

**INFLOW DESIGN FLOOD
CONTROL SYSTEM PLAN**

SPS INSTRUCTION

OPERATING RECORD DOCUMENT

Required per §257.105(g)(4)

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§257.107(g)(4)

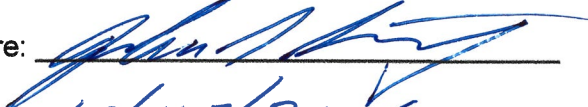
Sikeston Board of Municipal Utilities
Sikeston Power Station
Periodic Inflow Design Flood Control System Plan
Federal CCR Rule Record Document for Compliance with
40 CFR 257.82(c)

Professional Engineer's Certification

40 CFR 257.82(c) Periodic Inflow Design Flood Control System Plan

I, John N. Browning, P.E., a professional engineer licensed in the State of Missouri, hereby certify in accordance with 40 CFR 257.82(c)(5) that the Inflow Design Flood Control System Plan for the Sikeston Board of Municipal Utilities, Sikeston Power Station, Bottom Ash Pond meets the requirements of 40 CFR 257.82(c)(1) as found in federal regulation 40 CFR 257, Subpart D – Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments and has been prepared using good engineering and environmental judgement and standard accepted practices.

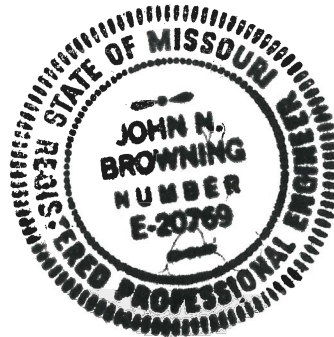
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GREDELL Engineering Resources, Inc.



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Sikeston Board of Municipal Utilities Sikeston Power Station Bottom Ash Pond Inflow Design Flood Control System Plan



Prepared for:



**Sikeston Power Station
1551 West Wakefield Avenue
Sikeston, MO 63801**

October 9, 2026

**Sikeston Board of Municipal Utilities
Sikeston Power Station
Bottom Ash Pond
Periodic Inflow Design Flood Control System Plan**

October 9, 2026

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1.0 INTRODUCTION

In accordance with the scope of services outlined in the Sikeston Board of Municipal Utilities (SBMU) Work Order No. 76 dated April 30, 2026, GREDELL Engineering Resources, Inc. (GER) conducted a five-year periodic assessment as specified under 40 CFR 257.82(c)(4) to the inflow design flood control system plan for the SBMU, Sikeston Power Station (SPS) Bottom Ash Pond, a coal combustion residual (CCR) surface impoundment. The purpose of this inflow design flood control system plan is to document how the inflow design flood control system has been designed and constructed to meet the requirements of the Federal CCR Rule, section (§) 40 CFR 257.82. Excerpts from the Federal CCR Rule, §257.82(a)-(c), describing the hydrologic and hydraulic capacity requirements of CCR surface impoundments and the required contents of this inflow design flood control system plan are provided for reference below. §257.3-3 describing the surface water protection requirements is also provided for reference below.

1.1 §257.82(a) and (b) – Hydrologic and Hydraulic Capacity Requirements for CCR Surface Impoundments

Excerpts from §257.82(a) and (b), which regards the hydrologic and hydraulic capacity requirements for CCR surface impoundments completed by GER are provided for reference below.

(a)(1) The inflow design flood control system must adequately manage flow into the CCR unit during and following the peak discharge of the inflow design flood specified in paragraph (a)(3) of this section.

(a)(2) The inflow design flood control system must adequately manage flow from the CCR unit to collect and control the peak discharge resulting from the inflow design flood specified in paragraph (a)(3) of this section.

(a)(3) The inflow design flood is: for a high hazard potential CCR surface impoundment, the probable maximum flood; for a significant hazard potential CCR surface impoundment, the 1,000-year flood; for a low hazard potential CCR surface impoundment, the 100-year flood; and for an incised CCR surface impoundment, the 25-year flood. These are determined under §257.73(a)(2) or §257.74(a)(2).

(b) Discharge from the CCR unit must be handled in accordance with the surface water requirements under §257.3-3.

1.2 §257.82(c) – Inflow Design Flood Control System Plan

Excerpts from §257.82(c), which regards the inflow design flood control system plan requirements for CCR surface impoundments completed by GER, are provided for reference below.

(c)(1) The owner or operator must prepare initial and periodic inflow design flood control system plans for the CCR unit according the timeframes specified in paragraphs (c)(3) and (4) of this section. These plans must document how the inflow design flood control system has been designed and constructed to meet the requirements of this section. Each plan must be supported by appropriate engineering calculations. The owner or operator of the CCR unit has completed the inflow design flood control system plan when the plan has been placed in the facility's operating record as required by §257.105(g)(4).

(c)(5) The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the initial and periodic inflow design flood control system plan meets the requirements of this section.

1.3 §257.3-3 – Surface Water

Excerpts from §257.3-3, which are referenced in §257.82(b), are provided for reference below.

(a) For purposes of section 4004(a) of the Act, a facility shall not cause a discharge of pollutants into waters of the United States that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES) under section 402 of the Clean Water Act, as amended.

(c) A facility or practice shall not cause non-point source pollution of waters of the United States that violates applicable legal requirements implementing an areawide or Statewide water quality management plan that has been approved by the Administrator under section 208 of the Clean Water Act, as amended.

2.0 POND DESCRIPTIONS

The SPS is located west of the City of Sikeston, south of West Wakefield Avenue, and east of Route BB in Scott County, Missouri. The Bottom Ash Pond resides in the southeast portion of the SPS property, and directly south of SPS's coal pile and Fly Ash Pond which has been capped and closed. The Bottom Ash Pond occupies approximately 61 acres with a maximum berm elevation of 322 feet. Based on an aerial survey conducted by Hampton, Lenzini and Renwick, Inc.(HLR) on November 24, 2024, the Bottom Ash Pond has an approximate storage capacity of 194.3 acre-feet (ac-ft) (8,461,748 cubic feet [ft³]) before water would reach the top of the berm, assuming the current water elevation is equal to the Bottom Ash Pond outlet pipe elevation of 314.5 feet. From the periodic report from 2021 to the latest aerial drone survey, the estimated storage capacity has decreased from 14,500,000 cubic feet to 8,461,748. In 2021 the normal pool water elevation was 318 ft, and the available survey did not include contours under the water surface, so GER used their best engineering estimate to locate the top of ash. The 2024 HLR survey included a bathymetric survey to better estimate the top of ash to estimate the approximate storage capacity of the bottom ash pond.

SPS is located at a transition between agricultural and urban areas, and the Bottom Ash Pond is located southeast of the main facility. The Bottom Ash Pond is surrounded by agricultural, commercial, and residential areas. Residential areas are located approximately 150 feet east/southeast of the Bottom Ash Pond. Commercial areas are located approximately 700 feet south of the Bottom Ash Pond. The main SPS facility is located to the west/northwest and north of the western half of the Bottom Ash Pond. The Fly Ash Pond is located north of the eastern half of the Bottom Ash Pond. Areas to the west and north of the main SPS facility are agricultural land. The remaining area around the Bottom Ash Pond is agricultural land. There is City-owned property to the east, south, and west of the Bottom Ash Pond. Reference Appendix A, Figure 1 – Aerial Overview, for a depiction of the Bottom Ash Pond.

2.1 Bottom Ash Pond Influent and Discharge Systems

Discharge from the Bottom Ash Pond is through a concrete structure with dimensions of 6 feet wide, 11 feet long, and 8.5 feet deep with a top elevation of 322.53 feet. The structure outlet contains a single, 10-inch carbon fiber pipe which discharges Bottom Ash Pond effluent into the Process Waste Pond. The discharge pipe inlet and outlet invert elevations are 314.53 feet and 304.97 feet respectively. A hand-operated valve, which is located near the toe of the Bottom Ash Pond's north berm, is used to control the discharge from the Bottom Ash Pond. The distance from the discharge structure to the control valve is approximately 80 feet and the slope of the discharge pipe is approximately 10.3 percent (%). From the control valve, the discharge pipe is routed to the Process Waste Pond over approximately 1,820 feet with a slope of approximately 0.07%. Average daily and monthly maximum flow rates from the Bottom Ash Pond are shown as influents into the Process Waste Pond in Table 1 – Wastewater Sources.

The existing Bottom Ash Pond overflow structure is constructed with a concrete inlet that has a 30-inch iron discharge pipe through the berm separating the Bottom Ash Pond from the closed Fly Ash Pond. The discharge of the overflow structure is into the Fly Ash Pond which is currently in closure. The overflow structure is inoperable due to excess CCR deposits in the closed Fly Ash Pond obstructing the discharge end of the 30-inch pipe. Influent and discharge structures are identified in Appendix A, Figure 2 – Bottom Ash Pond Hydraulic Structures. Schematic details of the Bottom Ash Pond outlet structure are provided in Appendix A, Figure 4 – Outlet Structure Details.

2.2 Settling Pond Influent and Discharge Systems

SPS discharges influent into the Settling Pond through an inlet located in the southeast corner of the Settling Pond. Influent consists of non-CCR wastewater. Non-CCR wastewater sources include coal pile runoff and coal handling wash down wastewater. Runoff from approximately 15.1 acres of the coal/limestone storage area is estimated to discharge into the Settling Pond. Non-CCR wastewater discharge into the Settling Pond through a structure series of four arched influent pipes. Average daily and monthly maximum flow rates for each wastewater source are shown in Table 1 – Wastewater Sources.

Discharge from the Settling Pond is through a principal spillway consisting of a 36-inch diameter corrugated metal pipe. The Settling Pond effluent discharges into the Process Waste Pond. The principal spillway discharge pipe inlet and outlet invert elevations are 304.8 feet and 304.55 feet respectively. The slope and length of the discharge pipe are approximately 0.6% and 41 feet. Average daily and monthly maximum flow rates from the Settling Pond are shown as influents into the Process Waste Pond in Table 1 – Wastewater Sources.

The existing Settling Pond emergency spillway is constructed as a 37-foot-long concrete broad crested weir. The width of the weir is approximately 30 feet long. The inlet and outlet invert elevations are 306.40 feet and 306.32 feet respectively. The emergency spillway discharges into the Process Waste Pond. Influent and discharge structures are identified in Appendix A, Figure 3 – Process Waste Pond Hydraulic Structures.

2.3 Process Waste Pond Influent and Discharge Systems

SPS discharges influent into the Process Waste Pond through four influent pipes located along the southern bank and in the northeast corner of the Process Waste Pond. Influent consists of non-CCR wastewater. Non-CCR wastewater sources include coal/limestone pile runoff, demineralizer water, Bottom Ash Pond effluent, and Settling Pond Effluent. Bottom Ash Pond and Settling Pond effluents are not CCR wastewater because the wastewater include only de minimis quantities of CCR. The Process Waste Pond is approximately 9.6 acres.

Non-CCR wastewater discharges into the Process Waste Pond through a 10-inch carbon fiber pipe (Bottom Ash Pond effluent) and a 3-inch carbon fiber pipe (demineralizer wastewater). Invert elevations of the 10-inch (Bottom Ash Pond effluent) and 3-inch (demineralizer wastewater) carbon pipe influents are 304.97 feet and 305.01 feet respectively.

Runoff from approximately 23.8 acres of the coal pile storage area discharges into the Process Waste Pond through a 24-inch corrugated metal pipe. The 24-inch corrugated metal pipe inlet and outlet invert elevations are 309.06 feet and 306.65 feet respectively. The minimum slope and length were determined to be approximately at 3.2% and 75 feet.

Discharge from the Process Waste Pond is through a concrete stop log structure with dimensions of 5 feet wide, 18 feet long, and 8 feet deep. The concrete structure contains a 3-foot-wide rectangular weir at an approximate elevation of 303.8 feet. The pond is discharged through a 24-inch corrugated metal pipe which discharges Process Waste Pond effluent to Richland Drainage Ditch #4 through Outfall 003 (Missouri State Operating Permit MO-0095575). The discharge pipe inlet and outlet invert elevations were estimated to be approximately 301.4 feet and 300.3 feet respectively. The discharge pipe was assumed to have a minimum slope of 0.5% and a length of approximately 230 feet. Average daily and monthly maximum flow rates from the Process Waste Pond are shown in Table 1 – Wastewater Sources. There is no emergency spillway for the Process Waste Pond. All influent and discharge structures are identified in Appendix A, Figure 3 – Process Waste Pond Hydraulic Structures. Schematic details of the Process Waste Pond outlet structure are provided in Appendix A, Figure 4 – Outlet Structure Details.

Table 1: Wastewater Sources¹

Discharging Water Body / Process	Receiving Water Body	Average Daily Flowrate (MGD)²	Maximum Daily Flowrate (MGD)³
Precipitation⁴	Bottom Ash Pond	3.13	8.05
Oil Separator	Settling Pond	0.11	0.22
Boiler Blowdown Tank	Settling Pond	0.22	0.36
Precipitation⁴	Settling Pond	0.15	0.39
Coal Handling Washdown	Settling Pond	0.05	0.10
Bottom Ash Handling	Settling Pond	1.06	2.26
Coal/Limestone Pile Runoff Precipitation⁴	Settling Pond	0.39	2.02
Demineralizer	Process Waste Pond	0.06	0.27
Precipitation⁴	Process Waste Pond	0.55	1.41
Total Discharge from Process Waste Pond	Richland Drainage Ditch #4	5.72	15.08

1. Wastewater Source flowrates were taken from the Process Flow Diagram that was prepared and provided by SPS.

2. Average Daily Flowrate is calculated for the 1-yr 24-hour storm event.

3. Max Daily Flowrate is calculated from the 25-yr 24-hour storm event.

4. Precipitation values provided by SPS were not used in the Hydraflow model. Precipitation values utilized in Hydraflow incorporated the inflow design flood of a 1,000-yr flood event.

3.0 INFLOW DESIGN FLOOD

§257.82 requires owners and operators of CCR surface impoundments to have hydrologic and hydraulic systems designed to adequately manage the flow from the peak discharge of the inflow design flood into and out of the CCR surface impoundment. The inflow design flood is determined by the hazard potential classification for the CCR surface impoundment. As previously stated, §257.82(a)(3) defines the inflow design flood for each hazard potential classification. The potential hazard inflow design flood for CCR surface impoundments are as follows:

- High Hazard Potential – probably maximum flood
- Significant Hazard Potential – 1,000-year flood
- Low Hazard Potential – 100-year flood

3.1 Bottom Ash Pond Hazard Potential Classification

The hazard potential classification for the Bottom Ash Pond was determined by modeling a worst-case scenario breach of the Bottom Ash Pond Berms and its resulting flood waters impact on the surrounding land. A worst-case scenario breach of the Bottom Ash Pond berm at SPS was modeled using HydroCAD. The flooded areas from the modeled breach include agricultural (owned by the City of Sikeston) and residential (owned by various private entities) properties.

