EMERGENCY ACTION PLAN FOR PETIT LAKE DAM

STATE ID NO. 112-009-00462; NID NO. GA00685

Revision 3

PETIT LAKE – BIG CANOE
PICKENS COUNTY, GEORGIA

Submitted to

BIG CANOE PROPERTY OWNER'S ASSOCIATION

10586 Big Canoe

Jasper, Georgia 30143

Submitted by

Geosyntec consultants

engineers | scientists | innovators

May 2018

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1. INTRODUCTION

1.1 Statement of Purpose

The purpose of the Emergency Action Plan (EAP) is to establish procedures for warning, evacuating and protecting persons and property which would be endangered in the event of a failure of the Petit Lake Dam, in Big Canoe, Georgia, as well as taking timely action to notify the appropriate emergency management agencies, law enforcement bodies, and/or governing officials of possible, impending, or actual failure of the dam.

1.2 History of Document

The EAP for Petit Lake Dam was originally created and revised by another consultant (Jordan, Jones, and Goulding) in 1998 and 2007, respectively. A summary of known dates of revision of this EAP is provided in Appendix E and future revisions and modifications should be added to this table.

This EAP was revised by Geosyntec Consultants, Inc. (Geosyntec), and relies upon information and analyses developed by others as identified in the Plan. Geosyntec has developed this plan in good faith for use by the Big Canoe Property Owner's Association (POA) and the Emergency Management Agencies responsible for Petit Lake Dam. This plan may not be relied upon by other parties and may not be modified without the express written permission of Geosyntec.

Geosyntec updated the EAP for Petit Lake Dam based on guidance from the Georgia Safe Dams Program document *Engineer Guidelines* (2015), and templates referred to in *Engineer Guidelines* created by the North Carolina Department of Environmental Quality (2016) and the Association of State Dam Safety Officials (2010).

The inundation mapping and calculations provided in Appendix B were original created by Jordan, Jones, and Goulding and have not been updated by Geosyntec. The Figures provided of inundation maps and Big Canoe property parcels, and the names and addresses provided in Tables 1 and 2 were provided by Big Canoe. The property parcels and addresses for properties downstream of Big Canoe in Table 3 were provided by the Pickens County Emergency Management Agency (EMA).

2. NOTIFICATION FLOWCHART

The Notification Flowcharts (Figure 1 and 2) summarize the following information which is applicable during an impending or imminent failure of the Petit Lake Dam:

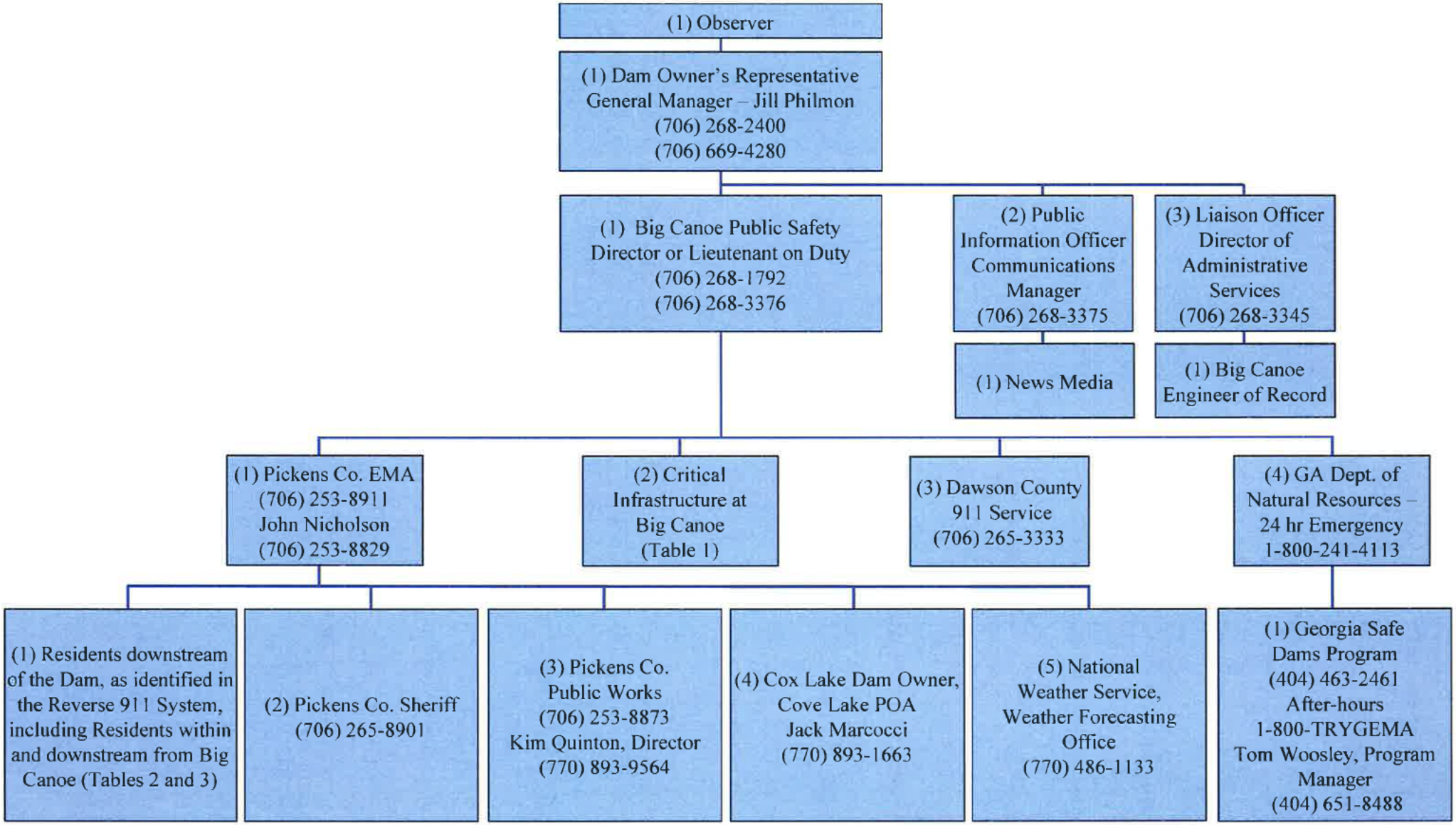
- Who is responsible for notifying Petit Lake Dam owner representative(s) and/or emergency management official(s);
- Who is to be notified; and
- What is the priority order in which individuals are to be notified.

All residents and employees of Big Canoe can and should be observers of unusual events at Petit Lake Dam. This observer group will be educated through the local newsletter regarding what are symptoms of impeding or imminent failure, and who at the POA should be contacted to initiate the Notification Process.

The Dam Owner's Representative or his designee is responsible for initiating the Notification Process. The Dam Owner' s Representative or his designee will verify the condition of Petit Lake Dam which the observer has identified and initiate the notification. The Dam Failure Notification Flow Charts (Figures 1 and 2 and Tables 1, 2, and 3) identify the residents, emergency management agencies, government agencies and Big Canoe Property Owners Association that should be contacted immediately and in what order. Subsequent contacts by each of these individuals are shown in priority order.

Figure 1: Petit Lake Dam

Dam Failure Notification Flowchart for Conditions C (Level 1) & B (Level 2) Emergencies

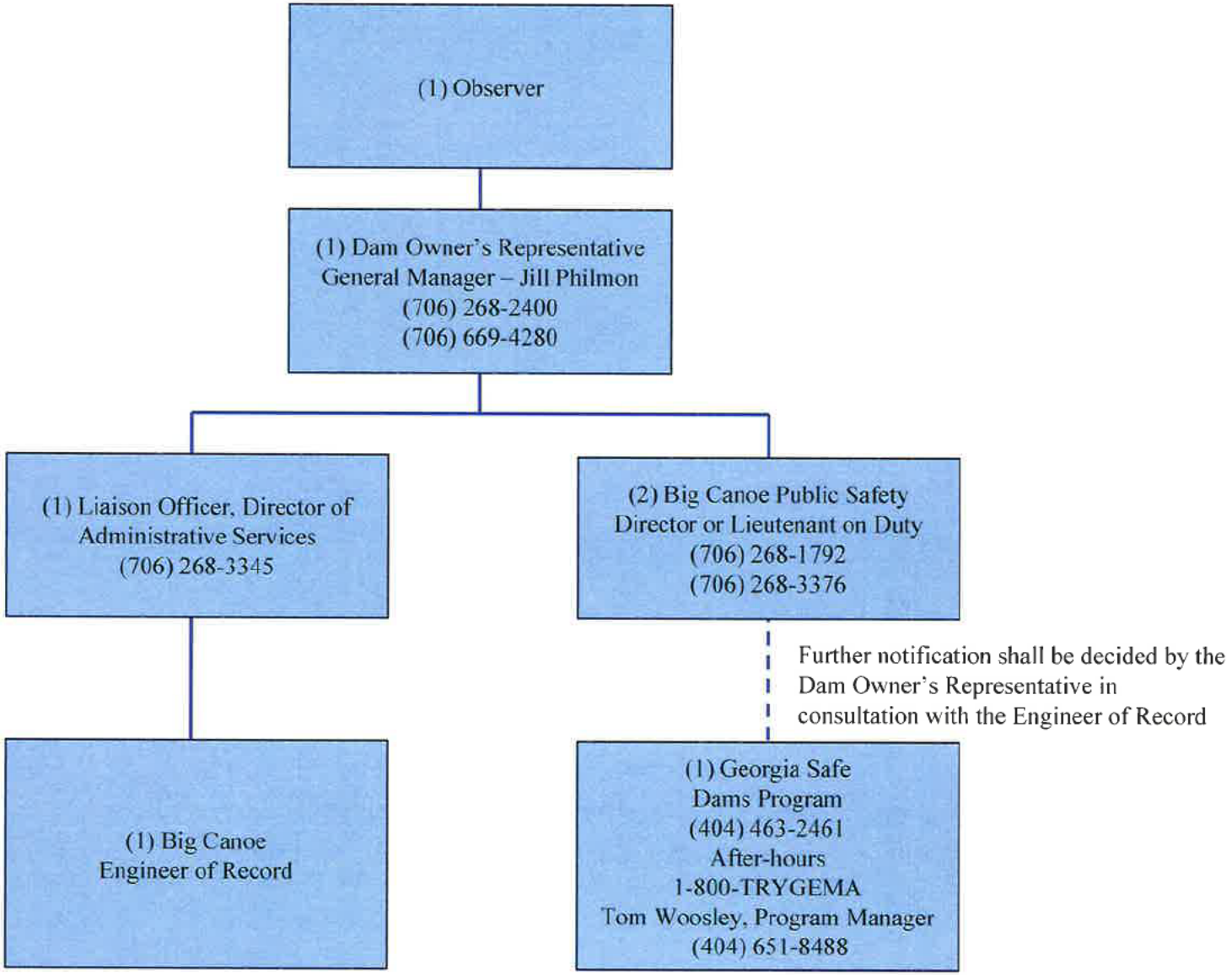


(#) = Order of Priority of Notification

Note: Flowchart and contact information provided by Big Canoe Property Owner's Association on 9, 19 and 19 June 2017.

Figure 2: Petit Lake Dam

Dam Failure Notification Flowchart for Condition A (Level 3) Emergencies



(#) = Order of Priority of Notification

Note: Flowchart and contact information provided by Big Canoe Property Owner's Association.

TABLE 1[1]
DAM FAILURE NOTIFICATION OF BIG CANOE CRITICAL INFRASTRUCTURE JUST BELOW THE DAM

EMERGENCY ACTION PLAN FOR PETIT LAKE DAM
PETIT LAKE DAM, BIG CANOE, GEORGIA

FACILITY	ADDRESS/LOT NUMBER	PHONE NUMBER
Utilities Office	Highland Trail/Wolfscratch Drive	706/268-3400
Swim Club	Wolfscratch Drive	706/268-3317
Fitness Center	Wolfscratch Drive	706/268-3441
Chapel	Wolfscratch Drive	706/268-3203
Tennis Center	Wolfscratch Drive	706/268-3367
IGA Express	Wolfscratch	706/268-3326
Lakewatch Village	Golf Club Drive	706/268-3326
Clubhouse	Golf Club Drive	706/268-3326
Fire Station #3	Wolfscratch Drive	706/268-1792
Duffers	Golf Club Drive	706/268-3273
Golf Shop	Golf Club Drive	706/268-3323
Cart Barn	Golf Club Drive	706/268-3323

Note:

[1] Facilities and contact information provided by Big Canoe Property Owner's Association on 26 April 2017 based on Inundation Mapping conducted by Jones, Jordan, and Goulding

TABLE 2[1]
DAM FAILURE NOTIFICATION OF BIG CANOE RESIDENTS AND OTHER FACILITIES

EMERGENCY ACTION PLAN FOR PETIT LAKE DAM
PETIT LAKE DAM, BIG CANOE, GEORGIA

#	Street Name Address	Owner's Name	Email address 1	Email address 2	BC Home Number	Phone Number 1	Phone Number 2	Phone Number 3
2569	Wilderness Parkway	Campbell, Douglas & Shannon	[redacted]					
5888	Wilderness Parkway	Williams, Sally						
87	Tanager Way	Farias, Fran & Phillip						
216	Indigo Bunting Trail	Turner, Jeffrey						
254	Indigo Bunting Trail	Harper, David						
270	Indigo Bunting Trail	Risoldi, Ciro						
288	Indigo Bunting Trail	Honeycutt, Boyce						
289	Indigo Bunting Trail	Lacey, Claude						
255	Indigo Bunting Trail	Rozeboom, Loren						
0	Bluebird Court	Reynolds, David & Patsy						
18	Bluebird Court	Reynolds, David & Patsy						
172	Canada Geese Point	Pepper, Ralph						
230	Canada Geese Point	Ebbeskotte, Carolyn						
205	Canada Geese Point	May, Randy						
121	Goldfinch Point	Perkel, Karen and Ralph						
36	Petit Ridge Drive	Huffstetler, Mark & Rachel						
84	Flycatcher Point	Clough, Gerald & Anne						
190	Swallow Point	Leff, Steven						
181	Swallow Point	Malgeri, Linda						
115	Swallow Point	Arthurs, Lee						
95	Swallow Point	Kelly, David and Laura						
0	Swallow Point	Bradley Family Trust						
18	Thrush Turn	Coleman, William						
56	Thrush Turn	Reisinger, Ralf & Daniela						
74	Thrush Turn	#47 Holding LLC						
40	Holly Point	Young, Alden						
287	Willow Drive	Roberson, Ellen						

