

**Deactivation and Remediation Contract Tour Script
May 17 -19, 2016**

- (S) – Stop and walk through
- (P) – Pause and remain on Bus
- (D) – Drive-by

Tour Day 1 – May 17, 2016

IN PARKING LOT PRIOR TO BOARDING BUS

“Welcome to the Paducah Gaseous Diffusion Plant (PGDP). Today we will be conducting a tour of activities, facilities, and equipment outside the plant. Safety shoes are not required; however, shoes worn shall be closed-toe, non-slip soles, above the ankle if possible, and made of leather or other substantive materials (not cloth). No high heels.

Security requirements dictate that all participants remain with the tour group for the duration of the tour. There are also several prohibited items that are not allowed at PGDP. These items include real or simulated firearms and ammunition, stun guns, alcoholic beverages, illegal drugs and paraphernalia, explosives, hand-held weapons, chemical irritants, and items prohibited by state and federal law. Other items not allowed on the tour include copying or transcription devices, electronic recording devices, cameras, radios, cell phones, laptops, tablets, cameras, two-way pagers, thumb or portable hard drives, gaming devices, smart watches, Fitbits, and knives with blades more than 2.5 inches long. Contraband brought to the PGDP will be confiscated.

Please be aware that all hand carried items (packages, briefcases, handbags, purses, etc.) will be inspected by security prior to boarding the bus. DOE will not be responsible for securing any items during the tour. Please keep hand-carried items to a minimum.”

IN THE PARKING LOT AT BUS LOCATION

Monitor passenger boarding to check for prohibited items. Remind passengers as they board about electronic device restrictions.

Ensure all participants have boarded,

Depart for tour.

ON BOARD BUS BEFORE BUS LEAVES THE PARKING LOT

“Welcome aboard. I assume everyone has secured your electronic devices as required. We will be narrating this tour to enable you to familiarize yourselves with the site facilities and projects. Please understand that you cannot verbally ask questions during the tour. Discussions should be minimized so that everyone can hear the script. All questions must be written and submitted in accordance with guidance provided previously. You have been

provided a checklist request form for the Bidders' Choice Tour that will take place on Thursday. The completed checklist will need to be provided at the end of tomorrow's tour."

1) Typical Groundwater Monitoring Well (P) – Pause and point out well

"On your left is a typical ground water monitoring well. There are approximately 330 groundwater monitoring wells associated with the Paducah Environmental Monitoring Program (EMP). These wells are necessary for the key program elements of the CERCLA Actions, which include the C-400 Interim Remedial Action, and Operations and Maintenance (O&M) Plans for both Northeast and Northwest Plumes Programs; the Landfill Groundwater Monitoring Program; and the Surveillance Monitoring Program.

The specific wells are identified in Appendix B of the current Environmental Monitoring Plan. This plan also identifies the specific monitoring requirements for each of the wells."

2) C-746-K Sanitary Landfill, SWMU 8 (P) – Pause and point out landfill

"On your left up on the hill is the C-746-K Landfill. This landfill was used between approximately 1951 and 1982 for disposal of fly ash from the plant's coal combustion boilers, for uncontaminated combustible plant waste, and for potential radiologically contaminated plant waste. The site depth is approximately 20 ft. with all waste originally placed aboveground. A clay cap was installed in 1982.

The ground surface is vegetated and slopes in a radial fashion. Drainage ditches along the western and northern edges of the landfill flow to the south into the unnamed tributary and to the east into Bayou Creek, respectively. Current monitoring activities include groundwater monitoring wells for volatile organic compounds and metals."

3) C-611 Water Treatment Facility (S) – Stop, depart bus for tour. Bus will turn around while group is touring facility.

Cover below information in the C-611 parking area prior to entering facility

"The C-611 Water Treatment Plant has 15 acres of fenced area and provides approximately 3 million gallons per day of water to the Department of Energy (DOE) and its site contractors.

The water treatment process is based on conventional water treatment techniques which include softening, coagulation, flocculation, sedimentation, and chlorination.

Raw water is taken from the Ohio River at a pumping station operated by Tennessee Valley Authority (TVA) at the Shawnee Fossil Plant (north of the plant site). The pumping station consists of six vertical turbine pumps rated at approximately 150 gallons per second and are located on the same pump deck as the TVA pumps. These pumps are located in two pump wells with bar screens containing three pumps per well. Currently, two of the pumps are not operational and there are no plans to repair.

