# Ohio Valley Electric Corporation

## KYGER CREEK STATION

# COAL COMBUSTION RESIDUAL FUGITIVE DUST CONTROL PLAN

Prepared By:

**Ohio Valley Electric Corporation**
3932 U.S. Rt. 23
Piketon, Ohio 45661

**Revision 0 – October 19, 2015**

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## Appendices

# Professional Engineer's Certification – 40 CFR 257.80(b)(7)

*I certify that I am a licensed professional engineer in the state of Ohio. I have reviewed the attached "Coal Combustion Residual Fugitive Dust Control Plan" for the Kyger Creek Station in Cheshire, Ohio. It is my professional opinion that this plan meets the requirements of 40 CFR 257.80 (b).*

Jacqueline S. Harmon, P.E.
Senior Associate

Stan A. Harris, P.E.
Senior Principal

*Stamp*


Stan A. Harris
Printed Name

53083 — Reg. No.
OH — Reg. State
10/7/15 — Date

## List of Acronyms

| | |
|---|---|
| Annual Report | Annual CCR fugitive dust control report |
| BSP | Boiler Slag Pond |
| CCR | Coal Combustion Residual |
| ESP | High Efficiency Electrostatic Precipitators (ESP) |
| FGD | Flue-Gas Desulfurization |
| Landfill | Kyger Creek Residual Waste Landfill |
| Ohio EPA | Ohio Environmental Protection Agency |
| OVEC | Ohio Valley Electric Corporation |
| PEM | Plant Environmental Manager |
| Plan | CCR Fugitive Dust Control Plan |
| PTI | Permit to Install |
| SFAP | South Fly Ash Pond |
| USGS | United States Geological Survey |
| WWTP | Waste Water Treatment Plant |

## 1.0 INTRODUCTION

This Coal Combustion Residual (CCR) Fugitive Dust Control Plan (Plan) has been prepared pursuant to the air criteria of 40 CFR part 257.80 (see Appendix A) and following good engineering practices to include measures that will effectively minimize CCR from becoming airborne at the Kyger Creek Station and associated CCR units. The Plan and subsequent amendments will be placed in the operating record and retained in the office of the Kyger Creek Station Plant Environmental Manager (PEM). The Plan and subsequent amendments will also be placed on Kyger Creek Station's publicly accessible internet website titled "CCR Rule Compliance Data and Information." The Plan will be amended whenever there is a change in conditions that would substantially affect the written plan in effect, such as the construction and operation of a new CCR unit. Where appropriate, the Plan incorporates fugitive dust control requirements as contained in the Ohio EPA air permits issued for the plant.

There are two CCR surface impoundments and one CCR landfill located at the Kyger Creek Station that are subject to the Plan. The surface impoundments are the Boiler Slag Pond (BSP) and the South Fly Ash Pond (SFAP). The Kyger Creek Residual Waste Landfill (Landfill) receives boiler slag, fly ash, gypsum and Flue-Gas Desulfurization (FGD) Waste Water Treatment (WWT) filter cake. The Plan addresses these CCR units and the facility's associated paved and unpaved roadways.

## 2.0 FACILITY DESCRIPTION AND CONTACT INFORMATION

### *2.1 Facility Information*

**Facility Information:**

Name of Facility: Kyger Creek Station

Street: 5758 State Route 7 North

City: Cheshire State: Ohio ZIP Code: 45620

County: Gallia

Latitude: 38°54'57.07" Longitude: 82°07'46.53"

### *2.2 Contact Information*

**Facility Owner:**

Name: Ohio Valley Electric Corporation

Mailing Address: P.O. Box 468

Physical Address: 3932 US Route 23

City, State, Zip Code: Piketon, Ohio 45661

Telephone Number: 740-289-7200
Email address: CCRCompliance@ovec.com

**Plan Contact:**
Name: Kyger Creek Station Plant Environmental Manager
Address: 5758 State Route 7 North
City, State, Zip Code: Cheshire, Ohio 45620
Telephone number: 740-367-5050

### *2.3 Activities at the Facility*

The Kyger Creek Power Plant is located on the shore of the Ohio River at Cheshire, Ohio, and consists of five electric generating units. Ohio Valley Electric Corporation (OVEC) owns Kyger Creek's five nominally rated 217-megawatt units. Approximately 2.5 million tons of coals per year are converted to electricity at the Kyger Creek Station, powering homes, businesses, schools, and industrial facilities.

