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CP4-ES-0077 **FRev. 1**	**TITLE**: Monitoring Well Abandonment	Page 1 of 7

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure defines the methods and requirements for abandonment of monitoring wells, piezometers, and water supply wells. The procedure steps and requirements provide guidance in accordance with Kentucky Division of Waste Management (KDWM) directives and Kentucky Administrative Regulations (KAR).

1.2 Scope

This procedure applies to Paducah Gaseous Diffusion Plant Deactivation and Remediation employees and subcontractors that abandon monitoring wells, piezometers, and water supply wells at the Paducah U.S. Department of Energy Site.

2.0 REFERENCES

2.1 Use References

- CP3-EN-0227, *Trenching, Excavation and Penetration Permit*
- CP3-ES-0007, *Approval to Discharge Air or Water.*
- CP3-FP-2005, *Welding, Burning, and Hot Work*
- CP3-WM-1037, *Generation and Temporary Storage of Waste Materials*
- CP4-ER-2701, *Large Equipment Decontamination*
- CP4-ES-2700, *Logbooks and Data Forms*
- CP4-ES-2702, *Decontamination of Sampling Equipment and Devices*
- Job Hazard Analysis (JHA) 10657, *Monitoring Well Abandonment*
- PAD-REG-1005, *Spill Prevention, Control, and Countermeasure Plan for the U.S. Department of Energy Paducah Site, McCracken County, KY*
- PAD-REG-1006, *Best Management Practices Plan*
- 401 KAR 6:310, *Water Supply Well Construction Practices and Standards*, Section 11, *Well Abandonment*
- 401 KAR 6:350, *Monitoring Well Construction Practices and Standards*, Section 11, *Monitoring Well Abandonment*

2.2 Source References

None

3.0 COMMITMENTS

None

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Precautions

4.1.1 **If** an open boring is present at the end of the work shift, **then** the work location shall be roped off/barricaded and the borehole covered in a manner that secures the site in a safe condition until abandonment activities are resumed.

4.1.2 Best Management Practices, as defined in PAD-REG-1006, *Best Management Practices Plan*, shall be employed to minimize consequences of spills or releases of hazardous material.

4.1.3 Spills and/or releases shall be cleaned up and reported in accordance with PAD-REG-1005, *Spill Prevention, Control, and Countermeasure Plan for the U.S. Department of Energy Paducah Site, McCracken County, KY*

4.1.4 A Hot Work Permit shall be issued according to CP3-FP-2005, *Welding, Burning, and Hot Work*, if any cutting is anticipated to produce flame, hot particles, and or sparks.

4.2 Limitations

4.2.1 Well abandonment shall be performed under the supervision of a Kentucky Certified Well Driller.

4.2.2 Grout must be high-solids bentonite with at least 30% solids unless otherwise specified by work control documents.

4.2.3 Bentonite with a minimum particle size of 3/8 inch shall be used if the borehole is plugged using the gravitational or free-flow methods.

4.2.4 Only potable water may be used as the hydration medium, if necessary.

4.2.5 Water generated from well abandonment must be discharged in accordance with CP3-ES-0007, *Approval to Discharge Air or Water*.

4.2.6 KDWM approval is required before abandonment of a permitted monitoring well.

4.2.7 Well regulatory basis must be identified and evaluated before abandonment.

5.0 PREREQUISITES

5.1 **Before** abandoning monitoring wells, obtain approval from the following:

- Industrial Safety
- Project Health Physicist (wells located in radiological areas)
- Regulatory Compliance

5.2 Review JHA 10657, *Monitoring Well Abandonment*, before initially performing well abandonment.

5.3 **If** performing abandonment activities at a permitted landfill, **then** notify KDWM 10 days before commencing any activities.

5.4 **If** a variance from the regulations is needed, **then** the Certified Well Driller shall obtain approval from the Kentucky Department for Environmental Protection, Division of Water before abandonment.