The raw water pumps discharge into one or both of two 36 inch lines that convey the water to the C-611 Water Treatment Plant. The switchgear for the raw water pumps are old and

below the high flood level for the river. Jumpers are available to power the pumps from alternate sources. All work in the pump house intake area is performed under a TVA contract since it is on TVA property. Responsibility for repairs to the two main lines are split between TVA and DOE. Any repairs made by TVA are paid for by DOE. Dredging of the intake lagoon is performed by TVA currently without charge to DOE. However, other work (intake cleaning, wet well cleaning, bar screen replacement and pump maintenance) must be paid for by DOE thru TVA to contractors.

As water arrives at the C-611 facility, it is softened, pre-chlorinated and flocculated in the mixing basin. Approximately 99% of the suspended solids are then settled out in the four reinforced, concrete-lined settling basins with a total capacity of 12 million gallons. After the sedimentation process, approximately 50-60% of the water is filtered, post chlorinated, and pumped to the sanitary water distribution system.

Chlorine Information (Open door to Chlorine room, read info below)

The Water Treatment Facility utilizes 1-ton chlorine cylinders for pre and post chlorination. Four 1-ton cylinders are located at the north end of the facility for pre-chlorination and two cylinders are located here for post chlorination. An average of 1-2 cylinders are used monthly. Due to the volume of chlorine at this location, the Process Safety Management Standard under OSHA, requires plans and procedures to be in place to address emergency response actions. DOE has considered reduction of hazardous materials inventory by replacement of chlorine gas and consideration has been given to the use of bleach. This will require the installation of a feed station and storage tanks and should be evaluated in conjunction with other optimization efforts such as connecting to an offsite service. The City of Paducah water system is currently utilizing liquid bleach.

We will now enter the facility and take a look at the multi-media sand filters. The steps are steep going up to the facility so please hold the handrails, pay attention to your walking surfaces, and walk single file along the grating.

Multimedia filters (Read below while pointing out feed station and filtration beds.)

After the water leaves the settling basins, sodium hexametaphosphate is added for corrosion protection at the feed station on the right. Water then flows through 5 multimedia filtration beds which have a capacity to treat up to 7 million gallons of water per day. The filtration beds are backwashed once every 96 hours. Solids from the backwashing go out to the sludge lagoon. Filtered water is then sent to a 500,000 gallon clear well for distribution to the plant sanitary water system via six pumps. Two of the pumps are dual drive, electric or diesel, and one of the six is a diesel pump used for emergency only. These pumps range from 600 – 5,000 gallons per minute. We will now walk outside to the settling basins.

Settling basins (read information below)

As mentioned prior, pre-chlorinated water flows to these four reinforced concrete-lined settling basis where suspended solids are settled out. These basins have a total capacity of 12 million gallons.

Currently, the sanitary water distribution system is significantly oversized. Changes to the water system to connect to an offsite service is being reviewed and planned. To accomplish this the overall site usage would be reduced to under 1 million gallons of water per day. In addition, the distribution system lines may require downsizing to ensure proper flow is maintained in the lines. None of these changes are expected to be complete at the transition to the new contract.

This concludes the tour of the C-611 Water Treatment Facility. We'll now board the bus to continue the tour."

Proceed to bus

4) C-615 Sewage Treatment Facility (P) – Pause after turning left onto Patrol Road and point out facility.

“On the right is the C-615 Sewage Treatment Plant which provides the sewage handling and treatment for the Paducah Site. The sanitary sewage drainage system and treatment plant were built in the early 1950s and the majority of the sewage collection system is constructed of vitrified clay pipe. The drainage system consists of gravity drain lines, flush tanks and lift stations. Operation of the collection system requires at least one person onsite who holds a Level 2 Sewage Collection license.

The drainage system is designed as gravity flow with lift stations as needed to maintain flow in the system. The sanitary sewage drainage system has two areas where lines appear to have collapsed. These are the 8” line north of C-102 and the drain line from the south side of C-400.