Flood water from a breach in the Bottom Ash Pond berm under the worst-case scenario conditions would not be contained to property owned solely by the City of Sikeston. Additionally, environmental damage, economic loss, disruption of lifeline facilities, or other impact concerns are expected from a breach in the Bottom Ash Pond berm. However, there is no probable loss of human life due to the flood waters from the breach in the Bottom Ash Pond berm. Therefore, the October 16, 2026 Hazard Classification Assessment for the Bottom Ash Pond at SPS was classified as: Significant Hazard Potential Classification.

3.2 Bottom Ash Pond Inflow Design Flood

As stated above, §257.82(a)(3) requires the inflow design flood for CCR surface impoundments with significant hazard potential classifications to be the 1,000-year flood. The 1,000-year flood is the volume of runoff generated by the 1,000-year rainfall event for a given location. The duration of the 1,000-year event was taken to be 24 hours. The 24-hour duration was used as it generated the maximum runoff volume. The 1,000-year, 24-hour rainfall event was modeled to determine if the existing hydrologic and hydraulic capacity of the Bottom Ash Pond and other hydraulic structures impacted by the discharge from the Bottom Ash Pond is adequate. From the National Oceanic and Atmospheric Administration (NOAA) Atlas 14, Volume 8, Version 2, the 1,000-year, 24-hour depth of rainfall for Sikeston, Missouri is 12 inches.

4.0 INFLOW DESIGN FLOOD CONTROL SYSTEM

As previously stated above, §257.82(a)(1) and (2) pertaining to CCR surface impoundments states owners or operators of CCR surface impoundments must design, construct, operate, and maintain the inflow design flood control system to adequately manage flow into the CCR surface impoundment during and following the peak discharge of the inflow design flood, as well as adequately manage the flow from the CCR unit to collect and control the peak discharge resulting from the inflow design flood. Therefore, the inflow design flood control system for the Bottom Ash Pond includes the following hydraulic structures which were modeled using Hydraflow.

- Bottom Ash Pond
- Settling Pond
- Process Waste Pond

4.1 Bottom Ash Pond Inflow and Outflow

The Bottom Ash Pond was modeled using Hydraflow with only one input, precipitation from the 1,000-year storm event over the approximate 61-acre area. Sikeston Power Station process wastewater sources include Bottom Ash Handling, Maintenance, and Operations. The maximum daily flow rates from Table 1 were used to develop a conservative model. It should be noted that due to the limitations of the modeling software, process wastewater flows were modeled using artificial drainage areas and runoff coefficients to yield the desired maximum daily flowrates reported in Table 1. The watershed for the Bottom Ash Pond is solely the area within the berms of the Bottom Ash Pond. The Bottom Ash Pond berms elevations are above the surrounding topography and therefore, do not receive additional stormwater runoff.

The average daily discharge rate was determined to be approximately 18.1 million gallons per day (MGD) with a total influent volume of approximately 2,423,501 ft³ (18.1 MG). The average water elevation in the Bottom Ash Pond has been recorded in the weekly inspection reports for the Bottom Ash Pond and in the annual inspections. These reports have labeled the water to be typically lower or at the 10-inch outlet pipe, with an inverted elevation of 314.53 feet. To be conservative, GER has assumed the initial water elevation to be level with the outlet structure at 314.5 feet.

The maximum water elevation in the Bottom Ash Pond from the 1,000-year flood was determined to be 318.6 feet, approximately 3.4 feet below the top of the Bottom Ash Pond berms (elevation ~322 feet). The remaining capacity of the Bottom Ash Pond with an area of 61 acres and 3.4 feet of storage are approximately 6,038,281 ft³. The peak discharge from the Bottom Ash Pond during the 1,000-year inflow design flood was determined to be 1.70 cubic feet per second (CFS). The average daily discharge rate was determined to be approximately 136,200 ft³/day (1 MGD). Therefore, the Bottom Ash Pond hydrologic and hydraulic capacity can adequately manage flow

during and following the peak discharge from the inflow design flood as required by §257.82(a)(1). See Appendix B, Hydraflow Report - 1,000-year Design Flood for a detailed report of the hydrologic and hydraulic model.

4.2 Settling Pond Inflow and Outflow

The Settling Pond was modeled using Hydraflow with five inputs, Pyrite Overflow Tank and Plant Drain Sumps 1,000-year storm event, Bottom Ash Pond discharge 1,000-year storm event, coal pile runoff from the 1,000-year storm event, Coal Handling Washdown Inflow 1,000-year storm event, and the runoff from the Settling Pond. The maximum daily flow rates from Table 1 were used to develop a conservative model. As previously stated, process wastewater flows were modeled using artificial drainage areas and runoff coefficients to yield the desired maximum daily flowrates reported in Table 1. The watershed for the Settling Pond includes the Settling Pond itself, the coal yard directly east of the Settling Pond, the discharge pipes from plant process, and BAP outlet pipe. The Settling Pond and the coal pile storage area are surrounded by berms with greater elevations than the surrounding topography and therefore do not receive any additional stormwater runoff.

The peak discharge from the combined inputs to the Settling Pond was determined to be 116 CFS. The average daily discharge rate was determined to be approximately 4.9 MGD with a total influent volume of approximately 651,173 ft³ (4.9 MGD). The initial water elevation in the Settling Pond was assumed to be 304.6 feet, the normal operational elevation of the Settling Pond. The maximum water elevation in the Settling Pond resulting from the combined influents was determined to be 307.0 feet, 2.0 feet below the top of the Settling Pond berms (elevation 309 feet). The remaining capacity of the Settling Pond with an area of 2.4 acres and 2.0 feet of storage are approximately 206,264 ft³. The peak discharge from the Settling Pond during the 1,000-year inflow design flood was determined to be 56.5 CFS. The average daily discharge from the Settling Pond was determined to be approximately 414,700 ft³/day (3.1 MGD). Therefore, the Settling Pond hydrologic and hydraulic capacity can adequately manage flow during and following the peak discharge from the inflow design flood as required by §257.82(a)(1). See Appendix B, Hydraflow Report - 1,000-year Design Flood for a detailed report of the hydrologic and hydraulic model.

4.3 Process Waste Pond Inflow and Outflow

The Process Waste Pond was modeled using Hydraflow with five inputs, the 1,000-year storm event precipitation, Settling Pond discharge, coal pile runoff from the 1,000-year storm event, and demineralizer wastewater flows. The maximum daily flow rates from Table 1 were used to develop a conservative model. As previously stated, process wastewater flows were modeled using artificial drainage areas and runoff coefficients to yield the desired maximum daily flowrates reported in Table 1. The watershed for the Process Waste Pond includes the Process Waste Pond itself, the coal yard directly east of the Process Waste Pond, and the discharge from the

Settling Pond and Plant Processes. The Process Waste Pond and the coal pile storage area are surrounded by berms with greater elevations than the surrounding topography and therefore do not receive additional stormwater runoff.

The peak discharge from the combined inputs to the Process Waste Pond was determined to be 211.3 CFS. The average daily discharge rate was determined to be approximately 9.9 MGD with a total influent volume of approximately 1,324,015 ft³ (9.9 MG). The initial water elevation in the Process Waste Pond was assumed to be 303.8 feet, the normal operational elevation of the Process Waste Pond. The maximum water elevation in the Process Waste Pond resulting from the combined influents was determined to be approximately 305.5 feet, or 3.5 feet below the top of the Process Waste Pond berms (approximate elevation 309 feet). The remaining capacity of the Process Waste Pond with an area of 9.7 acres and 3.5 feet of storage is approximately 1,440,971 ft³ (10.8 MGD). The peak discharge from the Process Waste Pond during the 1,000-year inflow design flood was determined to be 18.6 CFS. The average daily discharge from the Process Waste Pond was determined to be approximately 841,900 ft³/day (6.3 MGD). Therefore, the Process Waste Pond hydrologic and hydraulic capacity can adequately manage flow during and following the peak discharge from the inflow design flood as required by §257.82(a)(1). See Appendix B, Hydraflow Report - 1,000-year Design Flood for a detailed report of the hydrologic and hydraulic model.

4.4 Clean Water Act Surface Water Requirements

40 CFR 257.82 requires owners and operators of CCR surface impoundments to manage discharge during and following the inflow design flood in accordance with the surface water requirements of §257.3-3. As previously stated, §257.3-3 requires discharges from CCR surface impoundments into waters of the United States to be conducted in a manner which does not violate NPDES requirements and which does not cause non-point source pollution of waters of the United States. Since most of the discharge is a direct result from the volume of stormwater runoff generated during a 1,000-year event, it is presumed that the amount of constituents present in the effluent will be in compliance with SPS's operating permit. SPS will continue monitoring, sampling, and record keeping operations as required by their operating permit during a 1,000-year event to maintain compliance with their operating permit and thereby satisfy the requirements of §257.3-3.

It is noted that the Process Waste Pond discharges through Outfall #003, which is regulated by Missouri State Operating Permit MO-0095575. Under the regulating statutes, Chapter 644.076(4) RS MO states that,

"The liabilities which shall be imposed pursuant to any provision of sections [644.006](#) to [644.141](#) upon persons violating the provisions of sections [644.006](#) to [644.141](#) or any standard, rule, limitation, or regulation adopted pursuant

thereto shall not be imposed due to any violation caused by an act of God, war, strike, riot, or other catastrophe.”

The 1,000-year flood is viewed as an “act of God.” Even though it was determined that the berms would not be overtopped during the event, the provisions of 644.076(4) are presumed to be applicable.

5.0 RECOMMENDATIONS

The presumed normal operating conditions are the Bottom Ash Pond operating at an elevation of 314.5 feet, the Settling Pond operating at an elevation of 304.6 feet, and the Process Waste Pond Operating at 303.8 feet. Under these conditions, it was determined that the CCR impoundment and non-CCR impoundments affected by its discharge, have sufficient hydrologic and hydraulic capacity to adequately manage flow during and following the peak discharge from the inflow design flood as required by §257.82(a)(1).

Furthermore, it was also determined that if the valve on the Bottom Ash Pond was closed during the 1,000-year flood event, the Bottom Ash Pond has capacity to store the entire 1,000-year flood event. With the valve completely closed during this event, the Bottom Ash Pond would not discharge flows, and the maximum water surface elevation was determined to be approximately 318.6 feet, leaving approximately 3.4 feet of freeboard in the pond.

Additionally, if the Settling Pond is discharging and only one stop log was placed in the outlet structure of the Process Waste Pond resulting in an estimate water surface elevation of 306.2 feet, the Process Waste Pond has the hydrologic capacity to manage the 1,000-year flood event. With only one stop log in place, the maximum water surface elevation was determined to be approximately 307.0 feet, leaving 2.0 feet of freeboard in the pond.

6.0 PERIODIC PLAN PROCEDURES

As per §257.82(c)(4), the owner or operator must prepare periodic inflow design flood control system plans every five years. The date of completing the initial plan is the basis for establishing the deadline to complete the first periodic plan. The deadline for completing a subsequent plan is based on the date for completing the previous plan. The second periodic plan must be completed on or prior to October 17 in the year 2026, which corresponds to the completion of the first periodic inflow design flood control plan review completed on October 16, 2026.

7.0 PLAN AMENDMENTS

This Inflow Design Flood Control System Plan will be amended, as per §257.82(c)(2), whenever there is a change in conditions that would substantially affect the written plan in effect, such as modifications to hydraulic structures of the Bottom Ash Pond, additional influents or additional effluents.

8.0 MISCELLANEOUS REQUIREMENTS

Section 257.82(d) states that SBMU 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 A

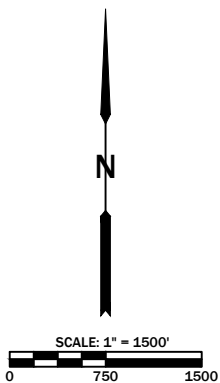
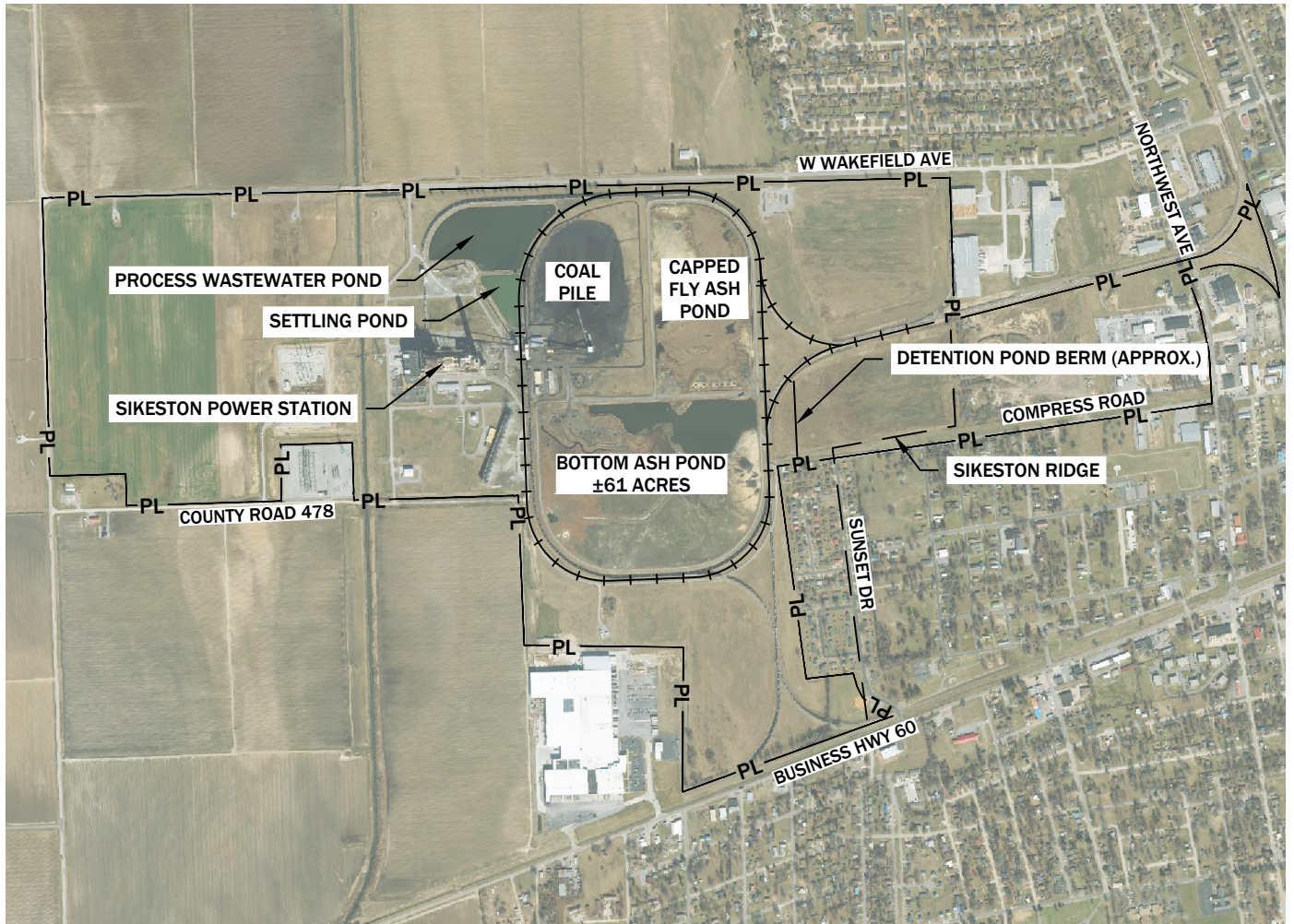
Figures