The generation of electricity using coal as a fuel source produces fly ash, boiler slag, and synthetic gypsum. The Kyger Creek Station is equipped with multiple pieces of environmental control equipment used to collect these materials.

All five units are equipped with high efficiency electrostatic precipitators (ESP) for the removal of fly ash from the flue gas. Fly ash is removed from the hoppers using a hydroveyor system where it is mixed with water and pumped to the SFAP for temporary storage. The SFAP is located immediately west of the plant. Fly ash is dewatered, resulting in a dry material for disposal or beneficial reuse.

After the flue gas stream has passed through the ESPs removing the fly ash, it then passes through the flue gas desulfurization (FGD) system, which produces a gypsum slurry. This slurry is dewatered, and the remaining dewatered material, synthetic gypsum, is taken to the Landfill for disposal or sold for beneficial reuse. Once the gypsum slurry is dewatered, the process water from the FGD system is treated in an onsite waste water treatment plant (WWTP) facility. This process generates a gypsum filter cake. These materials are conditioned with water as needed.

Fly ash, gypsum, and FGD WWTP gypsum filter cake are transported primarily by an overland conveyor system to the Landfill for disposal. In the event that the overland conveyor is unavailable, these materials are temporarily transported by truck to the Landfill. The Landfill is located approximately one and a half miles from the FGD systems. The fly ash and gypsum may also be transported off site by third party marketers/vendors for beneficial reuse.

Boiler slag is also produced by all five Kyger Creek Units and is wet sluiced to the BSP during unit operations. The boiler slag is routinely reclaimed from the pond and used or sold for beneficial reuse. Any material not used or sold for beneficial reuse will be ultimately disposed of in the Landfill.

### *2.4 Site Maps*

A USGS site location map for the Plant units is included as Figure 1-1 in Appendix B. A facility map is included as Appendix C (Figure 1-2). Appendix D (Figure 2-1) contains a USGS site location map for the Landfill and shows the property boundaries, surrounding topography and receiving waters. A USGS site location map of the SFAP is contained in Appendix E (Figure 3-1). Appendix F (Figure 4-1) contains a USGS site location map for the BSP.

## 3.0 FUGITIVE DUST CONTROL SELECTION – 40 CFR 257.80(b)(1)

### *3.1 Paved and Unpaved Roadways*

#### *3.1.1 Overview*

Under normal operations, the gypsum, FGD WWTP gypsum filter cake, boiler slag, and fly ash are transported on the overland conveyor system from the plant to the landfill stack out pad. The landfill stack out area is equipped with a dust suppression system, consisting of multiple water spray units, as well as atomized dust suppression units, located around the perimeter, that is used to maintain a sufficient moisture content in the material and control the generation of fugitive dust. From the stack out pad, trucks are used to transport these materials approximately one mile over paved and unpaved landfill roadways to the working face of the Landfill. These materials contain sufficient moisture content to reduce or eliminate fugitive dust.

Trucks are used to transport CCR to the Landfill from the plant site during times when the overland conveyor system is out of service for maintenance. Gypsum, FGD WWTP filter cake, boiler slag, and fly ash are transported from the plant load-out area over approximately nine and a half miles of plant paved roadways and public roadways to the Landfill entrance. Within the landfill entrance, the trucks travel approximately one mile over landfill paved roadways to the disposal area, followed by a much shorter unpaved roadway that varies with the location of the active fill area.

The fugitive dust control measures employed at the Kyger Creek Station have been determined to be adequate to control fugitive dust

from all Plant areas and approved by the Ohio Environmental Protection Agency (Ohio EPA) in the Plant's Air Permit to Install (PTI) (Permit No. P0109471). The roadways are also subject to visible emission limits as contained in the air permits, the results are reported to Ohio EPA semiannually. Periodically, public roads traveled by trucks may be addressed to minimize fugitive dust due to plant activity.