The design capacity of the system is 500,000 gallons per day. Currently, the system handles approximately 180,000 gallons per day without infiltration. However, it appears that the drainage system has a significant inflow/infiltration issue. With a 2” rainfall in a 24 hour period, the C-615 facility is pushed to capacity due to the inflow/infiltration. A sewer drainage system survey is expected to be completed this fiscal year. However, no major changes to the drainage system is expected to be complete prior to transition to the new contractor.

Operation of the C-615 treatment plant requires at least one person onsite who holds a Level 2 Waste Water Treatment System License. The C-615 treatment plant includes a comminutor, primary basins, and secondary basins for precipitation of solids, trickling filter, digester and drying beds. Sewage is handled by 4, 400 gallon per minute (gpm) basin pumps and 2, 75 gpm sludge pumps. The influent waste waters flow through the comminutor and grit basket for size reduction into the primary basin. Liquid from the primary basin flows to the trickling filter. From the trickling filter, a portion of the liquid flows to the primary basin for recycle and a portion flows to the secondary basin. The effluent from the secondary basin is chlorinated in the chlorine contact chamber and flows to Outfall 004.

The C-615 chlorine feed facility, located in a separate room on the southwest corner of the building, houses the chlorinator, chlorine containers, exhaust fan, and chlorine gas detection

system. The room houses no more than 10 – 150 lb. chlorine cylinders. At any time, up to two cylinders will be connected to the feed system with one normally in use and the other in standby. Changing the dechlorinating chemical to sodium bisulfate or sulfur dioxide has been considered, but no changes have been made.

Radiological contamination is likely present at C-615 in the digester and sludge. Previous sludge that was removed contained radiological contamination. One of the pumps in the C-615 facility is known to contain fixed contamination.

5) C-764 Trailer Complex (P) Pause alongside the trailer complex.

“On the right is the C-764 Trailer complex. This complex is utilized by the current DOE deactivation contractor for housing office and field personnel close to the work sites. The C-764 Trailer Complex contains eleven trailers and houses approximately 65 people. This complex was constructed originally to support Recovery Act work conducted at the site from 2009-2011. All of these trailers are assigned to the Deactivation/Remediation contractor – primarily used for remediation program support. This complex is not within the Limited Access area so unclear personnel do not require escorts in this area.”

6) KPDES Outfalls 004 & 008 (P) – Pause and point out the outfalls.

“On your left are Outfalls 004 and 008. The PGDP has two Kentucky Pollutant Discharge Elimination System (KPDES) permits which specifies the outfalls, monitoring frequencies, sampling parameters, and discharge limits for discharges of water from the PGDP. There are a number of outfalls surrounding the plant that receives effluents from different buildings and surface areas of the plant. All the outfalls are included in the KPDES permits. Details as to how plant areas and buildings discharge to the various outfalls is included in the KPDES permit applications.

Similar information for all of the outfalls you will see today are included in the permit applications and permits.”

7) Air Monitoring Station 015 (P) – Pause and point out the monitor station.

“On your left is Air Monitoring Station 015. The ambient air monitoring program was operated and managed by the Kentucky Cabinet for Health and Family Services since the program was initiated. The Contractor Environmental Management Program began managing the program on July 1, 2012, using nine solar-powered air monitoring units. Eight of the units are situated on DOE property. The remaining unit is located off-site near the Kevil community and functions as a collection site for background monitoring. The station on your left (015) is one of the 8 on-site ambient monitoring locations associated with the Paducah Environmental Monitoring Program. The specific locations, sampling frequencies (weekly and monthly), and analytical parameters are specified in the Environmental Management Program. Data from this monitoring is included in the National Emission Standards for Hazardous Air Pollutants Annual Report and the Paducah Annual Site Environmental Report (ASER).”

8) C-613 Scrapyard Sedimentation Lagoon (P) – Pause and point out the lagoon.

“On your left is the C-613 Sedimentation Lagoon. The lagoon was installed during the Scrap Yard Removal Project to limit the migration of sediments from the work site which include radiological contamination. The facility design consists of three components: storm water collection and conveyance, gravity-settling basin, and enhanced settling by chemical treatment. The facility is designed to detain the estimated runoff volume from the scrap metal yards for a 10-year, 24-hour precipitation event of 5 inches. Extra volume is included to enhance facility operation and efficiency. The volume of the basin at the design maximum water level is approximately 3,750,000 gal. At the elevation of the facility spillway, the basin capacity is approximately 4,500,000 gal. The basin empties into Outfall 001. The basin is still in use for limiting sediment migration from the northeast corner of PGDP. The basin contains a layer of sediments in the bottom that contain radionuclide contamination.

