Former Mt. Tom Station Power Plant
200 Northampton Street
Holyoke, Massachusetts

Initial Hazard Classification Special Basin

Mt. Tom Generating Company LLC
Houston, Texas

May 2026

Tighe & Bond

Certification

CCR Unit: Mt. Tom Generating Company LLC; former Mt. Tom Generating Station; Special Basin

I hereby certify, to the best of my knowledge, information, and belief:

1) That the information contained in this certification is prepared in accordance with the accepted practice of engineering; and

2) That the initial hazard potential classification assessment of the Tom Generating Station Special Basin meets the requirements specified in 40 CFR § 257.73(a)(2).

Printed Name Daniel R Buttrick

Date May 1, 2026

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SECTION 1 | Introduction

1.1 Background

On behalf of Mt. Tom Generating Company LLC ("MTGC"), a wholly owned indirect subsidiary of ENGIE North America, Inc., Tighe & Bond, Inc. ("Tighe & Bond") has prepared this initial hazard potential classification for the Special Basin associated with the Environmental Protection Agency ("EPA") Coal Combustion Residuals ("CCR") Final Rule for Legacy CCR Surface Impoundments ("LSI") and CCR Management Units ("CCRMU"), for the former MTGC facility (the "site"), located at 200 Northampton Street in Holyoke, Massachusetts in accordance with 40 CFR §257.73(a)(2).

The Basin known as "Special Basin" is shown on Figure 1 (Site Location map) and Figure 2 (Site Plan) and is a legacy CCR surface impoundment as defined by 40 CFR § 257.53.

The Special Basin is approximately 190 feet wide by 390 feet long with a maximum depth of approximately 14 feet, and a maximum structural height (compared to the elevation at the downstream toe) of approximately 12.5 feet. The maximum storage of the basin is approximately 12.2 acre-feet. There is currently no inflow to the basin other than direct precipitation over the basin surface area and immediately adjacent edges of the embankment crest, and the basin is generally dry other than immediately following rainfall events until rainwater infiltrates into the basin. There are no valves or diversions that could contribute flow to the basin other than direct precipitation, nor valves or diversions that would remove water from the basin. The location of the site and Special Basin are included in Appendix A.

1.2 Purpose

The purpose of this evaluation is to determine the hazard potential classification based on the potential consequences associated with a hypothetical failure. Hazard potential classifications relate to the consequences of failure and are independent of the structure's condition or anticipated performance.

1.3 Regulations

The definitions section of the EPA Final CCR Rule, 40 CFR § 257.53 states:

> *Hazard potential classification means the possible adverse incremental consequences that result from the release of water or stored contents due to failure of the diked CCR surface impoundment or mis-operation of the diked CCR surface impoundment or its appurtenances. The hazardous potential classifications include high hazard potential CCR surface impoundment, significant hazard potential CCR surface impoundment, and low hazard potential CCR surface impoundment, which terms mean:*
>
> 1) *High hazard potential CCR surface impoundment means a diked surface impoundment where failure or mis-operation will probably cause loss of human life.*
> 2) *Significant hazard potential CCR surface impoundment means a diked surface impoundment where failure or mis-operation results in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns.*

3) *Low hazard potential CCR surface impoundment means a diked surface impoundment where failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the surface impoundment owner's property.*

§ 257.73 (a) states:

(2) Periodic hazard potential classification assessments.

(i) The owner or operator of the CCR unit must conduct initial and periodic hazard potential classification assessments of the CCR unit according to the timeframes specified in paragraph (f) of this section. The owner or operator must document the hazard potential classification of each CCR unit as either a high hazard potential CCR surface impoundment, a significant hazard potential CCR surface impoundment, or a low hazard potential CCR surface impoundment. The owner or operator must also document the basis for each hazard potential classification.

(ii) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the initial hazard potential classification and each subsequent periodic classification specified in paragraph (a)(2)(i) of this section was conducted in accordance with the requirements of this section.

This report contains supporting documentation for the initial hazard potential classification assessment. The hazard potential classification for this structure was determined by observation of site conditions, review of available mapping, and use of a publicly available dam breach tool.

SECTION 2 | Basis of Rating

2.1 Background

MTGC is located in Hampden County, Massachusetts. The former plant is located adjacent to the Connecticut River approximately 15 miles north of Springfield, MA. The Special Basin is located north of Bottom Ash Basin A, sharing an embankment with Bottom Ash Basin A, and is adjacent to the Connecticut River. Since the decommissioning of the plant, the basin does not receive flow from outside sources, limiting accumulation of water to rainwater directly falling into the basin. There is no functioning low-level-outlet associated with the basin. Tighe & Bond is unaware of a previous hazard potential classification assessment for Special Basin.

2.2 Potential Failure Scenarios

The Special Basin has four potential failure directions:

- **To the north.** The Special Basin is adjacent to the Sedimentation Basin to the north, which is not a CCR LSI. Typically, the Special Basin and the Sedimentation Basin do not impound water. With both basins having a means of filling limited to rainwater falling into the basins, water levels are anticipated to rise and fall at a similar rate in the two basins. Additionally, the maximum pool elevations for the basins are similar to each other. Thus, since there is no water level differential driving embankment failure, Special Basin failure to the north is not plausible.
- **To the east.** A breach to the east would result in release of flow and possibly CCR into the Connecticut River.
- **To the south.** The Special Basin is located adjacent to and north of Bottom Ash Basin A. Typically, the Special Basin and Bottom Ash Basin A do not impound water. With both basins having a means of filling, which is limited to rainwater falling into the basin, water levels are anticipated to rise and fall at a similar rate. Additionally, the maximum pools for the basins are similar to each other. Thus, since there is no water level differential driving embankment failure, Special Basin failure to the south is not plausible.
- **To the west.** Special Basin is located east of the former coal stockpile and runoff area, which has no outlet. A breach to the west would discharge into this area and be contained.

Breaches to the north and south are not plausible thus not considered further. A breach to the west would be contained without potential for loss of life and would cause no environmental damage nor economic loss.

The more likely failure scenario with potential impact is to the east into the Connecticut River. Tighe & Bond modeled a breach into the Connecticut River using DSS WISE, an automated web-based two-dimensional dam break flood modeling program. The breach was modeled with the Special Basin at full pool at time of failure. The DSS WISE Flood Simulation Report (Appendix A) indicates that the peak flood wave will reach the Connecticut River nearly instantaneously but will result in a low surge of water that quickly spreads along the river. Loss of life and economic loss would not be expected. Environmental losses would be limited to the embankment material being discharged into the river, where the majority would be expected to settle and could be mechanically retrieved. The quantity of CCR expected to be discharged into the river is limited since the residual CCR remaining in the basin is vegetated.

In summary, of the four potential failure directions, none include probable loss of life or economic damage and only one would have the potential for low-level environmental damage.

