Record of Decision Summaries for ORNL, ETTP and Y12

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Record of Decision Name: Interim Record of Decision for Oak Ridge National Laboratory Waste Area Grouping 11 Surface Debris, Oak Ridge, Tennessee

Date Signed: 10/6/1992

Document Number: DOE/OR-1055&D4

Status: Completed - May 1994

Summary/Purpose: This Interim ROD focuses on waste area grouping (WAG) 11, which is located 1 mile east of the intersection of Highways 58 and 95 in the McNew Hollow area just north of Pine Ridge. Historically, this area was a storage area of radioactively contaminated scrap and debris from ORNL, Y-12, and K-25 and was known as the White Wing Scrapyard. While there were some attempts at cleanup the site in the past, surface debris still remained. This I-ROD aimed to remove the remaining surface debris from the WAG 11 site, and provided a methodology for making Action/No-action determinations.

Assessment of the Site: Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action, may present a current or potential threat to public health, welfare, or the environment**.**

Description of the Remedy: This I-ROD aims to collect and segregate surface debris at WAG 11 and then dispose of this debris in low-level waste silos in WAG 6. The collection and disposal of contaminated debris will provide a significant reduction in the threat to human health and the environment by isolating the waste from the environment. As an interim ROD, this remedy is not the final action planned for the site, but is intended to improve the site until a final decision is made.

Status Update: Remedial action for this I-ROD started in November of 1993 and finished in May 1994. The goals of remedial action were achieved by removal of debris that could be a source for contamination. Because some buried materials remain at the site, WAG 11 area is still monitored.

Final Resolution/Outcome: Complete

Record of Decision Name: Interim Record of Decision for Oak Ridge National Laboratory Waste Area Grouping 13 Cesium Plots, Oak Ridge, Tennessee

Date Signed: 10/6/1992

Document Number: DOE/OR-1059&D4

Status: Completed - July 1994, RAR Post-Closure Report approved 8/25/94

Summary/Purpose: This Interim ROD focuses on cesium in waste area grouping (WAG) 13, and provided a methodology for making Action/No-action determinations for the WAG. The WAG 13 cesium plots are in a 6 acre field just north of the Clinch River. In the past, the plots were used for a simulated nuclear weapons fallout study by ORNL. The I-Rod intended to remove cesium from the plots to a level that will decay away in 300 years.

Assessment of the Site: The elevated gamma radiation levels emitted from the plots at WAG 13 pose a potential threat to human health and the environment.

Description of the Remedy: The purpose of this I-ROD is to address only the cesium-contaminated soil within WAG 13. The major components of the remedy include: excavation of cesium-contaminated soil, storing soil in steel boxes designed for low-level radioactive waste, and disposal of the soil at WAG 6. As an interim ROD, this remedy is not the final action planned for the site, but is intended to improve the impact to human health and the environment.

Status Update: Field activities outlined by the I-ROD were completed in July 1994. The excavated soil, vegetation, scrap fencing and enclosures were placed in liquid low-level waste containers and placed in underground silos at WAG 6. Beyond confirmation sampling conducted after the completion of activities, based on the I-ROD, there were no requirements for post-remedial monitoring or care beyond maintenance of access controls and periodic inspection and monitoring of the surface cover. A final action for the cesium-plots will be included in a future ROD.

Final Resolution/Outcome: Complete

Record of Decision Name: Record of Decision for Interim Action: Sludge Removal from the Gunite and Associated Tanks Operable Unit, Waste Area Grouping 1, Oak Ridge National Laboratory, Oak Ridge, Tennessee

Date Signed: 11/2/1997

Document Number: DOE/OR/02-1591&D3

Status: Completed; RAR issued June 2001

Summary/Purpose: This Interim ROD includes eight of sixteen total gunite tanks located in or near the north and south tank farms at ORNL waste area grouping (WAG) 1. These eight tanks were identified as high priority because of the transuranic mixed waste contaminants and the age of the tanks. The gunite tanks were originally constructed in the 1940's with a projected operational life of one year. Although leaks were not detected, the long-term integrity of the tanks was a concern. The I-ROD also provided a methodology for making Action/No-action determinations for the site.

Assessment of the Site: A base-line risk assessment demonstrated that without institutional controls, the gunite tanks pose an unacceptable risk to human health and the environment now and in the future.

Description of the Remedy: The remedy proposed by this I-ROD is to remove the transuranic waste sludge from the gunite tanks and transfer it to the Melton Valley Storage Tanks. As an interim ROD, this remedy is not the final solution for the site, but is an important step in lowering the risk to human health and the environment. The presence or absence of remedial contamination in surrounding soil was not a part of the decision.

Status Update: Tank removal was completed in 2000. More than 400,000 gal of waste slurry containing about 87,000 gal of transuranic mixed waste sludge was transferred to the Melton Valley storage tanks.

Final Resolution/Outcome: Complete

Record of Decision Name: Record of Decision for the Surface Impoundments Operable Unit, Oak Ridge National Laboratory, Oak Ridge, Tennessee

Date Signed: 9/25/1997

Document Number: DOE/OR/02-1630&D2

Status: Completed; RAR for Impoundments A and B approved May 17, 2004. RAR for Impoundments C and D approved April 19, 1999

Summary/Purpose: This ROD focuses on the surface impoundment operable unit (SIOU) that is located in the south-central part of ORNL's main plant area, north of White Oak Creek. The impoundments A, B, C, and D were used to manage low-level radioactive liquid wastes generated from experiments and material processing at ORNL. Impoundments A and B are unlined and release contaminants to the environment through groundwater, whereas impoundments C and D were clay-lined and were not known to be leaking. This ROD proposed the removal of contaminated sediment and the layer of most highly contaminated soil from unlined ponds.

Assessment of the Site: Action is needed to address the impoundments because of their continuing releases to groundwater and White Oak Creek and the risk of airborne releases if the water cover is lost.