The C-613 Sedimentation Lagoon monitoring and control systems were upgraded in 2015 to include new turbidity and pH monitoring equipment, a depth indicator, automated pump shutdown features, and an automated phone dialer to notify operations staff of pump shutdown.

The Contractor will be required to manage the C-613 Sedimentation lagoon in accordance with the Operations and Maintenance Plan, including all required sampling and analysis.”

9) C-612 Northwest Pump & Treat Facility (S) – Stop, read information, and exit bus for tour. Bus will turn around while group tours facility.

“Straight ahead is the C-612 Northwest Plume Groundwater Treatment System. In August 1988, volatile organic compounds (VOCs) and radionuclides were detected in private water wells north of the Paducah Gaseous Diffusion Plant. An investigation was conducted to determine the nature and extent of off-site contamination. The investigation demonstrated that the principle contaminants of concern in the offsite groundwater were the VOC trichloroethylene (TCE) and the radionuclide technetium-99 (⁹⁹Tc). In July 1993, a Record of Decision was issued to implement an interim remedial action with the primary objective of initiating control of the source and mitigate the spread of contamination in the Northwest plume. Extraction wells were installed into the contaminated groundwater plume and the C-612 Treatment Facility was constructed to remove TCE and ⁹⁹Tc from the extracted groundwater. Operation of the C-612 Treatment Facility began in August 1995. As of March 31, 2016, the system has processed over 2 billion gallons of contaminated groundwater and has removed almost 4,000 gallons of TCE from the water. During the last reporting period, the concentrations of TCE and ⁹⁹Tc in groundwater entering the C-612 Treatment Facility were 2,251 ppb for TCE and 283 pico curies per liter for ⁹⁹Tc.

We will be doing a short walkthrough of this facility. As before, please be cautious and alert to your walking surface.”

Get off the bus and walk toward the entrance of the C-612 Facility. Pause at the discharge.

“This is the discharge point for the treated groundwater. This ditch leads to KPDES Outfall 001. During the last reporting period the concentrations of TCE in the treated groundwater was 1.62 ppb for TCE, which is less than the treatment goal of 5 ppb. The average ⁹⁹Tc level in the treated water was 61.0 pico curies per liter, which is less than the operational goal of 900 pCi/L.”

Proceed to the entrance of the C-612 Facility. (Due to noise in facility, read information outside while pointing out equipment. Then enter facility and allow them time to look over equipment)

The C-612 Treatment system processes water from two extraction wells. Each well pumps at a rate of approximately 100 gallons per minute for a total treatment rate of 200 gallons per minute. The system removes TCE from the water using air-stripping and activated carbon adsorption technologies. The ⁹⁹Tc is removed from the water using an ion-exchange process.

In 2015, the facility underwent a significant upgrade including replacement of the ion exchange system, the activated carbon beds, process piping and valves, and the programmable electronics and controls.

The contractor will be responsible for the operation and maintenance of this facility and extraction wells in accordance with the approved operations and maintenance plans including preparation, completion, and submittal of any applicable regulatory documents.

We will now get back on the bus to continue the tour.”

Proceed to the bus.

10) C-746-F Burial Yard, SWMU 5 (P) – Pause and point out burial yard.

“On your left is the C-746-F Burial Yard also known as Solid Waste Management Unit 5 (SWMU 5). SWMU 5 covers an area of approximately 197,000 ft² and is located adjacent to SWMU 6 to the east. The burial yard was operated from 1965 to 1987 and received radionuclide-contaminated scrap metal and slag from the C-746-A nickel and aluminum smelters, along with materials from the “Work for Others” program. Disposal pits were located on a grid system. Documentation of the size of these grids ranges from 10’ x 10’ cells to 20’ x 20’ cells excavated to a depth of 6 – 15’ below ground surface. The burial yard currently has a soil and vegetative cover.

