-1 was scheduled for recleaning. Transformer 777-1 was scheduled for cleanup to take place on August 14, 1989 (DOE 1992).

Fate of Constituents Released to Environment

No documentation was found that details the fate of the constituents (DOE 1992).

Action/No Action Recommendation

No action warranted.

- Based on review of the references, the transformer in question is 777-1, as identified above in the Unit Name. It is incorrectly identified as 771-1 in the Description of Operation or Occurrence.
- Transformer 777-1 contained mineral oil with just enough PCBs (56 ppm) to be classified as PCB-contaminated under TSCA (50 – 500 ppm). In 1986, leaks were repaired and cleaned up, and PCB- contaminated transformers were drained and refilled with clean mineral oil. The replacement oil in transformer 777-1 had a PCB concentration of 2.9 ppm (DOE 1992).

- Although transformer 777-1 was scheduled for cleanup to take place on August 14, 1989, the transformer was not removed until November 2003. Analysis of the transformer oil indicated a PCB concentration of only 2 ppm (DOE 1992). In an E-mail from Matt Francis to Michael Anderson dated March 4, 2004, it is noted that an inspection of the area on March 4, 2004 indicated no visible signs of significant contamination on the pad or the surrounding soil.
- The low concentration of PCBs in the original oil, combined with the reported cleanup operation in 1986 that was confirmed by the noted absence of staining on the pad in March 2004, indicates a no action warranted is justified.

After review of the PICs 4, 6, 9, 11, 14, 15, 17, 18, 41, 42, 44, 47, and 57 Action/No Action Recommendations report (DOE 2004) by the regulatory agencies, DOE received concurrence from CDPHE (the lead regulatory agency) of the no action warranted status for PIC 41 on April 30, 2004 (CDPHE 2004).

References

CDPHE, 2004, Correspondence to J. Legare, DOE RFO, from S. Gunderson, CDPHE, RE: Potential Incidents of Concern (PIC), 4, 6, 9, 11, 14, 15, 17, 18, 41, 42, 44, 47, and 57 Action/No Action Recommendations, April 15, 2004.

DOE, 1992, Historical Release Report for the Rocky Flats Plant, Rocky Flats Plant, Golden, Colorado, August.

DOE, 2004, Potential Incidents of Concern 4, 6, 9, 11, 14, 15, 17, 18, 41, 42, 44, 47, and 57 Action/No Action Recommendations, Rocky Flats Environmental Technology Site, Golden, Colorado, May.

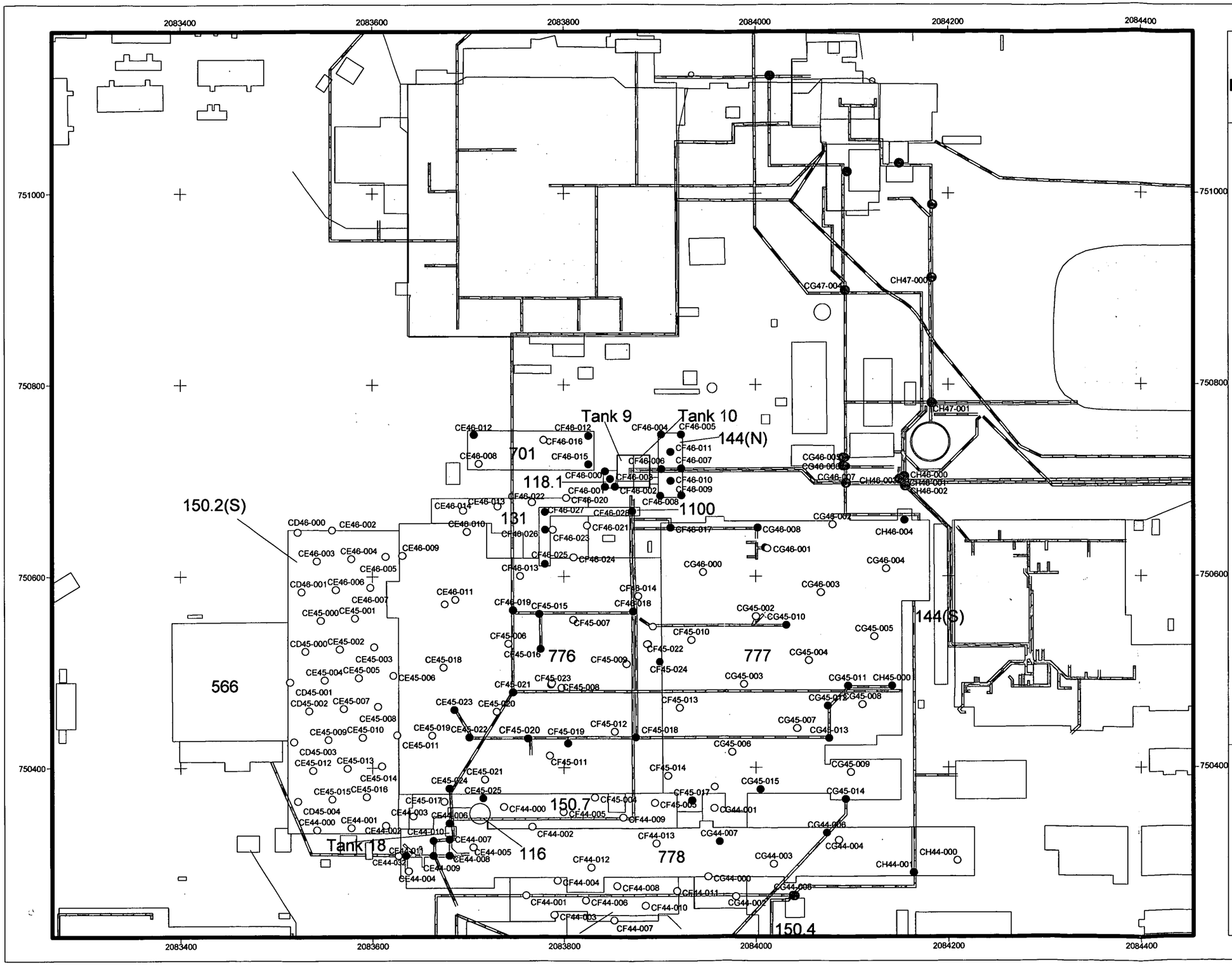
3.2 Approvals

IHSSs and PACs associated with IHSS Group NE/NW were approved by EPA on October 7, 2003. These IHSSs and PACs were updated in the FY2003 HRR and include the following:

- NE-216.2 – East Spray Field Center Area;
- NE-216.3 – East Spray Field South Area;
- NE-1407 – OU2 Treatment Facility;
- NE-1412 – Trench T-12 Located at OU 2 East Trenches
- NE-1413 – Trench T-13 Located at OU 2 East Trenches
- NW-174a – PU&D Yard – Drum Storage.

IHSSs 700-150.6 – Radioactive Site South of Building 779 and 150.8 – Radioactive Site Northeast of Building 779 were approved by CDPHE on October 1, 2003. These IHSSs were updated in theFY2003 HRR.

Figure 2.2
Proposed Sampling Locations for IHSS Group 700-3



Key

- Biased Sampling Location
- Statistical Grid Sampling Location
- Known OPWL Leak
- OPWL
- NPWL
- Tank
- 700-3 IHSS
- 700-3 UBC

Building

- Demolished
- Standing
- Sewer

N

Scale = 1:1200

80 0 80 Feet

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared By: October 2003

RADMS

KAISER•HILL COMPANY

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