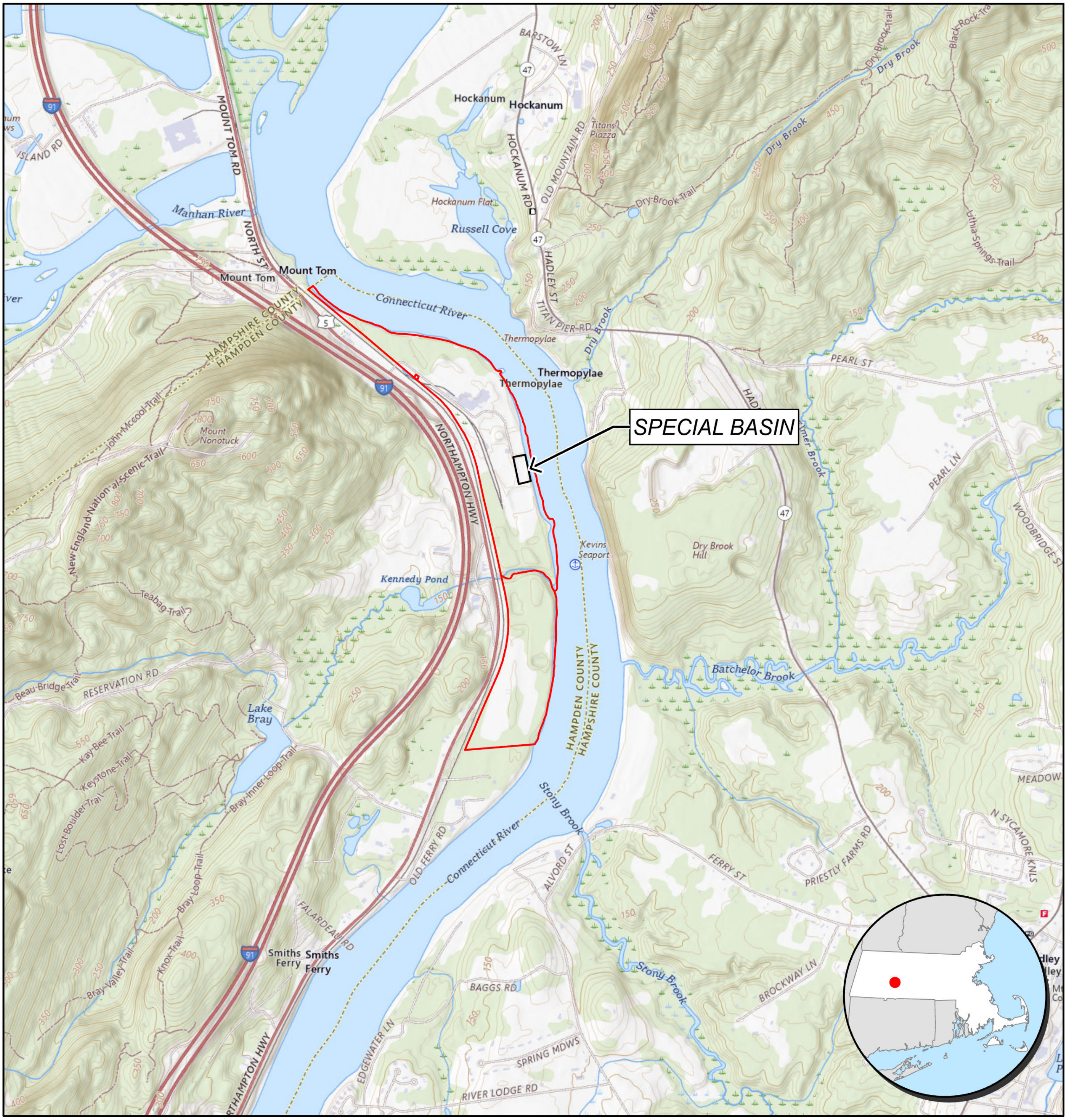
2.3 Hazard Classification

Findings of this review and assessment demonstrate that a breach of the impoundment results in no probable loss of human life or economic loss and low levels of environmental losses. It is Tighe & Bond's opinion that the impoundment meets the definition for a low hazard potential CCR surface impoundment (as defined in the CCR Rule §257.53).

Figures

Former Mt. Tom Station Power Plant
200 Northampton Street
Holyoke, Massachusetts

FIGURE 1
SITE LOCATION
April 2026



Property Boundary

N

1:24,000

0 1,000 2,000
Feet

Based on USGS The National Map Topo Basemap.
Contour Interval Equals 10 Feet.

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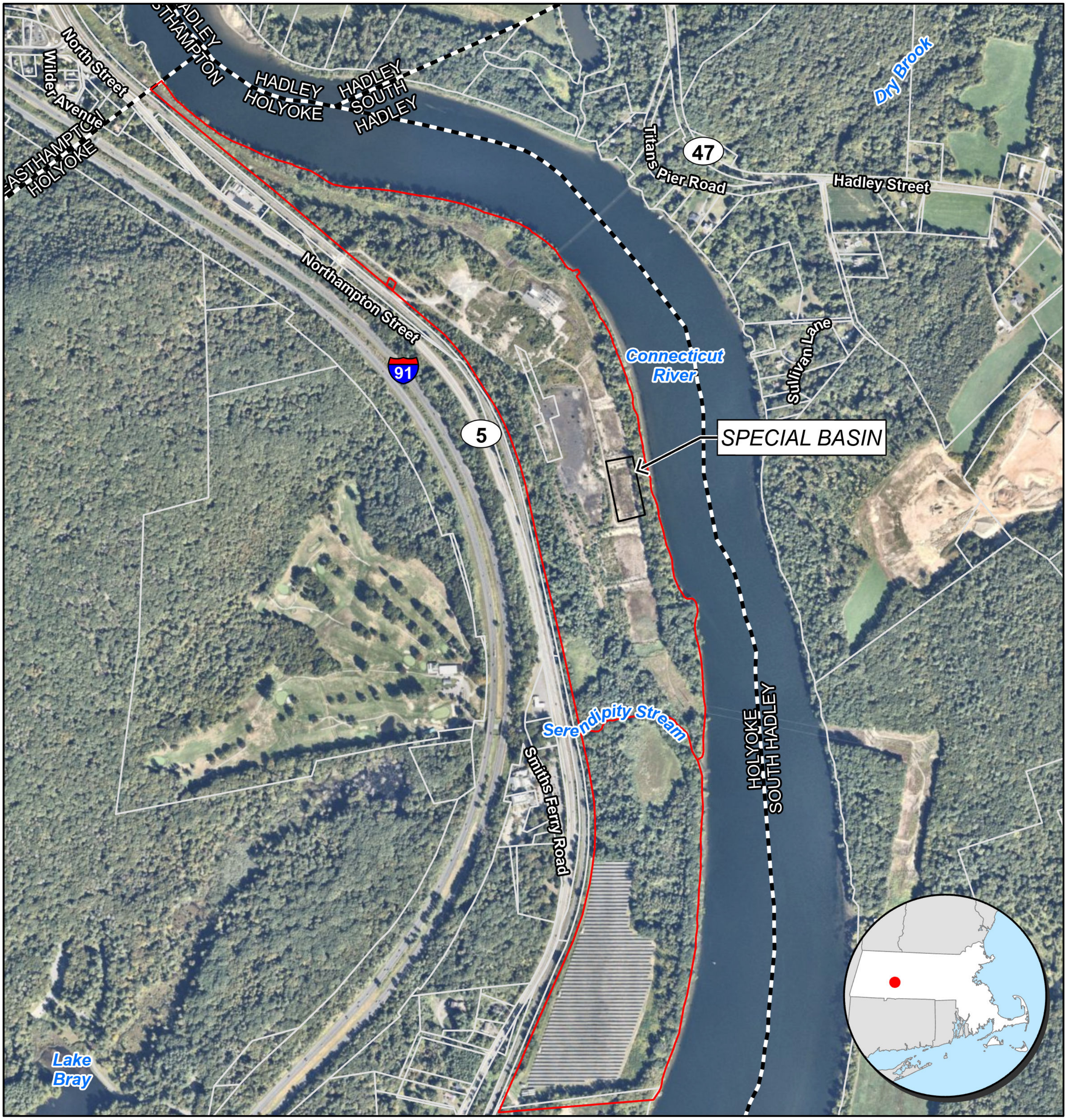
Former Mt. Tom Station Power Plant
200 Northampton Street
Holyoke, Massachusetts

FIGURE 2

SITE PLAN
April 2026



Property Boundary

Approximate Parcel Boundary

Municipal Boundary

N

1:10,800

0 450 900

Feet

Based on latest Nearmap Imagery.