5.5 **Before** pre-abandonment site preparation, inspect any area to be cleared for active bird nests.

5.6 **If** active bird nests are observed at the well site, **then** notify the site supervisor before site preparation.

5.7 Clear the site of grass/weeds as needed to ensure worker safety by minimizing trip hazards.

5.8 Obtain an Excavation/Penetration Permit in accordance with CP3-EN-0227, *Trenching, Excavation and Penetration Permit*, for each monitoring well abandoned.

6.0 INSTRUCTIONS

6.1 General Requirements

Project Manager/Front Line Supervisor

6.1.1 Ensure well abandonment is completed in accordance with 401 KAR 6:350, Section 11, *Monitoring Well Abandonment* for monitoring wells and piezometers, or 401 KAR 6:310, Section 11, *Well Abandonment* for water supply wells.

6.1.2 Ensure a record of well abandonment (Uniform Kentucky Well Maintenance and Plugging Record) is submitted by the Certified Well Driller to the Kentucky Energy and Environment Cabinet within sixty (60) days after date of abandonment.

6.1.3 Ensure the field geologist or other assigned project personnel records all observations and operations in accordance with CP4-ES-2700, *Logbooks and Data Forms*.

6.1.4 Ensure all equipment is decontaminated in accordance with CP4-ER-2701, *Large Equipment Decontamination* or CP4-ES-2702, *Decontamination of Sampling Equipment and Devices* before radiological survey out and demobilization from the site.

6.1.5 Manage waste in accordance with CP3-WM-1037, *Generation and Temporary Storage of Waste Materials*.

6.2 Monitoring Well and Piezometer Abandonment

Front Line Supervisor

6.2.1 Provide the Environmental Monitoring Project Manager the PGDP well number and the date the well is to be abandoned.

Environmental Monitoring Project Manager

6.2.2 Ensure the well inventory in the Environmental Monitoring Plan is updated.

6.2.3 Update the Paducah Oak Ridge Environmental Information System (OREIS) database with well abandonment information.

Certified Well Driller

NOTE:
The borehole may be plugged using the gravitational displacement or free-flow method to a maximum depth of fifty (50) feet.

6.2.4 Remove all well surface completion components such as concrete, bumper guards, etc.

6.2.5 Abandon well or piezometer by overdrill removal method in accordance with 401 KAR 6:350.

6.2.6 Inspect grout column in soil boring after 24 hours and add grout as necessary to bring top of grout column to within two feet of land surface.

6.2.7 Fill the top two feet of the soil boring with materials consistent with the surrounding surface.

6.2.8 Submit a report of abandonment within sixty (60) days of completion to the Kentucky Energy and Environment Cabinet.

6.2.9 Submit a report of abandonment to KDWM within sixty (60) days of abandonment of a permitted well.

6.3 Water Supply Well Abandonment

Certified Well Driller

Abandon water supply wells in accordance with 401 KAR6:310 Section 11, *Well Abandonment.*

7.0 ACCEPTANCE CRITERIA

Project Manager/Front Line Supervisor

7.1 Ensure the soil boring at the well site is filled to the elevation of the surrounding ground surface.

7.2 Ensure the well abandonment site is restored to its original intended use and any tire ruts or other surface imperfections are properly graded.

8.0 POST PERFORMANCE WORK ACTIVITIES

None

9.0 RECORDS

9.1 Records Generated

The following records may be generated by this procedure:

- Uniform Kentucky Well Construction Record (where applicable)
- Uniform Kentucky Well Maintenance and Plugging Record

9.2 Records Disposition

The records are to be maintained in accordance with CP3-RD-0010, *Records Management Process*.

Appendix A – Acronyms/Definitions

ACRONYMS

A. JHA – Job Hazard Analysis

B. KAR – Kentucky Administrative Regulations

C. KDWM – Kentucky Division of Waste Management

D. OREIS - Oak Ridge Environmental Information System

DEFINITIONS

None