The remedial investigation and feasibility study for this SWMU is complete and the proposed plan is currently undergoing public review and comment. The proposed plan recommends installation of a Kentucky Subtitle D cap, land-use controls, and long-term groundwater monitoring.”

11) C-752-C Decontamination Pad (P) – Pause and point out facility.

“On your right is the C-752-C Decontamination Pad. It is an open sided structure with a curbed concrete floor and sumps. The facility is utilized to decontaminate equipment prior to offsite release. Solutions/sprays used during decontamination activities enter the floor drains

and accumulate in the sumps. The accumulated water is pumped to storage tanks for further sampling and disposition.”

12) C-752-B Fuel Station (D) – Drive by slowly as information is read

“On your right is the C-752-B Fuel Station. Available 24 hours per day, 7 days per week, the fueling station utilizes a card reader and vehicle code system to provide self-service refueling of government owned/leased vehicles. The facility has two split tanks, each tank having a total capacity of 4,000 gallons. With the split tank configuration there are four fuel pumps and four fuel compartments (tanks) with the following capacities: Diesel On-road, 1,000 gallons; Biodiesel off-road, 3,000 gallons; E-85 gasoline, 1,000 gallons; and 87 octane gasoline, 3,000 gallons. The fuel station is maintained by the infrastructure contractor.”

13) KPDES Outfall 017 (D) – Drive by slowly and point out the outfall

“On your right is Outfall 017. This is the only outfall for discharges from the Depleted Uranium Hexafluoride Conversion Facility.

14) Proposed Waste Disposal Site 3A (D) – Drive by slowly and point out the disposal site.

“On your left is Waste Disposal Site 3A, one of five proposed candidate sites evaluated. The DOE estimates a future need for disposal of approximately 3.7 million cubic yards of radioactively contaminated, non-radioactively contaminated, and hazardous material (soil and building debris), including sanitary waste through the end of deactivation and decommissioning of the PGDP. DOE has prepared a Remedial Investigation/Feasibility Study to address on-site versus off-site options for waste disposal and whether an On-Site Waste Disposal facility (OSWDF) should be selected as the preferred alternative. Site 3A is one of five candidate sites evaluated in the Remedial Investigation/Feasibility Study that passed the Threshold Screening and therefore was carried forward for further evaluation. Site 5A is another site that you will see later in this tour. Site 3A is located outside of the secured area of the PGDP.”

15) Air Monitoring Station 57 (D) – Drive by slowly and point out monitor.

“On your right is Ambient Air Monitoring Station 57.”

16) C-617-C and KPDES Outfall 013 (P) – Pause and point out the pond/outfall.

“On your left is the C-617-C Pond and Outfall 013. This is a man-made wetland designed to control runoff from the cylinder yards. Outfall 013 receives the discharge from the pond as well as other plant effluents.

17) KPDES Outfalls 012, 011, 010 (D) – Drive by slowly and point out the outfalls.

“On your right we will be driving by Outfalls 012, 011, and 010 in that order.

18) C-755 Trailer Complex (D) – Drive by slowly and point out trailer complex.

“On the left is the C-755 Trailer Complex. This area is a 7-acre complex built in 1995 providing office trailers and change house for subcontractors just outside the security fence.

There are approximately 21 trailers, a change house, and maintenance building supporting approximately 150 people. Trailers in this area are assigned to both the Infrastructure and Deactivation/Remediation Contractors. Section J, Attachment J-18 identifies the facility assignments.”

19) C-765 Northeast Treatment Trailer (P) – Pause and point out the treatment trailer.

“On your left is the C-765 Treatment Trailer. It contains the treatment unit which is part of the Northeast Plume Containment System (NEPCS). The NEPCS consists of two extraction wells, an underground equalization tank, transfer piping, a treatment unit for air stripping and suspended solids removal, and monitoring well network. Operation of the NEPCS began February 28, 1997. As of March 31, 2016, the NEPCS has processed more than 1.5 billion gallons of water. Originally, the extracted water was sent to the plant cooling towers for air stripping. When enrichment operations were ceased the cooling towers were no longer available and it became necessary to provide an alternate means of treating the contaminated groundwater. To support the continued operation of the Interim Remedial Action until the optimization project is complete, this treatment unit was installed in 2013 and located near the planned location for extraction well 234. This treatment unit was plumbed temporarily to the pipeline that conveys groundwater from the existing extraction wells. Extraction wells EW331 and EW332, which are located approximately 3,000 feet northeast of the plant site near Ogden Landing Road, are being used temporarily to continue treatment of groundwater from the Northeast Plume. This arrangement will continue until the optimization project is completed and the use of the existing extraction wells is discontinued. As of December 31, 2015, this unit has removed over 300 gallons of TCE since it began operations.