Tighe&Bond

Appendix A:
Model Output

National Center for Computational Hydroscience and Engineering (NCCHE)

The University of Mississippi

DSS-WISE™ Lite Flood Simulation Report

Reservoir-type, sudden and complete bre
ach

Mt Tom Power Special Basin

NAXXXXX

April 08, 2026

Contact Information:

DSS-WISE™ Lite modeling questions: admin@dsswiseweb.ncche.olemiss.edu

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1.0 Overview

The Decision Support System for Water Infrastructure Security (DSS-WISE™) is an integrated software package combining 2D numerical flood modeling capabilities with a series of GIS-based decision support tools. It was developed by the National Center for Computational Hydroscience and Engineering (NCCHE) at the University of Mississippi and was initiated by the US Department of Homeland Security (DHS) Science and Technology Directorate through the Southeast Region Research Initiative (SERRI) Program.

A simplified, and fully automated, version of the DSS-WISE™ software suite (DSS-WISE™ Lite Ver 1.0) was developed on behalf of the US Army Corps of Engineers (USACE) Critical Infrastructure Protection and Resilience (CIPR) Program and the DHS Office of Infrastructure Protection. This simplified dam break flood modeling capability was available to interested parties through the Dams Sector Analysis Tool (DSAT) secure web portal until November 2014. An updated version with more features was developed on behalf of Federal Emergency Management (FEMA) and is available at dsswiseweb.ncche.olemiss.edu.

The DSS-WISE™ Lite software suite, running on NCCHE servers, automatically processes input files for dam-break modeling scenarios submitted by an user. DSS-WISE™ Lite further simplifies simulations by making several general overarching assumptions in an effort to streamline data preparation and computations.

The results produced by this simplified dam-break flood simulation tool represent a rough approximation. They are not intended to replace more detailed flood inundation modeling and mapping products or capabilities developed by hydraulic and hydrologic engineers and GIS professionals.

The user is, therefore, warned that professional engineering judgment should be used in the interpolation of the results generated by this simplified and automated dam-break flood analysis.

To learn more about DSS-WISE™ and DSS-WISE™ Lite visit us at:
`https://dsswiseweb.ncche.olemiss.edu`

Disclaimer

Elevation Datum

All reported elevations use the North American Vertical Datum of 1988 (NAVD 88).

2.0 Modeling Parameters and Conditions

2.1 Project Information

Project Name:	Mt Tom Power Special Basin
Scenario Name:	Reservoir-type, sudden and complete bre ach
NIDID:	NAXXXXX
Scenario Description:	1 active reservoir 1 active impounding structure reservoir-type, sudden and co mplete breach of Dam 1
User e-mail:	dazinheira@tighebond.com
Group:	MASSACHUSETTS

2.2 Simulation Parameters

Domain buffer distance (miles):	4.7
Simulation cell size requested (ft):	30.0
Simulation duration requested (days):	5

2.3 Impounding Structure(s) Characteristics

Number of Structures: 1

Structure Name:	Dam 1
Structure Type:	Embankment
Hydraulic Height (ft):	12.0
Crest Elevation (ft):	122.0
Length (ft):	424.085727607

2.4 Bridge(s) to be Removed

Number of Bridges: 0

2.5 User-Drawn Levees

Number of User-Drawn Levees: 1

Levee Name:	Levee 1
Start Elevation (ft):	130.0
End Elevation (ft):	130.0
Width(ft):	5.0
Length(ft):	804.837531435

2.6 Reservoir Characteristics

Number of Reservoirs: 1

Reservoir Name:	Special Basin
Selected Reservoir Point (Latitude/Longitude):	42.2782820046/-72.6026451035
Pool Elevation @ Max Storage (ft):	122.5
Maximum Storage Volume (ac-ft):	12.2
Pool Elevation @ Normal Storage (ft):	122.5
Normal Storage Volume (ac-ft):	12.2
Pool Elevation @ Failure (ft):	122.5
Failure Storage Volume (ac-ft):	12.2

2.7 Failure Conditions

Structure Name:	Dam 1
Structure Type:	Embankment
Failure Mode:	Total Dam Breach
Breach Type:	Embankment
Pool Elevation @ Failure (ft):	122.5
Storage Volume @ Failure (ac-ft):	12.2
Breach Location (Latitude/Longitude):	42.278343525/-72.6023071451

3.0 Automated Data Preparation and Job Flow Summary

3.1 Job Flow Summary

1. Prepare Digital Elevation Model (DEM) and Land Use/Land Cover (LULC) tiles for the Area of Interest (AOI) based on requested cellsize and maximum downstream distance.
2. Burn U.S. Army Corps of Engineers (USACE) levee lines and group-specific levee lines (if any) within the AOI, as well as any user-drawn levees into the DEM.
3. Assign Manning's coefficients based on LULC classifications.
4. Validate user provided simulation input parameters.
5. Remove user identified bridges from the DEM.
6. Estimate reservoir bathymetry.
7. Extend impounding structures if the specified reservoir level cannot be contained.
8. Fill reservoir to specified failure elevation.
9. Prepare boundary condition and all input data for simulation.

3.2 Reservoir Bathymetry and Filling

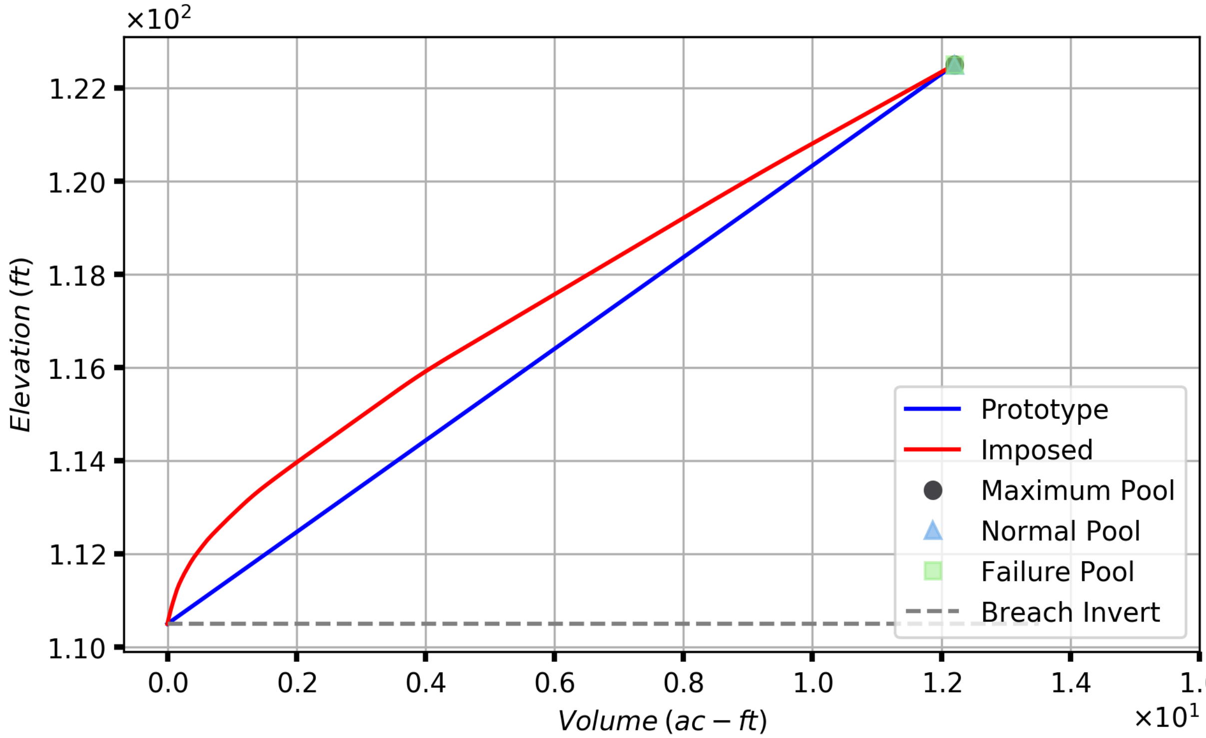

Figure 1. Stage-Volume Curve for Reservoir: Special Basin.