Figure 1 - Aerial View

Figure 2 – Bottom Ash Pond Hydraulic Structures

Figure 3 – Process Wastewater Pond Hydraulic Structures

Figure 4 – Outlet Structure Details



NOTES:

1. IMAGE PROVIDED BY ESRI IMAGERY, CAPTURED 02/12/2024.
2. PROPERTY LINES AND RAIL ROAD TRACKS ARE APPROXIMATE.

LEGEND

SBMU PROPERTY LINE (APPROXIMATE)	—— PL ——
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RAIL ROAD TRACKS (APPROXIMATE)	+ + + + +

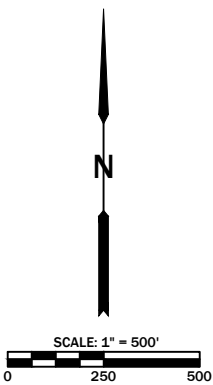
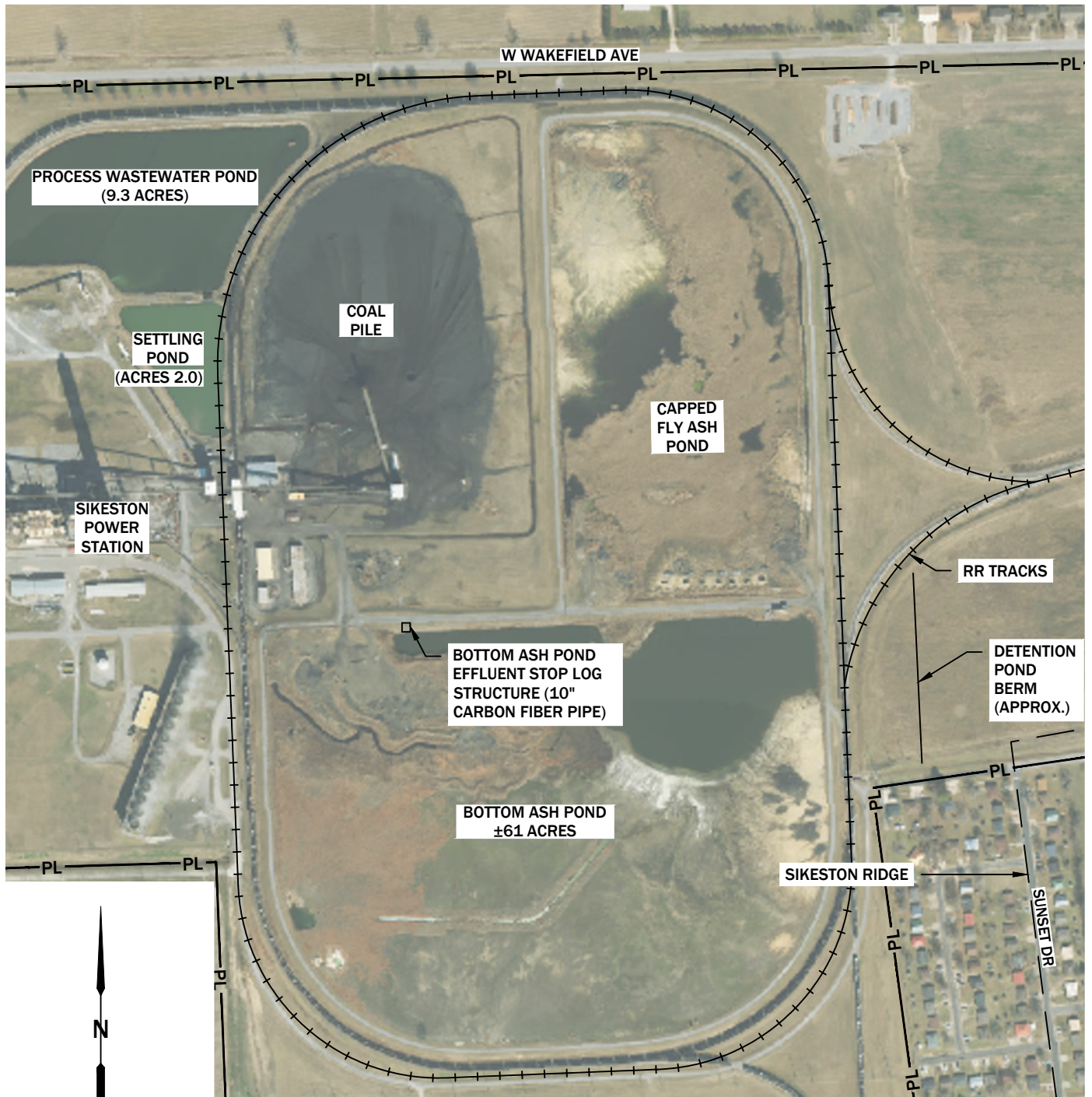
**INFLOW DESIGN FLOOD
CONTROL SYSTEM PLAN
SIKESTON POWER STATION
5-YEAR BAP UPDATE 2026**

FIGURE 1 - AERIAL VIEW



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DATE 10/2026	SCALE 1" = 1500'	PROJECT NAME 5-YEAR BAP UPDATE 2026	REVISION N/A
DRAWN BM	APPROVED JB	FILE NAME INFLOW FLOOD PLAN 10.26	SHEET # 1 OF 4



NOTES:

1. IMAGE PROVIDED BY ESRI IMAGERY, CAPTURED 02/12/2024.
2. PROPERTY LINES AND RAIL ROAD TRACKS ARE APPROXIMATE.

LEGEND

- SBMU PROPERTY LINE (APPROXIMATE) ——— PL ———
- SIKESTON RIDGE (APPROXIMATE) ——— ——— ———
- RAIL ROAD TRACKS (APPROXIMATE) + + + + +

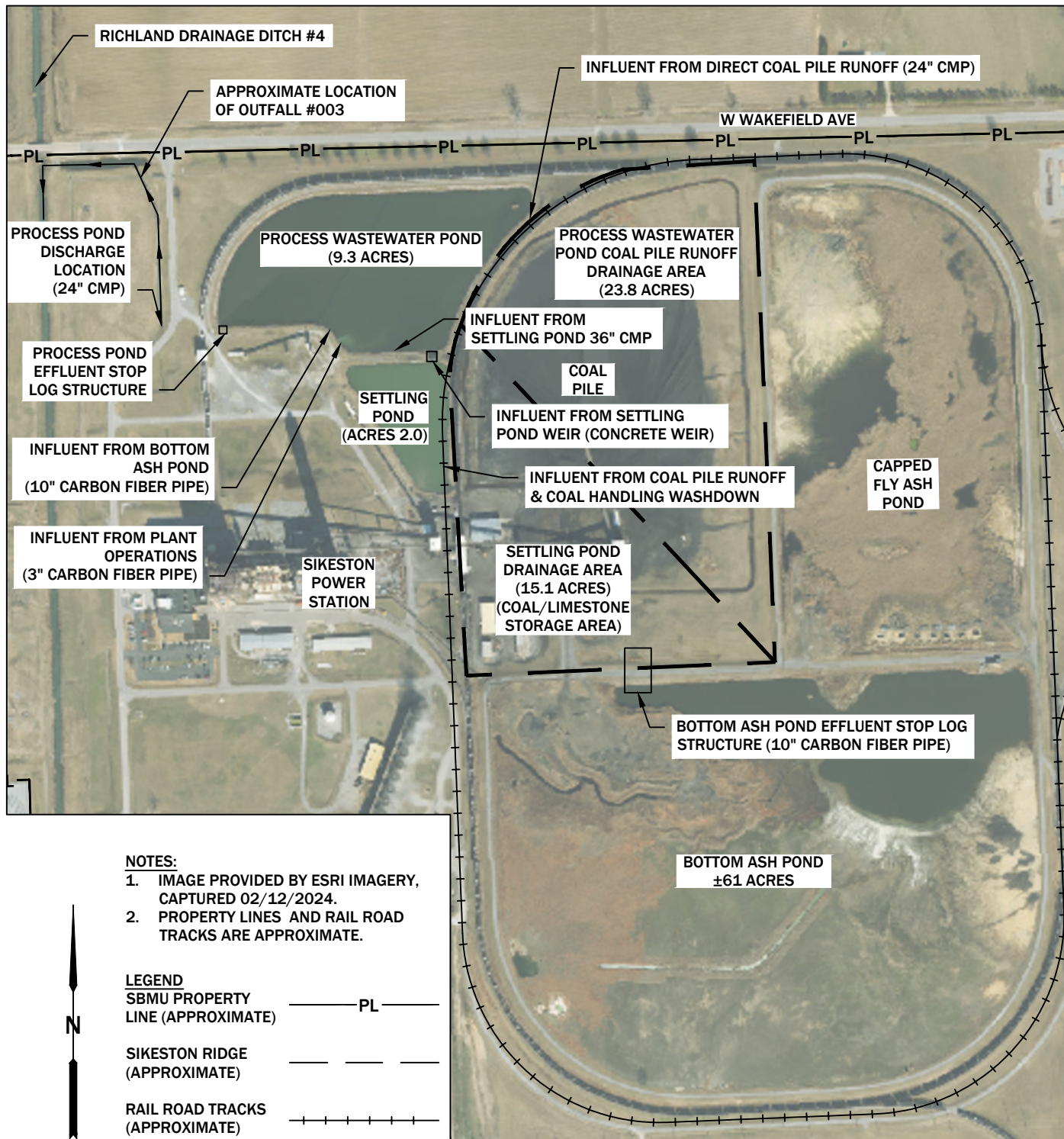
**INFLOW DESIGN FLOOD
CONTROL SYSTEM PLAN
SIKESTON POWER STATION
5-YEAR BAP UPDATE 2026**

**FIGURE 2 - BOTTOM ASH POND
HYDRAULIC STRUCTURES**



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DATE 10/2026	SCALE 1" = 500'	PROJECT NAME 5-YEAR BAP UPDATE 2026	REVISION N/A
DRAWN BM	APPROVED JB	FILE NAME INFLOW FLOOD PLAN 10.26	SHEET # 2 OF 4



NOTES:

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LEGEND

SBMU PROPERTY LINE (APPROXIMATE)	PL
SIKESTON RIDGE (APPROXIMATE)	---
RAIL ROAD TRACKS (APPROXIMATE)	—+—+—+—+—+—+—+—+—+—

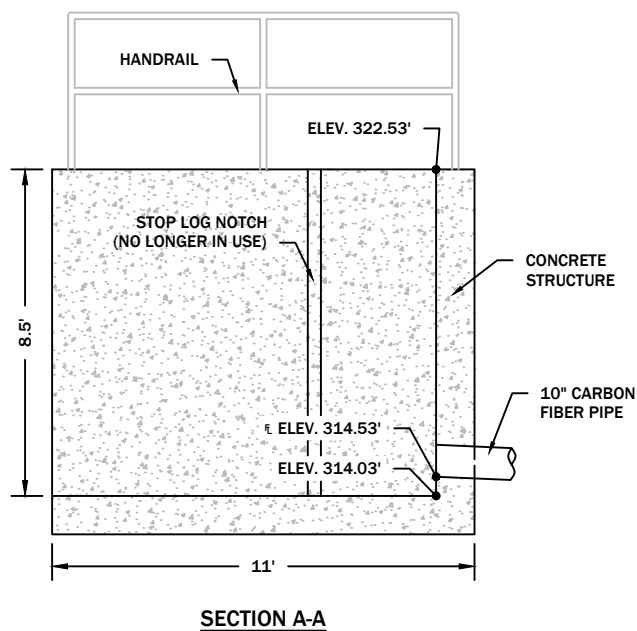
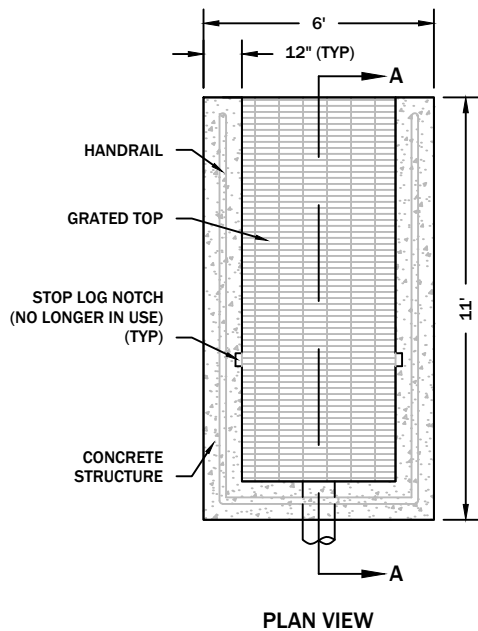
**INFLOW DESIGN FLOOD
CONTROL SYSTEM PLAN
SIKESTON POWER STATION
5-YEAR BAP UPDATE 2026**

**FIGURE 3 - PROCESS WASTE WATER
POND HYDRAULIC STRUCTURES**

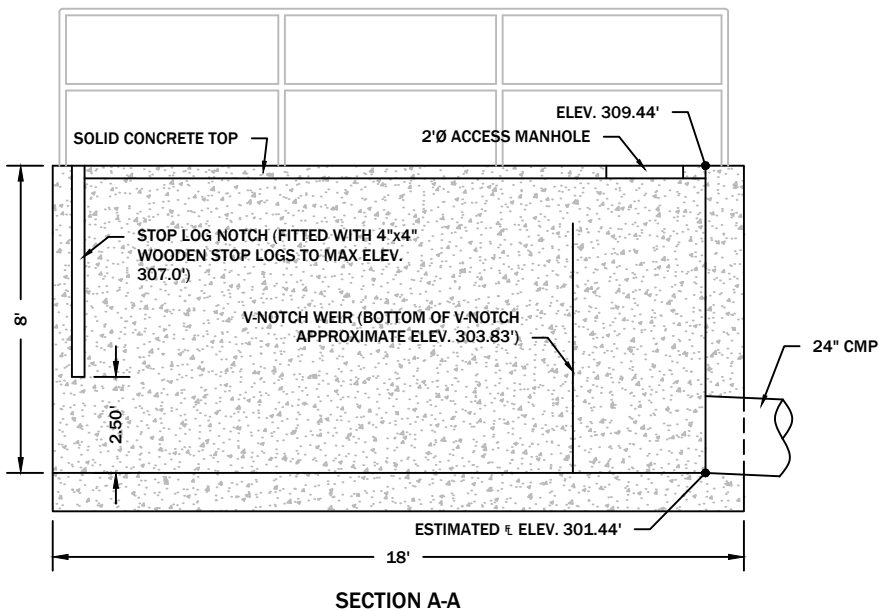
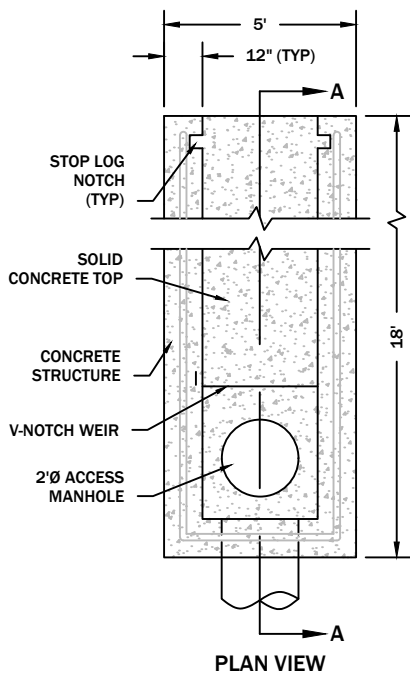


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**BOTTOM ASH POND
OUTLET STRUCTURE**
SCALE: N.T.S.