The Contractor shall continue and complete the optimization of the Northeast Plume Pump and Treat System consistent with regulatory agencies negotiated agreements and strategies, as specified in the 2015 Dispute Resolution on the Northeast Plume Pump and Treat System Optimization. As part of the optimization project, a second treatment unit, extraction wells, and monitoring wells will be installed inside the limited area. The contractor will be responsible for the operation and maintenance of these treatment units and wells in accordance with the approved operations and maintenance plan including preparation, completion, and submittal of any applicable regulatory documents.”

20) Proposed Waste Disposal Site 5A (P) – Pause and point out waste disposal site.

On your left is the Proposed Disposal Site 5A. As we mentioned earlier, DOE is evaluating candidate sites for the OSWDF. This is Site 5A, one of the five candidate sites evaluated in the Remediation Investigation/Feasibility Study that passed the Threshold Screening and therefore carried forward for further evaluation. Site 5A is located on an interior portion of DOE-owned property, located primarily outside of the secured area of PGDP, with approximately 24% of the site within the secured portion of the PGDP plant. This site is approximately 135 acres. The majority of Site 5A land is designated as DOE-owned property licensed to West Kentucky Wildlife Management Area. The western portion is designated DOE-owned industrial land use.”

21) C-746-U Landfill (D) – Read information while driving through gate

“We are now entering the C-746-U Landfill. It is an operational RCRA Subtitle D landfill for disposal of Paducah Site solid waste and environmental media. The landfill waste acceptance criteria prohibits the disposal of classified, hazardous, or Low Level Waste. However, waste with residual radioactive material within authorized limits may be disposed in this landfill. The location of the landfill is outside the security fence. The total area of the landfill site is 60 acres with approximately 22 acres permitted for disposal.

The approved landfill design has a total of 23 disposal cells. Five of the 23 cells within the C-746-U landfill have been constructed and are filled or are active. Each expansion/opening of the new cells requires a modification to the permit.”

22) C-746-U-15 Leachate (P) – Pause and point out collection system.

“On your right is the C-746-U leachate collection system. It consists of a 12-inch drainage layer utilizing an 8-inch diameter perforated pipe for the main collection lines. The leachate flows by gravity to a collection wet well where it is pumped to a series of storage tanks with a total capacity of approximately 100,000 gallons. The estimated peak daily leachate generation rate for 15 days is approximately 88,000 gallons for the operation of Cells 1–5.

Collected leachate from the C-746-U Landfill is treated through a series of treatment processes including particulate filters, activated carbon, apatite media, and ion exchange media to remove potential organic and metal contaminants before being discharged to KPDES outfall 020.”

23) C-746-U Settling Pond (P) – Pause and point out settling pond.

“On your right is the C-746-U Settling Pond. Surface water runoff from the C-746-U Landfill is diverted to the C-746-U sedimentation pond. The surface water diversion ditches, culverts, and sedimentation pond are designed to accommodate the 100-year, 24-hour storm event. The pond has approximately 4.5 acres of surface area and is treated to remove sediments and discharged to KPDES Outfall 019 two to three times per year. Outfall 019 is the same physical location as Outfall 020. The discharges must not be comingled; therefore the separate designations are used.”

Point out landfill on left side of bus as it circles the area.

Bus will return to C-100 parking lot.

Read the following as bus returns to C-100 parking lot.

“This concludes the Day 1 tour of the outside of the facility. Tomorrow tour will be focused on the inside of the plant. The tour is expected to take approximately 6 hours and will involve a considerable amount of walking, included climbing stairs in several facilities. Please wear appropriate clothing and footwear.

We are now returning to the C-100 parking lot. Just a reminder that any questions need to be in written form and submitted in accordance with guidance previously provided. We thank-you for your interest in the Paducah Plant Deactivation and Remediation Project.”