Prototype: Theoretical cubic Hermite spline curve generated from user-provided reservoir elevation and volume information.
Imposed: Measured from reservoir bathymetry after filling to the failure elevation.

The reservoir water surface was detected to be in the DEM, so bathymetry estimation was performed using the prototype stage-volume curve shown above.
User-given Storage Volume at Failure (ac-ft): 12.2
Imposed Storage Volume at Failure (ac-ft): 12.2
After filling to the failure elevation, the imposed reservoir volume matched 100.0% of the prototype volume.

3.3 Data Sources

1. Digital Elevation Models

   Sources: USGS 3D Elevation Program (3DEP) 2019 datasets, NOAA, and any group-specific DEM data if provided

   Resolutions: 2, 1, 1/3, and 1/9th arc-second, 1 meter, and varying resolutions of group-specific DEM data (if any), based upon availability

   Vertical Datum: NAVD88

   Horizontal Datum: NAD83

2. National Land Use/Land Cover Data

   Sources: USGS 2016 (CONUS), 2011 (Alaska), and 2001 (Hawaii and Puerto Rico)

   Resolution: 30 m

3. National Levee Database

   Source: USACE

4. Group-specific levee data

   Source: Provided by individual groups

3.4 Digital Elevation Model

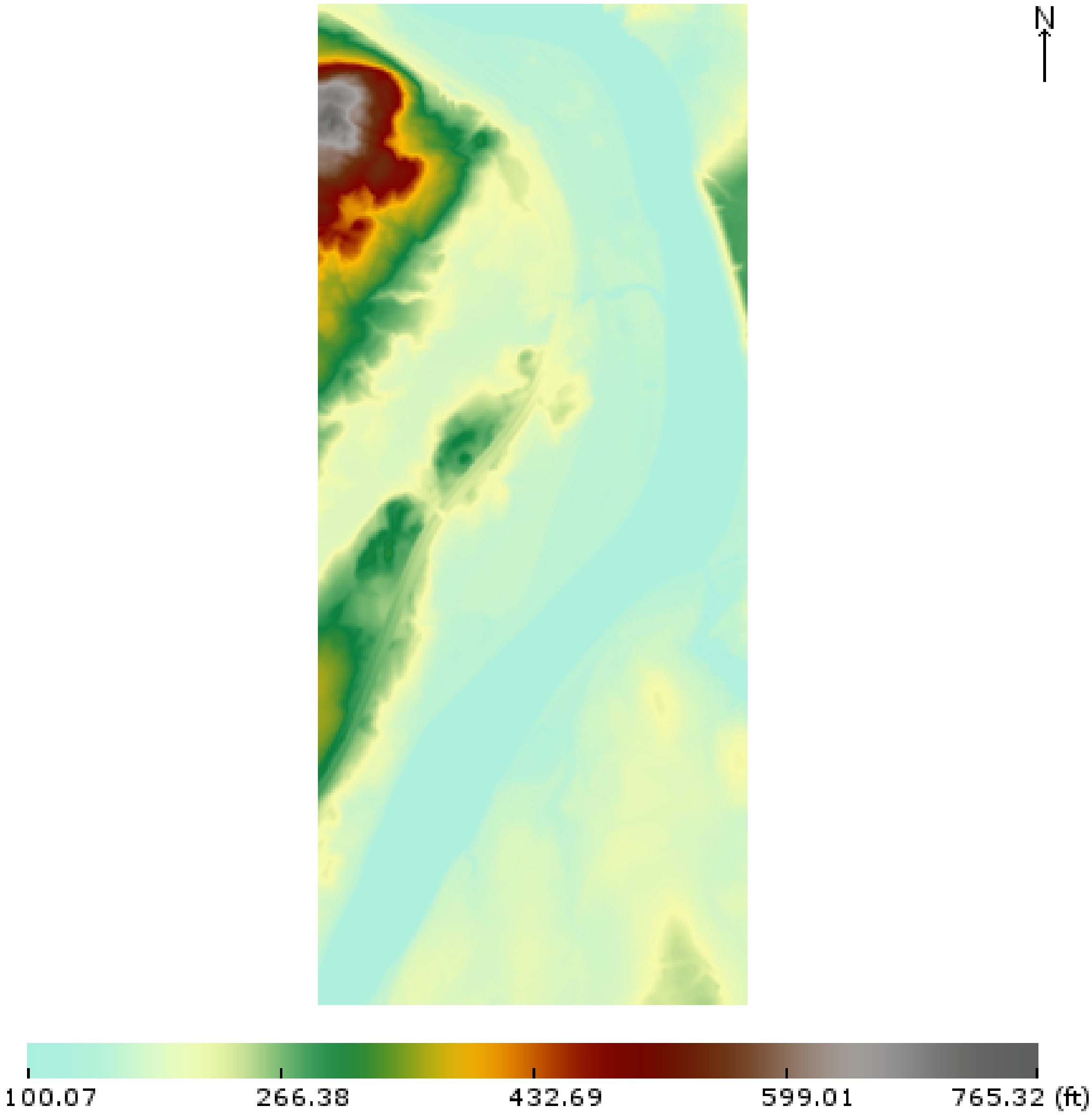

Image Dimensions: N-S: 2.574 miles E-W: 1.108 miles

Figure 2. Map of Digital Elevation Model with Levees for AOI.