**PROCESS WASTEWATER POND
OUTLET STRUCTURE**
SCALE: N.T.S.

NOTE:
NO CONSTRUCTION PLANS WERE AVAILABLE FOR THE
PROCESS WASTEWATER POND OUTLET STRUCTURE.
SCHEMATIC DRAWINGS BASED ON LIMITED SITE
OBSERVATIONS & ENGINEERING JUDGEMENT AS MOST OF THE
OUTLET WAS SUBMERGED AT THE TIME OF THE SITE VISIT.

**INFLOW DESIGN FLOOD
CONTROL SYSTEM PLAN
SIKESTON POWER STATION
5-YEAR BAP UPDATE 2026**

FIGURE 4 - OUTLET STRUCTURE DETAILS



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DATE 10/2026	SCALE N.T.S.	PROJECT NAME 5-YEAR BAP UPDATE 2026	REVISION N/A
DRAWN BM	APPROVED JB	FILE NAME INFLOW FLOOD PLAN 10.26	SHEET # 4 OF 4

APPENDIX B

Hydraflow Report – 1,000 Year Design Flood

Watershed Model Schematic..... 1

100 - Year

Summary Report..... 2

Hydrograph Reports..... 3

 Hydrograph No. 1, Rational, Pyrite Overflow Tank and Plant Drain Sumps..... 3

 Hydrograph No. 2, SCS Runoff, Bottom Ash Pond Precip..... 4

 Hydrograph No. 3, Reservoir, Bottom Ash Pond..... 5

 Pond Report - Bottom Ash Pond..... 6

 Hydrograph No. 4, SCS Runoff, Process Pond Precipitation..... 7

 Hydrograph No. 5, Rational, Demineralizer Inflow..... 8

 Hydrograph No. 6, SCS Runoff, SW Coal Pile Runoff Precipitation..... 9

 Hydrograph No. 7, SCS Runoff, NE Coal Pile Runoff Precipitation..... 10

 Hydrograph No. 8, Rational, Coal Handling Washdown Inflow..... 11

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 Hydrograph No. 11, Reservoir, Settling Pond..... 14

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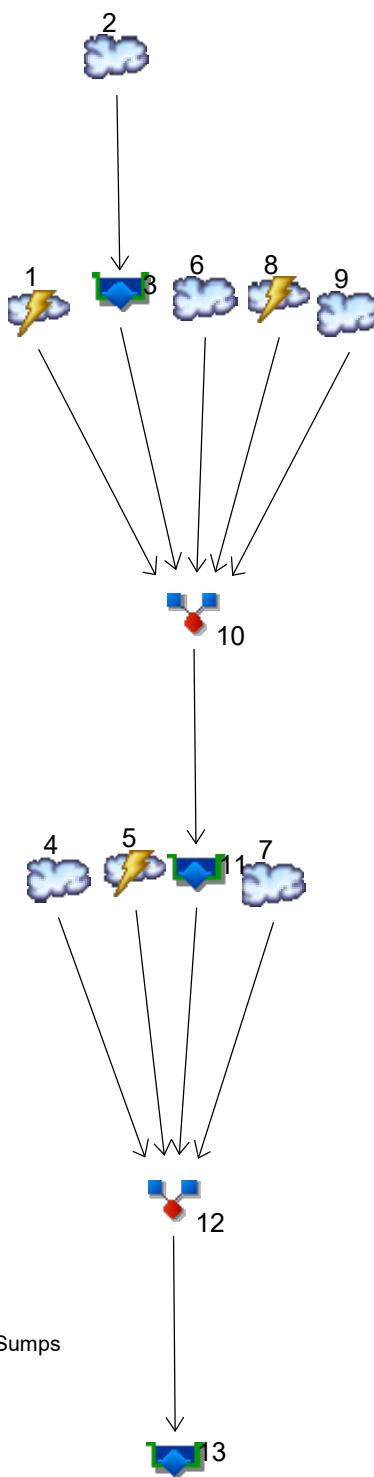
 Hydrograph No. 13, Reservoir, Process Waste Pond..... 17

 Pond Report - Process Waste Pond..... 18

IDF Report..... 19

Watershed Model Schematic

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2027



Legend

Hyd.	Origin	Description
1	Rational	Pyrite Overflow Tank and Plant Drain Sumps
2	SCS Runoff	Bottom Ash Pond Precip
3	Reservoir	Bottom Ash Pond
4	SCS Runoff	Process Pond Precipitation
5	Rational	Demineralizer Inflow
6	SCS Runoff	SW Coal Pile Runoff Precipitation
7	SCS Runoff	NE Coal Pile Runoff Precipitation
8	Rational	Coal Handling Washdown Inflow
9	SCS Runoff	Settling Pond Precipitation
10	Combine	Settling Pond Inflow
11	Reservoir	Settling Pond
12	Combine	Inflow Proc. Waste Pond
13	Reservoir	Process Waste Pond

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2027

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	6.988	1	720	301,870	-----	-----	-----	Pyrite Overflow Tank and Plant Drain
2	SCS Runoff	962.15	1	717	2,423,501	-----	-----	-----	Bottom Ash Pond Precip
3	Reservoir	0.000	1	n/a	0	2	318.56	3,985,359	Bottom Ash Pond
4	SCS Runoff	121.50	1	717	301,849	-----	-----	-----	Process Pond Precipitation
5	Rational	0.094	1	720	4,074	-----	-----	-----	Demineralizer Inflow
6	SCS Runoff	81.03	1	725	253,014	-----	-----	-----	SW Coal Pile Runoff Precipitation
7	SCS Runoff	116.42	1	727	395,230	-----	-----	-----	NE Coal Pile Runoff Precipitation
8	Rational	0.472	1	720	20,372	-----	-----	-----	Coal Handling Washdown Inflow
9	SCS Runoff	30.14	1	717	75,917	-----	-----	-----	Settling Pond Precipitation
10	Combine	102.05	1	721	651,173	1, 3, 6, 8, 9	-----	-----	Settling Pond Inflow
11	Reservoir	56.50	1	736	622,862	10	306.96	833,336	Settling Pond
12	Combine	211.27	1	719	1,324,015	4, 5, 7, 11	-----	-----	Inflow Proc. Waste Pond
13	Reservoir	18.64	1	915	1,211,138	12	305.50	3,223,729	Process Waste Pond
Inflow Flood Design 6-9-26.gpw					Return Period: 100 Year			Tuesday, 08 / 25 / 2026	

Hydrograph Report

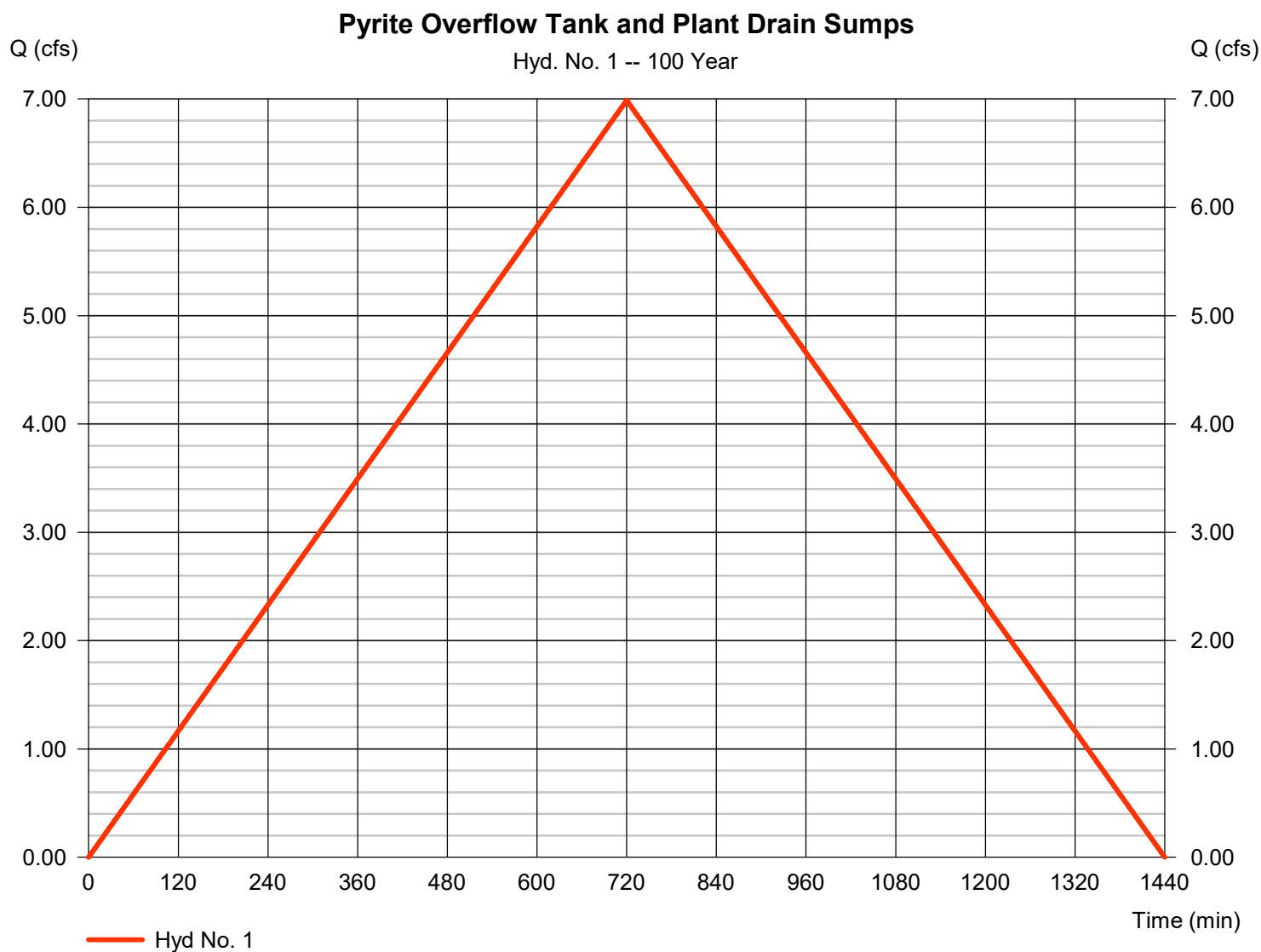
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2027

Tuesday, 08 / 25 / 2026

Hyd. No. 1

Pyrite Overflow Tank and Plant Drain Sumps

Hydrograph type	= Rational	Peak discharge	= 6.988 cfs
Storm frequency	= 100 yrs	Time to peak	= 720 min
Time interval	= 1 min	Hyd. volume	= 301,870 cuft
Drainage area	= 8.150 ac	Runoff coeff.	= 0.99
Intensity	= 0.866 in/hr	Tc by User	= 720.00 min
IDF Curve	= Sikeston.IDF	Asc/Rec limb fact	= 1/1