TABLE 2[1]
DAM FAILURE NOTIFICATION OF BIG CANOE RESIDENTS AND OTHER FACILITIES

EMERGENCY ACTION PLAN FOR PETIT LAKE DAM
PETIT LAKE DAM, BIG CANOE, GEORGIA

#	Street Name Address	Owner's Name	Email address 1	Email address 2	BC Home Number	Phone Number 1	Phone Number 2	Phone Number 3
135	Chestnut Rise	Collins, Norma	[redacted]					
135	Chestnut Rise	Abernathy, MaryAnn						
135	Chestnut Rise	Scott, Norman & Jonny						
145	Chestnut Rise	Milles, Purtell						
145	Chestnut Rise	Faust, Richard & Wendy						
145	Chestnut Rise	Moser, Nancy						
145	Chestnut Rise	Ferrini, Joseph						
155	Chestnut Rise	House, Jerry						
155	Chestnut Rise	Eaves, Dennis						
155	Chestnut Rise	Doll, Herman						
20	Sconti Ridge	Manning, Joyce						
20	Sconti Ridge	Parks, William						
20	Sconti Ridge	Collier, Daryl & Linda						
20	Sconti Ridge	Hanson/Shaw						
34	Sconti Ridge	Brown, Donald & MaryAnn						
34	Sconti Ridge	Hayes, Jr., Mark						
34	Sconti Ridge	Young, Shelia						
34	Sconti Ridge	Verell, William & Susan						
48	Sconti Ridge	Wagner, William & Patricia						
48	Sconti Ridge	Sherman, Karen						
48	Sconti Ridge	Hacker & Ramsey						
86	Sconti Ridge	Campbell,Mark						
86	Sconti Ridge	McCann, Debra and Ronald						
86	Sconti Ridge	Captan, Mohamed & Marcia						
86	Sconti Ridge	Wood, Barbara						
116	Sconti Ridge	Mullins, Jr. B.A.						
116	Disharoon	Floyd, Greg						

TABLE 2[1]
DAM FAILURE NOTIFICATION OF BIG CANOE RESIDENTS AND OTHER FACILITIES

EMERGENCY ACTION PLAN FOR PETIT LAKE DAM
PETIT LAKE DAM, BIG CANOE, GEORGIA

#	Street Name Address	Owner's Name	Email address 1	Email address 2	BC Home Number	Phone Number 1	Phone Number 2	Phone Number 3
116	Sconti Ridge	Capone & Rutledge	[redacted]					
140	Sconti Ridge	Riley, Ronald						
40	Treetop Lane	Chait, Susan						
104	Treetop Lane	Paynter, Fredrick						
309	Buckskull Hollow Drive	Brown, Carolyn						
301	Buckskull Hollow Drive	Warren, Claude						
57	Buckskull Hollow Drive	Henil & Brennan						
41	Buckskull Hollow Drive	Dollar, Dari & David						
11	Buckskull Hollow Drive	Bassett, Robert & Jolyne						
22	Buckskull Hollow	McCardel, James & Dora Jean						
26	Buckskull Hollow	Davis, James						
84	Highland Court	Nicholson						
110	Highland Court	Lundstrom						
0	Highland Court	BC LLC						
196	Sconti Knoll Drive	Cody, Gail						
200	Sconti Knoll Drive	Horsley, Rosemarie						
193	Sconti Knoll Drive	Kowalski, George						
191	Sconti Knoll Drive	Tanner, Caroll						
60	Sconti Ridge	Hackney						
86	Sconti Point	Crawford, Howard Wayne						
0	Sconti Point	Rhodus, Gary and Marsha						
0	Sconti Point	Bhold, Adriana						
0	Sconti Point	Bhold, Adriana						
62	Sconti View Drive	Slade, David						
34	Sconti Ct.	Landreth, Porter						
21	Chestnut Knoll Point	Rees, James						
5	Chestnut Knoll Point	Moon, Jacqueline						

TABLE 2[1]
DAM FAILURE NOTIFICATION OF BIG CANOE RESIDENTS AND OTHER FACILITIES

EMERGENCY ACTION PLAN FOR PETIT LAKE DAM
PETIT LAKE DAM, BIG CANOE, GEORGIA

#	Street Name Address	Owner's Name	Email address 1	Email address 2	BC Home Number	Phone Number 1	Phone Number 2	Phone Number 3
7	Chestnut Rise	Bowers, Joanne	[redacted]					
9	Chestnut Knoll Point	Leardini, Paolo						
11	Chestnut Knoll Point	Gurusamy & Subbannan						
31	Chestnut Knoll	Genone, Terry and Loretta						
41	Chestnut Knoll Point	Nelson, Ronald						
28	Tanager Way	Beraha, Dan & Ellen						
226	Wolfscratch Village Cir.	Chapel						
51	Clubhouse Drive	Apgar, Cindy & Dan						
79	Clubhouse Drive	Fargason, Charles & Gail						
65	Clubhouse Drive	Dubose Calvin Jr. & Mary ann						
1944	Wilderness PKWY	Mcclure, William & Nancy						
	Clubhouse Drive	Bowers-Mcclure, Mark & Joanne						
29	Clubhouse Drive	Bell, Pamela & Kerry						
1944	Wilderness Parkway	Hecht, Bruce and Rosemary						
1944	Wilderness Parkway	Tillery, Roger & Patty						
1944	Wilderness Parkway	Prince,Bruce & Judith						
1944	Wilderness Parkway	Chu, Kathleen and Norman						
1944	Wilderness Parkway	Gregg, Fredrick & Sue						
1944	Wilderness Parkway	Kadechuk, Barry & Linda						
1944	Wilderness Parkway	Delashmutt, R. E.						
1944	Wilderness Parkway	Hyland, Keith and Lauren						
1944	Wilderness Parkway	Lehmberg, Bill & Peggy						
1944	Wilderness Parkway	Zamborsky, Joe and Lis						
1944	Wilderness Parkway	Salcedo, Cesar & Anna						
1944	Wilderness Parkway	Dicus, Patti & Frank						
1944	Wilderness Parkway	Farias, Fran & Phillip						
315	Choctaw Pass	Anne Bopp						

TABLE 2[(1)]
DAM FAILURE NOTIFICATION OF BIG CANOE RESIDENTS AND OTHER FACILITIES

EMERGENCY ACTION PLAN FOR PETIT LAKE DAM
PETIT LAKE DAM, BIG CANOE, GEORGIA

#	Street Name Address	Owner's Name	Email address 1	Email address 2	BC Home Number	Phone Number 1	Phone Number 2	Phone Number 3
333	Choctaw Pass	Auchter, Barbara and Thorne	[redacted]					
126	Sinti trail	Tiller, Micheal D. & Valerie						
140	Sinti Trail	Albritton, Jeffery						
190	Sinti trail	Fellows, Henry & Pamela						
204	Sinti trail	Heller, Steve & Carol						
220	Sinti trail	Morris, William and Margie						
75	Twin Creek Drive	Back, Stephen and Susan						
101	Twin Creek Drive	Psalmond, Phillip and Tami						
115	Twin Creek Drive	Clark, Brandon and Monica						
131	Twin Creek Drive	Boudreau, Bill and Cindy						
151	Twin Creek Drive	Creel, Lynda and Micheal						
185	Twin Creek Drive	Santoro, Ann and Peter						
104	Twin Creek Drive	Willett, Roy & Weslie						
80	Twin Creek Drive	Cetrino, Carol/Piccirillo, Mark						

Note:
(1) Contact information provided by Big Canoe Property Owner's Association on 25 April 2017.

TABLE 3[1]
DAM FAILURE NOTIFICATION OF PROPERTIES DOWNSTREAM OF BIG CANOE

EMERGENCY ACTION PLAN FOR PETIT LAKE DAM
PETIT LAKE DAM, BIG CANOE, GEORGIA

#	Street Name Address	Parcel ID
295	Blackwell Creek Way	049A 064
121	Chastain Court	049 024
59	Clint Court	050 022
916	Cove Lake Drive	049 090 112
976	Cove Lake Drive	049 090 113
968	Cove Lake Drive	049 090 114
903	Cove Lake Drive	049 090 115
141	Cove Lake Drive	049 090 116
779	Cove Lake Drive	049 090 117
661	Cove Lake Drive	049 090 118
543	Cove Lake Drive	049 090 119
112	Cove Lake Drive	049 090 120
459	Cove Lake Drive	049 090 121
391	Cove Lake Drive	049 090 122
351	Cove Lake Drive	049 090 123
303	Cove Lake Drive	049 090 124
249	Cove Lake Drive	049 090 125
8822	Cove Road	049 090
385	Del Moore Road	049 021
11117	Highway 53 East	050 023
10322	Highway 53 East	050 029
100	Hunters Trace	049A 003
1065	Hunters Trace	049A 031
1109	Hunters Trace	049A 032

Note:
[1] Property information provided by the Pickens County EMA on 21 February 2018. Personal names and contact information for residents outside of Big Canoe are not accessible outside of the Pickens County EMA CodeRED system.

TABLE 3[1]
DAM FAILURE NOTIFICATION OF PROPERTIES DOWNSTREAM OF BIG CANOE

EMERGENCY ACTION PLAN FOR PETIT LAKE DAM
PETIT LAKE DAM, BIG CANOE, GEORGIA

#	Street Name Address	Parcel ID
30	Justice Way	049 030
43	Justice Way	049 031 001
16	Limestone Trail	050 028 001
44	MacKenzie Lane	049 089
533	Old Mill White Road	049 013
1493	Old Mill White Road	049 017
1543	Old Mill White Road	049 020
1985	Old Mill White Road	050 026
2192	Old Mill White Road	050 027
2164	Old Mill White Road	050 027 002
40	Overlook Court	049 090 128
27	Overlook Court	049 090 129
520	Partain Road	049 119
638	Partain Road	049 121
54	Pendley Woods Road	049 124
24	Pony Lane	049A 017
584	Redbud Pass	049A 051
451	Redbud Pass	049A 053
874	Sparkling Springs Road	049 019 001 & 049 019 002
189	Timber Creek	049 089 008
87	Trotters Lane	049A 001
125	Trotters Lane	SEWER PLANT

Note:
[1] Property information provided by the Pickens County EMA on 21 February 2018. Personal names and contact information for residents outside of Big Canoe are not accessible outside of the Pickens County EMA CodeRED system.

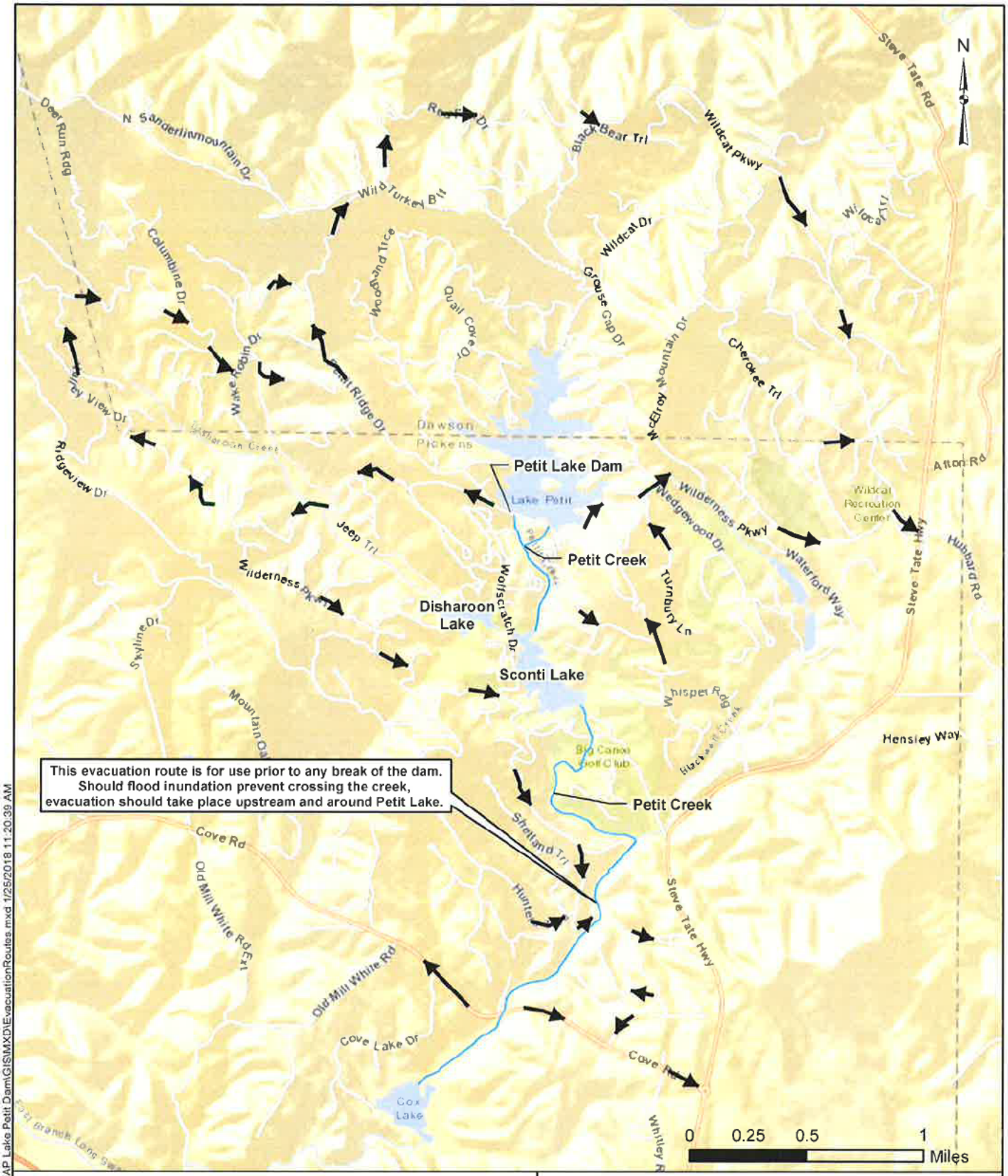
3. PROJECT DESCRIPTION

Petit Lake Dam is located within the Big Canoe Development on Petit Creek about 5.8 miles upstream of Marble Hill, in Pickens County, north central Georgia. The reservoir formed by the dam has a surface area of 104 acres at a normal pool elevation of 1635.0 and extends up Petit Creek approximately 0.70 miles. The total storage for the reservoir is approximately 7,500 ac-ft, according to the Georgia Safe Dams database. The drainage area upstream of Big Canoe Dam is 1.53 square miles. The topography around the dam consists of very steep, wooded, mountainous foothills.