3.5 Reservoir Boundary and Breaching Structure

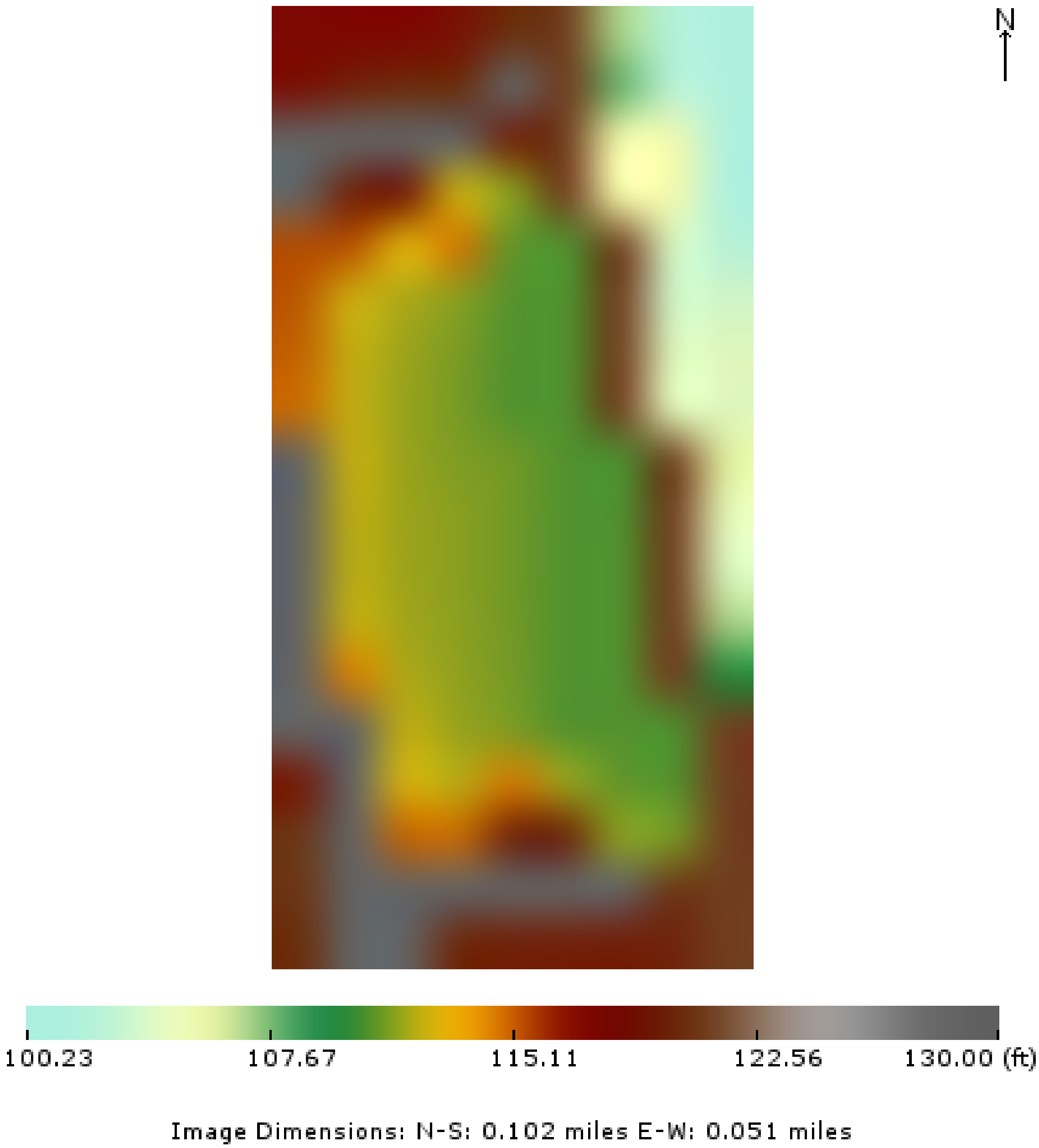

Figure 3. Map of Reservoir Boundary and Breached Structure.

3.6 Reservoir Initial Depth Profile

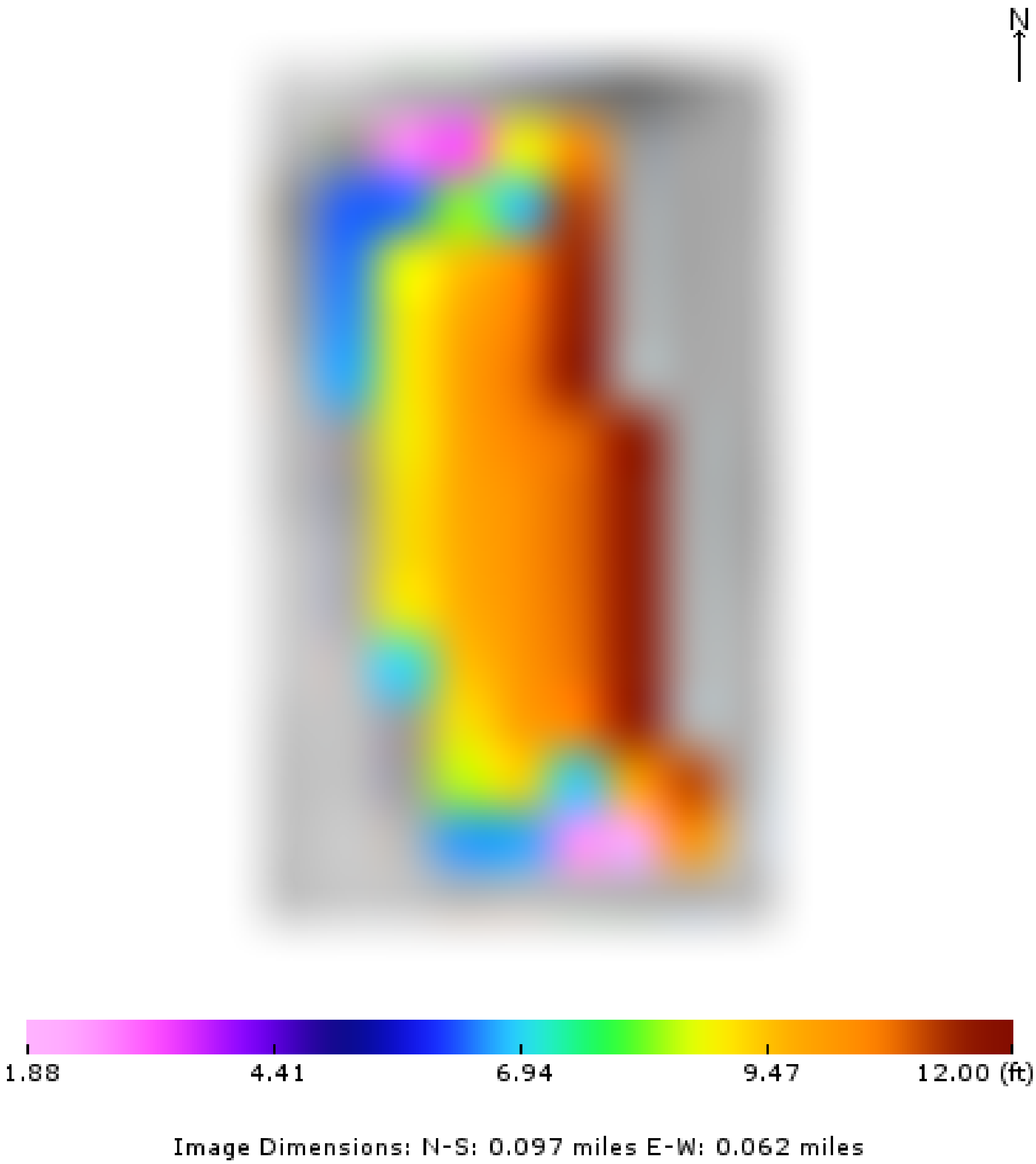

Figure 4. Map of Initial Depths in Reservoir at Failure Conditions.