Description of the Remedy: The proposed plan of action by this ROD is to remove surface waters, sediments and the top layer of sub impoundment soil in the area, discharge of surface water to the Process Waste Treatment Plant, and the treatment and proper disposal of contaminated sediment. The remedy further included containerizing treated waste, transportation of waste to the appropriate disposal facility, and backfilling of the impoundments. Radiation levels in the sediments at the SIOU were considered extremely hazardous, making the remediation a priority.

Status Update: The former waste impoundments have been remediated based on ROD requirements. The remedial action produced 994 solidified waste forms. The area was covered with gravel and asphalt and is currently utilized as parking lots. Although no institutional controls were required based on the ROD, signs are in place indicating that permits are required prior to performing any excavation work in the area.

Final Resolution/Outcome: Complete

Record of Decision Name: Record of Decision for Interim Action to Remove Fuel and Flush Salts from the Molten Salt Reactor Experiment (MSRE) at the Oak Ridge National Laboratory, Oak Ridge, Tennessee

Date Signed: 7/7/1998

Document Number: DOE/OR/02-1671&D2

Status: Ongoing

Summary/Purpose: This Interim ROD covers the contaminated waste salts at the Molten Salt Reactor Experiment (MSRE), located in building 7503 at ORNL. The reactor operation was permanently shut down December 12, 1969. Upon investigation of the site in 1994, concerns were found that needed to be immediately addressed, resulting in a time-critical removal action in order to reduce risk to workers. The intention of this I-ROD is to remove uranium and fuel salts from fuel and drain tanks, with the goal of eliminating risk of a criticality incident and the hazards associated with uranium hexafluoride and fluorine gas release at the site.

Assessment of the Site: Remediating the MSRE facility is a high priority because of the unacceptable risk to human health and the environment associated with the highly radioactive salt stored in the drain tanks.

Description of the Remedy: The remedy proposed by this I-ROD includes the following remedial action: melting and chemically treating the salt in the drain tank cell, separating the uranium from the salts, transferring the uranium to the repository at ORNL, packaging the residual salt, and placing the salt in interim storage at ORNL until arrangements are made for final disposition. Because this is an interim decision, final arrangements for the salt, MSRE reactor components, and demolition of building 7503 will be a part of future decision documents.

Status Update: This I-ROD is still in progress. The requirements for the MSRE uranium are nearing completion as it was delivered to Building 3019A at ORNL for intermediate storage. However, the requirement to transfer transuranic salts to interim storage is ongoing.

Final Resolution/Outcome: The actions under this I-ROD are ongoing. As of January 2019, remediation efforts continue. DOE will submit completion documents for regulatory review and approval once work in these areas is finished.

Record of Decision Name: Record of Decision for the Interim Actions for the Melton Valley Watershed at the Oak Ridge National Laboratory, Oak Ridge, Tennessee

Date Signed: 9/21/2000

Document Number: DOE/OR/01-1826&D3

Status: Completed - September 2007; RAR approved September 2007. LUCIP approved May 2006

Summary/Purpose: This Interim ROD includes the Melton Valley watershed area, which is approximately 1062 acres. Much of the area consists of waste burial grounds, and a large portion of the surrounding area is contaminated as a result of historical DOE uses. There are different types of contaminated areas in the Melton Valley watershed, such as: buried wastes, landfills, tanks, impoundments, seepage pits and trenches, and contaminated soil and sediment. Surface water carries contaminants from these waste areas to the Clinch River. As an Interim ROD, the remedy selected is not the final remedial decision for the area, but is expected to be consistent with any future remedial decisions. The I-ROD also provided a methodology for making Action/No-action determinations for the site.

Assessment of the Site: The major problems identified in Melton Valley are the presence of radiological wastes, contaminant releases to surface water, and widespread contamination in secondary media.

Description of the Remedy: The remedy proposed by this I-ROD includes: Capping, excavation, and containment of contaminated areas in Melton Valley water shed to reduce spread of contamination to surface and ground water. The following are goals for the area: remediation of the eastern portion of Melton Valley, which contains the reactor sites, to a condition that allows industrial use with limited restrictions, continue the use of the western portion of Melton Valley as waste management with wastes contained in place, and surface water remediation consistent with the state's stream classification (e.g., recreation as well as fish and aquatic life). Land use controls will be implemented for the sites for industrial areas, waste management areas and surface water and floodplain areas. Because this is an interim ROD, this remedy is not the final action planned for the site, but is intended to improve the site in the interim.

Status Update: The interim ROD has been completed for Melton Valley including a range of activities that were intended to reduce contaminant releases from the site including construction of 145 acres of multi-layer caps covering locations at SWSA 4, SWSA 5, and SWSA 6 and an installation of 3065 ft of up gradient diversion trenches at multiple locations. The scope of the original ROD was modified through subsequent action documents including ROD amendments. Monitoring of the site is being conducted and will contribute to a final remedial action for the Melton Valley watershed area. The final decision on secondary media (groundwater, White Oak Creek, and lake sediments), as well as ecological, buildings and boundary sites will be addressed in the Final Melton Valley ROD.

Final Resolution/Outcome: Complete

Record of Decision Name: Record of Decision for Interim Actions in Bethel Valley, Oak Ridge, Tennessee

Date Signed: 5/2/2002

Document Number: DOE/OR/01-1862&D4

Status: Ongoing

Summary/Purpose: This Interim ROD in Bethel Valley applies to inactive facilities and areas with accessible contamination in the area of the ORNL plant. Bethel Valley is a 1734 acre area that is subdivided into four areas for the purposes of this I-ROD: East Bethel Valley, Central Bethel Valley, West Bethel Valley and Raccoon Creek. East Bethel Valley includes the ORNL plant maintenance area, Central has the main plant area, West has burial grounds, and Raccoon Creek has some contaminated media originally from West Bethel Valley. Historically, Bethel Valley was used for different tasks that contributed to contamination such as a radiochemical development and processing laboratory and as an industrial maintenance facility. The remedy for this area includes capping, excavation, containment, and decontamination & decommissioning of contamination sources in Bethel Valley. With this being an interim ROD, many areas remain to be addressed in Bethel Valley. Long term land use controls and final groundwater remediation will be addressed in subsequent decisions.