Petit Lake Dam is listed in the Georgia State Safe Dams Program and the National Inventory of Dams under the following identification numbers, respectively: 112-009-00462 and GA00685. The earth dam has a maximum height of 126 feet according to the Georgia Safe Dams database, a length of 880 feet, and a top width of 35 feet. The dam has a 15-foot wide concrete cascading channel spillway on the east side of the earth dam's abutment. The spillway discharge is controlled by a concrete crest underneath a bridge located on the roadway (i.e. Wilderness Parkway) running along the crest of the dam (See Dam Features Map provided in Appendix C). The dam has a 36-inch low level drain which is the only permanent means of lowering the lake level short of structural excavation of an abutment area or the use of temporary pumps or siphons. The low-level drain can be operated by a sluice gate operator located near the center top of the dam. Lake Sconti, owned by Big Canoe, is located some 1.0 miles downstream of Petit Lake. This earth dam has a maximum height 40 feet, a length of 190 feet and a top width of 20 feet. The dam has a 10-foot wide concrete spillway on the eastern abutment. Cox Lake Dam is located some 3.5 miles downstream from Petit Lake Dam south of Cove Road, and is not owned or operated by Big Canoe.

Big Canoe has two permanent roadway access points: (1) the main entrance off Steve Tate Highway is Wilderness Parkway, which crosses Petit Creek some 2.3 miles downstream of Petit Lake Dam, and (2) the secondary entrance off Steve Tate Highway (also Wilderness Parkway) which crosses over the top of Petit Lake Dam, as well as connecting to the main entrance road via a road at the base of Petit Lake Dam (See Inundation Map provided in Appendix B). A third access route utilizes a gravel maintenance road adjacent to the Sconti Golf Clubhouse. These three (3) connections to Steve Tate Highway are the only evacuation routes from the impacted areas of Big Canoe. The use of these evacuation routes will be controlled by the Big Canoe Department of Public Safety to prevent endangerment of evacuees in case of an imminent failure. As shown in Figure 3, two (2) of these evacuation routes would be cut off west of Petit Creek in case of a dam failure of Petit Lake Dam, and evacuation would need to take place via roads upstream of Petit Lake (i.e., Valley View Drive, Petit Ridge Drive, and Quail Cove Drive) and connecting back to the northern intersection of Wilderness Parkway and Steve Tate Road. A small portion of Steve Tate Highway could also be inundated in the event of a major dam failure.

An additional road downstream and outside of the Big Canoe Development would be impacted by failure of Petit Lake Dam. Cove Road is some 3.0 miles downstream of the dam. Petit Creek flows through three (3) 10-foot x 10-foot box culverts under Cove Road.



Notes:
1. This evacuation map is for use prior to any break of the dam. Should flood inundation prevent crossing of Petit Creek by those residents of Big Canoe west of the creek, evacuation should take place upstream and around Petit Lake via Valley View Drive, Petit Ridge Drive, and Quail Cove Drive before connecting to the northern portion of Wilderness Parkway and Steve Tate Road.
2. Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community
Approximate Image Date: March 2015

Petit Lake Dam
Emergency Action Plan - Evacuation Routes Prior to Dam Failure

Big Canoe Property Owner's Association
Jasper, Georgia

Geosyntec consultants

Chattanooga, TN | May 2018

Figure 3

N:\BI\Big Canoe\Projects\TN6338 - 2017 EAP Lake Petit Dam\GIS\MXD\EvacuationRoutes.mxd 1/25/2018 11:20:39 AM

4. EMERGENCY DETECTION, EVALUATION, AND CLASSIFICATION

Detection and Evaluation of Petit Lake Dam Failure:

Once the observer notifies the Dam Owner's Representative or his designee about a condition of concern, the Dam Owner's Representative or his designee will immediately proceed to Petit Lake Dam and personally inspect the dam for any signs of failure condition. The Dam Owner's Representative or his designee will evaluate the severity of the condition of concern utilizing the guidelines in Table 4 to determine the appropriate Emergency Action Classification. Petit Lake Dam Failure Emergencies will be classified according to their severity and urgency. For the purposes of this EAP, three emergency classifications are provided. Conditions C, B, and A are consistent with other Big Canoe action plans, while Levels 1, 2, and 3 are consistent with Georgia Department of Natural Resources (DNR) Safe Dams Program. For clarity, both nomenclatures are provided throughout this EAP and are defined as follows:

- Condition C (Level 1): Failure is imminent or has occurred

  This is a situation where a failure either has occurred, is occurring, or obviously is just about to occur. It is impossible to determine how long it will take for a failure to occur or for a complete breach to occur once failure begins. Therefore, once the Dam Owner's Representative determines that there is no longer time available to attempt corrective measures to prevent failure, the "failure is imminent or has occurred" warning, as suggested in Section 5.1, should be issued. Emergency management officials will interpret the phrase "failure is imminent" to mean that the dam is failing. For evacuation purposes, "failure is imminent" and "failure has occurred" should be interpreted as the same condition.

- Condition B (Level 2): Potential failure situation is developing

  This is a situation where a failure may eventually occur, but preplanned actions taken during certain events (such as major floods, earthquakes, evidence of piping, etc.) may alleviate failure. Recommended methods and steps to alleviate the risk of failure are provided in Table 5. Even if failure is inevitable, more time is generally available than in a "failure has occurred" situation to issue warnings and/or take preparedness actions. When a dam safety situation is observed that may lead to a failure if left unattended, but there is no immediate danger, the Dam Owner's Representative will issue a warning that a "potential failure situation is developing". The Dam Owner's Representative will assess the situation and determine the urgency of the emergency situation. Based on the Dam Owner's Representative's assessment, the first series of notifications should be made and it is up to the Pickens County EMA to determine the subsequent course of action to follow.

NOTE: It should be remembered that it may be appropriate to declare a Condition C (Level 1). However, there should be a smooth transition from Condition B (Level 2) to Condition C (Level 1) when using both conditions.

- Condition A (Level 3): Unusual, slowly developing event

  This is a condition where a situation is developing, but has not yet threatened the operation or the structural integrity of the dam. The situation should be investigated by the Dam Owner's Representative for development of a potential or imminent dam failure situation. The Dam Owner's Representative will assess the situation and determine a path forward approach. Warnings shall not be issued unless the situation develops into a Condition B (Level 2) situation.

To assist the Emergency Management Agency in selecting their appropriate course of action and to provide a proper transition from Condition A (Level 3) to Condition B (Level 2) or Condition B (Level 2) to Condition C (Level 1), the Big Canoe Public Safety Director will clearly communicate the situation to the EMA. For Condition A (Level 3) and Condition B (Level 2) situations, the Big Canoe Public Safety Director will place the first series of notifications on initial alert, and provide periodic updates on the situation as it develops so that the EMA can assess when they should implement their evacuation procedures. For example, the Dam Owner's Representative will issue an initial warning and periodic updates on the lake level as it rises during flooding conditions and eventually overtops the dam. As the lake rises, a "potential failure situation is developing" warning should be issued with periodic updates on how much time is available before overtopping occurs. Once the dam overtops, a "failure is imminent or has occurred" warning should be issued, as suggested in Section 5.1.

Preplanned actions will be initiated once a Condition B (Level 2) Emergency has been declared and the initial notifications have been completed. The preplanned operations that should be undertaken are shown in Table 5.

TABLE 4[1]
DETECTION OF DAM FAILURE AND CLASSIFICATION OF EMERGENCY

EMERGENCY ACTION PLAN FOR PETIT LAKE DAM
PETIT LAKE DAM, BIG CANOE, GEORGIA

EVENT	DAM FAILURE MECHANISM	EVALUATION OF FAILURE	CLASSIFICATION OF FAILURE MECHANISM[2]
Unexpected Failure	• Unknown	Dam unexpectedly and without warning begins to fail	Condition C (Level 1)
Major Flood/ Embankment Overtopping	• Overtopping of dam	Erosion and removal of the road and embankment occurring	Condition C (Level 1)
		Flood pool rapidly approaching top of dam and embankment still intact	Condition B (Level 2)
Global Earthquake or Seismic Activity	• Settlement of dam crest • Slope movement • Evidence of seepage or piping	Settlement of more than a few inches	Condition C (Level 1)
		Slope movement larger than the size of a car	
		Flowing water from downstream face of dam	
		Settlement of less than a few inches	Condition B (Level 2)
		Slope movement of less that the size of a car	
		Wet areas on downstream face of dam that continue to increase in size and intensity of flow	
		Measurable earthquake felt or reported near the dam and dam appears to be stable.	Condition A (Level 3)
Embankment Movement	• Settlement of dam crest • Slope movement	Settlement of more than a few inches	Condition C (Level 1)
		Slope movement larger than the size of a car	
		Settlement of less than a few inches	Condition B (Level 2)
		Slope movement of less than the size of a car	
		New cracks in the embankment greater than 1/4-inch wide without seepage	Condition A (Level 3)
Embankment Seepage	• Evidence of seepage or piping	Flowing water greater than 10 gallons per minute from downstream face of dam	Condition C (Level 1)
		Wet areas with cloudy discharge on downstream face of dam that continue to increase in size and intensity of flow	Condition B (Level 2)
		New seepage areas in or near the dam, water flowing clear	Condition A (Level 3)
Spillway Flow	• Spillway overflow • Spillway erosion	Spillway overflowing with an advancing head cut that is threatening the control section or that is already flooding people downstream	Condition C (Level 1)
		Spillway overflowing with active gully erosion	Condition B (Level 2)
		Spillway overflowing with no active erosion	Condition A (Level 3)
		Normal flow with erosion under, beneath, or at edges of the spillway	Condition A (Level 3)
Sinkholes	• Observed sinkhole	Rapidly enlarging sinkhole on dam or appurtenances	Condition C (Level 1)
		Observation of new sinkhole in reservoir area or on embankment	Condition B (Level 2)
		Observation of sinkhole downgradient of the dam	Condition A (Level 3)
Routine Instrumentation Readings	• Significant change in piezometer readings • Rapid decrease in lake level	Increase in piezometer readings of more than 10 feet and flowing water from downstream face of dam	Condition C (Level 1)
		Rapid decrease in lake level and flowing water from downstream face of dam	
		Increase in piezometer readings of more than 10 feet and no flowing water from downstream face of dam	Condition B (Level 2)
		Rapid decrease in lake level with no apparent reason and no flowing water from downstream face of dam	
		Piezometer readings vary beyond predetermined values and no flowing water from downstream face of dam	Condition A (Level 3)
Security Threat	• Bomb threat	Detonated bomb that has results in damage to the dam or appurtenances	Condition C (Level 1)
		Verified bomb threat that, if carried out, could result in damage to the dam or appurtenances with no impacts to the functioning of the dam	Condition B (Level 2)
		Reported bomb threat, unverified	Condition C (Level 1)
Sabotage/ Vandalism	• Damage to dam or appurtenances	Damage to dam or appurtenances that has resulted in uncontrolled water release	Condition A (Level 3)
		Damage to dam or appurtenances that has resulted in seepage flow	Condition B (Level 2)
		Damage or modification to the dam or appurtenances with no impacts to the function of the dam	Condition C (Level 1)
Blocked culverts	• Blockage	Debris is blocking a spillway pipe, causing lake level to rise	Condition C (Level 1)

Notes:
[1] This table was based on a similar table from the North Carolina Department of Environmental Quality, 2016.

[2] Conditions C. B. and A are consistent with other Big Canoe action plans while Levels 1, 2. and 3 are consistent with Georgia Department of Natural Resources (GA DNR) Safe Dams Program. For clarity, both nomenclatures are provided.

TABLE 5
PREPLANNED OPERATIONS FOR CONDITION B (LEVEL 2) EMERGENCY

EMERGENCY ACTION PLAN FOR PETIT LAKE DAM
PETIT LAKE DAM, BIG CANOE, GEORGIA

EVENT	IMPENDING DAM FAILURE MECHANISM	PREPLANNED OPERATIONS IN PRIORITY ORDER
Major Flood/Embankment Overtopping	Overtopping of dam	1. Make a reasonable attempt to open the sluice gate on the low level drain, or bring in pumps and discharge outflow to spillway or directly into Petit Creek, to lower level of lake. 2. Open the bypass valve on the water supply line to the water treatment plant (if available). 3. If lake levels continue to rise dangerously close to top of the dam crest, excavate emergency channel in abutment area adjacent to concrete chute spillway. Also bring in emergency pumps and discharge outflow to spillway or directly into Petit Creek. *Do not excavate channel on top of dam, or discharge pump outflow on face of dam*
Earthquake or Seismic Activity	Slope Failure	1. Make a reasonable attempt to open the sluice gate on the low level drain, or bring in pumps and discharge outflow to spillway or directly into Petit Creek, to lower level of lake. 2. Open the bypass valve on the water supply line to the water treatment plant (if available). 3. Monitor piezometer readings daily and plot readings to identify significant changes in readings. Also record lake levels. 4. Survey elevation along top of dam daily at 50' intervals. Plot elevations of each point to identify significant changes in readings. 5. Obtain input from Georgia Safe Dams Program and Owner's Engineer as to emergency repairs to be constructed (if any).
Embankment Movement, Embankment Seepage, Spillway Flow, or Sinkhole	Slope Failure	1. Make a reasonable attempt to open the sluice gate on the low level drain, or bring in pumps and discharge outflow to spillway or directly into Petit Creek, to lower level of lake. 2. Open the bypass valve on the water supply line to the water treatment plant (if available). 3. Monitor piezometer readings daily and plot reading to identify significant changes in readings. Also record lake levels. 4. Survey elevation along top of dam daily at 50' intervals. Plot elevations of each point to identify significant changes in readings. 5. Obtain input from Georgia Safe Dams Program and Owner's Engineer as to emergency repairs to be constructed (if any).
Routine Instrumentation	Slope Failure	1. Make a reasonable attempt to open the sluice gate on the low level drain, or bring in pumps and discharge outflow to spillway or directly into Petit Creek, to lower level of lake. 2. Open the bypass valve on the water supply line to the water. 3. Monitor piezometer readings daily and plot reading to identify significant changes in readings. Also record lake levels. 4. Survey elevation along top of dam daily at 50' intervals. Plot elevations of each point to identify significant changes in readings. 5. Obtain input from Georgia Safe Dams program or Owner's Engineer as to emergency repairs to be constructed (if any).
Security Threat or Sabotage	Slope Failure	1. Make a reasonable attempt to open the sluice gate on the low level drain, or bring in pumps and discharge outflow to spillway or directly into Petit Creek, to lower level of lake. 2. Open the bypass valve on the water supply line to the water treatment plant (if available).

5. GENERAL RESPONSIBILITIES UNDER THE PLAN

The EAP contains preplanned actions designed to prevent a failure to dam structures or to minimize the impact of a dam failure on life and property. It establishes and documents procedures for notifying state and local emergency management agencies, law enforcement bodies, and downstream residents affected by a dam failure. All responsible parties responsible for implementing the EAP shall verify their responsibilities with their signature in Appendix D.

5.1 Dam Owner's Responsibilities:

The person responsible for performing the tasks required under the EAP is the Dam Owner's Representative and the Public Safety Director. If the Public Safety Director is absent, the responsible person will be the Public Safety Director Lieutenant on duty at that time.

The duties of the Public Safety Director under the EAP should be as follows:

1. The responsibility for making the initial assessment of the emergency - Condition C (Level 1), Condition B (Level 2), or Condition A (Level 3).