3.7 Land Use/Land Cover

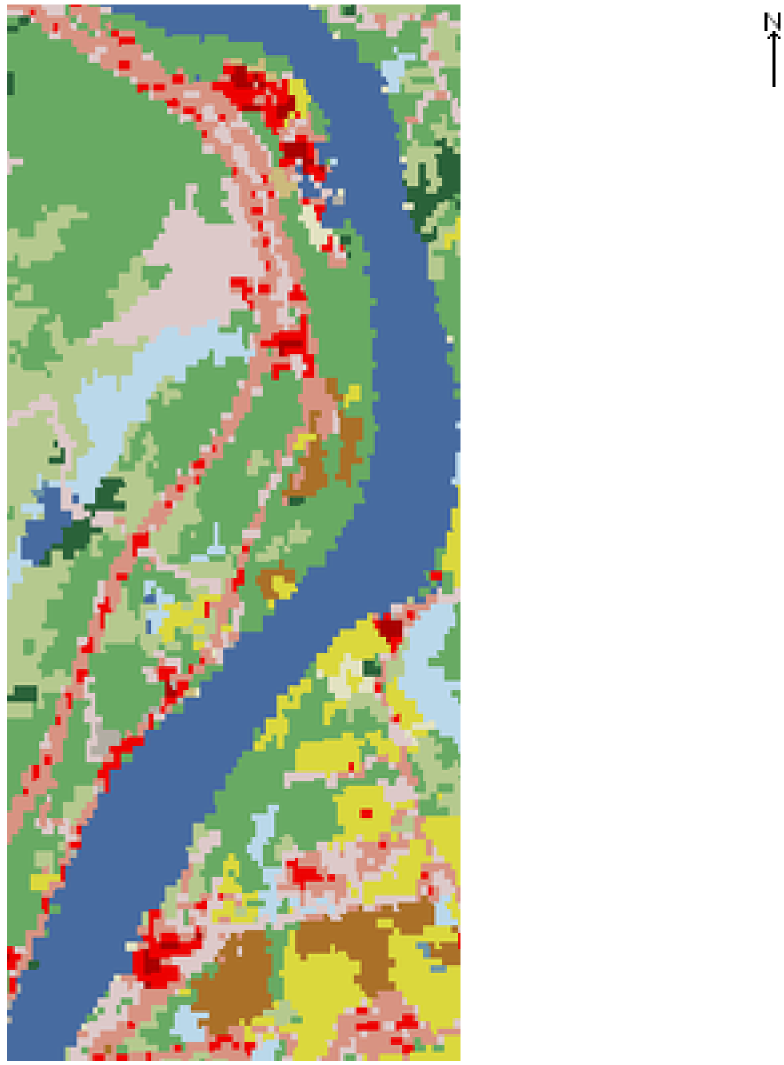

Image Dimensions: N-S: 2.574 miles E-W: 1.108 miles

Figure 5. Map of Land Use for AOI.

4.0 Simulation Results

4.1 Simulation Summary

Simulation Request Received:	06:57 AM CDT (04/08/2026)
Simulation Start Time:	06:59 AM CDT (04/08/2026)
Simulation End Time:	07:00 AM CDT (04/08/2026)
DEM resolution used for simulation (ft):	30.0
DEM resolution requested (ft):	30.0
Final distance reached downstream (miles):	2.2
Domain buffer distance (miles):	4.7
Elapsed simulation time after breach initiation (hrs):	120.0
Remaining reservoir volume at termination (%):	0.0
Termination condition:	Simulation end time reached(120.0 hours).

4.2 Land Use and Manning's Roughness Coefficient for Inundated Area

Land Use Description	% of Inundated Area	n-Value($m^{-1/3}s$)	Code	Color
Open Water	98.91	0.0330	11	
Deciduous Forest *	0.62	0.1000	41	
Grassland/Herbaceous	0.14	0.0400	71	
Barren Land	0.08	0.0113	31	
Woody Wetlands	0.08	0.1500	90	
Hay/Pasture	0.07	0.0350	81	
Evergreen Forest *	0.02	0.1000	42	
Mixed Forest *	0.02	0.1200	43	
Unclassified	0.00	0.0350	0	
Perennial Snow/Ice	0.00	0.0100	12	
Developed, Open Space	0.00	0.0404	21	
Developed, Low Density	0.00	0.0678	22	
Developed, Medium Density	0.00	0.0678	23	
Developed, High Density	0.00	0.0404	24	
Dwarf Scrub *	0.00	0.0350	51	
Shrub/Scrub	0.00	0.0400	52	
Sedge/Herbaceous *	0.00	0.0350	72	
Lichens *	0.00	0.0350	73	
Moss *	0.00	0.0350	74	
Cultivated Crops	0.00	0.0700	82	
Emergent Herbaceous Wetlands	0.00	0.1825	95	

Note: * indicates an n-value estimated by NCCHE. ** indicates an n-value given by the user. Other values are taken from literature.

4.3 Coverage and Sources of DEM Raster Datasets

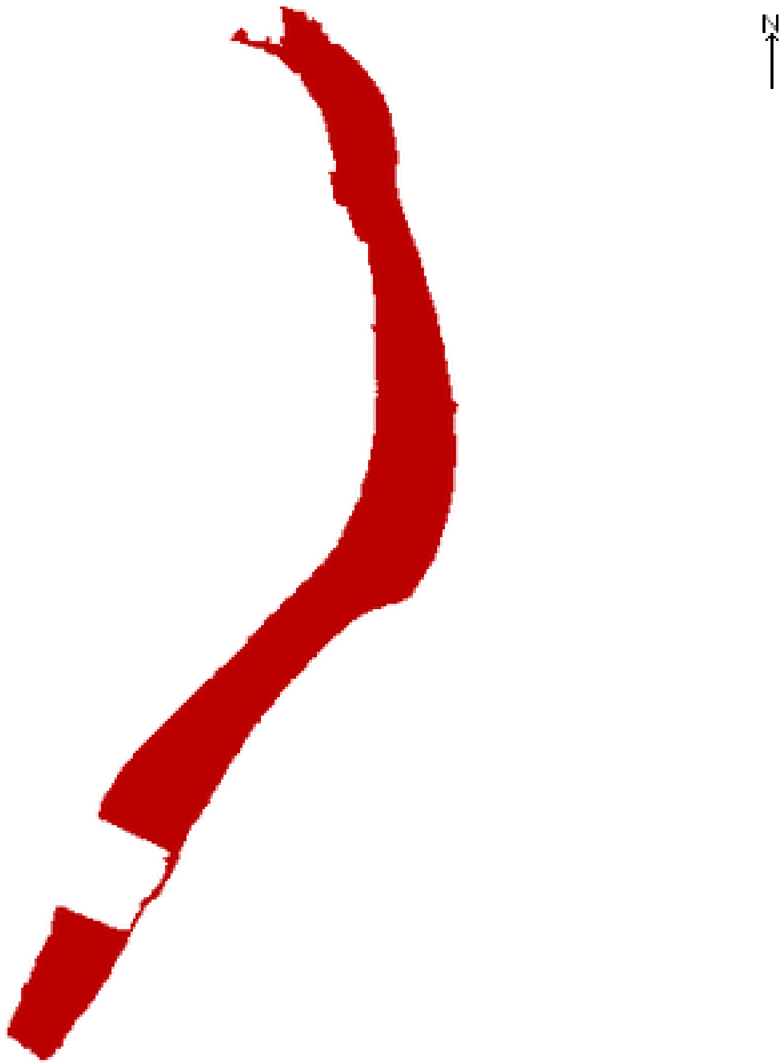

Figure 6. Coverage of DEM Raster Datasets in the Inundation Area.

DEM Source	Source Resolution	Source Dataset	Color
USGS	1 arc-second	usgs_1as	
USGS	1/3 arc-seconds	usgs_13as	
USGS	1 meter	usgs_utm_z18_1m	

Note: The DEM for this job was created from the source DEM raster datasets listed above. These DEM raster datasets were resampled and reprojected to the user defined cell size and UTM zone, respectively. Resampled and projected DEM raster datasets were then stacked in the order specific to the group under which this simulation was submitted.