Assessment of the Site: Major problems identified in Bethel Valley are discrete waste disposal areas, as well as widespread soil, groundwater, surface water and sediment contamination.

Description of the Remedy: The selected remedy major components include: removal of inactive buildings, installation of caps on SWSAs 1 and 3, removal of FFA steel tank contents, stabilization and some removal of inactive liquid low-level waste pipelines, removal of contaminated soils and sediments. In this interim ROD remedy, areas of Bethel Valley will be remediated to various land use levels, including controlled industrial areas, unrestricted industrial areas, and recreational areas for the SWSA 3 burial ground and Contractor's Landfill. The selected remedy does leave some hazardous substances in place that require future land use restrictions. Because this is an interim ROD, this remedy is not the final action planned for the site, but is intended to improve the site from the original condition.

Status Update: To-Date the following actions have been completed with required monitoring or land use controls: BVBG Contractor's Landfill, BVBG SWSA3, Corehole 8 Extraction System, BVBG SWSA1, BVBG Former Waste Pile Area, BVBG Non-Rad Wastewater Treatment Plant Debris Pile, and Building 4501/4505 Mercury Sumps. However, not all Bethel Valley I-ROD actions have been implemented at this time, and plans are still ongoing for their completion.

Final Resolution/Outcome: The actions under this I-ROD are ongoing. As of January 2019, remediation efforts continue. DOE will submit completion documents for regulatory review and approval once work in these areas is finished.

ETTP Site ROD's

Record of Decision Name: Interim Action Record of Decision for K-1417 and K-1417B

Date Signed: 9/19/1991

Document Number: DOE/OR-991

Status: Completed - Closed under RCRA May 1999. Complete Remedial Action Report approved March 2, 1995

Summary/Purpose: The Interim ROD presents selected action for the K-1417 A and B drum storage yards and the K-1419 sludge treatment facility. These specific sites are located in the northeastern portion of ETTP and were originally designed to be temporary storage facilities of mixed wastes. In total, the affected areas under this I-ROD have 65,000 drums of both stabilized sludges and raw sludges. The I-ROD is not considered the final remedy for the site, with subsequent investigation of the site and potential solutions for the final remedy needed. This I-ROD serves as an action plan to abate, prevent or eliminate the threat to human health or the environment due to leaking drums at the storage yards of ETTP, and presents a methodology for making Action/No-action determinations.

Assessment of the Site: The steel drums containing mixed waste (radioactive/hazardous) began to deteriorate, and develop small leaks. The stacked drums of mixed waste also became unstable, with the potential to shift or topple. The drums had the potential to create a safety and health hazard for site workers, as well as contamination of surface water and possibly groundwater.

Description of the Remedy: The goal of the I-ROD is to prevent the threat of release of contaminants to the environment from deteriorating drums and to minimize the threat to human health in relation to the raw and stabilized sludges at the location. Additionally, the I-Rod intended to manage the mixed waste in compliance with the Resource Conservation and Recovery Act (RCRA), a law that governs the disposal of solid waste and hazardous waste. The plan included the following elements: dewatering of raw sludges and repackaging, treatment of all liquids, and storage of all containers in indoor facilities.

Status Update: The project activities including treatment, repackaging and compliant storage of the waste sludges were completed in December of 1994.

Final Resolution/Outcome: Complete

Record of Decision Name: Interim Record of Decision for the Oak Ridge K-25 Site K-1070 Operable Unit (OU) SW31 Spring

Date Signed: 9/30/1992

Document Number: DOE/OR-1050&D2

Status: Completed - Explanation of Significant Difference 1993; Remediation Action/Effectiveness Report approved December 11, 1996. Addendum to RAER to terminate action approved February 28, 2007

Summary/Purpose: This Interim ROD presents a selected remedy to collect and treat SW 31 spring discharge (K-1070 OU) at the ETTP site and presents a methodology for making Action/No-action determinations. It is considered the first step towards the remediation of K-1070 Operable Unit (OU), which has a burial ground used for the disposal of hazardous and radiological waste. The SW31 Perennial spring collects surface seepage waters and groundwater. This I-ROD is not considered the final remedy for the site, with subsequent investigation of the site and potential solutions for the final remedy needed.

Assessment of the Site: The SW31 stream is contaminated with volatile organic compounds (VOCs), heavy metals, and Polychlorinated biphenyls (PCBs). The spring is located within the ETTP perimeter fence, however the spring discharges into Mitchell Branch which confluences with Poplar Creek, and the Clinch River**.**

Description of the Remedy: The K-1070 OU was identified as a high priority site within ETTP. The SW31 stream was selected as an appropriate area for clean-up initiatives during ongoing research of the K-1070 OU and the ETTP site. The goal of the I-ROD is to eliminate an identified and easily controllable release of hazardous substances into Mitchell Branch. In the chosen remedy, discharge from SW31 would be collected and treated through a water treatment system and a CNF-an NPDES permitted facility to remove contaminants in the water.

Status Update: Water from SW-31 was been processed at ETTP's Central Neutralization Facility (CNF) starting in the summer of 1997 and discharged through a National Pollutant Discharge Elimination System (NPDES) outfall. In 2013 the CNF closed, and the Chromium Waste Treatment System began operating as a waste water treatment facility in its place.