### *3.1.2 Landfill and Plant Roadways*

The fugitive dust control measures for roadways include watering, sweeping, tarping of trucks, and speed control. Water trucks are used as needed based upon the daily inspections and other observations to minimize or eliminate fugitive dust. A street sweeper/vacuum truck may also be used to clean paved roadways. All trucks travelling on public roadways are covered with tarps and routinely inspected for overall body integrity, leaks and spillage. The maximum posted speed limit at the Landfill is 15 mph for paved and unpaved roads. The maximum posted speed limit within the plant is 10 mph. Any materials that may be deposited onto paved roadways from trucks will be promptly removed to minimize fugitive emissions. Implementation of control measures will not be necessary for roadways that are covered with snow and/or ice or if sufficient precipitation occurs to minimize or eliminate fugitive dust. Implementation of any control measures will be suspended if unsafe or hazardous driving conditions would be created by their use.

## *3.2 Overland Conveyor System*

### *3.2.1 Overview*

The overland conveyor system is a belt conveyor that transports material extended distances over land. Under normal operations, the gypsum, FGD WWTP gypsum filter cake, boiler slag, and fly ash are transported on the overland conveyor system from the plant to the landfill stack out pad.

### *3.2.2 Transfer of CCR Material on Overland Conveyor System*

The conveyor system consists of a variable speed drive and a conveyor belt that is equipped with ¾ conveyor covers, which protects the material from the elements. It also is comprised of fully enclosed transfer points. The conditioned material is transferred from the generation point approximately one mile to the onsite Landfill stack out pad. The overland conveyor system possesses belt turnovers to prevent any carry-over of material. The belt turnovers are located prior

to material being placed on the belt and at the Landfill stack pad after the material is unloaded.

## *3.3 Landfill*

### *3.3.1 Overview*

The landfill receives boiler slag, fly ash, gypsum, and FGD WWT gypsum filter cake from the Kyger Creek Station. Each of these materials is conditioned with moisture prior to emplacing it into the landfill as per 40 CFR 257.80(b)(2). However, additional water may be added at the landfill as necessary to minimize fugitive dust emissions. In addition to the requirements found in the CCR rule, the landfill activities are subject to Ohio EPA Air PTI No. P0109471. The permit also includes visible particulate emissions limits as well as monitoring, recordkeeping and reporting requirements.

### *3.3.2 Unloading and Placement*

Fly ash is dredged from the SFAP, as needed, and transported on the overland conveyor system from the plant to the Landfill stack-out pad. Gypsum and FGD WWTP filter cake are also transported on the overland conveyor system from the plant to the landfill stack-out pad. These materials are then loaded into trucks and transported to the current open cell of the Landfill, where they are unloaded and spread and compacted by a bull dozer or similar equipment. A roller may also be used for additional compaction.

Occasionally, trucks are used to transport CCR to the Landfill from the plant site. The CCR is loaded into trucks at the plant site and transported to the Landfill. The material is then unloaded from trucks in the active fill area of an open landfill cell, where a bulldozer or similar equipment will spread and compact the materials. A roller may also be used for compaction.

Boiler slag that is not used or sold for beneficial reuse is loaded into trucks from the plant and then unloaded from trucks for disposal within the landfill.

The fugitive dust control measures for truck unloading include maintaining moisture in the material. The measures for spreading and compacting include maintaining vehicle speed, watering materials, and application of temporary cover, if needed.

### *3.3.3 Wind Erosion*

Generally, landfill disposal areas can be classified as closed or open. Closed areas have received final cover and vegetation has been established. Open areas contain both the active fill area and areas that have been compacted but not yet received temporary or final cover. The open area fugitive dust control measures include: precautionary measures such as minimizing the amount of open area, compacting material as it is unloaded, watering, and application of chemical suppressants, if needed.

## *3.4 South Fly Ash Pond*

Kyger Creek Station fly ash is mixed with water and sluiced to the SFAP via the hydroveyor system. Due to the wet condition of the ash and location of the pond surface below the dam wall elevations, the pond typically has no fugitive emissions. However, certain seasonal weather conditions combined with pond water levels may create dry areas within the pond which may result in windblown fugitive dust from the pond surface. A review of potential control measures concluded that very limited options are applicable and appropriate since the unstable surface of the pond will not support the application of water, chemical suppressants, or cover materials. Wind barriers and enclosures are not appropriate due to the very large surface area of the pond. However, the pond level may be adjusted to inundate the exposed dry areas and minimize dusting. The applicable and appropriate fugitive dust control measure is to adjust the pond water level, when practicable.