4.4 Maximum Flood Depth

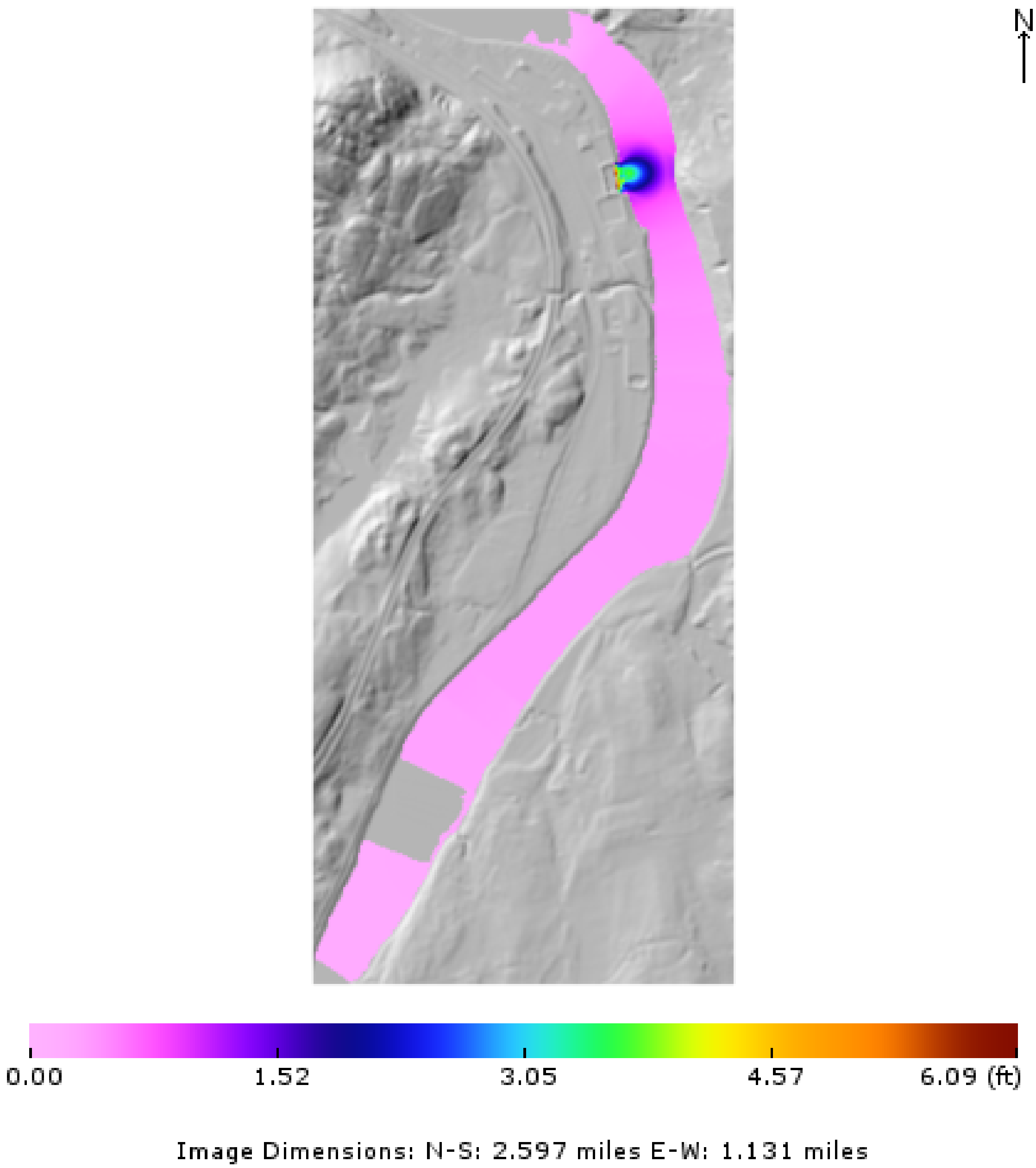

Figure 7. Maximum Flood Depth Map.

4.5 Flood Arrival Time

Flood arrival time is measured from the beginning of the simulation.

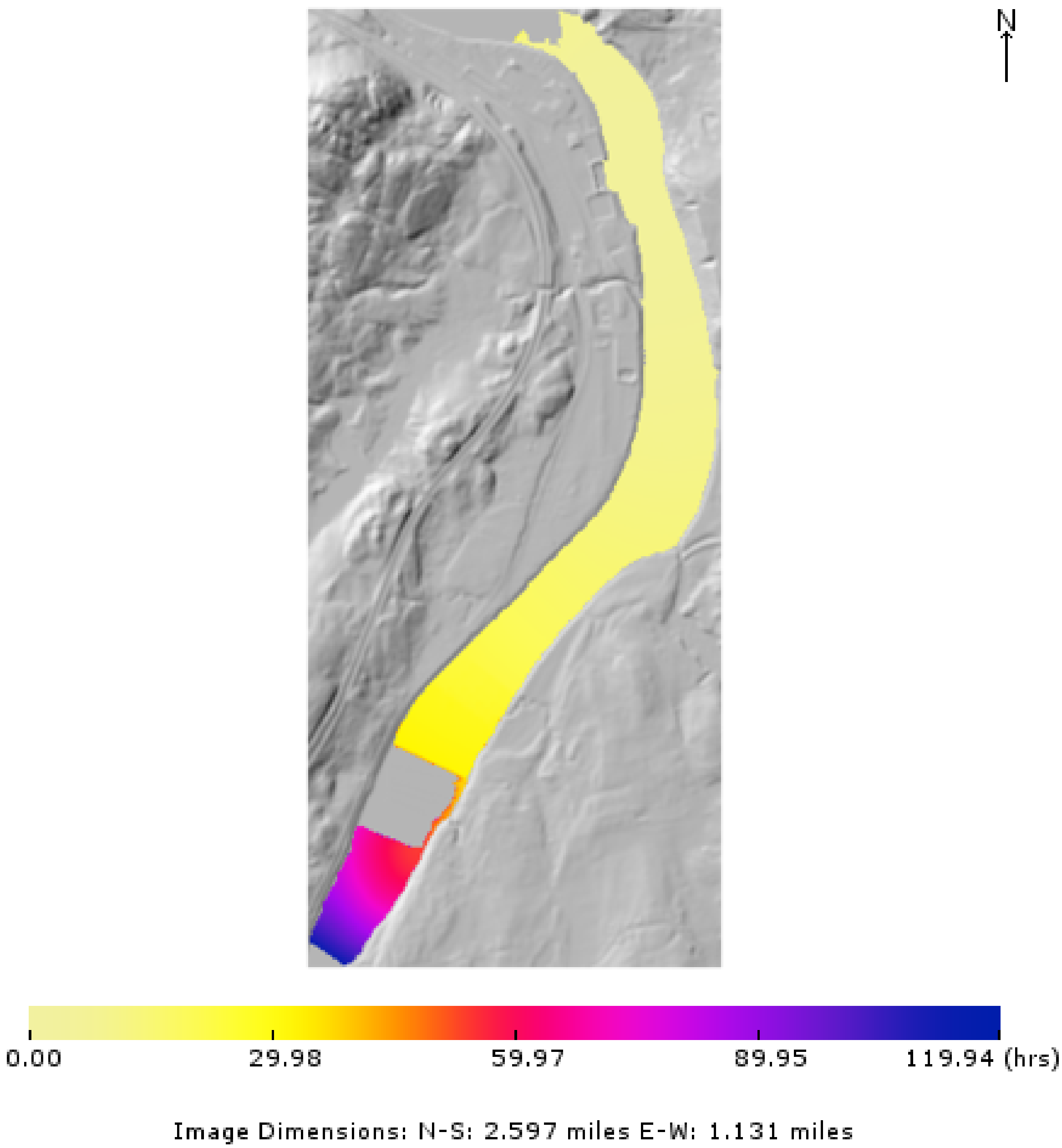

Figure 8. Flood Arrival Time Map.

4.6 Computed Breach Hydrograph through the Breaching Structure

The positive discharges (Q^{+}) are measured in the positive direction with respect to each observation line.