Final Resolution/Outcome: Complete

Record of Decision Name: Record of Decision for the K-1407-B/C Ponds at the Oak Ridge K-25 Site Oak Ridge, Tennessee

Date Signed: 9/30/1993

Document Number: DOE/OR/02-1125&D3

Status: Completed - Remedial Action Report approved August 16, 1995

Summary/Purpose: This decision document identifies selected remedial action for contaminated soils at K-1407-B Holding Pond and K-1407-C Retention Basin and presents a methodology for making Action/No-action determinations. The K-1407-B/C Ponds are in the northeast quadrant of the K-25 site, within the perimeter fence. Mitchell Branch is the receiving stream for both surface and groundwater discharge for the northeastern portion of K-25.

Assessment of the Site: Actual or threatened releases of hazardous substances, such as residual metal, radiological and volatile organic compound contamination from the site may present an imminent and substantial endangerment to public health, welfare, or the environment.

Description of the Remedy: The remedy addresses the contamination in the K-1407B/C pond soils. Other units and groundwater will be evaluated under different remedial investigations. The major components of the remedy include: placement of clean soil and rock fill for isolation and shielding, maintenance of institutional controls, and groundwater monitoring to assess performance of action and the effectiveness of this remedy. Formerly, to comply with the original RCRA, the K-1407B/C ponds underwent sludge removal in 1987 and it was completed in 1989. After the sludge removal, soil sample testing in the ponds found additional contaminants in the ponds.

Status Update: Remedial action was implemented from July 1994 to January 1995. The ponds were filled with rock and had a soil cover and vegetation placed over the rock. Groundwater monitoring occurred at this site after remediation.

Final Resolution/Outcome: Complete

Record of Decision Name: Record of Decision for the K-1070 - C/D Operable Unit, East Tennessee Technology Park, Oak Ridge Tennessee

Date Signed: 1/23/1998

Document Number: DOE/OR/02-1486&D4

Status: Completed - Remedial Action Report approved February 18, 2003

Summary/Purpose: This ROD presents remedial action of the K-1070 C/D G-Pit and concrete pad as well as presenting a methodology for making Action/No-action determinations. It also establishes that no further action will be required for the Landfarm Area and surface water and sediment at 1070 C/D. The K-1070-C/D OU is a 22-acre tract of land that is located within the eastern side of ETTP. The K-1070-C/D OU is divided into seven source areas: Trench Area, Landfarm Area, Concrete Pad Area, North Pits Area, South Pits Area, Pits Downgradient Area, and the K-1414 Area. These areas include soil and buried waste, such as drums, gas centrifuge hardware and other equipment, and numerous hazardous substances.

Assessment of the Site: The G Pit appears to be the primary source of contaminant release to the K-1070-C/D OU soil and groundwater. If actual or threatened releases of hazardous substances from this site are not addressed, the substances present unacceptable risks to public health, welfare, or the environment.

Description of the Remedy: The remedy proposed by this ROD seeks to lessen a primary contaminant source to groundwater by excavating the G Pit, containing the contaminated soil, and backfilling the G Pit with suitable material. A soil cover will be placed over the Concrete Pad Area. Existing groundwater contamination is not covered by this ROD. Sites such as the Trench Area, North Pits Area, South Pits Area (exclusive of the G Pit) will be reevaluated for final remedial action in future ROD's.

Status Update: The concrete pad was covered with soil in April of 1999 and the G-Pit removal was completed in January of 2000. The final decision on groundwater will be addressed in future ETTP Site Wide ROD and the final disposition of the pad will be addressed under the Zone 2 ROD.

Final Resolution/Outcome: Complete

Record of Decision Name: Record of Decision for the K-1070 A Burial Ground East Tennessee Technology Park, Oak Ridge Tennessee

Date Signed: 1/13/2000

Document Number: DOE/OR/01-1734&D3

Status: Completed - Remedial Action Report approved November 28, 2003

Summary/Purpose: The K-1070-A Burial Ground consists of approximately 3 acres in the northwest corner of ETTP. It is located outside of the main plant area on the southern slope of the Black Oak Ridge. The burial ground has uranium-contaminated waste that is buried in unlined trenches and pits, which has an impact on groundwater. Groundwater that is impacted by K-1070-A Burial Ground emerges at Spring 21-002, flows into the K-901-A Holding pond and flows into the Clinch River. This ROD identifies source removal action as the excavation of contaminated material at K-1070 A Burial Ground and presents a methodology for making Action/No-action determinations.

Assessment of the Site: Actual or threatened releases of hazardous substances from this site are not addressed. The substances present an imminent and substantial endangerment to public health, welfare, or the environment.

Description of the Remedy: The selected remedy for this ROD includes source removal action, to address present and projected future threats posed by the K-1070-A Burial Ground through excavation and permanent disposal of waste in an approved facility. No cleanup standards for environmental media were identified for this action. Soil is not the primary concern in this remedy; however soil that appears to be contaminated from the waste in the K-1070-A Burial Ground will be removed. A final remedy for groundwater and surface water will be addressed in subsequent decisions.

Status Update: Remediation was completed in March of 2003 with 28,509 tons of waste excavated from the site. The final decision on groundwater for this area will be addressed in a future Final Zone 1 ROD.

Final Resolution/Outcome: Complete

Record of Decision Name: Record of Decision for Interim Actions in Zone 1 East Tennessee Technology Park, Oak Ridge, Tennessee

Date Signed: 11/8/2002

Document Number: DOE/OR/01-1997&D2

Status: Ongoing

Summary/Purpose: Zone 1 at East Tennessee Technology Park is a 1400 acre area of land that is located outside of the main security fence at the ETTP site. Historically this area was used for some waste disposal and light industrial use. The Interim ROD for Zone 1 focuses on known areas of soil contamination and known sources of releases: buried material in Blair Quarry, various scrap material and debris in K-770 area as well as sludge beds and Imhoff tanks in the K-710 area. This ROD addresses remediation action for contaminated soils and subsurface features, establishes remediation limits, and presents a methodology for making Action/No-action determinations.