2. The responsibility for initiating the notification process (see Notification Flowchart). All warning messages should be brief and to the point. For example, for a Condition C (Level 1) Emergency, the message should be as follows: **"This is Public Safety Director at Big Canoe. I have verified overtopping of Petit Lake dam and believe dam failure is imminent. I request that you immediately activate the Petit Lake Dam Emergency Action Plan. This is an actual emergency and not a drill."** Note that a warning message shall not be issued for a Condition A (Level 1) emergency.

3. The responsibility for initiating the preplanned actions in case of a Condition B (Level 2) emergency.

5.2 Responsibility for Notification:

For a Condition C (Level 1) or Condition B (Level 2) emergency, the Dam Owner's Representative, the General Manager of the Big Canoe POA, is responsible for contacting the Public Safety Director at Big Canoe, the Public Information Officer Communications Manager, and the Liaison Officer, Director of Administrative Services.

The Public Safety Director at Big Canoe is responsible for notifying Pickens County EMA, Critical Infrastructure at Big Canoe (Table 1), Dawson County 911 Services, and the Georgia DNR 24-Hour Emergency Contact in the event of an emergency. If time allows, he should seek advice and assistance.

The Public Information Officer, Communications Manager is responsible for notifying the News Media (including radio and television media). The Liaison Officer, Director of Administrative Services is responsible for notifying Big Canoe's Engineer of Record.

The Pickens County EMA is responsible for notification of the residents below the dam as identified in the Reverse 911 System, including: (i) Big Canoe residents (Table 2) and residents downstream from Big Canoe (Table 3), (ii) Pickens County Sheriff's Department, (iii) Pickens County Public Works, (iv) the Cox Lake Dam Owner (Cove Lake Property Owner's Association, Inc.), and the (v) National Weather Service Weather Forecasting Office.

The Georgia DNR 24 Hour Emergency Contact is responsible for notification of the Georgia Safe Dams Program.

For a Condition A (Level 3) emergency, the Dam Owner's Representative, the General Manager of the Big Canoe POA, is responsible for contacting the Public Safety Director at Big Canoe and the Liaison Officer, Director of Administrative Services.

The Liaison Officer, Director of Administrative Services is responsible for contacting the Big Canoe Engineer of Record. The Public Safety Director at Big Canoe is responsible for contacting the Georgia Safe Dams Program, if required by the Dam Owner's Representative.

5.3 Responsibility for Evacuation:

Warning and evacuation planning are the responsibilities of the Pickens County EMA who have the statutory obligation. Under the EAP, the Big Canoe Public Safety Director is responsible for notifying the Pickens County EMA when a failure is imminent or has occurred (Condition C or Level 1), or a potential failure situation is developing (Condition B or Level 2). Big Canoe will not assume the responsibility of government entities for evacuation of people. This procedure should be coordinated with the appropriate public officials prior to an emergency situation developing.

5.4 Responsibility for Duration, Security Termination, and Follow-Up:

The Pickens County EMA is responsible for monitoring the situation at the dam and keeping local authorities informed of developing conditions at the dam from the time that an emergency starts until the emergency has been terminated. Security measures at the dam should be implemented by the Pickens County Sheriff's Department.

The Pickens County EMA is responsible for declaring that the emergency at the dam is terminated.

A follow-up evaluation after an emergency by all participants will be conducted. The Big Canoe POA is responsible for coordinating this effort and generating a written report which will detail the extent to which the EAP was followed, and what changes, additions or improvements need to be made to the EAP.

5.5 EAP Coordinator Responsibility

The Dam Owner's Representative or his designee will be the designated EAP coordinator who will be responsible for EAP related activities, including preparing revisions to the EAP, establishing training activities, coordinating EAP exercise, etc. They will also be the EAP contact if any of the involved parties have questions about the plan. The EAP will be reviewed annually with contacts, phone numbers, verified for accuracy. Documentation of the annual review is provided in Appendix E. As infrastructure and homes are built in the inundation map hazard areas, contact information (i.e., resident's names, addresses, and phone numbers) will be added to Tables 1, 2, and 3, as appropriate and available.

6. PREPAREDNESS

The following actions should be taken in preparation of an emergency:

- Initiation of a dam inspection and surveillance program. The dam should be formally inspected annually, at minimum, and readings from the dam instrumentation should be taken and interpreted quarterly, at minimum. During quarterly readings, basic observations of the dam can also be made.

- Preparation of a systematic warning and evacuation plan. A formal notification system should be coordinated with residents and businesses in the inundation area, and evacuation routes should be discussed/provided to those residents.

- Preparations should be made for evacuation on weekends, weekdays, and any time of day or night, including holidays. The emergency responders should have backup ways of communicating and a way to respond to the emergency in case of power outages.

- Community awareness programs for emergency response procedures. The community should be made aware of the possible emergencies and procedures associated with the possible failure of the dam.

- Establishment of emergency flood operating procedures.

- Organization of equipment, labor, and materials for use in emergency situations. A list of locally available resources that could be used in the event of an emergency are provided in Appendix F. These businesses can supply pumps, power generators, divers for inspections, and materials for temporary repair, depending on the emergency. Also the Pickens County EMA has provided a list of equipment that may be available during a dam failure.

- Conduct emergency exercises. At minimum, an orientation meeting should be held with key people so that those playing key roles and those having responsibilities outlined in this EAP can become familiar with it. A drill or tabletop exercise can be held, and coordinated with the Pickens County EMA. Documentation of reviews, tests, and revisions of this EAP should be documented in the forms provided in Appendix E.

7. REFERENCES

Association of State Dam Safety Officials [2010]. "EAPWG Final EAP Template," available online at http://www.damsafety.org/community/owners/?p=3a95437d-1876-46d6-843b-d65d45beb46a , accessed March 2017.

Georgia Safe Dams Program [2015]. "Engineer Guidelines, 2015 Edition," Georgia Department of Natural Resources, Version 4.0.

Jordan, Jones, and Goulding [1998]. "Emergency Action Plan for Dam Failure, Petit Lake Dam, Big Canoe, Georgia," prepared for Big Canoe Property Owner's Association, September.

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North Carolina Department of Environmental Quality [2016]. "Guidelines for Owner Completion of the Emergency Action Plan (EAP) Template," Division of Energy, Mineral and Land Resources, available online at https://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-mineral-land-permits/dam-safety, accessed March 2017.

APPENDIX A

DEFINITIONS

APPENDIX A - DEFINITIONS

ABUTMENT	The part of the valley side against with the dam is constructed. Right and left abutments are those on respective sides as an observer when looking downstream.
APPURTENANCES	Structures around a dam that are necessary to the operation of the dam project (i.e., spillways).
BREACH	An opening through the dam resulting in partial or total failure of the dam.
CATEGORY I DAM	A dam that is either 25 feet tall or impounds 100 acre-feet of water and where improper operation or dam failure would result in the probable loss of human life.
COMPREHENSIVE EAP EXERCISE	An in-depth exercise of an EAP that involves the interaction of the dam owner with the state and local emergency management agencies in a stressful environment with time constraints. Functional and full scale EAP exercises are considered comprehensive EAP exercises.
DAM FAILURE	Catastrophic type of failure characterized by the sudden, rapid, and uncontrolled release of impounded water. It is recognized that there are lesser degrees of failure and that any malfunction or abnormality outside the design assumptions and parameters which adversely affect a dam's primary function of impounding water is properly considered a failure. Such lesser degrees of failure can progressively lead to or heighten the risk of a catastrophic failure. They are, however, normally amendable to corrective action.
EMBANKMENT	Fill material, usually earth or rock, placed with sloping sides.
EMERGENCY ACTION PLAN (EAP) EXERCISE	An activity designed to promote emergency preparedness; test or evaluate emergency action plans, procedures or facilities; train personnel in emergency management duties; and demonstrate operational capability. Exercises consist to the performance of duties, tasks or operations very similar to the way they would be performed in a real emergency. However, the exercise performance is in response to a simulated event.
EMERGENCY MANAGEMENT AGENCY	The State and local agencies responsible for emergency operations, planning, mitigation, preparedness, response, and recovery for all hazards.
EMERGENCY OPERATIONS CENTER	The location or facility where responsible officials gather during an emergency to direct and coordinate emergency operations, to communicate with other jurisdictions and with field emergency forces, and to formulate protective action decisions and recommendations during an emergency.
FLOOD ROUTING	A process of determining progressively over time the amplitude of a flood wave as it moves past a dam or downstream to successive points along a river or stream.
HAZARD	A situation which creates the potential for adverse consequences such as loss of life, property damage or other adverse impacts. Impacts may be for a defined area downstream of a dam from flood-waters released through spillways and outlet works of the dam or waters released by partial or complete failure of the dam.
HEADWATER	The water immediately upstream from a dam. The water surface elevation varies due to fluctuations in inflow and the amount of water passed through the dam.
INUNDATION MAP	A map delineating areas that would be flooded as a result of a dam failure or other unusually large spillway release.
OVERTOP	Flow of an embankment dam beyond its spillway capacity and over the top of the dam crest, or containment elevation.

PIPING	Internal erosion caused by seepage.
PROJECT DESIGN FLOOD	The maximum rate of rainfall in which the dam could safely pass or store without overtopping.
SEEPAGE	The continuous movement of water from the upstream face of the dam toward its downstream face.
SETTLEMENT	The downward movement of the ground due to forces (i.e., buildings and other structures) applied to the surface.
SPILLWAY	A structure over or through which flood flows are discharged.
TAIL WATER	The water downstream from the dam.

APPENDIX B

INUNDATION MAPS AND CALCULATIONS

PREPARED BY JORDAN, JONES, AND GOULDING

AND BIG CANOE POA

Area Description

Petit Lake is a 115 foot high earthen embankment in the upper reaches of the Blackwell Creek drainage basin in northeastern Pickens County. It impounds approximately 6,000 acre-feet of water, according to National Inventory of Dams data (1992). The contributing drainage area is approximately 1.53 square miles consisting primarily of heavily wooded residential development and heavily wooded undeveloped land.

Approximately 1.0 mile downstream of Petit Lake on Blackwell Creek is Sconti Lake. The embankment here is approximately 40 feet high and only impounds approximately 260 acre-feet according to the National Inventory of Dams data (1992). The drainage area to Sconti, minus the area into Petit, is approximately 3.3 square miles, again consisting primarily of heavily wooded residential and heavily wooded undeveloped land.

Between the two lakes, the valley is partially cleared and serves primarily as a golf course and for other recreational activities. Downstream of Sconti the valley is relatively narrow, typical of North Georgia undeveloped streams, and is generally heavily wooded.

Approximately 1.33 miles downstream of Sconti is a two-lane roadway (Wilderness Parkway) crossing of Blackwell Creek consisting of a covered bridge approximately 100 feet in length. The roadway connects to the south main entrance to the Big Canoe community.

Approximately 0.6 miles further downstream is another two-lane roadway crossing named Cove Road. This is a county maintained road. This crossing consists of three 10' x 10' box culverts.

Downstream of Cove Road, according to the U.S.G.S. Nelson Quadrangle Map, is Cox Lake. The embankment is approximately 97 feet high

Downstream of Cox Lake, the stream is again relatively narrow and heavily wooded. There are several homes at various points along the stream in this area and the stream adds some additional tributaries. Just east of the Marblehill community and parallel to the north of Georgia Hwy. 53, the stream widens into a small floodplain consisting of cultivated fields.

From here, the stream curls to the northwest and then south around a small rise and goes under Hwy. 53 in Marblehill. It then turns to the northeast to travel through Marblehill, going under a railroad bridge in the center of Marblehill.

From Marblehill the stream enters a relatively wide floodplain extending to the east of Marblehill and parallel to the south of Hwy. 53.

Modeling

The stream from Petit Lake to the floodplain east of Marblehill has been modeled using the National Weather Service program, DAMBRK. The dam breach flood volume and peak downstream times, elevations and flows have been calculated using this program.

Cox Lake has been modeled using design plans provided by the NCRS office in Jasper, Georgia. It was initially hoped that the flood wave would be stopped and held in this structure. However, the magnitude of the flood wave is such that the dam is overtopped with substantial flow occurring through the emergency spillway and over the top of the dam. The height of the modeled overtopping is approximately 1.25 feet or 0.75 feet below the breach elevation (two feet above top of dam). It is assumed since this is an engineered structure and has been periodically inspected through the years, it would be able to withstand this overtopping without breaching.

The covered bridge road and Cove Road were both modeled as dams with minimal initial flow-through for initial conditions computations. The area of opening capacity for both roads below the roadway elevation is insignificant compared to the magnitude of the breach flood peak, therefore it is not necessary to explicitly model the bridge openings.

In contrast, the Hwy. 53 and railroad bridge in Marblehill were modeled as bridges with the area of opening below the embankment defined. The two crossings were field measured and both are in good structural condition. However, the breach wave height exceeds the embankment height by more than two feet for both crossings resulting in breaching of both crossings.

Worst Case Scenario

Two scenarios are generally appropriate for modeling a dam breach wave. One scenario would consist of a sunny day breach which have the model beginning with a full reservoir to the top of dam elevation with all outflow structures blocked. The other would consist of a project storm breach consisting of water level beginning at normal pool, normal outflow occurring, and a project storm hydrograph entering the reservoir with the breach occurring at the peak time of the inflow hydrograph. The two scenarios would be compared and the worst case used to define the dam breach flood zone. For dams with large storage capacities and large drainage areas, the two scenarios are generally necessary for determining the worst case for downstream flooding.

Petit Lake has a large storage capacity and small inflow drainage basin. Only one breach scenario has been modeled for this EAP, the sunny day breach. The storm breach analysis was limited because the excess storage capacity before the dam is overtopped minus the spillway outflow is adequate to contain the storm runoff from this relatively small sparsely developed drainage basin. The peak breach wave from this model at Petit Lake is 225,253 cubic feet per second. With the starting water surface level at the top of dam elevation, the freeboard is completely filled.

Preliminary project storm hydrographs have been developed for both Petit Lake and Sconti Lake using HEC-1. The hydrographs are for PMP rainfall, taken from Hydrometeorological Report No. 51 from the National Weather Service, consisting of 30.2 and 41 inches for the 6-Hour and 24-Hour duration storms, respectively. A Curve Number and Lag Time have been determined using Soil Conservation Service (now National Resource Conservation Service) techniques. The peak flow for Petit Lake for the two storms is 14,624 cfs (6-Hour) and 7,100 cfs (24-Hour). This is less than 10% of the modeled initial peak breach flow. For Sconti Lake (not including the Petit Lake drainage area) the two peaks are 18,830 cfs (6-Hour) and 13,294 cfs (24-Hour), again less than 10% of the breach flow.

During the project storm scenario, the freeboard storage and outflow capacity of Petit Lake would cause the dam breach to begin at a level substantially below the top of dam elevation, thus producing a lowered volume and peak when compared to the sunny day scenario. The project storm hydrograph into Sconti Lake would not raise a total project storm breach flow peak to above the level of the sunny day scenario.