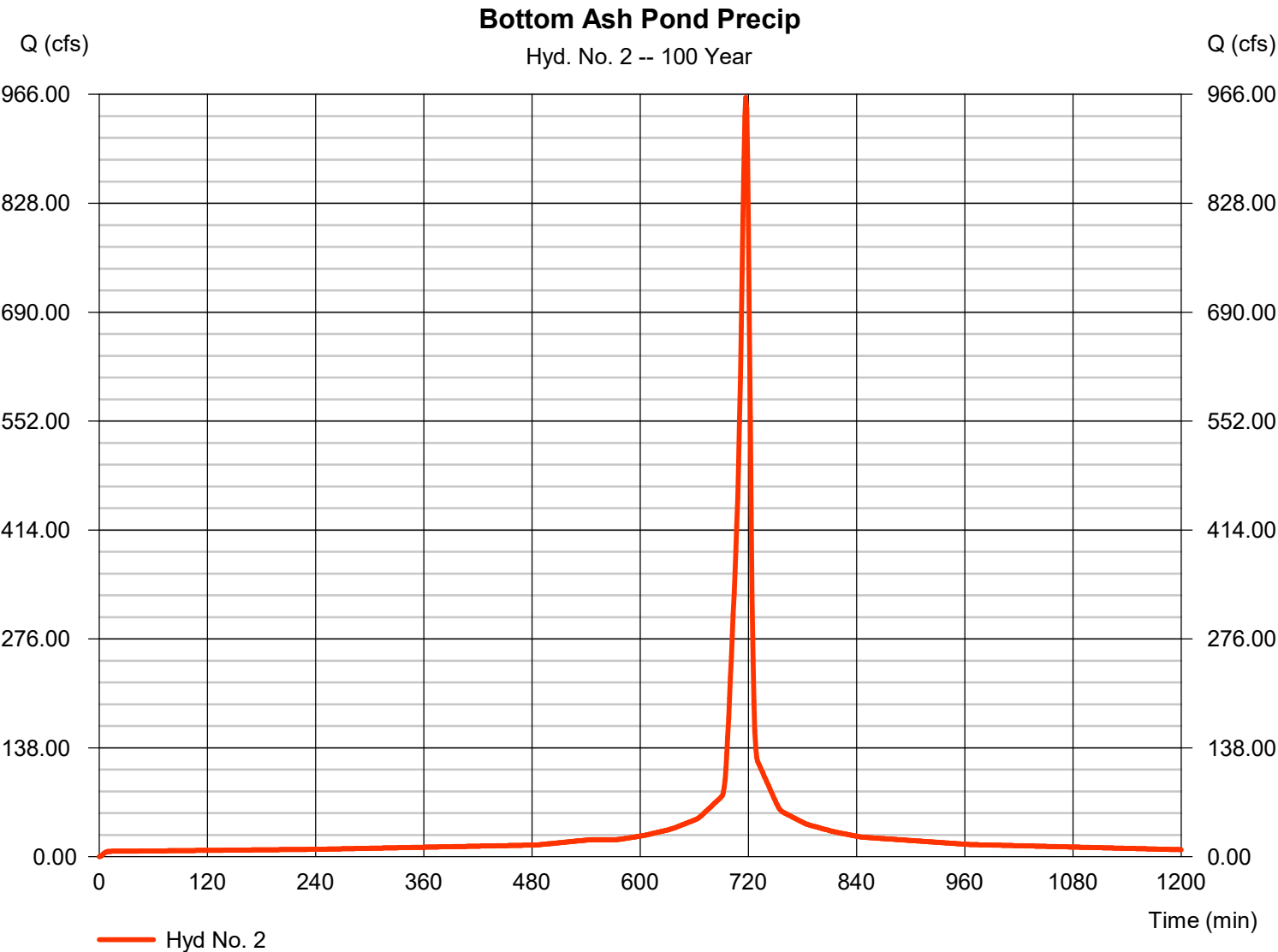


Hydrograph Report

Hyd. No. 2

Bottom Ash Pond Precip

Hydrograph type	=	SCS Runoff	Peak discharge	=	962.15 cfs
Storm frequency	=	100 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	2,423,501 cuft
Drainage area	=	53.950 ac	Curve number	=	100
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	12.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



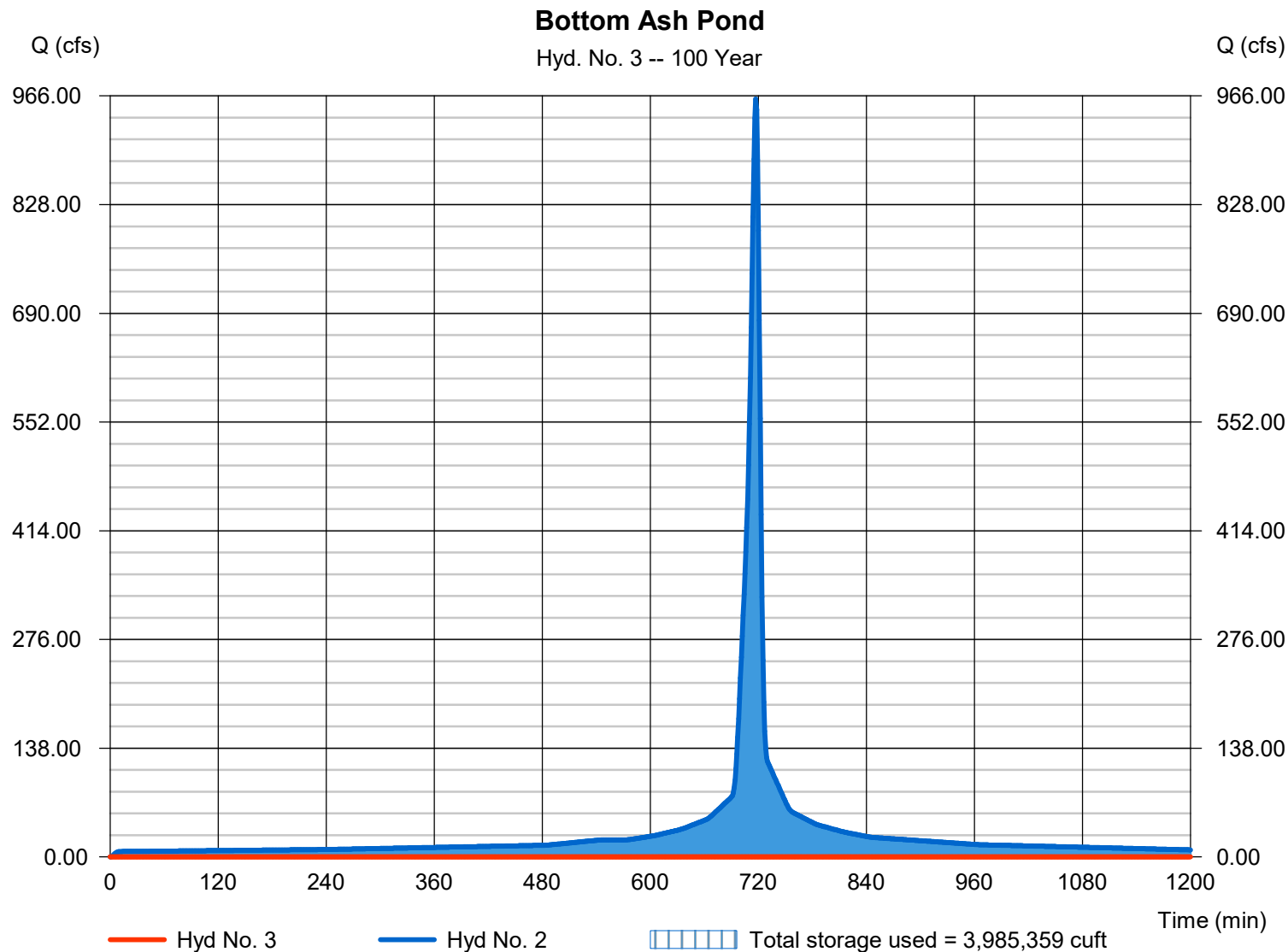
Hydrograph Report

Hyd. No. 3

Bottom Ash Pond

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 100 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 2 - Bottom Ash Pond Precip	Max. Elevation	= 318.56 ft
Reservoir name	= Bottom Ash Pond	Max. Storage	= 3,985,359 cuft

Storage Indication method used. Wet pond routing start elevation = 314.50 ft.



Pond No. 1 - Bottom Ash Pond

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 307.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	307.00	00	0	0
1.00	308.00	2,405	1,202	1,202
2.00	309.00	98,146	50,275	51,478
3.00	310.00	174,701	136,424	187,902
4.00	311.00	244,197	209,449	397,350
5.00	312.00	309,076	276,636	673,987
6.00	313.00	345,444	327,260	1,001,247
7.00	314.00	377,960	361,702	1,362,949
8.00	315.00	417,680	397,820	1,760,769
9.00	316.00	482,802	450,240	2,211,009
10.00	317.00	578,745	530,774	2,741,783
11.00	318.00	809,393	694,069	3,435,852
12.00	319.00	1,161,035	985,214	4,421,066
13.00	320.00	1,712,251	1,436,643	5,857,709
14.00	321.00	2,183,081	1,947,666	7,805,375
15.00	322.00	2,253,455	2,218,265	10,023,640

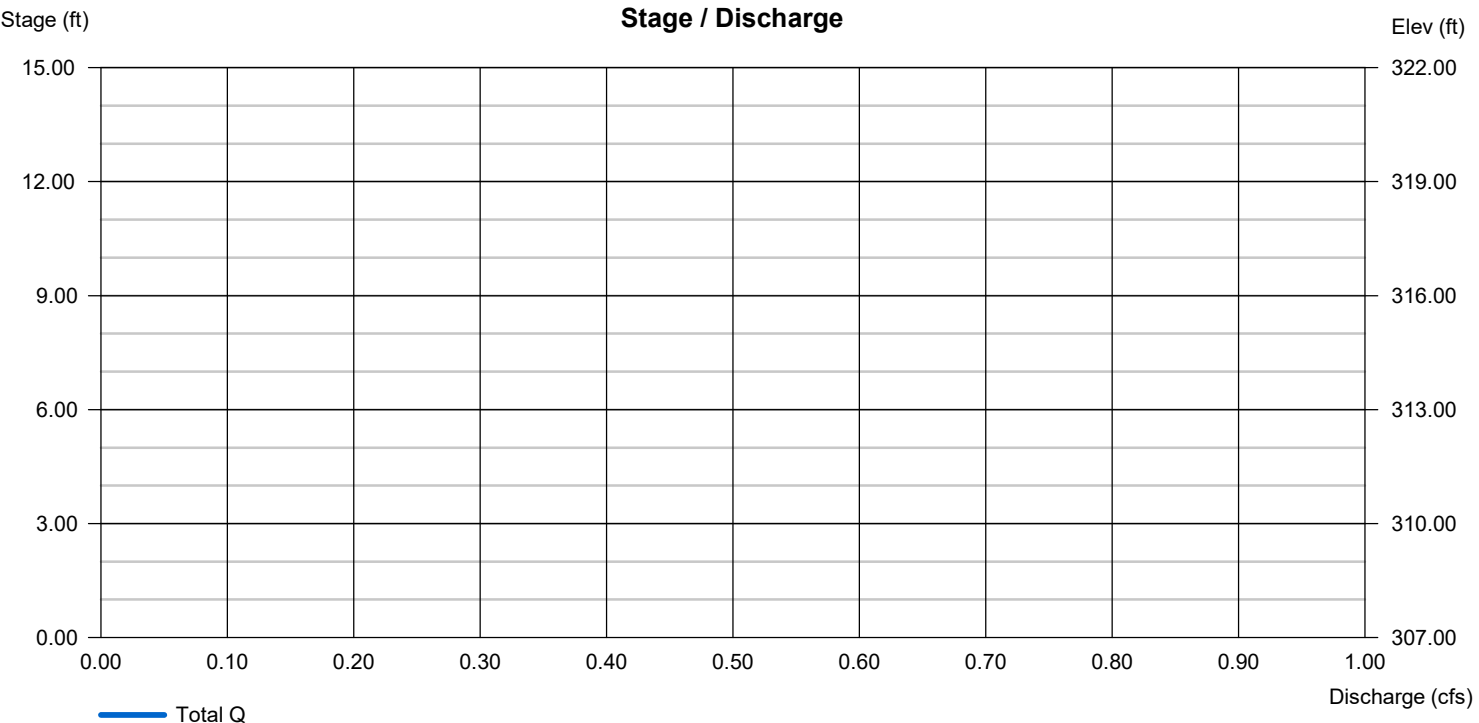
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 10.00	0.00	0.00	0.00
Span (in)	= 10.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 314.53	0.00	0.00	0.00
Length (ft)	= 1900.00	0.00	0.00	0.00
Slope (%)	= 0.50	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 4.00	0.00	0.00	0.00
Crest El. (ft)	= 322.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydrograph Report

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Hyd. No. 4

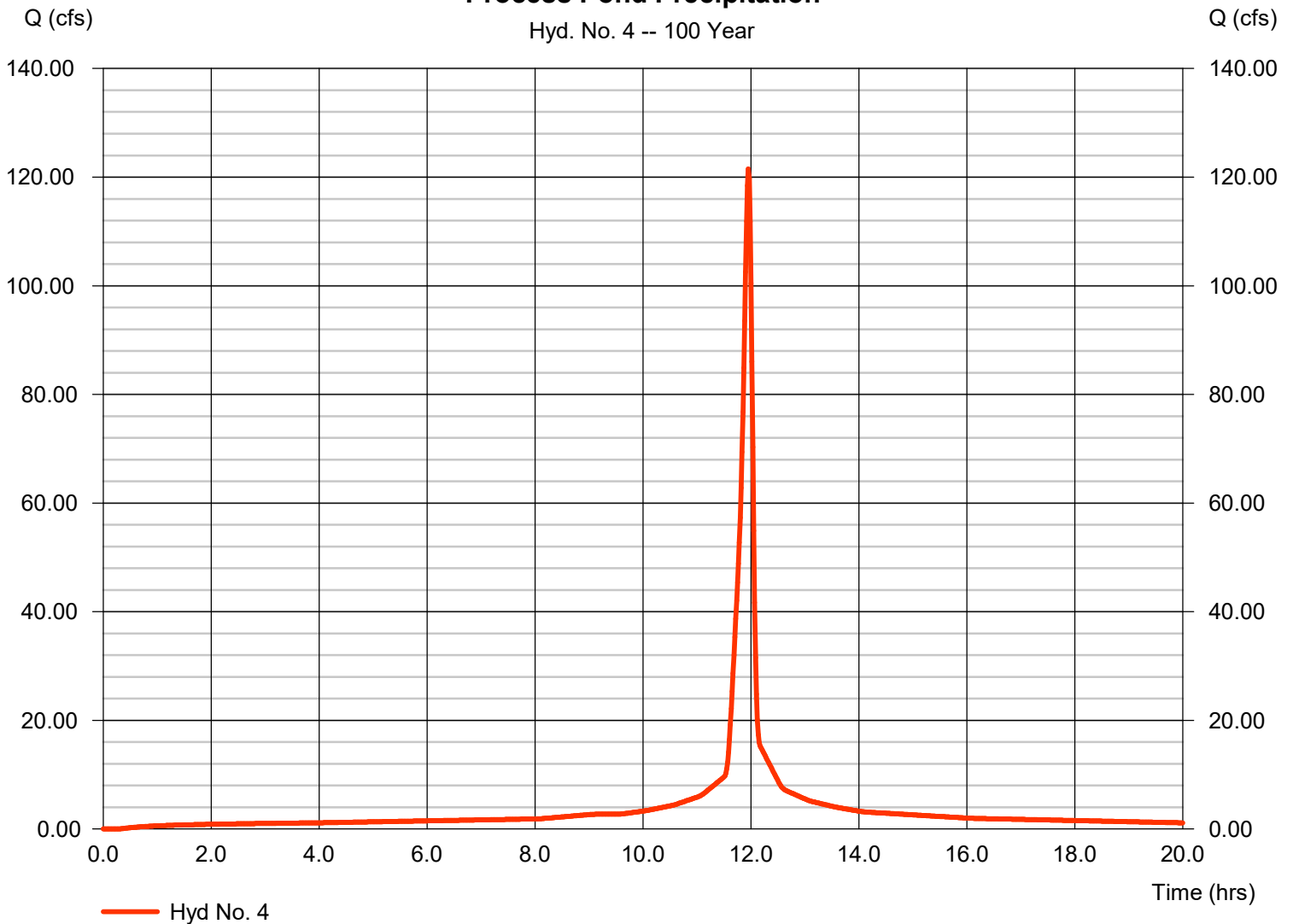
Process Pond Precipitation

Hydrograph type = SCS Runoff
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 9.680 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 12.00 in
 Storm duration = 24 hrs