Assessment of the Site: The potential for "unacceptable risk" to an industrial worker exists from hazardous substances in soils in Zone 1, from soils and buried material in Blair Quarry, and from various subsurface features such as scrap metal and other debris, tanks, and sludge beds. Remediation is necessary to protect public health and prepare the site future unrestricted industrial land use.

Description of the Remedy: The known areas of contamination in Zone 1 will be remediated to meet standards for unrestricted industrial land use, which is the goal of this remedy. The steps to clean-up include: soil removal, burial area removal, scrap metal and debris removal, demolition of some above-ground structures, and imposition of land use controls. The plan for remediation accounts for 10 ft below ground surface (bgs) level. Future industrial use will be permitted without controls in the first 10 feet bgs. Use of the subsurface below 10 feet will be restricted. Future residential use of this land will be prohibited. The remedy in this ROD is considered interim because the scope does not include contaminated groundwater, surface water, or sediment. However, remediation is intended to address underlying issues of contaminated soils and limit the further contamination of groundwater. Interim land use controls is a critical component of this ROD to ensure remedy effectiveness; final land use controls will be implemented in a future decision document.

Status Update: Remediation efforts to date are incomplete. Previous work identified areas in which the unrestricted industrial use I-ROD goal was not met. These areas include the Contractor's Spoil Area, K-770 (Powerhouse) Area, K-720 Fly Ash Pile, Duct Bank Corridor, Duct Island East and West, and the K-901 Drainage Area. Although the site was originally intended to be for industrial use, the Black Oak Ridge Conservation Easement (BORCE) designated the northern portion of Zone 1 for recreational use on March 14, 2005 after a human health risk assessment determined this land use was acceptable.

Final Resolution/Outcome: Actions under this Interim ROD are ongoing. As of January 2019, remediation efforts continue in the previously mentioned areas. DOE will submit completion documents for regulatory review and approval once work in these areas is finished.

Record of Decision Name: Record of Decision for Soil, Buried Waste, and Subsurface Structure Actions in Zone 2, East Tennessee Technology Park, Oak Ridge, Tennessee

Date Signed: 4/19/2005

Document Number: DOE/OR/01-2161&D2

Status: Ongoing

Summary/Purpose: Zone 2 at ETTP is an 800 acre area of land that historically had heavy industrial use, including a main plant, laboratory, administration building, disposal areas, maintenance shops, and support facilities. This ROD addresses contaminated soils, buried waste, and subsurface structures including slabs. The ROD establishes soils remediation limits to protect future users and presents a methodology for making Action/No-action determination. Zone 2 is divided into seven geographic regions: the Mitchell Branch Area, the K-1401/K-1070-C/D Area, the Administrative/Laboratories Area, the K-1064 Peninsula Area, the K-25 Area, the K-27/29 Area, and the K-31/K-33 Area. Levels of current contamination and potential for groundwater contamination vary within these seven regions of Zone 2.

Assessment of the Site: The potential for "unacceptable risk" to an industrial worker exists in Zone 2 from soils, buried waste, and subsurface structures such as slabs. Potential contaminants at ETTP include radionuclides, inorganic elements and polychlorinated biphenyls (PCBs). Remediation is necessary to protect public health and prepare the site future unrestricted industrial land use.

Description of the Remedy: The selected remedy includes the removal of contaminant sources and contaminated soil. The plan for remediation allows for future land use for industrial purposes with controls in place to prevent access to residual contamination. The performance objective is to protect the future industrial worker and groundwater. This ROD does not address groundwater, surface water or sediment that was previously contaminated. Land Use Controls will be established to ensure that any contamination remaining does not pose a threat to human health. The future residential use of this land will be prohibited. After remediation, general industrial use of the site up to 10 feet below ground surface (bgs) will be permitted.

Status Update: The remediation efforts in Zone 2 are incomplete to date. While the goal of unrestricted industrial land use up to 10 feet bgs has been met in some areas of Zone 2, there are still areas that need further remediation. Areas such as the K-801-H cooling tower basin, K-1066-F cylinder storage yard, K-1407-C pond, K-1417-B drum storage yard, K-1071 concrete pad, and the K-1004-J vaults still require remediation to meet standards for unrestricted industrial land use.

Final Resolution/Outcome: The actions under this ROD are ongoing. As of January 2019, remediation efforts continue in the previously mentioned areas. DOE will submit completion documents for regulatory review and approval once work in these areas is finished.

Y12 Site ROD's

Record of Decision Name: Record of Decision Operable Unit 2 UNC Disposal Site

Date Signed: 6/28/1991

Document Number: Unnumbered

Status: Completed - August 1992

Summary/Purpose: This ROD pertains to operable unit 2, the United Nuclear Corporation disposal site that covered 1.3 acres in the southern portion of the Y-12 Plant. The landfill was created to receive waste from the decommissioning of the UNC facility in Rhode Island. The ROD covers remedial action for the United Nuclear Corporation landfill to cap and monitor for thirty years. The intention of this ROD is to prevent future soil and groundwater contamination from the landfill. The ROD also presents a methodology for making Action/No-action determination.

Assessment of the Site: Some drums and boxes containing waste in the UNC landfill had deteriorated, rusted or split open. Investigations showed that contamination of surrounding soil and ground water had not occurred at the time of testing, but was a hazard.

Description of the Remedy: The remedy that was selected for the UNC landfill included clearing of vegetation, and capping the waste with a multi-layer cover. The area would be revegetated and backfilled with additional soil. This chosen remedy also includes plans to monitor the groundwater as well as routine inspection of the cap system.

Status Update: Field activities outlined by the ROD began in May 1992 and were complete by August 1992.The activities included construction of a multilayer cover system, installation of access controls, and groundwater monitoring. Site inspections are required to be continued for 30 years following completion.