Because of the large storage capacity of Petit Lake and the relatively small PMP inflows to both Petit and Sconti Lakes, we are confident the sunny day scenario represents the worst case. The mapped extents of the sunny day model represents the maximum area of flood that would occur for any breach scenario.

Modeling Parameters

Modeling parameters have been developed in accordance with the Georgia Safe Dams Program Engineering Guidelines, 1998 Edition [1]. The following breach parameters have been used:

Petit Lake
- Starting Water Surface Elevation = Top of Dam (1648 msl)
- [1] Breach Base Width = Height of Dam (118 feet)
- Breach Side Slope = 1:1
- [1] Time to Complete Failure = 0.5 hours

Sconti Lake
- Starting Water Surface Elevation = Normal Pool (1464.3 msl, approx.)
- [1] Breach Base Width = Height of Dam (40 feet)
- Breach Side Slope = 1:1
- [1] Time to Complete Failure = 0.5 hours

Covered Bridge
- Starting Water Surface Elevation = Calibrated for Initial Conditions
- [1] Breach Base Width = Height of Embankment (31 feet)
- Breach Side Slope = 1:1
- Time to Complete Failure = 0.1 hours

Cove Road
- Starting Water Surface Elevation = Calibrated for Initial Conditions
- [1] Breach Base Width = Height of Embankment (30 feet)
- Breach Side Slope = 1:1
- Time to Complete Failure = 0.1 hours

Cox Lake
- Starting Water Surface Elevation = Normal Pool (1276.2 msl)
- [1] Breach Base Width = Height of Dam (97 feet)
- Breach Side Slope = 1:1
- Time to Complete Failure = 0.5 hours

Hwy. 53 in Marblehill
- Starting Water Surface Elevation = Calibrated for Initial Conditions
- [1] Breach Base Width = Height of Embankment (22 feet)
- Breach Side Slope = 1:1
- Time to Complete Failure = 0.1 hours

Railroad Bridge in Marblehill
- Starting Water Surface Elevation = Calibrated for Initial Conditions
- [1] Breach Base Width = Height of Embankment (22 feet)
- Breach Side Slope = 1:1
- Time to Complete Failure = 0.1 hours

Manning's values and expansion/contraction coefficients were based on engineering judgment after visual inspection of the Blackwell Creek valley. Sections were obtained from a digital terrain model developed from U.S.G.S. quad topography and were adjusted to reflect visual inspection of the stream valley channel. Minor adjustments were made in stream reach distances to promote numerical stability in the model.

Areas of off-channel storage have been incorporated at appropriate locations in the model.

Additional parameters were included or modified based on requirements for calculating initial conditions and for promoting numerical stability through a complete peak assessment for all sections. These additional parameters include: section smoothing, delta x distances, constant turbine flow, additional reservoir inflow, lateral inflow, and others as required. These additional parameters serve only to promote the numerical stability of the model and do not minimize the magnitude of the peak elevation and flow results.

Results

The modeling results indicate that Sconti Lake Dam, the covered bridge road, and Cove Road would all be breached under a substantial flood wave.

Peak elevations indicate that a small portion of Steve Tate Road would be underwater.

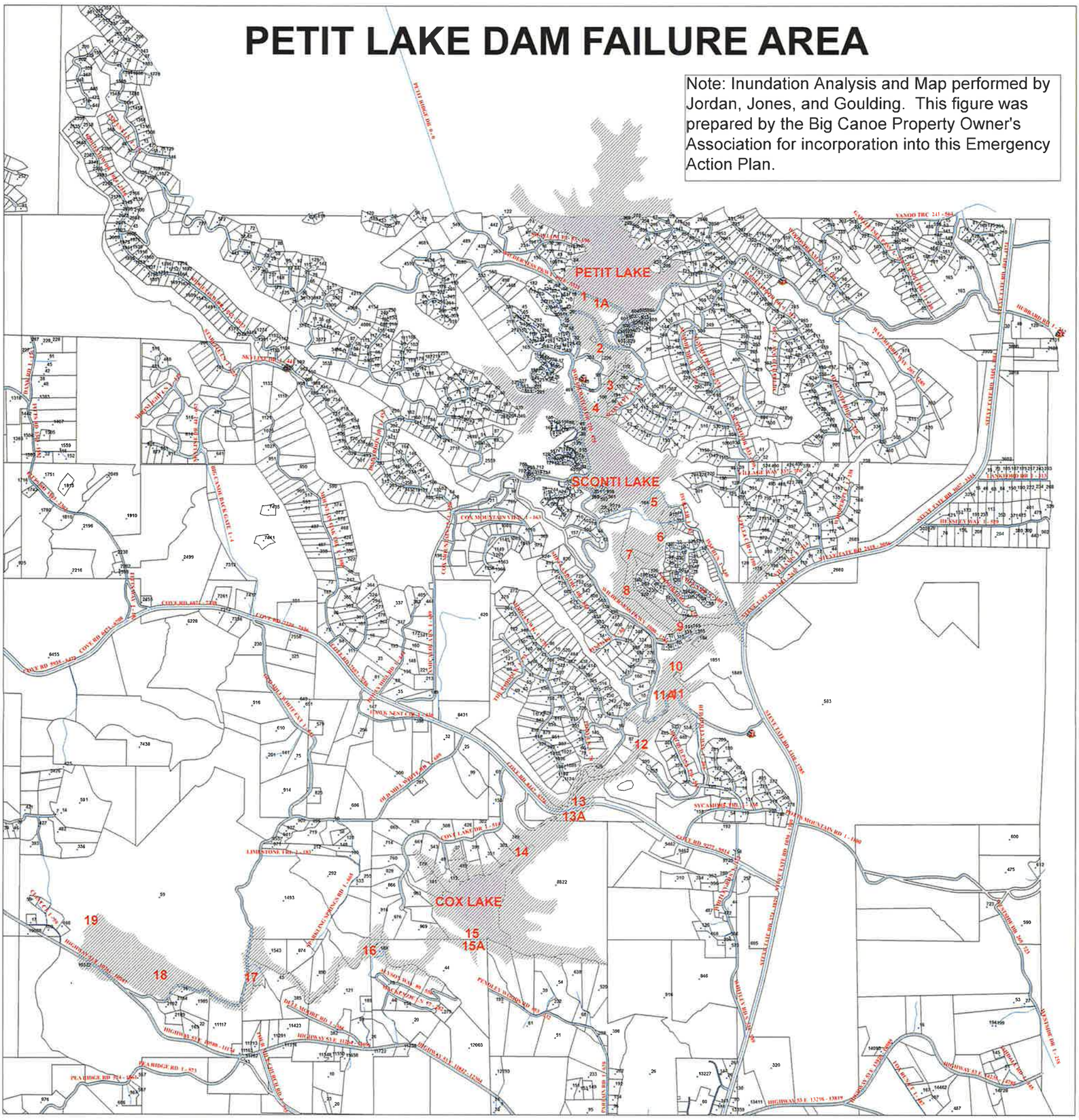
The model indicates that Cox Lake would be overtopped but not breached. Portions of Hwy. 53 to the east and to the west of Marblehill would be temporarily submerged but are on the edge of the main flood channel. The crossings in Marblehill would be breached and areas in Marblehill within the floodplain south of Hwy. 53 would be inundated and in the direct path of the breach wave.

The model indicates that the breach wave is dissipated to a height of approximately 22 feet just upstream of where Hwy. 53 again crosses the stream, east of Marblehill. The height of the bridge/embankment here is approximately 27 feet. It is therefore assumed this crossing serves to break the flood wave and dissipate the volume in the upstream floodplain.

The extent of the breach flooding is shown on the attached maps. DAMBRK and HEC-1 input and output is attached.

PETIT LAKE DAM FAILURE AREA

Note: Inundation Analysis and Map performed by Jordan, Jones, and Goulding. This figure was prepared by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

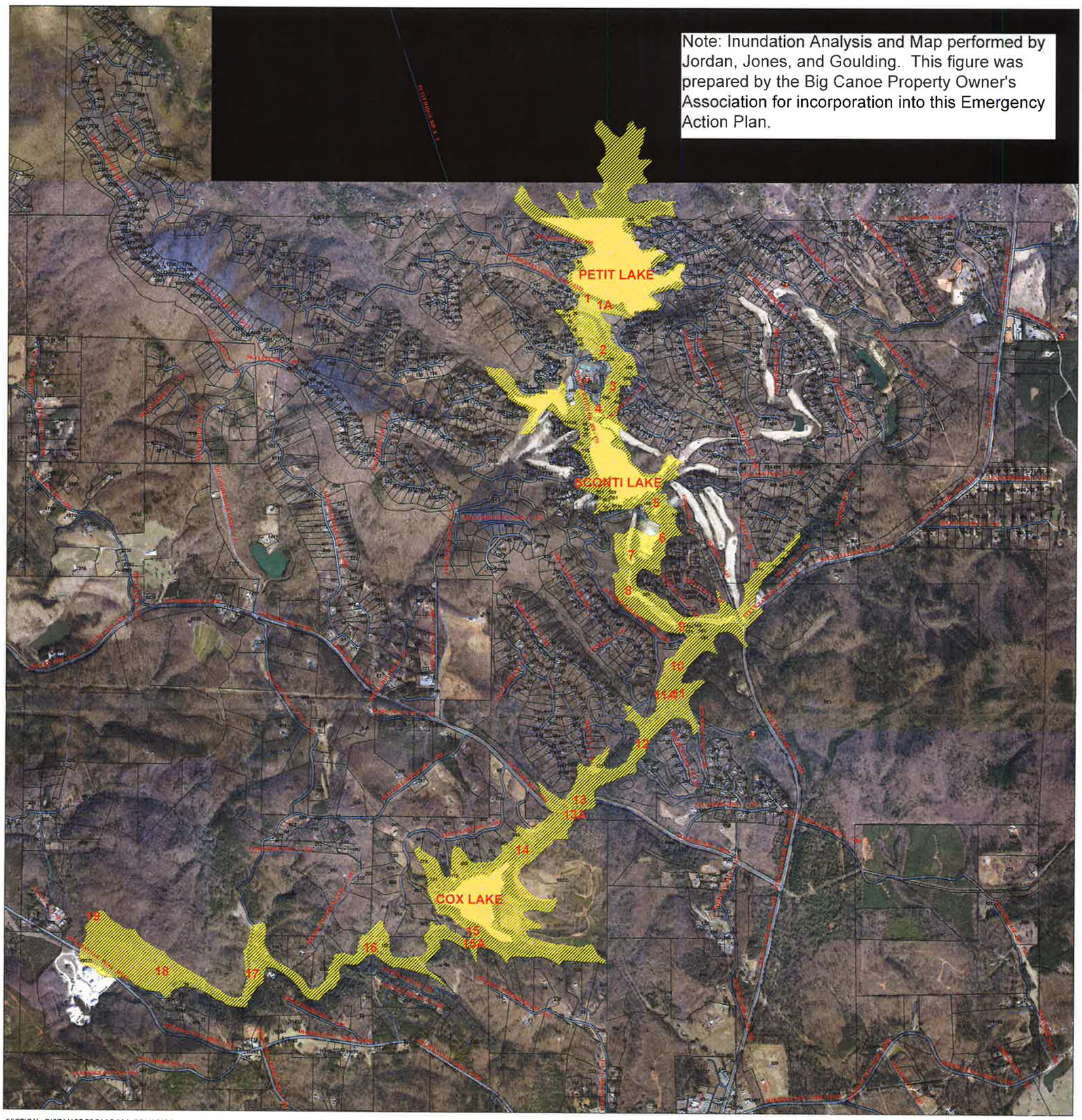


SECTION NUMBER	DISTANCE FROM DAM (MILES)	PEAK DISCHARGE (CFS)	INUNDATION ELEVATION (FEET)	MAX WAVE HEIGHT (FEET)	MAX. WAVE TIME (MIN.)	FIRST ARRIVAL TIME (MIN.)	SECTION FEATURE
1	0.00	226,710	1648.00	118.00	0.00	2.4	PETIT LAKE DAM
1A	0.01	226,710	1580.46	51.46	24.9	2.4	PETIT LAKE DAM
2	0.17	219,957	1571.64	56.64	25.6	4.8	-
3	0.44	214,878	1544.21	54.21	27.0	7.2	SCONTI LAKE
4	0.68	205,865	1521.44	57.44	28.5	9.6	SCONTI LAKE DAM
5	0.98	193,157	1500.23	70.23	30.0	10.8	-
6	1.05	191,411	1475.97	51.97	31.8	10.8	-
7	1.40	170,022	1457.48	62.48	35.1	14.4	-
8	1.48	166,307	1454.07	64.07	35.4	15.6	-
9	1.93	154,962	1419.42	59.42	38.4	16.8	-
10	2.20	149,669	1393.79	53.79	41.1	20.4	-
11	2.33	144,385	1387.48	57.48	42.3	22.8	UPSTREAM COVERED BRIDGE
11A	2.34	144,385	1329.00	52.41	42.9	30.5	DOWNSTREAM COVERED BRIDGE
12	2.90	126,137	1353.09	53.09	48.0	30.0	-
13	3.00	124,573	1349.00	54.00	48.3	35.7	COVE RD (3) 10'X10' BOX CULVERT
13A	3.01	125,573	1294.00	49.80	48.9	36.5	DOWNSTREAM OF COVE RD
14	3.28	112,520	1335.56	57.56	56.7	37.5	UPSTREAM OF COX LAKE
15	3.66	95,807	1333.47	98.47	57.3	48.1	COX LAKE
15A	3.67	95,807	1278.41	44.41	58.2	49.2	DOWNSTREAM OF COX LAKE
16	4.15	89,804	1229.60	34.60	62.7	54.8	-
17	4.80	84,036	1165.52	30.52	69.3	58.5	-
18	5.30	74,149	1132.85	27.85	78.3	62.3	-
19	5.68	61,538	1122.11	32.11	87.0	72.0	-