## *3.5 Boiler Slag Pond*

Kyger Creek Station boiler slag is produced by all five Kyger Creek Units and is wet sluiced to the BSP during unit operations. The boiler slag is routinely reclaimed from the pond and used or sold for beneficial reuse. Any material that is not used or sold for beneficial reuse is loaded into trucks from the plant and then unloaded for disposal within the landfill. A review of potential control measures concluded that the applicable and appropriate options consist of: watering and chemical suppressant application. Water or chemical dust suppressant is applied to minimize fugitive emissions as needed. Water spray is applied as needed to the material handling activities and the drop from the loader into the trucks is minimized to further minimize fugitive emissions. Enclosures, compaction and daily cover are not applicable given the size of the area and characteristics of the material.

## 4.0 PLAN ASSESSMENT – 40 CFR 257.80(b)(4)

The Plan will be periodically assessed to verify its effectiveness, and if necessary, amended in accordance with Section 7.0 below. The Landfill, SFAP, BSP, and associated paved and unpaved roadways are inspected on a daily basis. The purpose of the inspections is to determine if CCR fugitive dust is present and whether the control measures for each CCR unit as described above are being implemented as necessary to minimize or eliminate fugitive emissions. Records of inspections and the control measures implemented as a result of the inspections will be maintained in the Plant's operating record for a period of at least five years. The PEM will review the inspection records quarterly to assess the effectiveness of the Plan and determine if additional or modified measures are warranted. No inspection is necessary if the surface is covered with snow and/or ice or if precipitation has occurred that is sufficient to minimize or eliminate fugitive emissions. Implementation of any control measure will be suspended if unsafe or hazardous driving conditions would be created by its use.

## 5.0 CITIZEN COMPLAINT LOG – 40 CFR 257.80(b)(3)

### *5.1 Plant Contacts*

Generally, complaints made to the plant are by telephone and received by the PEM (Plan Contact). In the case of holiday, weekends, or other times when the PEM may not be onsite, the plant guard houses or plant general phone number may receive complaint information by telephone that is provided to the PEM at the earliest convenience. Complaints may also be made via email at CCRCompliance@ovec.com or to Ohio EPA who in turn will contact the PEM.

### *5.2 Follow-up*

All complaints will be entered into a log by the PEM with details noted such as the nature of the complaint, date, time, and other relevant details. All complaints will be investigated which may include: checking plant operations at the time of the event, reviewing inspection records, discussing with other plant personnel, reviewing weather data, collecting samples and contacting the person making the complaint to obtain additional information.

### *5.3 Corrective Action and Documentation*

Corrective actions will be taken as needed and documented. If it is determined that the Plan needs to be amended as a result of the corrective actions, it will be amended in accordance with 40 CFR 257.80(b)(6). If possible, the PEM will follow-up with the complainant and/or Ohio EPA to

explain the findings of the complaint investigation, corrective actions or sampling results. Citizen complaints will be recorded in the Annual Report.

## 6.0 ANNUAL REPORT – 40 CFR 257.80(c)

The Annual CCR fugitive dust control report (Annual Report) will include the following components: description of actions taken to control CCR fugitive dust, a record of all citizen complaints, and a summary of any corrective measures taken. The initial Annual Report will be completed no later than 14 months after placing the initial CCR fugitive dust control plan in the facility's operating record. The deadline for completing subsequent reports is one year after the date of completing the previous report. The Annual Report will be deemed complete when the plan has been placed in the facility's operating record as described in Section 8.0.

## 7.0 PLAN AMENDMENTS – 40 CFR 257.80(b)(6)

This Plan is a "living" document and will be amended, as necessary, whenever there is a change in condition that would substantially affect the written plan in effect, such as the construction and operation of a new CCR unit. Amendments made to the Plan will be documented in Appendix E. The amended Plan will be placed into the facility's operating record as described in Section 8.0.

## 8.0 RECORDKEEPING, NOTIFICATION and INTERNET REQUIREMENTS – 40 CFR 257.80(d)

### *8.1 Recordkeeping – 40 CFR 257.105(g)*

The Plan and files of all related information will be maintained in a written operating record at the facility for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, record or study. Files may be maintained on a computer or storage system accessible by a computer. One recordkeeping system may be used for the BSP, SFAP and Landfill as the system identifies each file by the name of each unit (i.e. BSP, SFAP, or Landfill). The Plan (and any subsequent amendment of the plan) and the Annual Report will be kept in the facility's operating record as they become available. Only the most recent Plan must be maintained in the record.