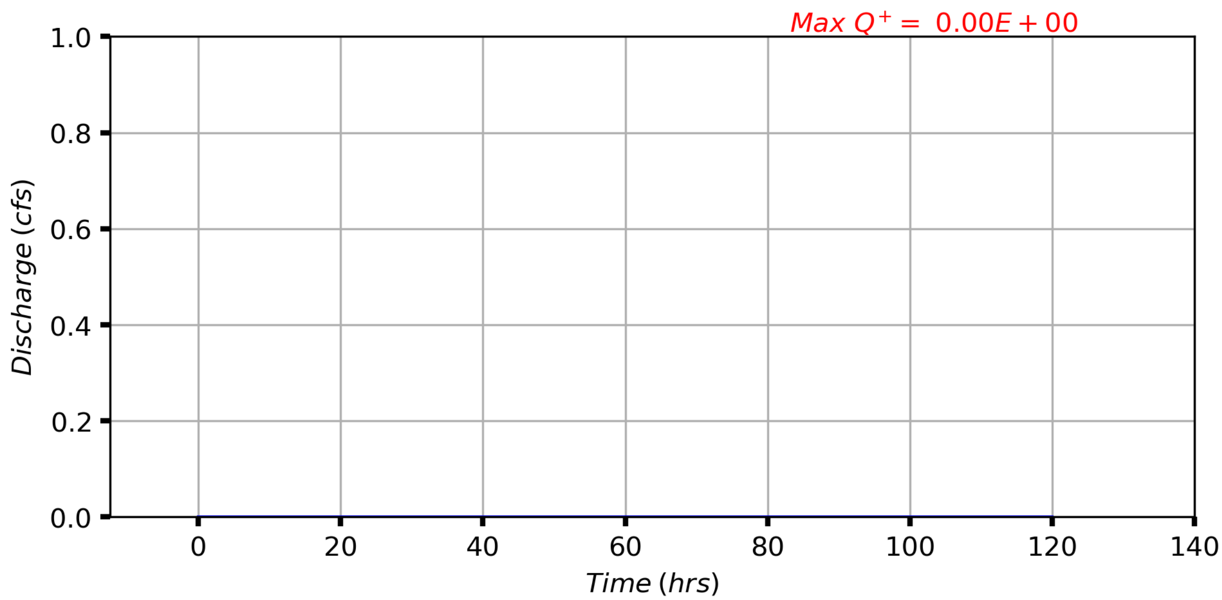

Figure 9. Breach Discharge Measured at: Dam 1.

4.7 Observation Line Hydrograph(s)

The positive discharges (Q^+) are measured in the positive direction with respect to each observation line.

No observation lines were defined.

4.8 Breaching Reservoir Time History

The reservoir water surface elevation as a function of time was computed by summing the water depth and bed elevation at a regular interval at the user-specified reservoir point.

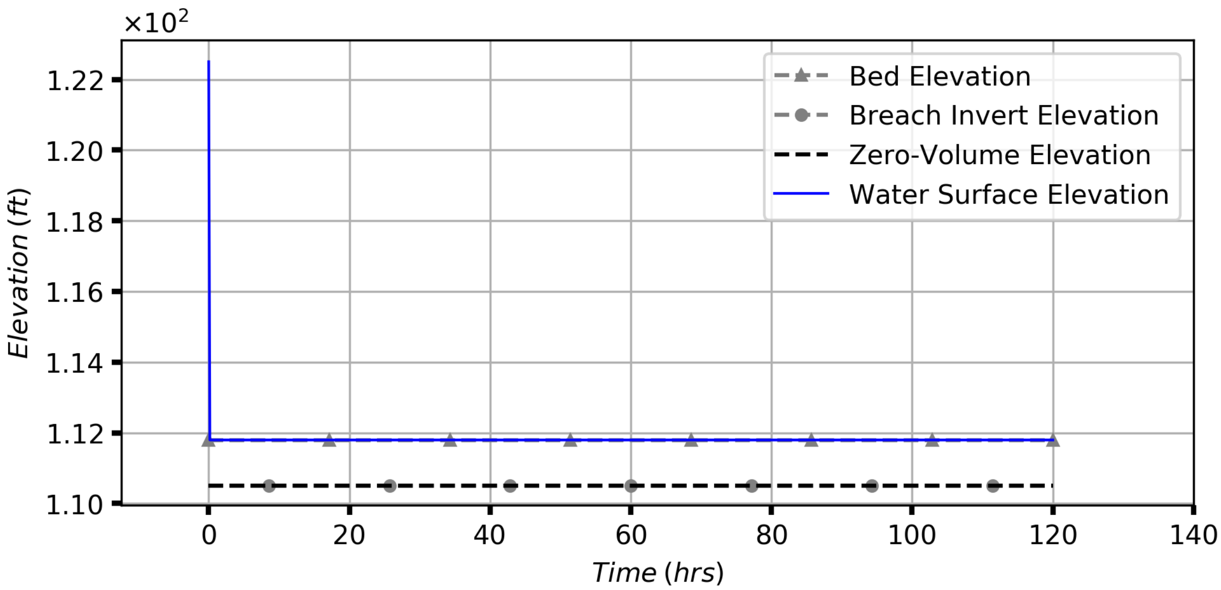

Figure 10. Reservoir Water Surface Elevation.

The reservoir volume as a function of time was computed by the following formula: $V_t = V_{init} - V_{net}$, where V_t is the reservoir volume at a given time, V_{init} is the reservoir's initial imposed volume, and V_{net} is the net volume that has crossed downstream across any part of the breaching structure's centerline up to that point. Since this only considers water which has completely exited the breach, it should be taken as an approximation.

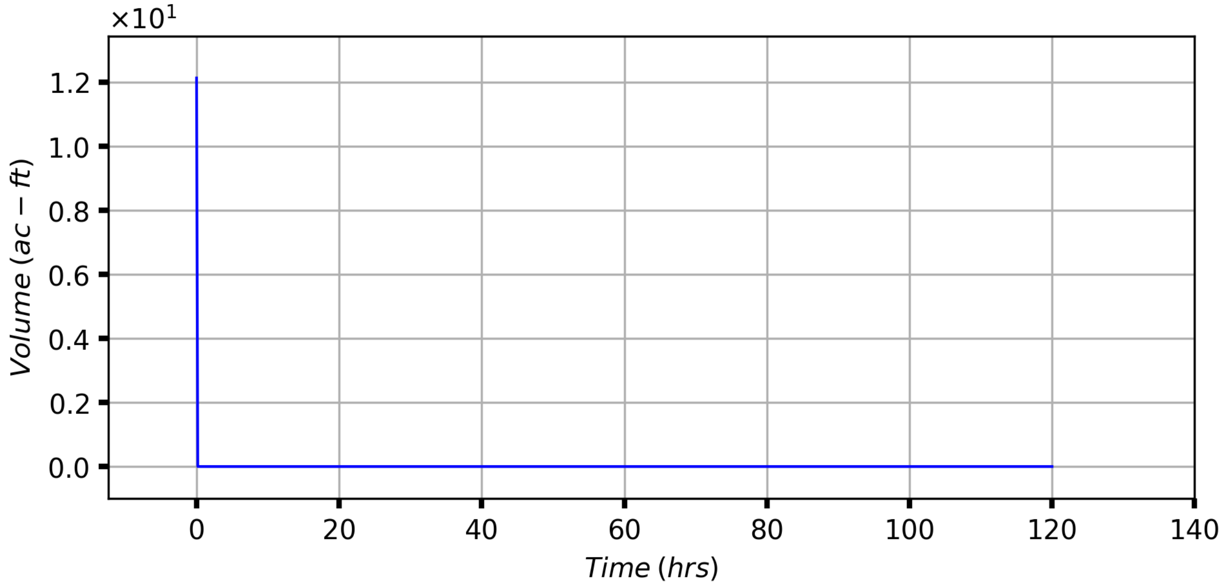

Figure 11. Reservoir Volume.

4.9 Downloading Simulation Results

The simulation results can be accessed at the following web address:

`https://dsswiseweb.ncche.olemiss.edu/download`

Job ID: 111928

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