Final Resolution/Outcome: Complete

Record of Decision Name: Record of Decision Interim Action ROD for Mercury Tank Remediation

Date Signed: 9/26/1991

Document Number: DOE/OR/02-1164

Status: Completed - March 1993

Summary/Purpose: This Interim ROD involves three concrete sedimentation tanks that are located at Y12, tank 2100-U, 2104-U, and 2101-U. The tanks receive flow from basement sumps of two buildings that formerly housed a mercury-based lithium separation process. The site is drained by a storm water system that discharges to Upper East Fork Poplar Creek. This document proposes remedial action to remove and solidify mercury contaminated sludges and water from the tanks.

Assessment of the Site: Sediments contaminated with Mercury and elemental Mercury were entering storm sewer system from three tanks at the site. The tanks were identified as contributing excessive mercury to Upper East Fork Poplar Creek.

Description of the Remedy: The Interim ROD's proposed remedy has the following objectives: removal of oil and oily water in Tank 2101-U, removal of mercury-contaminated sediment from Tanks 2100-U and 2101-U, and the removal and solidification of mixed wastes from Tank 2104-U. As an interim ROD, this will not be the final decision document for the site, but will improve current conditions of the tanks.

Status Update: The activities outlined by the I-ROD began in December of 1992 and were completed in March 1993.After completion of I-ROD, Tank 2101-U was abandoned in place, tank 2104-U was removed from service and tank 2100-U was drained and inspected. Discharge through tank 2100-U was redirected; with this action, the Y-12 Plant storm water collection system bypasses the mercury tanks. No surveillance or inspections of the site are required.

Final Resolution/Outcome: Complete

Record of Decision Name: Record of Decision for the Y-12 for the Plating Shop Container Areas

Date Signed: 9/30/1992

Document Number: DOE/OR-1049&D3

Status: Completed -September 1992

Summary/Purpose: This ROD pertains to the Plating Shop Container Area on the Y-12 campus; the area is within the Upper East Fork Poplar Creek watershed. This area has served as a collection and storage site for spent plating solutions and sludges for operations within the Y-12 complex. The ROD states that no further action is necessary for the Plant Plating Shop Container Area due to the determination that risks were below the threshold for potential concern.

Assessment of the Site: A conservative exposure scenario determined that the total excess cancer risk is below EPA's range of concern.

Description of the Remedy: The selected remedy for this ROD is that no further action is needed. Based on EPA standard levels, there is no further action necessary to protect human health at the site. This ROD only addresses the soil of the Plating Shop Container Areas, so final remedial decisions for this site will be assessed with the Upper East Fork Poplar Creek operable unit.

Status Update: The ROD determined no further action was needed, so no remedial action was taken.

Final Resolution/Outcome: No Further Action Determination

Record of Decision Name: Record of Decision for the Upper East Fork Poplar Creek Operable Unit 2 (Abandoned Nitric Acid Pipeline) at the Oak Ridge Y-12 Plant, Oak Ridge, Tennessee

Date Signed: 9/12/1994

Document Number: DOE/OR/02-1265&D2

Status: Completed - September 1994

Summary/Purpose: This ROD is for the Abandoned Nitric Acid Pipeline at the Y-12 Plant, which runs 4,800 feet from Building 9215 to the S-3 Site. Historically, this pipe was used to carry waste effluent from a uranium recovery process that produced nitric acid and depleted uranium. The pipeline had turns, bends, joints, and low points where waste effluent might have collected or leaked. The ROD recommends that no further action is needed because the determination conditions related to the site do not pose an unacceptable threat to human health or the environment.

Assessment of the Site: A baseline risk assessment indicates that the abandoned nitric acid pipeline area does not pose an unacceptable threat to human health and the environment.

Description of the Remedy: The remedy chosen in this ROD is that no further action is needed for the soils at the Abandoned Nitric Acid Pipeline. The risk assessment shows that previous cleanup and maintenance activities reduced the radiological and other hazards in the area. This ROD only addresses soils surrounding the pipeline, so any groundwater issues will be addressed by future remedial decisions. However, the pipeline is not considered to be a source of groundwater contamination at this time.

Status Update: The ROD determined no further action was needed, so no remedial action was taken.

Final Resolution/Outcome: No Further Action Determination

Record of Decision Name: Record of Decision for Kerr Hollow Quarry at the Oak Ridge Y-12 Plant, Oak Ridge, Tennessee

Date Signed: 9/29/1995

Document Number: DOE/OR/02-1398&D2

Status: Completed - September 1995; RA completed under approved RCRA closure plan

Summary/Purpose: This ROD is for Kerr Hollow Quarry, a 3 acre flooded limestone rock quarry that is located at the Y-12 plant. The quarry was operated during the 1940s, but was abandoned and allowed to fill with water. The quarry was then used as a treatment site for water-reactive, corrosive, or ignitable wastes from Y12 and ORNL. This ROD recommends no further action, because actions were taken under an approved Resource Conservation and Recovery Act (RCRA) closure plan.

Assessment of the Site: The closure of Kerr Hollow Quarry under RCRA guidelines and the restricted access of the site provides protection of human health and the environment.

Description of the Remedy: This ROD states that no further action is necessary because previous action was taken under an approved RCRA closure plan. The RCRA remedies involved removing the containers, cylinders, and other materials from the bottom of the quarry. Groundwater will be monitored at this site, and the status of this site under CERCLA will be reviewed every 5 years.

Status Update: The ROD determined no further action was needed, so no remedial action was taken.

Final Resolution/Outcome: No Further Action Determination

Record of Decision Name: Record of Decision for Chestnut Ridge Operable Unit 2 (Filled Coal Ash Pond and Vicinity)

Date Signed: 2/21/1996

Document Number: DOE/OR/02-1410&D2

Status: Completed - April 1997; RAR approved June 1997

Summary/Purpose: This ROD addresses the Chestnut Ridge Operable Unit 2, also known as the Filled Coal Ash Pond (FCAP) just south of Y-12. Historically, the FCAP was used as a settling basin for coal ash slurry from the Y-12 Steam Plant. The ROD addresses the threats to plants, animals, and humans by minimizing the migration of contaminants into surface water, reducing direct contact with the ash, upgrading dam improvements and stabilization, and preserving the local habitat. The ROD also presents a methodology for making Action/No-action determinants.