Date: 9/3/2015

Legend

- Roads
- Petit Lake Dam Failure Inundation Area
- Lakes
- Parcels
- Structures



SECTION NUMBER	DISTANCE FROM DAM (MILES)	PEAK DISCHARGE (CFS)	INUNDATION ELEVATION (FEET)	MAX WAVE HEIGHT (FEET)	MAX. WAVE TIME (MIN.)	FIRST ARRIVAL TIME (MIN.)	SECTION FEATURE
1	0.00	226,710	1648.00	118.00	0.00	2.4	PETIT LAKE DAM
1A	0.01	226,710	1580.46	51.46	24.9	2.4	PETIT LAKE DAM
2	0.17	219,957	1571.64	56.64	25.6	4.8	-
3	0.44	214,878	1544.21	54.21	27.0	7.2	SCONTI LAKE
4	0.68	205,865	1521.44	57.44	28.5	9.6	SCONTI LAKE DAM
5	0.98	193,157	1500.23	70.23	30.0	10.8	-
6	1.05	191,411	1475.97	51.97	31.8	10.8	-
7	1.40	170,022	1457.48	62.48	35.1	14.4	-
8	1.48	166,307	1454.07	64.07	35.4	15.6	-
9	1.93	154,962	1419.42	59.42	38.4	16.8	-
10	2.20	149,669	1393.79	53.79	41.1	20.4	-
11	2.33	144,385	1387.48	57.48	42.3	22.8	UPSTREAM COVERED BRIDGE
11A	2.34	144,385	1329.00	52.41	42.9	30.5	DOWNSTREAM COVERED BRIDGE
12	2.90	126,137	1353.09	53.09	48.0	30.0	
13	3.00	124,573	1349.00	54.00	48.3	35.7	COVE RD (3) 10'X10' BOX CULVERT
13A	3.01	125,573	1294.00	49.80	48.9	36.5	DOWNSTREAM OF COVE RD
14	3.28	112,520	1335.56	57.56	56.7	37.5	UPSTREAM OF COX LAKE
15	3.66	95,807	1333.47	98.47	57.3	48.1	COX LAKE
15A	3.67	95,807	1278.41	44.41	58.2	49.2	DOWNSTREAM OF COX LAKE
16	4.15	89,804	1229.60	34.60	62.7	54.8	
17	4.80	84,036	1165.52	30.52	69.3	58.5	
18	5.30	74,149	1132.85	27.85	78.3	62.3	
19	5.68	61,538	1122.11	32.11	87.0	72.0	

Date: 9/3/2015

Legend

- Roads
- Petit Lake Dam Failure Inundation Area
- Lakes
- Parcels
- Structures

SECTION NUMBER	DISTANCE FROM DAM (MILES)	PEAK DISCHARGE (CFS)	INUNDATION ELEVATION (FEET)	MAX. WAVE HEIGHT (FEET)	MAX. WAVE TIME (MIN.)	FIRST ARRIVAL TIME (MIN)	SECTION FEATURE
1	0.00	228,710	1448.00	118.00	0.00	2.4	PETIT LAKE DAM
1A	0.01	228,710	1380.40	51.48	24.3	2.4	PETIT LAKE DAM
2	0.17	218,957	1371.84	46.84	25.6	4.8	-
3	0.44	214,878	1344.21	34.21	27.0	7.2	SCONTI LAKE
4	0.69	208,995	1321.44	57.44	28.5	9.6	SCONTI LAKE DAM
5	0.96	193,157	1300.23	70.23	30.0	10.8	-
6	1.05	181,911	1275.07	31.97	31.5	10.8	-
7	1.40	170,022	1257.48	82.48	33.1	14.4	-
8	1.48	165,264	1243.01	44.07	33.4	15.0	-
9	1.85	157,147	1212.23	52.23	36.4	16.8	-
10	2.07	151,878	1399.40	49.30	42.0	-	-
11	2.20	149,669	1393.79	50.75	44.4	20.4	-
11A	2.33	144,385	1387.48	54.47	45.6	22.8	UPSTREAM COVERED BRIDGE
12	2.34	144,385	1329.00	52.41	46.5	30.5	DOWNSTREAM COVERED BRIDGE
13	2.90	128,137	1363.09	53.09	51.6	30.0	COVE ROAD (3) 10'X10' BOX CULVERT
13A	3.00	124,573	1349.00	54.00	51.9	35.7	
14	3.01	125,573	1294.00	49.8	57.3	36.5	DOWNSTREAM OF COVE RD
15	3.28	112,520	1335.56	57.56	60.0	37.5	UPSTREAM OF COX LAKE
15A	3.66	96,807	1333.47	98.47	60.9	48.1	COX LAKE
16	3.67	95,807	1278.41	44.41	61.8	49.2	DOWNSTREAM OF COX LAKE
17	4.15	89,804	1229.60	34.60	66.3	54.8	

EVACUATION ROUTE (TYP)

LAKES

HAZARD AREA

SECTION MARKER (DAM BREAK ANALYSIS)

GRAPHIC SCALE

NOTE:
SEE FIGURE 2 OF THE WRITTEN REPORT FOR ALL ROMAN NUMERAL NOMENCLATURE
SEE FIGURE 3 OF THE WRITTEN REPORT FOR ALL ALPHABETIC NOMENCLATURE

Jordan Jones & Goulding

BIG CANOE
PROPERTY OWNER'S
ASSOCIATION

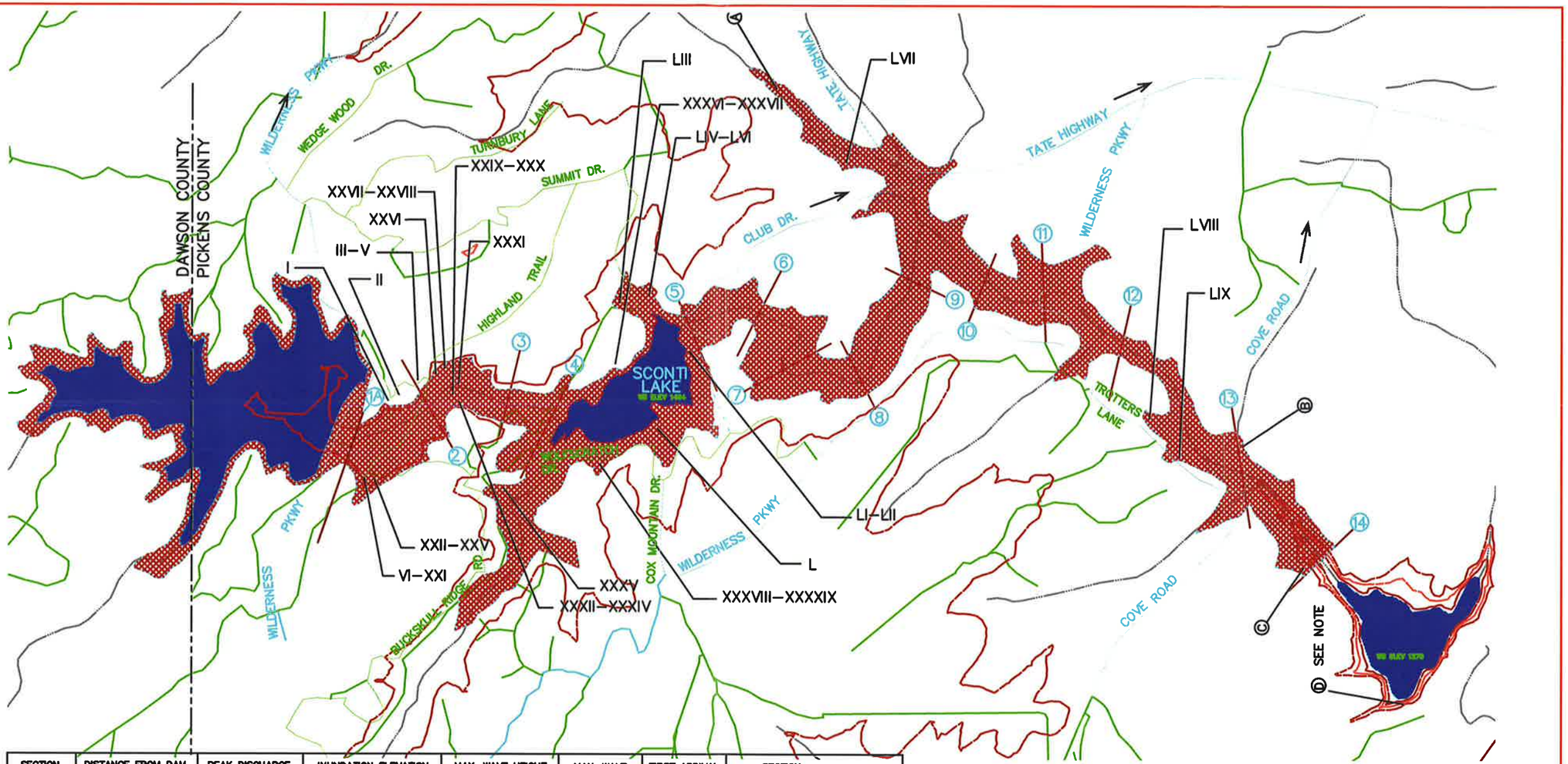
NOT RELEASED FOR CONSTRUCTION

PETIT LAKE
EMERGENCY ACTION PLAN

INUNDATION MAP

C1

Note: Inundation Analysis and Map performed by Jordan, Jones, and Goulding. this figure was prepared by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.



SECTION NUMBER	DISTANCE FROM DAM (MILES)	PEAK DISCHARGE (CFS)	INUNDATION ELEVATION (FEET)	MAX. WAVE HEIGHT (FEET)	MAX. WAVE TIME (MIN.)	FIRST ARRIVAL TIME (MIN)	SECTION FEATURE
1	0.00	225,253	1648.00	118.00	0.00	2.4	PETIT LAKE DAM
1A	0.01	225,253	1573.75	44.75	24.9	2.4	PETIT LAKE DAM
2	0.17	221,077	1566.04	51.04	25.6	4.8	–
3	0.44	218,198	1538.49	48.49	28.2	7.2	SCONTI LAKE
4	0.68	207,154	1519.61	55.61	29.1	9.6	SCONTI LAKE DAM
5	0.96	188,110	1503.47	73.47	30.7	10.8	–
6	1.05	187,902	1440.73	16.73	30.2	10.8	–
7	1.40	174,989	1455.56	60.56	34.0	14.4	–
8	1.48	172,268	1461.96	61.96	34.4	15.6	–
9	1.93	164,765	1414.63	54.63	38.7	16.8	–
10	2.20	160,903	1391.28	51.28	38.9	20.4	COVERED BRIDGE
11	2.33	157,479	1386.73	56.73	39.4	22.8	
12	2.90	144,487	1350.53	50.53	43.8	30.0	COVE ROAD (3) 10'X10' BOX CULVERT
13	3.00	143,793	1345.94	50.94	44.0	31.2	UPSTREAM OF COX LAKE
14	3.28	139,337	1318.98	40.98	48.0	33.6	DOWNSTREAM OF COX LAKE

EVACUATION ROUTE (TYP)

LAKES

HAZARD AREA

SECTION MARKER (DAM BREAK ANALYSIS)

GRAPHIC SCALE

NOTE:
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BIG CANOE PROPERTY OWNER'S ASSOCIATION

NOT RELEASED FOR CONSTRUCTION

PETIT LAKE
EMERGENCY ACTION PLAN

INUNDATION MAP

C1

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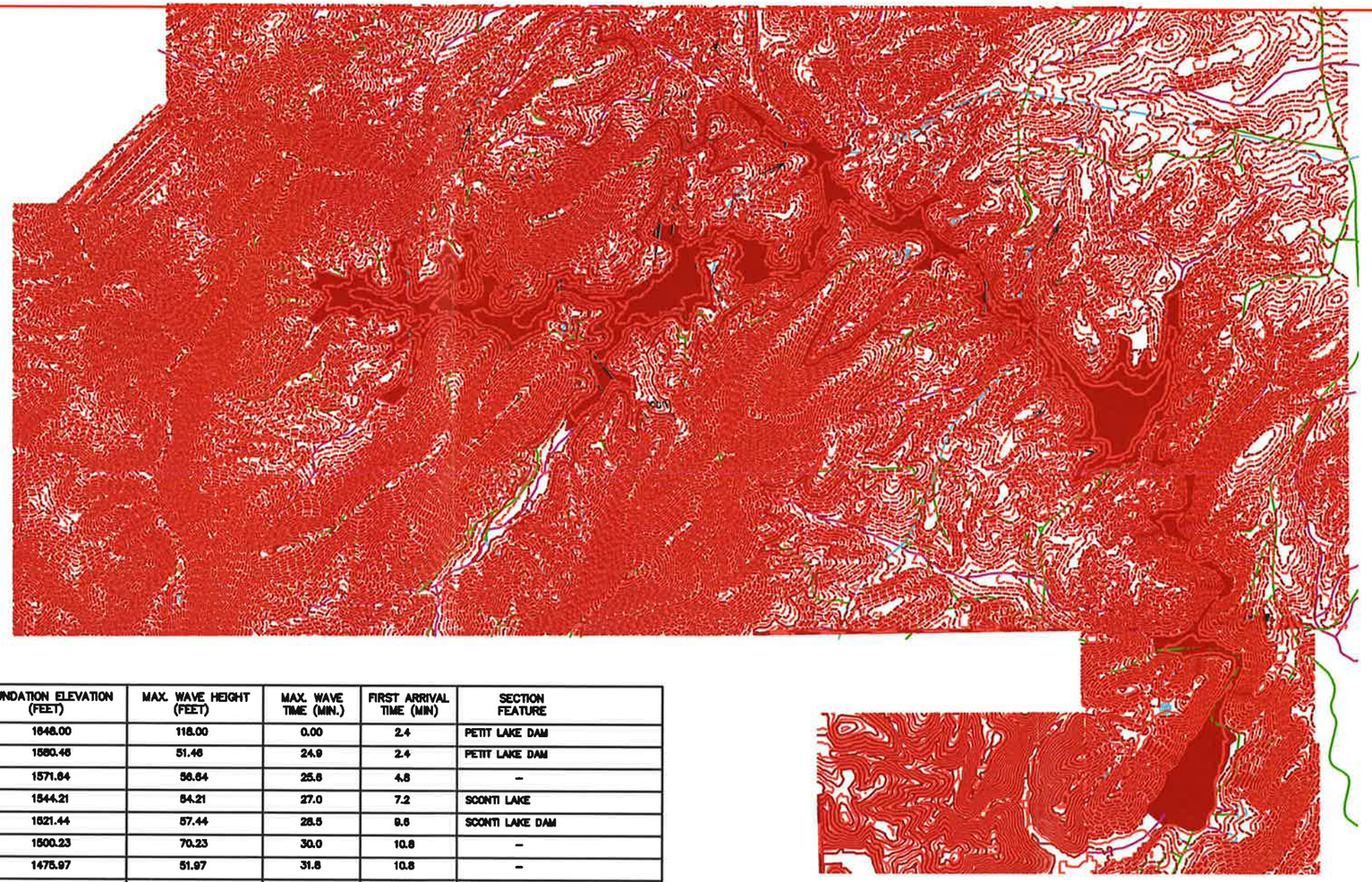