### *8.2 Notification – 40 CFR 257.106(g)*

Ohio EPA Director will be notified within 30 days of when the Plan (or any subsequent amended Plan) or the Annual Report is placed in the operating

record and on the publicly available internet site. This notification will be made before the close of business on the day the notification is required to be completed. "Before the close of business day" means the notification must be postmarked or sent by e-mail. If the notification deadline falls on a weekend or federal holiday, the notification is automatically extended to the next business day.

### *8.3 Internet Site Requirements – 40 CFR 257.107(g)*

The most recent Plan and annual Report will be placed on the facility's CCR website titled "CCR Rule Compliance Data and Information" within 30 days of placing them in the operating record.

# Appendix A– 40 CFR Part 257.80 Air Criteria (Published April 17, 2015 in 80 FR 21468)

## §257.80 Air criteria.

(a) The owner or operator of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit must adopt measures that will effectively minimize CCR from becoming airborne at the facility, including CCR fugitive dust originating from CCR units, roads, and other CCR management and material handling activities.

(b) *CCR fugitive dust control plan.* The owner or operator of the CCR unit must prepare and operate in accordance with a CCR fugitive dust control plan as specified in paragraphs (b)(1) through (7) of this section. This requirement applies in addition to, not in place of, any applicable standards under the Occupational Safety and Health Act.

(1) The CCR fugitive dust control plan must identify and describe the CCR fugitive dust control measures the owner or operator will use to minimize CCR from becoming airborne at the facility. The owner or operator must select, and include in the CCR fugitive dust control plan, the CCR fugitive dust control measures that are most appropriate for site conditions, along with an explanation of how the measures selected are applicable and appropriate for site conditions. Examples of control measures that may be appropriate include: Locating CCR inside an enclosure or partial enclosure; operating a water spray or fogging system; reducing fall distances at material drop points; using wind barriers, compaction, or vegetative covers; establishing and enforcing reduced vehicle speed limits; paving and sweeping roads; covering trucks transporting CCR; reducing or halting operations during high wind events; or applying a daily cover.

(2) If the owner or operator operates a CCR landfill or any lateral expansion of a CCR landfill, the CCR fugitive dust control plan must include procedures to emplace CCR as conditioned CCR. Conditioned CCR means wetting CCR with water to a moisture content that will prevent wind dispersal, but will not result in free liquids. In lieu of water, CCR conditioning may be accomplished with an appropriate chemical dust suppression agent.

(3) The CCR fugitive dust control plan must include procedures to log citizen complaints received by the owner or operator involving CCR fugitive dust events at the facility.

(4) The CCR fugitive dust control plan must include a description of the procedures the owner or operator will follow to periodically assess the effectiveness of the control plan.

(5) The owner or operator of a CCR unit must prepare an initial CCR fugitive dust control plan for the facility no later than October 19, 2015, or by initial receipt of CCR in any CCR unit at the facility if the owner or operator becomes subject to this subpart after October 19, 2015. The owner or operator has completed the initial CCR fugitive dust control plan when the plan has been placed in the facility's operating record as required by §257.105(g)(1).

(6) *Amendment of the plan.* The owner or operator of a CCR unit subject to the requirements of this section may amend the written CCR fugitive dust control plan at any time provided the revised plan is placed in the facility's operating record as required by §257.105(g)(1). The owner or operator must amend the written plan whenever there is a change in conditions that would substantially affect the written plan in effect, such as the construction and operation of a new CCR unit.

(7) The owner or operator must obtain a certification from a qualified professional engineer that the initial CCR fugitive dust control plan, or any subsequent amendment of it, meets the requirements of this section.

(c) *Annual CCR fugitive dust control report.* The owner or operator of a CCR unit must prepare an annual CCR fugitive dust control report that includes a description of the actions taken by the owner or operator to control CCR fugitive dust, a record of all citizen complaints, and a summary of any corrective measures taken. The initial annual report must be completed no later than 14 months after placing the initial CCR fugitive dust control plan in the facility's operating record. The deadline for completing a subsequent report is one year after the date of completing the previous report. For purposes of this paragraph (c), the owner or operator has completed the annual CCR fugitive dust control report when the plan has been placed in the facility's operating record as required by §257.105(g)(2).