Assessment of the Site: The potential release of coal ash from the site may present an unacceptable risk to public health, welfare, or the environment.

Description of the Remedy: The ROD's proposed remedy addresses surface water and soil contaminated by coal ash on Chestnut Ridge. The chosen remedy improves the dam and stabilization, creates a passive treatment system that reduces contaminant migration, and restricts human access to contamination with institutional controls. The ash will remain in place at the site, and the surface water will receive limited treatment. Institutional controls will restrict access to contamination and reduce risk to human health.

Status Update: Field activities began in August of 1996 and were completed in April of 1997. The following actions were taken according to the RAR: crest of dam was raised, the face of the dam was reinforced, subsurface drain was installed, large trees were removed, emergency spillway was repaired, and a settling basin and oxygenation weir were constructed. The remedial action calls for long-term monitoring of the dam and access controls.

Final Resolution/Outcome: Complete

Record of Decision Name: Record of Decision for Bear Creek Valley (BCV) Operable Unit 2

Date Signed: 1/23/1997

Document Number: DOE/OR/02-1435&D2

Status: Completed; No RAR exists for this decision

Summary/Purpose: The ROD pertains to the area known as Bear Creek Valley Operable Unit 2 at the Y12 site, which has a former construction spoil area, Spoil Area 1, and a former construction storage yard, the SY-200 Yard. Spoil Area 1, a class IV landfill, had a soil cover placed in 1985, but exceeded the limit on the volume of waste at the unit. A layer of clean soil was also placed on SY-200 after equipment was removed from the site. In addition to the remedy chosen, the ROD presents a methodology for making Action/No-action determinants.

Assessment of the Site: Low levels of metals, organic compounds, and radionuclides were detected in the soil at the OU 2 sites: Spoil Area 1 and the SY-200 Yard that pose a potential risk to human health.

Description of the Remedy: The chosen remedy for this ROD is to maintain existing soil covers on the Spoil Area 1 and the SY-200 and to impose institutional controls. The institutional controls will be through both physical barriers and deed restrictions for restricted industrial land use. Physical surveillance of the soil covers and maintenance and repair of the site will be performed when needed.

Status Update: No CERCLA performance monitoring is required under the No Further Action ROD. However, stewardship requirements include access and land use restrictions to prevent unacceptable exposure. The final decision on other media will be included in future BCV Groundwater ROD.

Final Resolution/Outcome: No Further Action Determination

Record of Decision Name: Record of Decision for the Disposal of Oak Ridge Reservation Comprehensive Environmental Response, Compensation, and Liability Act of 1980 Waste (EMWMF), Oak Ridge, Tennessee

Date Signed: 11/2/1999

Document Number: DOE/OR/01-1791&D3

Status: Ongoing

Summary/Purpose: This ROD details the remedial action to build and operate a CERCLA landfill for remediation waste on the Oak Ridge Reservation, west of the Y-12 Plant in East Bear Creek Valley. The ROD addresses the construction of an engineered waste disposal facility as well as operation and the long-term institutional controls for the facility. The site, to be named the Environmental Management Waste Management Facility (EMWMF), is located in the East Bear Creek Valley, within the Bear Creek Valley watershed. It was estimated that the implementation of other RODs across the Oak Ridge Reservation would create 280,000 yd3 of waste. Creating the EMWMF provides a permanent disposal area for radioactive, hazardous and mixed wastes. In addition to the remedy chosen, the ROD presents a methodology for making Action/No-action determinants.

Assessment of the Site: Remediation of sites in the Oak Ridge Reservation will generate large quantities of contaminated waste, which needs to be disposed of in a manner that is protective of public health and the environment.

Description of the Remedy: The remedy proposed by this ROD includes the following points. Construction and operation of an earthen disposal cell large enough to hold a minimum of 223,000 yd3 of waste. The facility will be designed to receive low-level radioactive waste, hazardous waste, and mixed waste. Waste must be certified for disposal, and must meet on-site disposal requirements. Once a waste cell is closed, a Resource Conservation and Recovery Act (RCRA) compliant cover must be placed over the waste. Monitoring, maintenance, and long-term institutional controls of the site are required by this remedy. The Toxic Substances Control Act (TSCA) requirement that the bottom of the landfill liner be at least 50 ft. above the historical high groundwater table has been waivered by the EPA.

Status Update: The EMWMF opened in 2002 and is a total of 120 acres. The site is designed, as specified to hold waste from other operable units on the Oak Ridge Reservation. While the capacity of EMWMF is 2.2 million cubic yards, this site will not be enough for all of the waste generated by the Oak Ridge Reservation. A new disposal facility is being proposed, called the EMDF, and remedial investigations are underway for this proposal

Final Resolution/Outcome: Actions under this Interim ROD are ongoing. As of January 2019, remediation efforts continue in the previously mentioned areas. DOE will submit completion documents for regulatory review and approval once work in these areas is finished.

Record of Decision Name: Record of Decision for Phase I Activities in Bear Creek Valley at the Oak Ridge Y-12 Plant, Oak Ridge, Tennessee

Date Signed: 6/16/2000

Document Number: DOE/OR/01-1750&D4

Status: Ongoing

Summary/Purpose: This ROD covers the following areas located in Bear Creek Valley: Boneyard/Burnyard, Hazardous Chemical Disposal Area, S-3 Ponds Pathway 3, Disposal Area Remedial Action (DARA) Solids Storage Area, and the Oil Landfarm Soil Containment Pad. This ROD for Bear Creek Valley pertains to the watershed, extending from the western boundary of the Y-12 Plan to just west of Highway 95. Many of the areas mentioned were formal waste disposal areas used by the Y-12 plant to dispose of radiologically contaminated and uncontaminated wastes. The remedial actions for this site include soil removal and established remediation goals for Bear Creek. In addition to the remedy chosen, the ROD presents a methodology for making Action/No-action determinants.