SECTION NUMBER	DISTANCE FROM DAM (MILES)	PEAK DISCHARGE (CFS)	INUNDATION ELEVATION (FEET)	MAX. WAVE HEIGHT (FEET)	MAX. WAVE TIME (MIN.)	FIRST ARRIVAL TIME (MIN)	SECTION FEATURE
1	0.00	228,710	1648.00	118.00	0.00	2.4	PETIT LAKE DAM
1A	0.01	228,710	1580.46	51.46	24.9	2.4	PETIT LAKE DAM
2	0.17	219,957	1571.84	56.84	25.6	4.8	–
3	0.44	214,678	1544.21	54.21	27.0	7.2	SCONTI LAKE
4	0.66	206,865	1521.44	57.44	28.5	9.6	SCONTI LAKE DAM
5	0.96	193,157	1500.23	70.23	30.0	10.8	–
6	1.05	191,411	1475.97	51.97	31.8	10.8	–
7	1.40	170,022	1457.48	62.48	35.1	14.4	–
8	1.46	166,307	1454.07	64.07	35.4	15.6	–
9	1.93	154,962	1419.42	59.42	38.4	18.8	–
10	2.20	149,669	1393.79	53.79	41.1	20.4	–
11	2.33	144,365	1387.48	57.48	42.3	22.8	UPSTREAM COVERED BRIDGE
11A	2.34	144,365	1329.00	52.41	42.9	30.5	DOWNSTREAM COVERED BRIDGE
12	2.90	128,137	1353.09	53.09	48.0	30.0	
13	3.00	124,573	1349.00	54.00	48.3	36.7	COVE ROAD (3) 10'X10' BOX CULVERT
13A	3.01	125,573	1294.00	49.6	48.9	36.5	DOWNSTREAM OF COVE RD
14	3.28	112,520	1338.56	57.56	56.7	37.5	UPSTREAM OF COX LAKE
15	3.66	98,607	1333.47	98.47	57.3	48.1	COX LAKE
15A	3.67	95,607	1278.41	44.41	58.2	49.2	DOWNSTREAM OF COX LAKE
16	4.15	89,804	1229.60	34.60	62.7	54.8	
17	4.80	84,036	1165.52	30.52	69.3	58.5	
18	5.30	74,149	1132.85	27.85	78.3	62.3	
19	5.66	61,538	1122.11	32.11	87.0	72.0	

EVACUATION ROUTE (TYP)

LAKES

HAZARD AREA

SECTION MARKER (DAM BREAK ANALYSIS)

GRAPHIC SCALE

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BIG CANOE PROPERTY OWNER'S ASSOCIATION

NOT RELEASED FOR CONSTRUCTION

PETIT LAKE
EMERGENCY ACTION PLAN

INUNDATION MAP

C1

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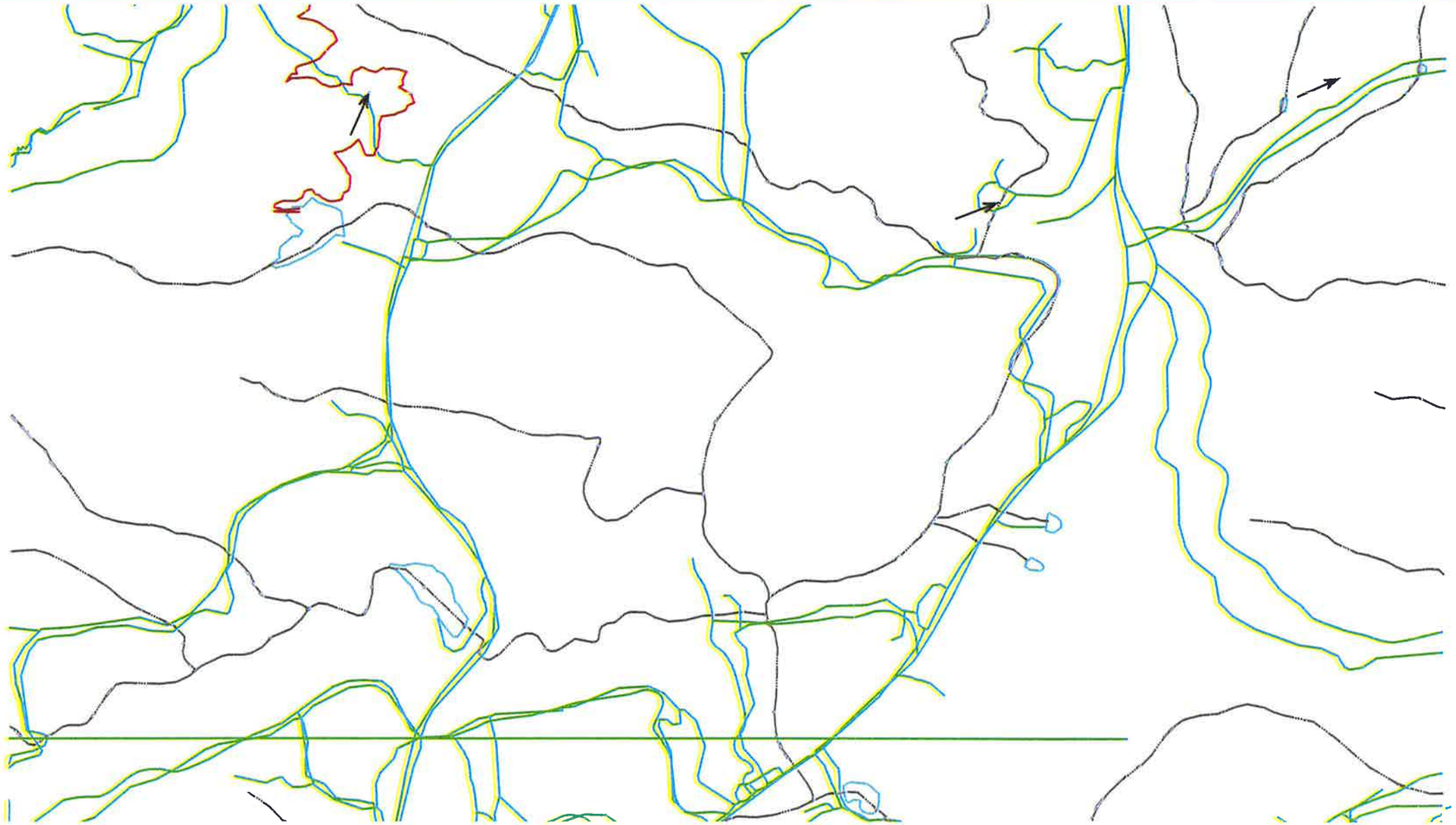

SECTION NUMBER	DISTANCE FROM DAM (MILES)	PEAK DISCHARGE (CFS)	INUNDATION ELEVATION (FEET)	MAX. WAVE HEIGHT (FEET)	MAX. WAVE TIME (MIN.)	FIRST ARRIVAL TIME (MIN)	SECTION FEATURE
1	0.00	225,253	1648.60	116.60	0.60	2.4	PETIT LAKE DAM
1A	0.01	225,253	1573.75	44.75	24.9	2.4	PETIT LAKE DAM
2	0.17	221,077	1586.04	51.04	25.6	4.8	–
3	0.44	218,188	1538.49	48.49	26.2	7.2	SCENTI LAKE
4	0.66	207,754	1519.61	35.61	29.1	9.6	SCENTI LAKE DAM
5	0.88	188,110	1503.47	73.47	30.7	10.8	–
6	1.05	187,802	1440.73	16.73	30.2	10.8	–
7	1.40	174,869	1455.88	60.88	34.0	14.4	–
8	1.48	172,288	1461.85	61.85	34.4	15.6	–
9	1.83	164,785	1414.63	54.63	38.7	16.8	–
10	2.20	160,803	1391.28	51.28	38.9	20.4	COMBINED BRIDGE
11	2.33	157,479	1388.75	98.73	39.4	22.8	
12	2.80	144,457	1350.53	50.53	43.8	30.0	COME ROAD (3) 10'X16' BOX CULVERT
13	3.60	143,785	1345.94	50.94	44.0	31.2	UPSTREAM OF COK LANE
14	3.86	139,537	1316.86	40.86	46.0	33.6	DOWNSTREAM OF COK LANE

EVACUATION ROUTE (TYP)

LAKES

HAZARD AREA

SECTION MARKER (DAM BREAK ANALYSIS)

GRAPHIC SCALE

NOTE:
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SEE FIGURE 3 OF THE WRITTEN REPORT FOR ALL ALPHABETIC NOMENCLATURE

BIG CANOE
PROPERTY OWNER'S
ASSOCIATION

NOT RELEASED FOR CONSTRUCTION

PETIT LAKE
EMERGENCY ACTION PLAN

INUNDATION MAP

C1

Note: Inundation Analysis and Map performed by Jordan, Jones, and Goulding. this figure was prepared by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

Emerg. Action Plan Lake Petit Dam Jordan, Jones, & Goulding

```
         1         1         4         3         3
         1         6        13        16
148.8     103.9     66.5      34.7      14.6      4.2       1.1       0.0
1650.0    1635.0    1620.0    1600.0    1580.0    1560.0    1540.0    1530.0
0.0       1648.     1.0       1530.     118.      0.5       1530.     0.0
1648.     1648.     0.0       0.0       0.0       0.0       0.0       1100.0
0.0       1464.30   1.0       1430.0    40        0.5       1430.0    0.0
1472.0    1470.     1464.0    0.0       318.0     0.0       570.0     975.0
0.0       1335.0    1.0       1330.0    31.0      0.1       1330.0    0.0
1349.     1347.     1330.0    0.0       45.0      0.0       450.0     0.0
0.0       1300.0    1.0       1295.0    30.0      0.1       1295.0    0.0
1327      1325.     1295.0    0.0       45.0      0.0       750.0     0.0
0.0       0.81       1.0       0         0         0         0         0.0
100.0     1300.0    10000.0
0.0       2.0       24.0
        18         8         6         0        -1         2         2         0
         1         2         6        13        16        18
       0.9         5         7
         2         3
         3         4
         5         6
         7         8
         8         9
         9        10
        10        11
0.0
1530.     1540.     1560.     1580.     1600.     1620.     1640.     1650.
300.      450.      630.      840.      1070.     1600.     1940.     2300.
0.
0.01
1529.0    1540.     1560.     1580.     1600.     1620.     1640.     1650.
300.      450.      630.      840.      1070.     1600.     1940.     2300.
0.
0.17
1515.     1520.     1540.     1560.     1580.     1590.     1600.     1610.
40.       105.      300.      680.      770.      850.      980.      1190.
0.
0.44
1490.     1495.     1500.     1510.     1520.     1540.     1560.     1564.
13.       35.       165.      250.      315.      432.      560.      620.
 0.
0.68
1464.     1470.     1480.     1490.     1500.     1510.     1520.     1540.
 5.       10.       180.      470.      1060.     1180.     1230.     1450.
 0.
0.98
1430.     1460.     1470.     1480.     1490.     1500.     1505.     1540.
 5.       100.      276.      356.      506.      680.      960.      2395.
 0.
0.99
1429.0    1460.     1470.     1480.     1490.     1500.     1505.     1540.
 5.       100.      276.      356.      506.      680.      960.      2395.
 0.
1.05
1424.     1425.     1430.     1440.     1450.     1460.     1470.     1484.
19.       39.       180.      263.      350.      637.      785.      978.
 0.
1.40
1395.     1400.     1410.     1420.     1425.     1430.     1440.     1488.
29.       65.       240.      420.      510.      590.      695.      1185.
 0.
1.48
1390.     1395.     1400.     1405.     1420.     1430.     1440.     1462.
21.       30.       55.       170.      290.      380.      455.      590.
 0.
1.93
1360.     1365.     1370.     1390.     1400.     1420.     1440.     1450.
18.       41.       125.      255.      320.      435.      560.      650.
 0.
2.20
1340.     1345.     1350.     1360.     1380.     1390.     1420.     1430.
28.       46.       140.      240.      425.      520.      710.      790.
 0.
2.33
1330.     1340.     1350.     1360.     1380.     1390.     1400.     1410.
50.       90.       330.      470.      700.      790.      845.      1020.
```

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

```
 0.
2.34
1329.0   1340.   1350.   1360.   1380.   1390.   1400.   1410.
17.      90.     330.    470.    700.    790.    845.    1020.
 0.
2.90
1300.    1305.   1310.   1320.   1330.   1340.   1360.   1390.
23.      40.     145.    285.    380.    450.    630.    850.
 0.
3.00
1295.    1325.   1330.   1340.   1350.   1360.   1370.   1380.
30.      250.    540.    830.    985.    1135.   1290.   1450.
0.
3.01
1294.0   1325.   1330.   1340.   1350.   1360.   1370.   1380.
30.      250.    540.    830.    985.    1135.   1290.   1450.
0.
3.28
1278.    1280.   1300.   1320.   1340.   1360.   1380.   1400.
35.      115.    300.    530.    665.    780.    915.    1095.
0.
0.050    0.06    0.10    0.12    0.15    0.15    0.18    0.18
0.050    0.06    0.10    0.12    0.15    0.15    0.18    0.18
0.050    0.06    0.10    0.12    0.15    0.15    0.18    0.18
0.050    0.06    0.10    0.12    0.15    0.15    0.18    0.18
0.055    0.06    0.10    0.12    0.15    0.15    0.18    0.18
0.060    0.07    0.10    0.12    0.15    0.15    0.18    0.18
0.060    0.07    0.10    0.12    0.15    0.15    0.18    0.18
0.050    0.06    0.10    0.12    0.15    0.15    0.18    0.18
0.050    0.06    0.10    0.12    0.15    0.15    0.18    0.18
0.050    0.06    0.10    0.12    0.15    0.15    0.18    0.18
0.055    0.06    0.10    0.12    0.15    0.15    0.18    0.18
0.050    0.06    0.10    0.12    0.15    0.15    0.18    0.18
0.055    0.06    0.10    0.12    0.15    0.15    0.18    0.18
0.055    0.06    0.10    0.12    0.15    0.15    0.18    0.18
0.055    0.06    0.10    0.12    0.15    0.15    0.18    0.18
0.055    0.06    0.10    0.12    0.15    0.15    0.18    0.18
0.05     0.00    0.05    0.05    0.05    0.00    0.05    0.00
0.05     0.05    0.05    0.00    0.00    0.00    0.05    0.00
0.00
0.0      0.00    0.25    0.0     -0.4    0.00    0.00    0.25
-0.4     0.25    0.00    0.00    0.00    0.00    0.00    -0.3
0.00
0.0      0.0     -27.0   0.0     0.0     0.0     0.00    0.0
2        7
50.0     500.0   1000.0
00.0     000.0   1000.0
```

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

ANALYSIS OF THE DOWNSTREAM FLOOD HYDROGRAPH

PRODUCED BY THE DAM BREAK OF

Emerg. Action Plan

ON

Lake Petit Dam

ANALYSIS BY

Jordan, Jones, & Goulding

BASED ON PROCEDURE DEVELOPED BY
DANNY L. FREAD, PH.D., SR. RESEARCH HYDROLOGIST

QUALITY CONTROL TESTING AND OTHER SUPPORT BY
JANICE M. LEWIS, RESEARCH HYDROLOGIST

HYDROLOGIC RESEARCH LABORATORY
W23, OFFICE OF HYDROLOGY
NOAA, NATIONAL WEATHER SERVICE
SILVER SPRING, MARYLAND 20910

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

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*** ***
*** SUMMARY OF INPUT DATA ***
*** ***
****
****