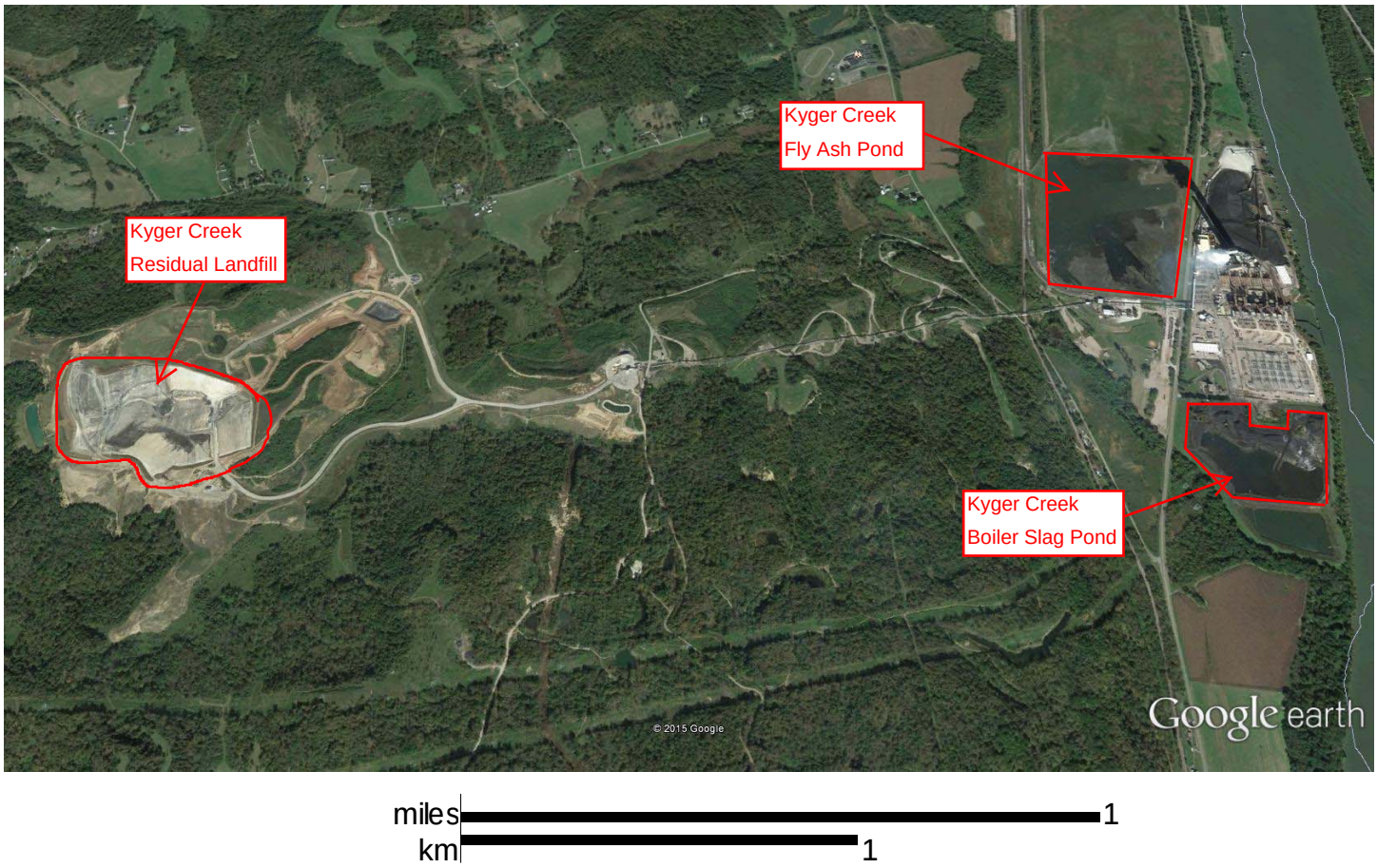
(d) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in §257.105(g), the notification requirements specified in §257.106(g), and the internet requirements specified in §257.107(g).