Peak discharge = 121.50 cfs
 Time to peak = 11.95 hrs
 Hyd. volume = 301,849 cuft
 Curve number = 99
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 5.00 min
 Distribution = Type II
 Shape factor = 484

Process Pond Precipitation

Hyd. No. 4 -- 100 Year

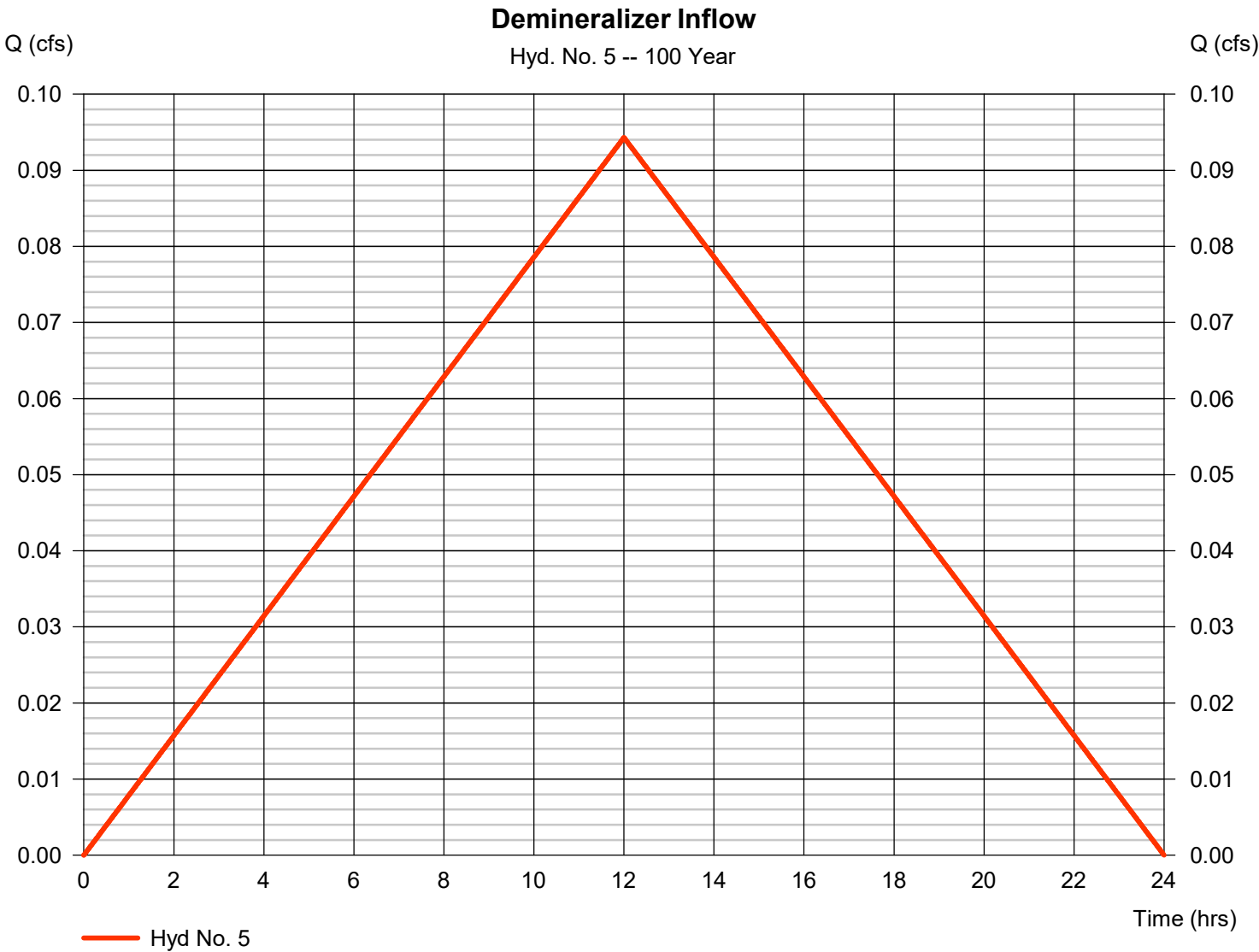


Hydrograph Report

Hyd. No. 5

Demineralizer Inflow

Hydrograph type	= Rational	Peak discharge	= 0.094 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.00 hrs
Time interval	= 1 min	Hyd. volume	= 4,074 cuft
Drainage area	= 0.110 ac	Runoff coeff.	= 0.99
Intensity	= 0.866 in/hr	Tc by User	= 720.00 min
IDF Curve	= Sikeston.IDF	Asc/Rec limb fact	= 1/1

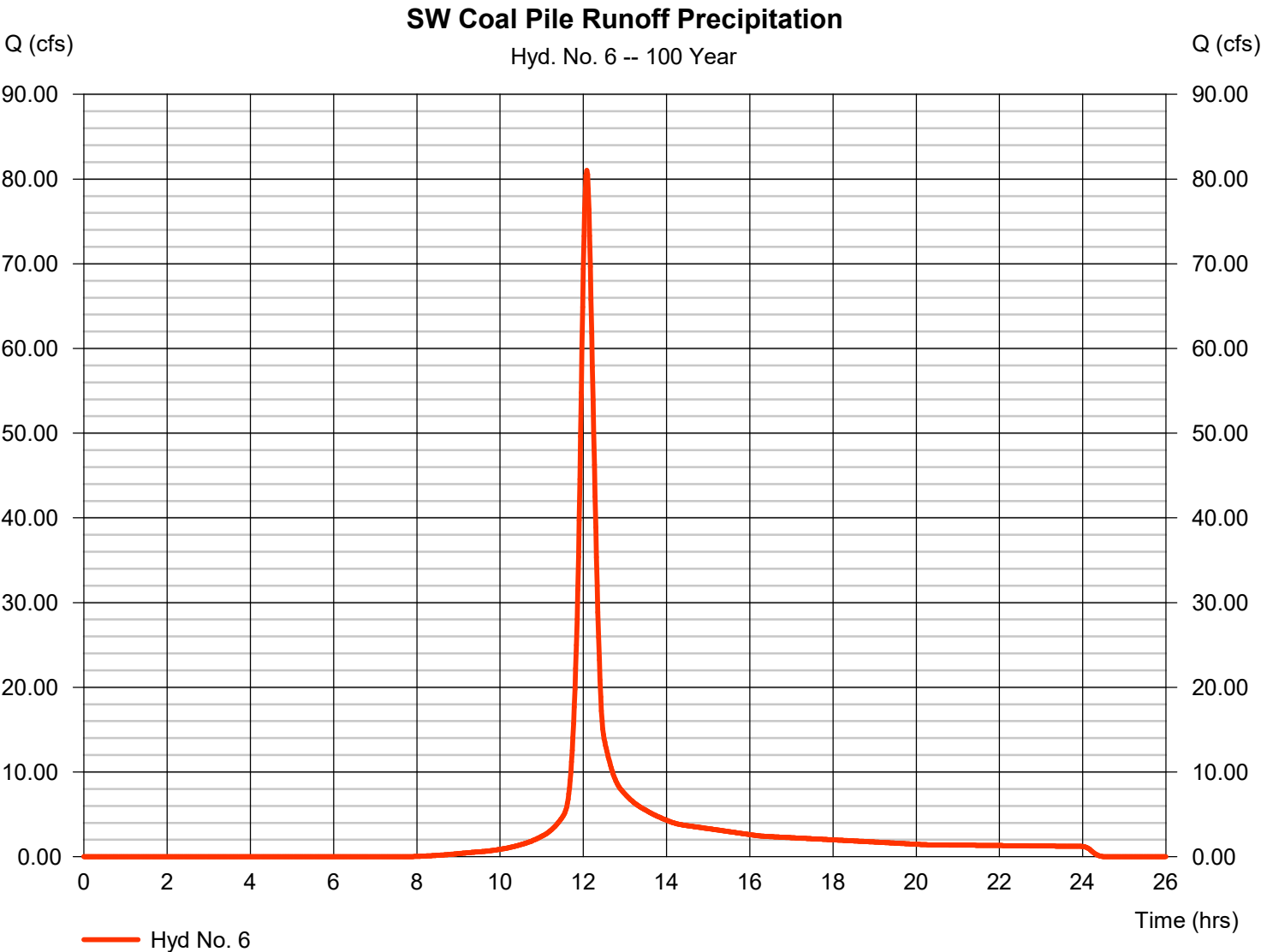


Hydrograph Report

Hyd. No. 6

SW Coal Pile Runoff Precipitation

Hydrograph type	=	SCS Runoff	Peak discharge	=	81.03 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.08 hrs
Time interval	=	1 min	Hyd. volume	=	253,014 cuft
Drainage area	=	15.100 ac	Curve number	=	68
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	19.00 min
Total precip.	=	12.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

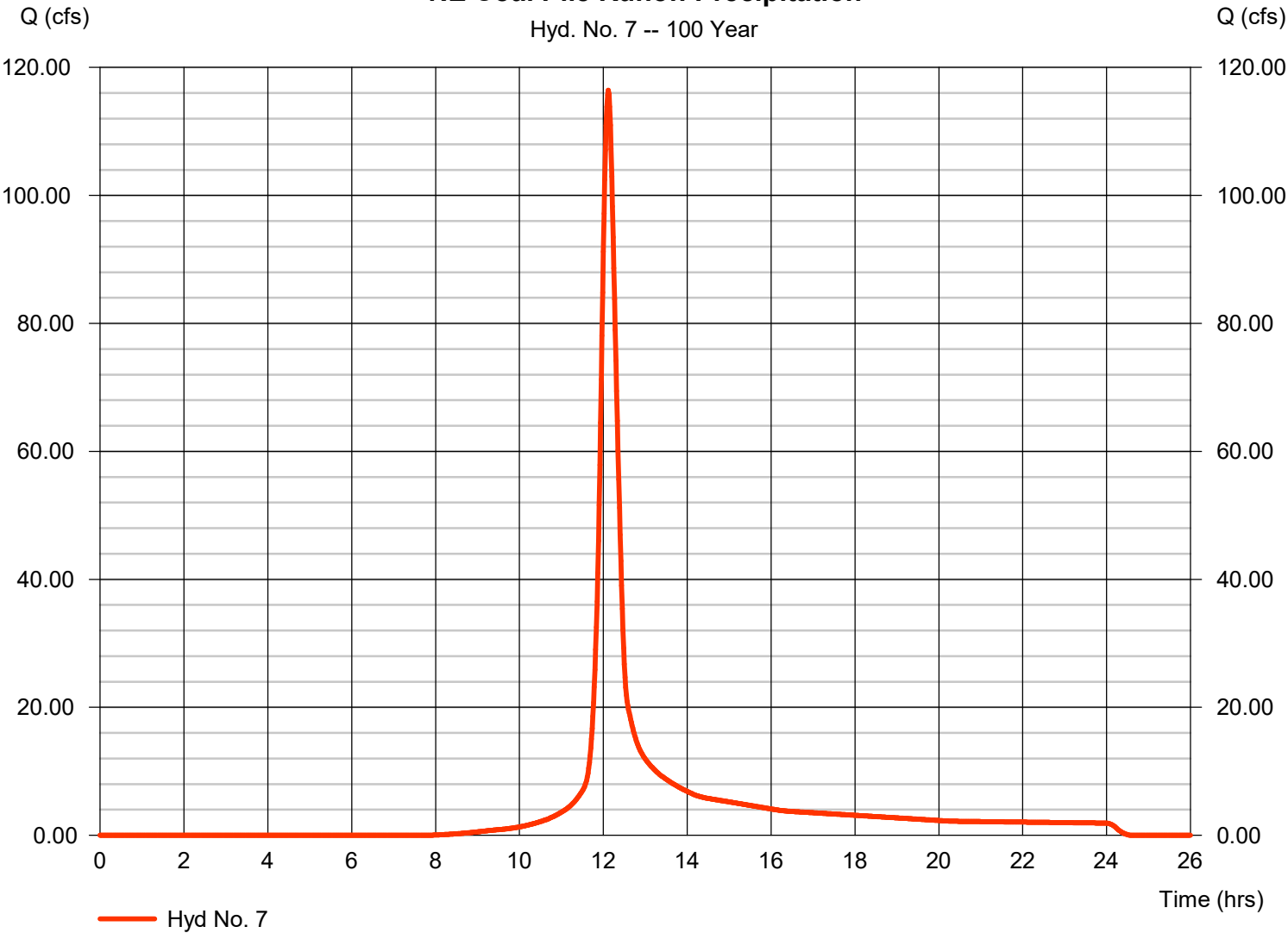
Hyd. No. 7

NE Coal Pile Runoff Precipitation

Hydrograph type	=	SCS Runoff	Peak discharge	=	116.42 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.12 hrs
Time interval	=	1 min	Hyd. volume	=	395,230 cuft
Drainage area	=	23.800 ac	Curve number	=	68
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.00 min
Total precip.	=	12.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