Assessment of the Site: Several contaminants have been identified in soil surface water, and groundwater in the Bear Creek watershed including radionuclides metals in soil, uranium, nitrate and volatile organic compounds (VOCs) in groundwater.

Description of the Remedy: The major components of this ROD include the following points. Primary source areas at the Boneyard/Burnyard will be excavated for disposal and what remains of the site will be hydraulically isolated. The shallow groundwater contamination at the S-3 Site Pathway 3 will be intercepted and treated before entering Bear Creek. Soil at the DARA will be removed for offsite commercial disposal, and the DARA and Oil Landfarm storage facilities will be decontaminated and dismantled. Surface and groundwater monitoring will be implemented and Bear Creek will continue to go through testing and maintenance. Current land use restrictions in Bear Creek Valley will be maintained under this ROD.

Status Update: This ROD is still ongoing, with funding limitations becoming an issue to complete all of the remedial actions in the ROD. To date, 57,000 cubic yards of soil has been removed from the Boneyard/Burnyard, with a protective cap being placed over remaining soil in 2003. Oil Landfarm wastes were also removed and disposed of in 2001. The S-3 Pathway actions proposed by the ROD were terminated; and final decisions for the BCV will be addressed in future decision documents: the Burial Ground ROD and the BCV Groundwater ROD.

Final Resolution/Outcome: Actions under this ROD are ongoing. As of January 2019, remediation efforts continue in the previously mentioned areas. DOE will submit completion documents for regulatory review and approval once work in these areas is finished.

Record of Decision Name: Interim Record of Decision for Phase I in Upper East Fork Poplar Creek

Date Signed: 5/2/2002

Document Number: DOE/OR/01-1951&D3

Status: Ongoing

Summary/Purpose: Processes and programs at the Y-12 plant have contaminated soil, surface water, sediment and groundwater. This I-ROD presents remedial action for source control actions in Upper East Fork Poplar Creek (UEFPC) such as sediments and treatment plants. It further establishes a ROD goal of 200 ppm at Station 17 for mercury, which gauges the effects of various actions included in the ROD as they are completed. This ROD is an initial phase for remediation in the Upper East Fork Poplar Creek Watershed, and will be followed by subsequent action. In addition to the remedy chosen, the ROD presents a methodology for making Action/No-action determinants.

Assessment of the Site: The potential for unacceptable risk to an industrial worker exists at this site from soils, scrap, buried waste, and subsurface structures. Contaminants also present a potential future threat to groundwater or surface water.

Description of the Remedy: The remedy for this I-ROD focuses on several source control remedies that aim to reduce the spread of mercury from the Y-12 plant. Components of this remedy include: hydraulic isolation of contaminated soils in West End Mercury Area, removal of contaminated sediments from UEFPC and Lake Reality, as well as the treatment of discharging groundwater from Outfall 51. These remedies constitute the phase one for the UEFPC area, with further phases being addressed with additional action documents.

Status Update: This I-ROD is still in progress. In 2016 an amendment to the ROD significantly expanded the control of mercury being released by the West End Mercury Area by creating a project to build a water treatment plant at Outfall 200. The remediation of UEFPC Watershed is being conducted in stages, with this ROD representing the first phase.

Final Resolution/Outcome: Actions under this Interim ROD are ongoing. As of January 2019, remediation efforts continue in the previously mentioned areas. DOE will submit completion documents for regulatory review and approval once work in these areas is finished.

Record of Decision Name: Record of Decision for Phase II Interim Remedial Actions for Contaminated Soils and Scrapyard in Upper East Fork Poplar Creek, Oak Ridge, Tennessee

Date Signed: 4/21/2006

Document Number: DOE/OR/01-2229&D3

Status: Ongoing

Summary/Purpose: Y-12 is an active manufacturing and developmental engineering facility that was originally built as part of the World War II Manhattan Project. Historically, the processes and programs at the Y-12 complex have contaminated soil, surface water, sediment, and groundwater. This I-ROD addresses Phase II of the approach to remedy the Upper East Fork Poplar Creek (UEFPC) Watershed. Remediation of the entire UEFPC watershed will be conducted in stages using a phased approach, with the I-ROD for Phase I being the initial phase. Remedial action is presented for soils and scrap yard and established cleanup goals for mercury in soils. In addition to the remedy chosen, the ROD presents a methodology for making Action/No-action determinants.

Assessment of the Site: The potential for unacceptable risk to an industrial worker exists at this site from soils, scrap, buried waste, and subsurface structures. Contaminants also present a potential future threat to groundwater or surface water.

Description of the Remedy: The I-ROD includes the following components under the selected remedy that is the second phase of remediation in the UEFPC area; Identification of sources of unacceptable releases to ground and surface water. Contaminated soils that are accessible will be excavated, to allow for controlled industrial land use up to 2 ft. in depth while protecting underlying groundwater and surface water. Y-12 Salvage Yard scrap will be removed. Further, limited groundwater monitoring near deep soil excavation areas will be conducted for a 5 year minimum. Land Use Controls will also be established, extending throughout the entire Y-12 industrial area.

Status Update: The cleanup associated with this ROD is ongoing. The remediation of the UEFPC Watershed is being conducted in stages, with this ROD representing the second phase. Total cleanup under this phase two ROD is not expected for a number of years.

Final Resolution/Outcome: Actions under this Interim ROD are ongoing. As of January 2019, remediation efforts continue in the previously mentioned areas. DOE will submit completion documents for regulatory review and approval once work in these areas is finished.