Appendix B – Figure 1-1 Kyger Creek Station Site Map

Figure 1-1 Kyger Creek Station Site Map

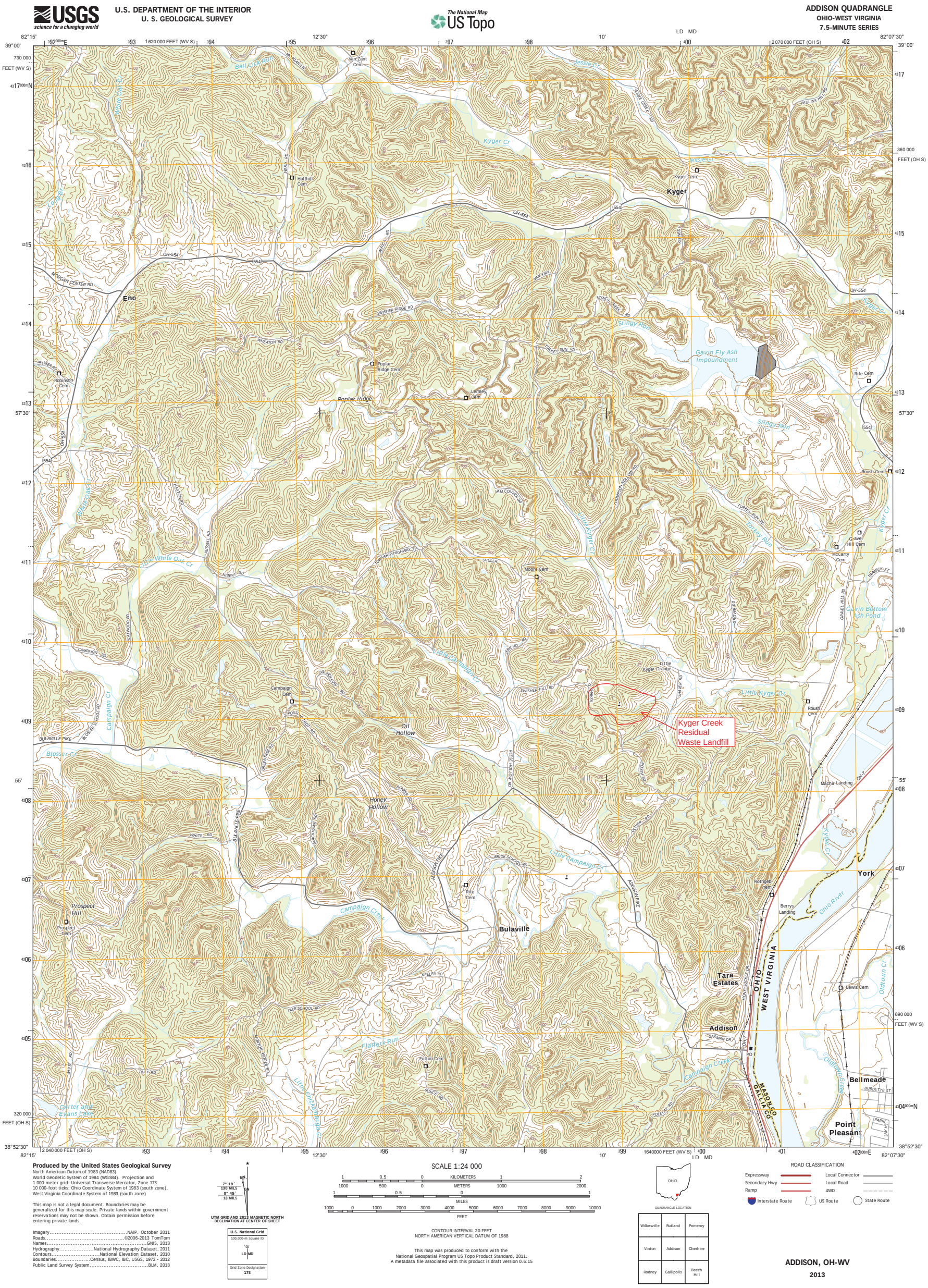
Appendix C – Figure 1-2 Kyger Creek Facility Map