NE Coal Pile Runoff Precipitation

Hyd. No. 7 -- 100 Year

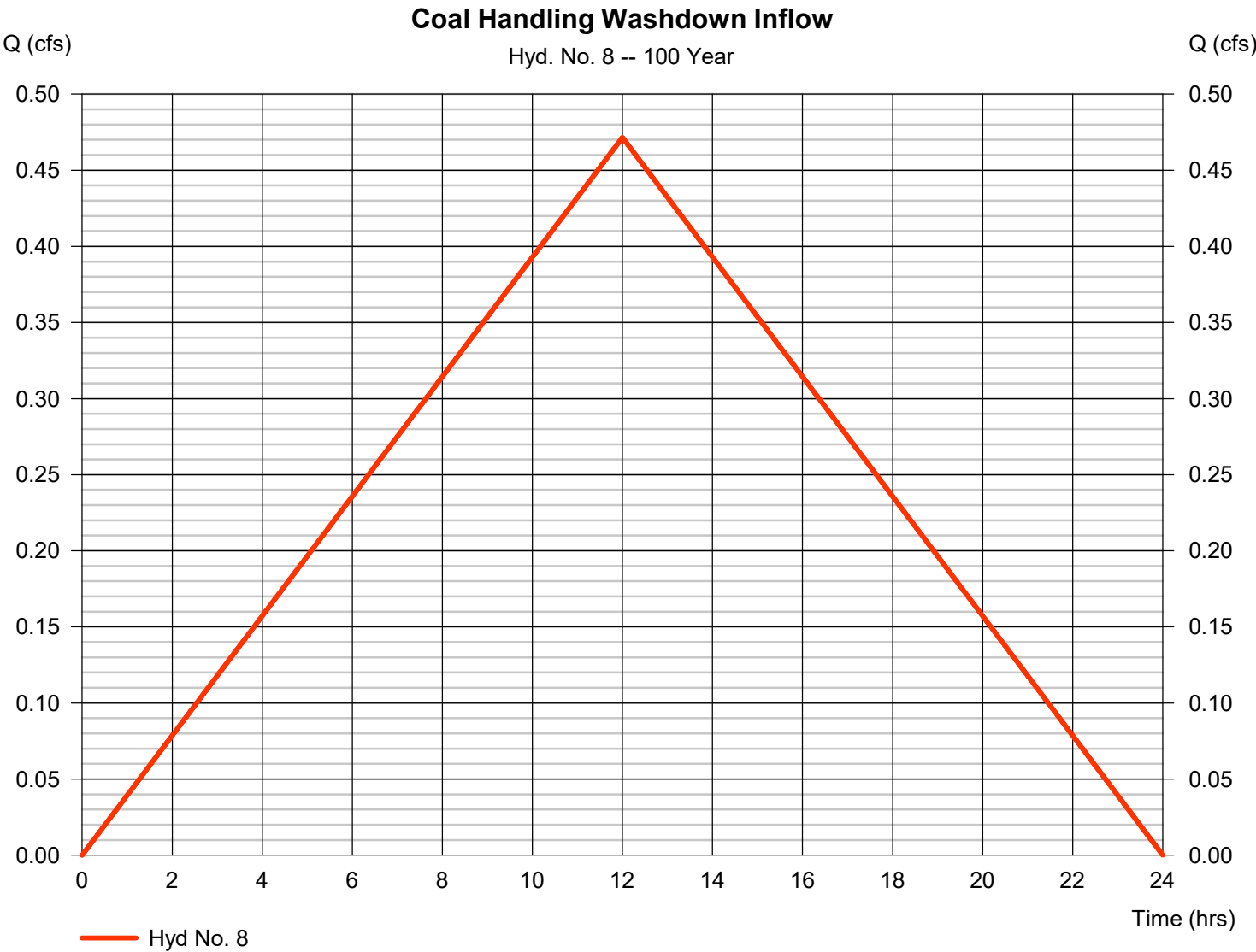


Hydrograph Report

Hyd. No. 8

Coal Handling Washdown Inflow

Hydrograph type	= Rational	Peak discharge	= 0.472 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.00 hrs
Time interval	= 1 min	Hyd. volume	= 20,372 cuft
Drainage area	= 0.550 ac	Runoff coeff.	= 0.99
Intensity	= 0.866 in/hr	Tc by User	= 720.00 min
IDF Curve	= Sikeston.IDF	Asc/Rec limb fact	= 1/1

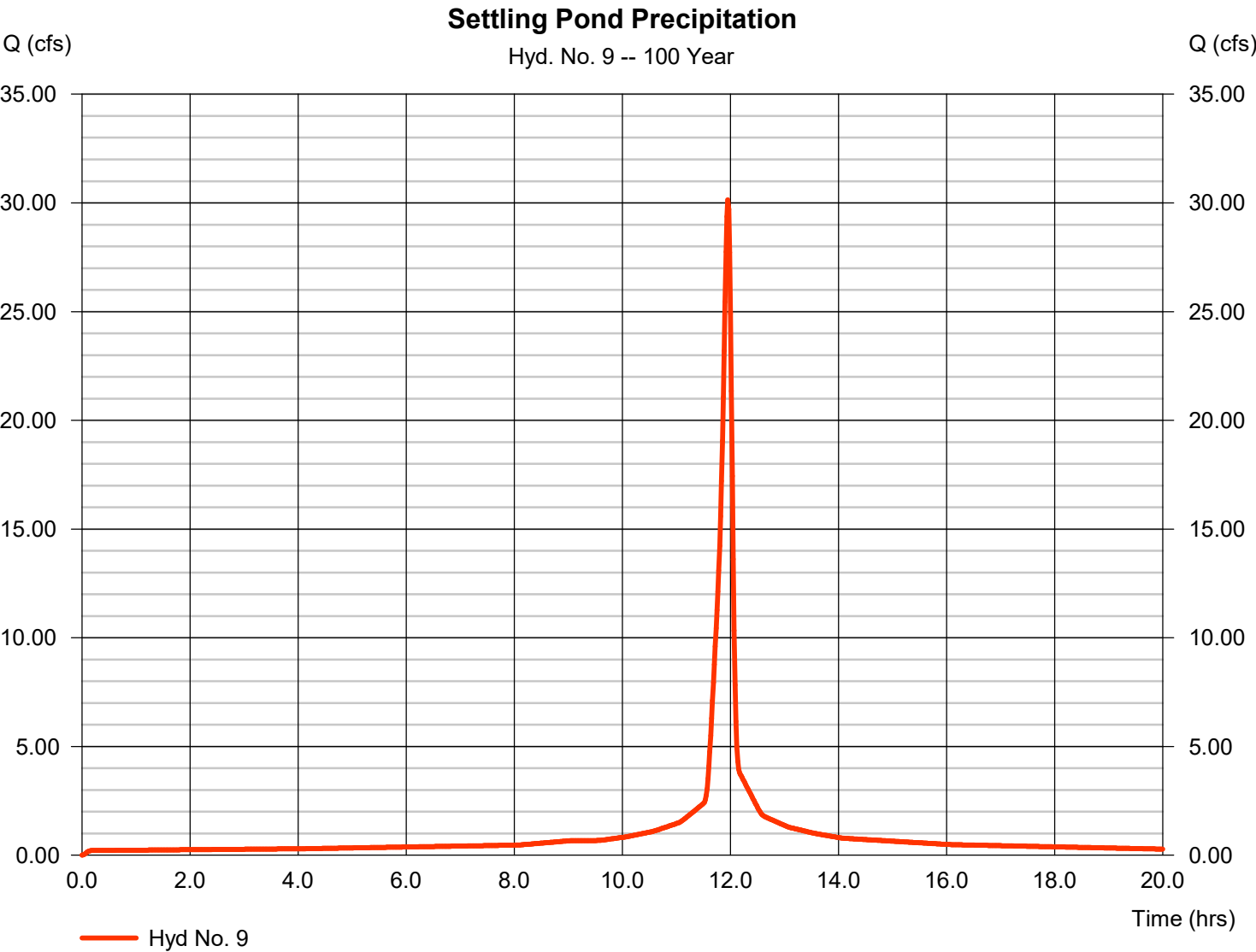


Hydrograph Report

Hyd. No. 9

Settling Pond Precipitation

Hydrograph type	= SCS Runoff	Peak discharge	= 30.14 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.95 hrs
Time interval	= 1 min	Hyd. volume	= 75,917 cuft
Drainage area	= 2.400 ac	Curve number	= 100
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 12.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

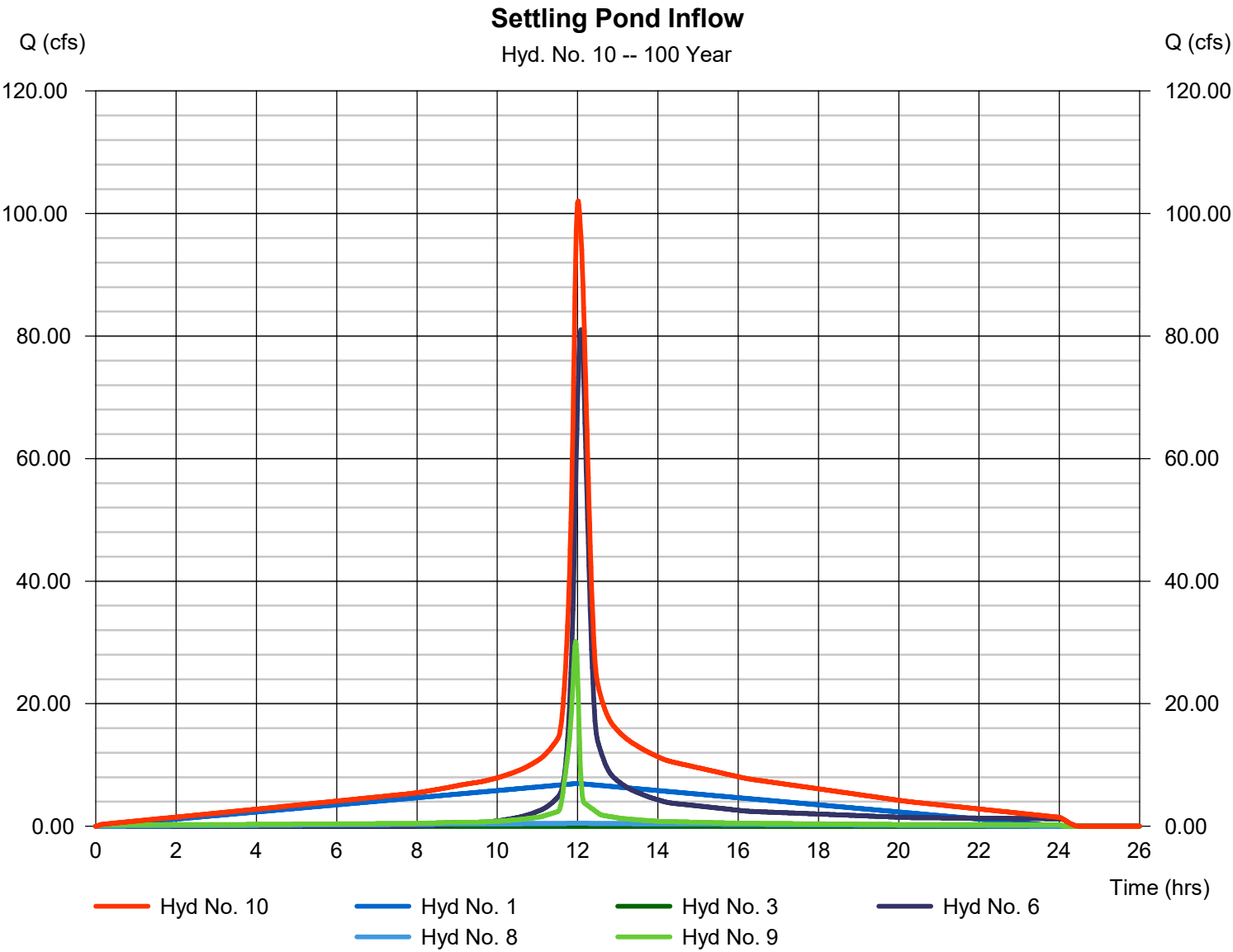
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Tuesday, 08 / 25 / 2026

Hyd. No. 10

Settling Pond Inflow

Hydrograph type	= Combine	Peak discharge	= 102.05 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.02 hrs
Time interval	= 1 min	Hyd. volume	= 651,173 cuft
Inflow hyds.	= 1, 3, 6, 8, 9	Contrib. drain. area	= 26.200 ac



Hydrograph Report

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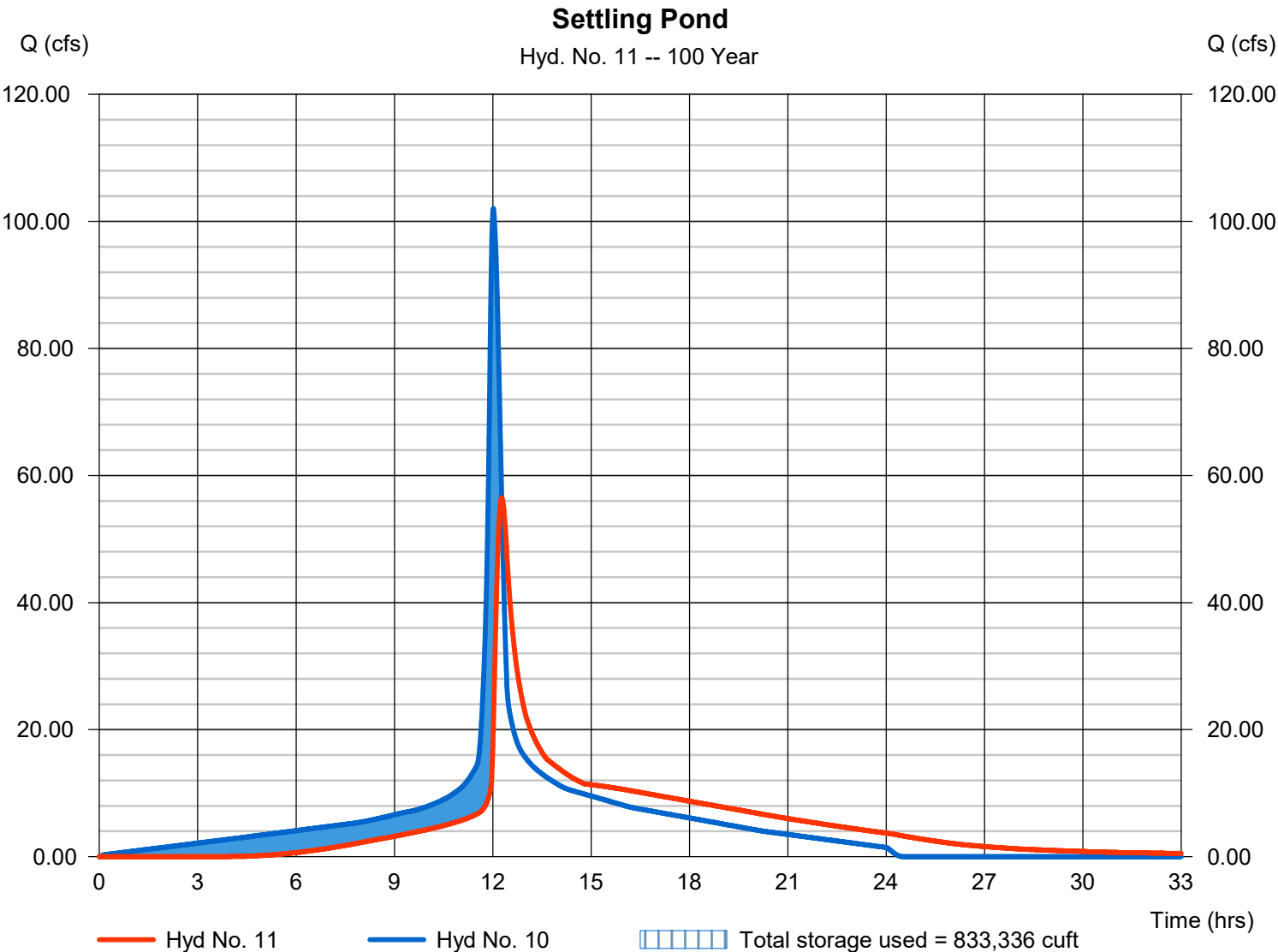
Tuesday, 08 / 25 / 2026

Hyd. No. 11

Settling Pond

Hydrograph type	= Reservoir	Peak discharge	= 56.50 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.27 hrs
Time interval	= 1 min	Hyd. volume	= 622,862 cuft
Inflow hyd. No.	= 10 - Settling Pond Inflow	Max. Elevation	= 306.96 ft
Reservoir name	= Settling Pond	Max. Storage	= 833,336 cuft

Storage Indication method used. Wet pond routing start elevation = 304.60 ft.