Figure 1-2 Kyger Creek Facility Map



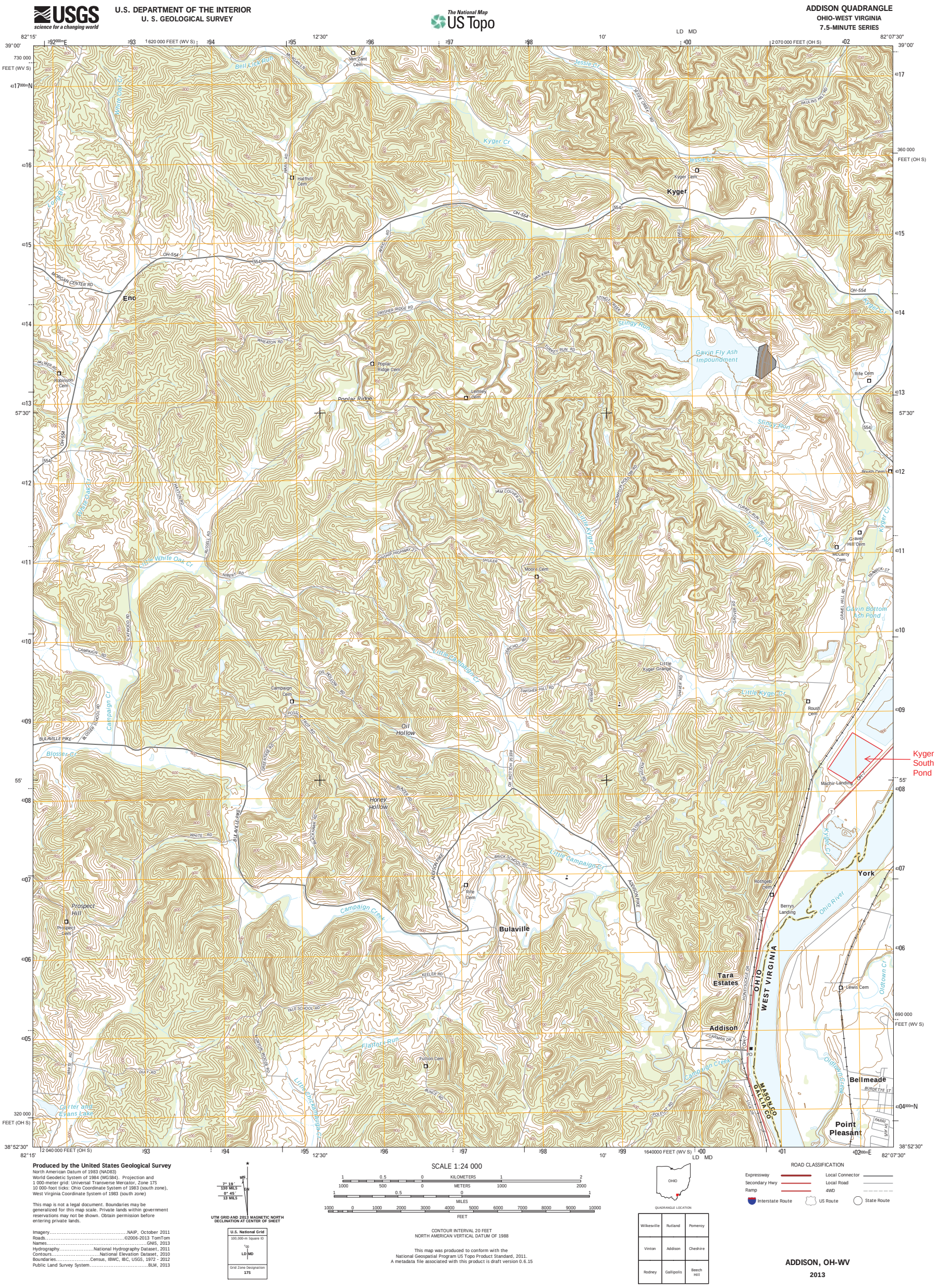
Appendix D – Figure 2-1 Kyger Creek Residual Waste Landfill Map

Figure 2-1 Kyger Creek Residual Waste Landfill Map



Appendix E – Figure 3-1 Kyger Creek South Fly Ash Pond Map

Figure 3-1 Kyger Creek South Fly Ash Pond Map



Appendix F – Figure 4-1 Kyger Creek Boiler Slag Pond Map

Figure 4-1 Kyger Creek Boiler Slag Pond Map

# Appendix G – Plan Modification Document

| Record of Plan Revisions | | |
|---|---|---|
| Revision Number | Date | Revision Description |
| 0 | 10/19/2015 | Initial Plan |
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