Pond No. 3 - Settling Pond

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 297.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	297.00	70,300	0	0
1.00	298.00	72,800	71,550	71,550
2.00	299.00	75,400	74,100	145,650
3.00	300.00	78,100	76,750	222,400
4.00	301.00	80,800	79,450	301,850
5.00	302.00	83,600	82,200	384,050
6.00	303.00	86,400	85,000	469,050
7.00	304.00	89,200	87,800	556,850
8.00	305.00	92,100	90,650	647,500
9.00	306.00	95,000	93,550	741,050
10.00	307.00	98,000	96,500	837,550
11.00	308.00	101,000	99,500	937,050
12.00	309.00	104,100	102,550	1,039,600

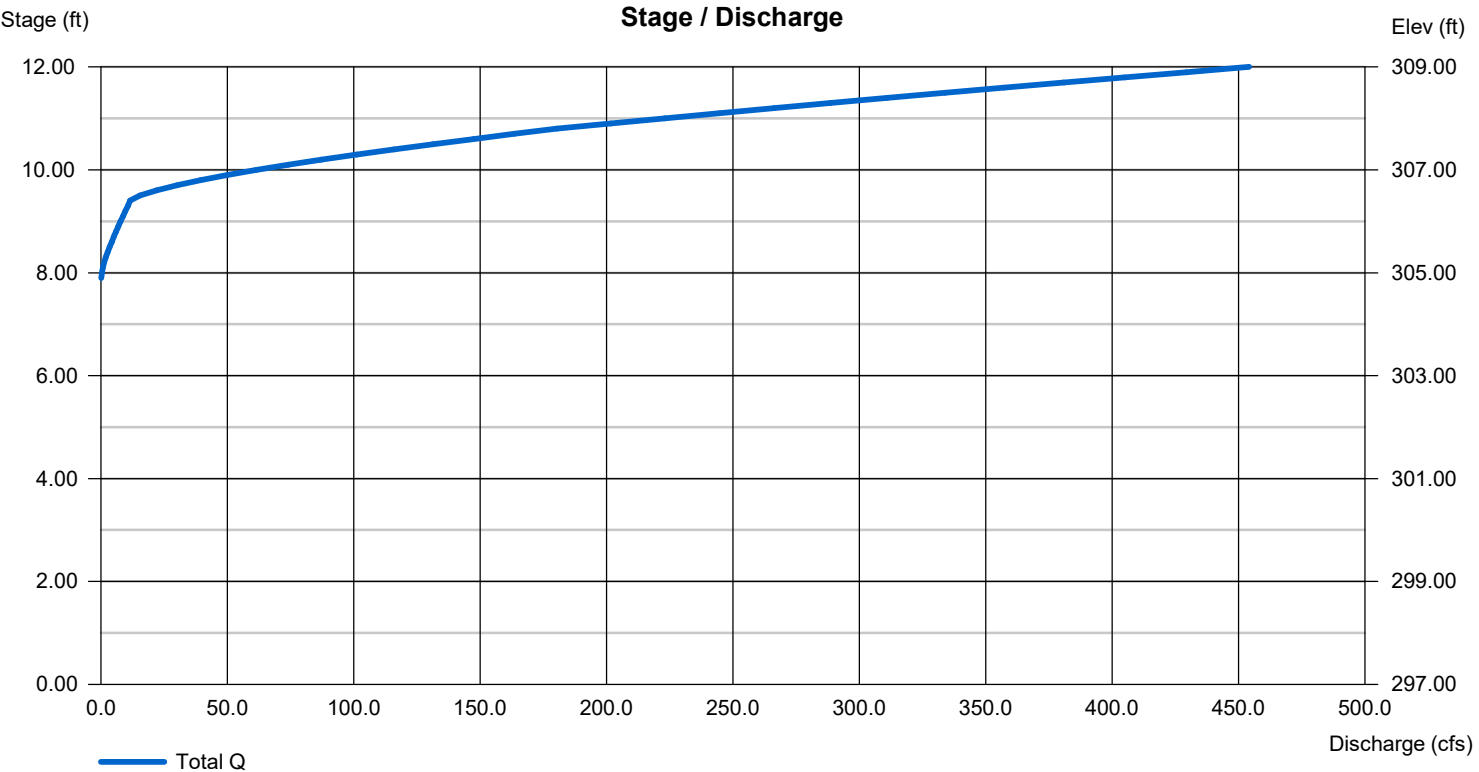
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	0.00	0.00	0.00
Span (in)	= 36.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 304.80	0.00	0.00	0.00
Length (ft)	= 41.00	0.00	0.00	0.00
Slope (%)	= 0.60	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 37.00	0.00	0.00	0.00
Crest El. (ft)	= 306.40	0.00	0.00	0.00
Weir Coeff.	= 2.60	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

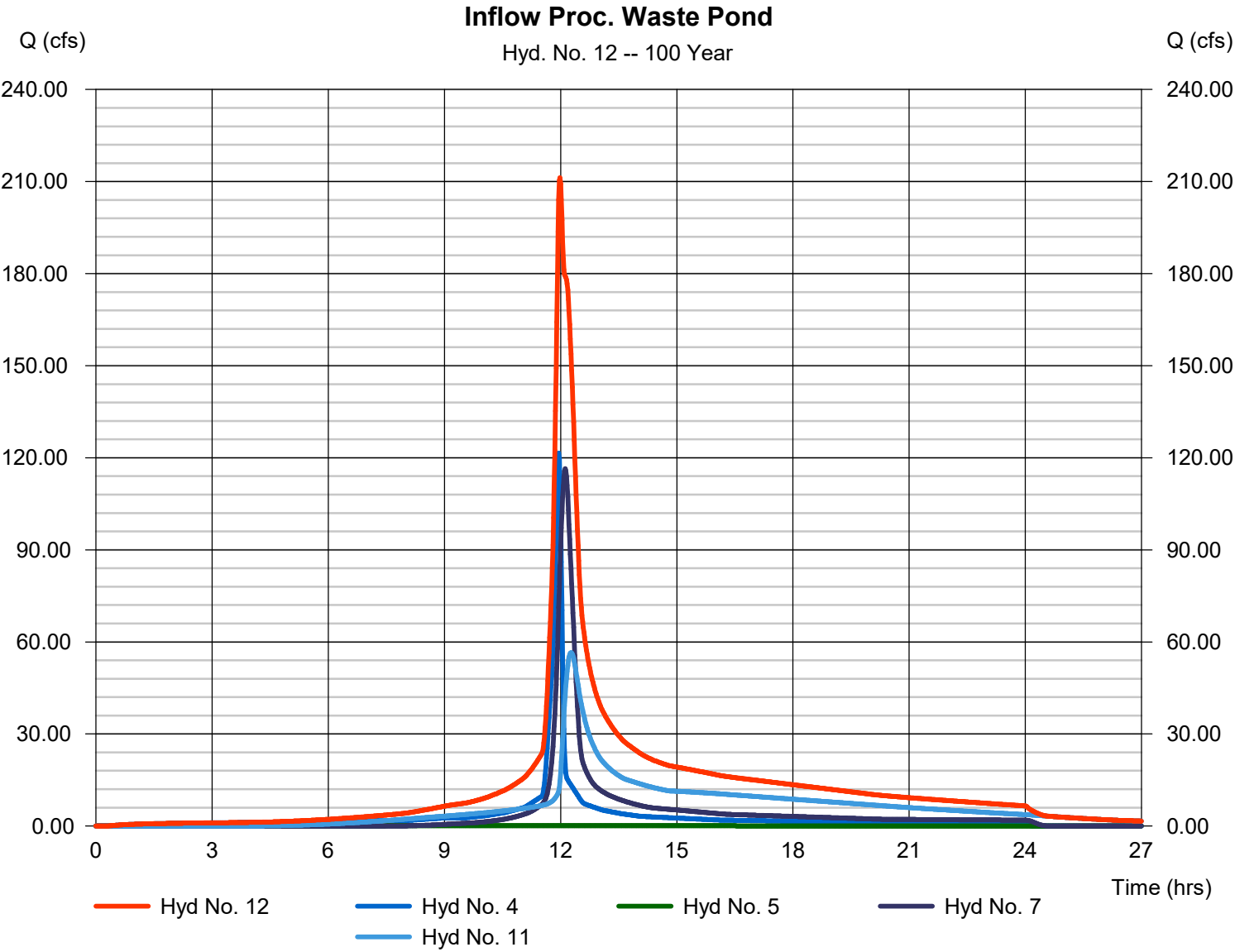


Hydrograph Report

Hyd. No. 12

Inflow Proc. Waste Pond

Hydrograph type	= Combine	Peak discharge	= 211.27 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.98 hrs
Time interval	= 1 min	Hyd. volume	= 1,324,015 cuft
Inflow hyds.	= 4, 5, 7, 11	Contrib. drain. area	= 33.590 ac



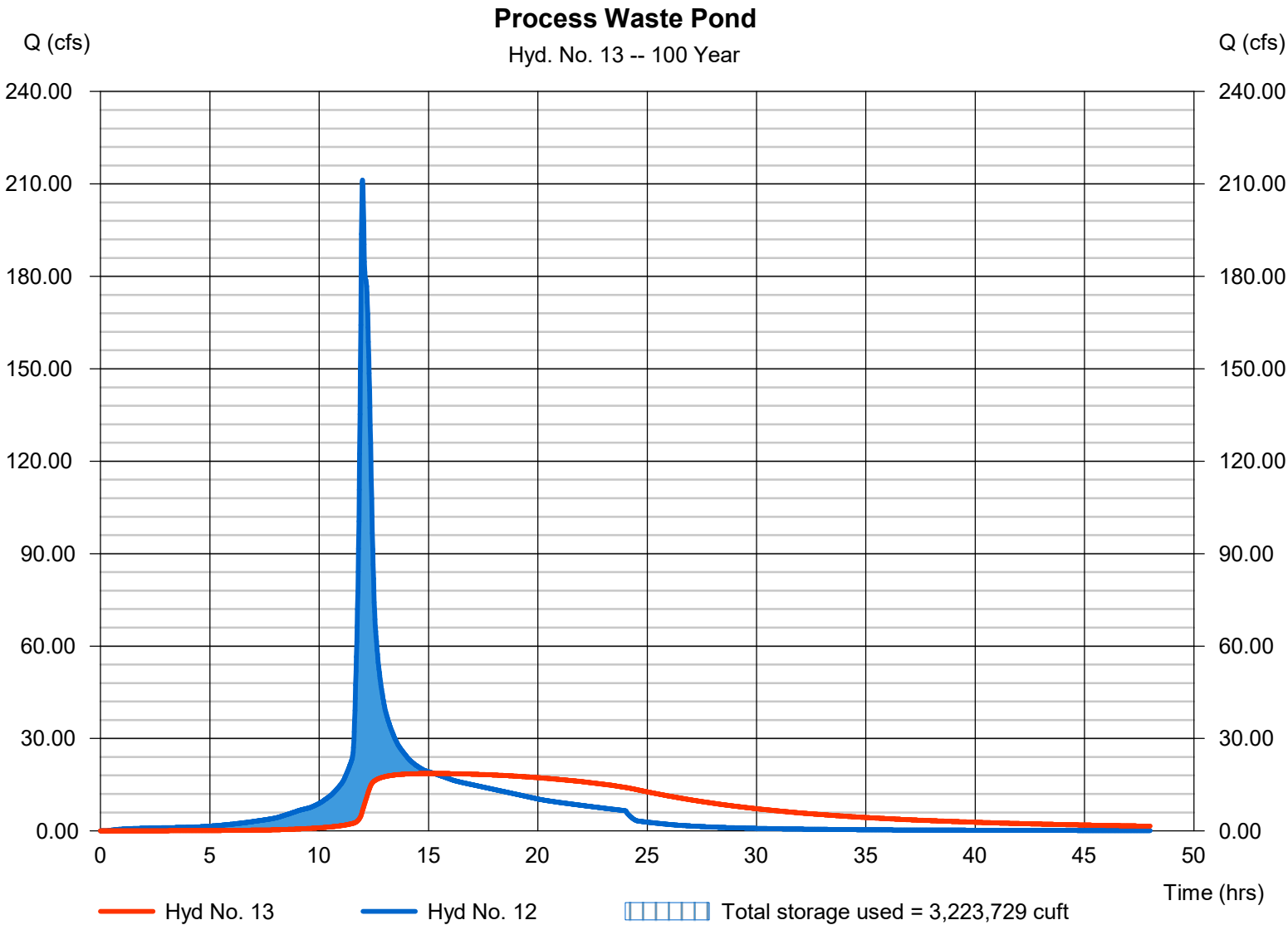
Hydrograph Report

Hyd. No. 13

Process Waste Pond

Hydrograph type	= Reservoir	Peak discharge	= 18.64 cfs
Storm frequency	= 100 yrs	Time to peak	= 15.25 hrs
Time interval	= 1 min	Hyd. volume	= 1,211,138 cuft
Inflow hyd. No.	= 12 - Inflow Proc. Waste Pond	Max. Elevation	= 305.50 ft
Reservoir name	= Process Waste Pond	Max. Storage	= 3,223,729 cuft

Storage Indication method used. Wet pond routing start elevation = 303.80 ft.



Pond No. 2 - Process Waste Pond

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 297.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	297.00	356,500	0	0
1.00	298.00	361,700	359,100	359,100
2.00	299.00	367,000	364,350	723,450
3.00	300.00	372,400	369,700	1,093,150
4.00	301.00	377,700	375,050	1,468,200
5.00	302.00	383,100	380,400	1,848,600
6.00	303.00	388,600	385,850	2,234,450
7.00	304.00	394,000	391,300	2,625,750
8.00	305.00	399,500	396,750	3,022,500
9.00	306.00	405,000	402,250	3,424,750
10.00	307.00	410,500	407,750	3,832,500
11.00	308.00	416,100	413,300	4,245,800
12.00	309.00	421,700	418,900	4,664,700

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	0.00	0.00	0.00
Span (in)	= 24.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 301.44	0.00	0.00	0.00
Length (ft)	= 230.00	0.00	0.00	0.00
Slope (%)	= 0.50	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 3.00	0.00	0.00	0.00
Crest El. (ft)	= 303.80	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