INPUT CONTROL PARAMETERS FOR Emerg. Action Plan

PARAMETER	VARIABLE	VALUE
NUMBER OF DYNAMIC ROUTING REACHES	KKN	1
TYPE OF RESERVOIR ROUTING	KUI	1
MULTIPLE DAM INDICATOR	MULDAM	4
PRINTING INSTRUCTIONS FOR INPUT SUMMARY	KDMP	3
NO. OF RESERVOIR INFLOW HYDROGRAPH POINTS	ITEH	3
INTERVAL OF CROSS-SECTION INFO PRINTED OUT WHEN JNK=9	NPRT	0
FLOOD-PLAIN MODEL PARAMETER	KFLP	0
METRIC INPUT/OUTPUT OPTION	METRIC	0

IDAM= 1

IDAM= 6

IDAM= 13

IDAM= 16

Emerg. Action Plan RESERVOIR

TABLE OF ELEVATION VS SURFACE AREA

SURFACE AREA (ACRES) SA(K)	ELEVATION (FT) HSA(K)
148.8	1650.00
103.9	1635.00

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34.7	1600.00
14.6	1580.00
4.2	1560.00
1.1	1540.00
.0	1530.00

DAM NUMBER 1

Emerg. Action Plan RESERVOIR AND BREACH PARAMETERS

PARAMETER	UNITS	VARIABLE	VALUE
ELEVATION OF WATER SURFACE	FEET	YO	1648.00
SIDE SLOPE OF BREACH		Z	1.00
ELEVATION OF BOTTOM OF BREACH	FEET	YBMIN	1530.00
WIDTH OF BASE OF BREACH	FEET	BB	118.00
TIME TO MAXIMUM BREACH SIZE	HR	TFH	.50
ELEVATION OF WATER WHEN BREACHED	FEET	HF	1648.00
ELEVATION OF TOP OF DAM	FEET	HD	1648.00
ELEVATION OF UNCONTROLLED SPILLWAY CREST	FEET	HSP	.00
ELEVATION OF CENTER OF GATE OPENINGS	FEET	HGT	.00
DISCHARGE COEF. FOR UNCONTROLLED SPILLWAY		CS	.00
DISCHARGE COEF. FOR GATE FLOW		CG	.00
DISCHARGE COEF. FOR UNCONTROLLED WEIR FLOW		CDO	.00
DISCHARGE THRU TURBINES	CFS	QT	1100.00

CDO SHOULD NOT BE 0.0 IF OVERTOPPING MAY OCCUR

DAM NUMBER 2

Emerg. Action Plan RESERVOIR AND BREACH PARAMETERS

PARAMETER	UNITS	VARIABLE	VALUE
ELEVATION OF WATER SURFACE	FEET	YO	1464.30
SIDE SLOPE OF BREACH		Z	1.00
ELEVATION OF BOTTOM OF BREACH	FEET	YBMIN	1430.00
WIDTH OF BASE OF BREACH	FEET	BB	40.00
TIME TO MAXIMUM BREACH SIZE	HR	TFH	.50
ELEVATION OF WATER WHEN BREACHED	FEET	HF	1472.00
ELEVATION OF TOP OF DAM	FEET	HD	1470.00
ELEVATION OF UNCONTROLLED SPILLWAY CREST	FEET	HSP	1464.00
ELEVATION OF CENTER OF GATE OPENINGS	FEET	HGT	.00
DISCHARGE COEF. FOR UNCONTROLLED SPILLWAY		CS	318.00

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

DISCHARGE COEF. FOR GATE FLOW		CG	.00
DISCHARGE COEF. FOR UNCONTROLLED WEIR FLOW		CDO	570.00
DISCHARGE THRU TURBINES	CFS	QT	975.00

DAM NUMBER 3

Emerg. Action Plan RESERVOIR AND BREACH PARAMETERS

PARAMETER	UNITS	VARIABLE	VALUE
ELEVATION OF WATER SURFACE	FEET	YO	1335.00
SIDE SLOPE OF BREACH		Z	1.00
ELEVATION OF BOTTOM OF BREACH	FEET	YBMIN	1330.00
WIDTH OF BASE OF BREACH	FEET	BB	31.00
TIME TO MAXIMUM BREACH SIZE	HR	TFH	.10
ELEVATION OF WATER WHEN BREACHED	FEET	HF	1349.00
ELEVATION OF TOP OF DAM	FEET	HD	1347.00
ELEVATION OF UNCONTROLLED SPILLWAY CREST	FEET	HSP	1330.00
ELEVATION OF CENTER OF GATE OPENINGS	FEET	HGT	.00
DISCHARGE COEF. FOR UNCONTROLLED SPILLWAY		CS	45.00
DISCHARGE COEF. FOR GATE FLOW		CG	.00
DISCHARGE COEF. FOR UNCONTROLLED WEIR FLOW		CDO	450.00
DISCHARGE THRU TURBINES	CFS	QT	.00

DAM NUMBER 4

Emerg. Action Plan RESERVOIR AND BREACH PARAMETERS

PARAMETER	UNITS	VARIABLE	VALUE
ELEVATION OF WATER SURFACE	FEET	YO	1300.00
SIDE SLOPE OF BREACH		Z	1.00
ELEVATION OF BOTTOM OF BREACH	FEET	YBMIN	1295.00
WIDTH OF BASE OF BREACH	FEET	BB	30.00
TIME TO MAXIMUM BREACH SIZE	HR	TFH	.10
ELEVATION OF WATER WHEN BREACHED	FEET	HF	1327.00
ELEVATION OF TOP OF DAM	FEET	HD	1325.00
ELEVATION OF UNCONTROLLED SPILLWAY CREST	FEET	HSP	1295.00
ELEVATION OF CENTER OF GATE OPENINGS	FEET	HGT	.00
DISCHARGE COEF. FOR UNCONTROLLED SPILLWAY		CS	45.00
DISCHARGE COEF. FOR GATE FLOW		CG	.00
DISCHARGE COEF. FOR UNCONTROLLED WEIR FLOW		CDO	750.00

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

DISCHARGE THRU TURBINES CFS QT .00

DHF(INTERVAL BETWEEN INPUT HYDROGRAPH ORDINATES) = .00 HRS.

TEH(TIME AT WHICH COMPUTATIONS TERMINATE)= .8100 HRS.

BREX(BREACH EXPONENT) = 1.000

MUD(MUD FLOW OPTION) = 0

IWF(TYPE OF WAVE FRONT TRACKING) = 0

KPRES(WETTED PERIMETER OPTION) = 0

KSL(LANDSLIDE PARAMETER) = 0

DFR(WINDOW FOR CRITICAL FROUDE NO. IN MIX FLOW ALGORITHM)= .050

INFLOW HYDROGRAPH TO Emerg. Action Plan

****

100.00 1300.00 10000.00

TIME OF INFLOW HYDROGRAPH ORDINATES

.0000 2.0000 24.0000

1

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

CROSS-SECTIONAL PARAMETERS FOR Lake Petit Dam
BELOW Emerg. Action Plan

PARAMETER	VARIABLE	VALUE
NUMBER OF CROSS-SECTIONS	NS	18
MAXIMUM NUMBER OF TOP WIDTHS	NCS	8
NUMBER OF CROSS-SECTIONAL HYDROGRAPHS TO PLOT	NTT	6
TYPE OF OUTPUT OTHER THAN HYDROGRAPH PLOTS	JNK	0
CROSS-SECTIONAL SMOOTHING PARAMETER	KSA	-1
DOWNSTREAM SUPERCRITICAL OR NOT	KSUPC	2
NO. OF LATERAL INFLOW HYDROGRAPHS	LQ	2
NO. OF POINTS IN GATE CONTROL CURVE	KCG	0

NUMBER OF CROSS-SECTION WHERE HYDROGRAPH DESIRED
(MAX NUMBER OF HYDROGRAPHS = 6)

1 2 6 13 16 18

SMF= .90 NTSM= 5 NSMR= 7

NUSM(K)	NDSM(K)
2	3
3	4
5	6
7	8
8	9
9	10
10	11

CROSS-SECTIONAL VARIABLES FOR Lake Petit Dam
BELOW Emerg. Action Plan

PARAMETER	UNITS	VARIABLE
LOCATION OF CROSS-SECTION	MILE	XS(I)
ELEVATION(MSL) OF FLOODING AT CROSS-SECTION	FEET	FSTG(I)
ELEV CORRESPONDING TO EACH TOP WIDTH	FEET	HS(K,I)
TOP WIDTH CORRESPONDING TO EACH ELEV (ACTIVE FLOW PORTION)	FEET	BS(K,I)
TOP WIDTH CORRESPONDING TO EACH ELEV (OFF-CHANNEL PORTION)	FEET	BSS(K,I)
NUMBER OF CROSS-SECTION		I
NUMBER OF ELEVATION LEVEL		K

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

CROSS-SECTION NUMBER 1
****

XS(I) = .000 FSTG(I) = .00

HS ...	1530.0	1540.0	1560.0	1580.0	1600.0	1620.0	1640.0	1650.0
BS ...	300.0	450.0	630.0	840.0	1070.0	1600.0	1940.0	2300.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

CROSS-SECTION NUMBER 2
****

XS(I) = .010 FSTG(I) = .00

HS ...	1529.0	1540.0	1560.0	1580.0	1600.0	1620.0	1640.0	1650.0
BS ...	300.0	450.0	630.0	840.0	1070.0	1600.0	1940.0	2300.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

CROSS-SECTION NUMBER 3
****

XS(I) = .170 FSTG(I) = .00

HS ...	1515.0	1520.0	1540.0	1560.0	1580.0	1590.0	1600.0	1610.0
BS ...	40.0	105.0	300.0	680.0	770.0	850.0	980.0	1190.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

CROSS-SECTION NUMBER 4
****

XS(I) = .440 FSTG(I) = .00

HS ...	1490.0	1495.0	1500.0	1510.0	1520.0	1540.0	1560.0	1564.0
BS ...	13.0	35.0	165.0	250.0	315.0	432.0	560.0	620.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

1

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

CROSS-SECTION NUMBER 5
****

XS(I) = .680 FSTG(I) = .00

HS ...	1464.0	1470.0	1480.0	1490.0	1500.0	1510.0	1520.0	1540.0
BS ...	5.0	10.0	180.0	470.0	1060.0	1180.0	1230.0	1450.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

CROSS-SECTION NUMBER 6
****

XS(I) = .980 FSTG(I) = .00

HS ...	1430.0	1460.0	1470.0	1480.0	1490.0	1500.0	1505.0	1540.0
BS ...	5.0	100.0	276.0	356.0	506.0	680.0	960.0	2395.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

CROSS-SECTION NUMBER 7
****

XS(I) = .990 FSTG(I) = .00

HS ...	1429.0	1460.0	1470.0	1480.0	1490.0	1500.0	1505.0	1540.0
BS ...	5.0	100.0	276.0	356.0	506.0	680.0	960.0	2395.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

CROSS-SECTION NUMBER 8
****

XS(I) = 1.050 FSTG(I) = .00

HS ...	1424.0	1425.0	1430.0	1440.0	1450.0	1460.0	1470.0	1484.0
BS ...	19.0	39.0	180.0	263.0	350.0	637.0	785.0	978.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

CROSS-SECTION NUMBER 9
****

XS(I) = 1.400 FSTG(I) = .00

HS ...	1395.0	1400.0	1410.0	1420.0	1425.0	1430.0	1440.0	1488.0
BS ...	29.0	65.0	240.0	420.0	510.0	590.0	695.0	1185.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

CROSS-SECTION NUMBER 10
****

XS(I) = 1.480 FSTG(I) = .00

HS ...	1390.0	1395.0	1400.0	1405.0	1420.0	1430.0	1440.0	1462.0
BS ...	21.0	30.0	55.0	170.0	290.0	380.0	455.0	590.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

CROSS-SECTION NUMBER 11
****

XS(I) = 1.930 FSTG(I) = .00

HS ...	1360.0	1365.0	1370.0	1390.0	1400.0	1420.0	1440.0	1450.0
BS ...	18.0	41.0	125.0	255.0	320.0	435.0	560.0	650.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

CROSS-SECTION NUMBER 12
****

XS(I) = 2.200 FSTG(I) = .00

HS ...	1340.0	1345.0	1350.0	1360.0	1380.0	1390.0	1420.0	1430.0
BS ...	28.0	46.0	140.0	240.0	425.0	520.0	710.0	790.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

CROSS-SECTION NUMBER 13
****

XS(I) = 2.330 FSTG(I) = .00

HS ...	1330.0	1340.0	1350.0	1360.0	1380.0	1390.0	1400.0	1410.0
BS ...	50.0	90.0	330.0	470.0	700.0	790.0	845.0	1020.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

CROSS-SECTION NUMBER 14
****

XS(I) = 2.340 FSTG(I) = .00

HS ...	1329.0	1340.0	1350.0	1360.0	1380.0	1390.0	1400.0	1410.0
BS ...	17.0	90.0	330.0	470.0	700.0	790.0	845.0	1020.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

CROSS-SECTION NUMBER 15
****

XS(I) = 2.900 FSTG(I) = .00

HS ...	1300.0	1305.0	1310.0	1320.0	1330.0	1340.0	1360.0	1390.0
BS ...	23.0	40.0	145.0	285.0	380.0	450.0	630.0	850.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

CROSS-SECTION NUMBER 16
****

XS(I) = 3.000 FSTG(I) = .00

HS ...	1295.0	1325.0	1330.0	1340.0	1350.0	1360.0	1370.0	1380.0
BS ...	30.0	250.0	540.0	830.0	985.0	1135.0	1290.0	1450.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

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Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

CROSS-SECTION NUMBER 17
****

XS(I) = 3.010 FSTG(I) = .00

HS ...	1294.0	1325.0	1330.0	1340.0	1350.0	1360.0	1370.0	1380.0
BS ...	30.0	250.0	540.0	830.0	985.0	1135.0	1290.0	1450.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

CROSS-SECTION NUMBER 18
****

XS(I) = 3.280 FSTG(I) = .00

HS ...	1278.0	1280.0	1300.0	1320.0	1340.0	1360.0	1380.0	1400.0
BS ...	35.0	115.0	300.0	530.0	665.0	780.0	915.0	1095.0
BSS ...	.0	.0	.0	.0	.0	.0	.0	.0

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Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

CROSS-SECTION	1	BST ...	300.00	450.00	630.00	840.00	1070.00	1600.00	1940.00	2300.00
CROSS-SECTION	1	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	2	BST ...	300.00	450.00	630.00	840.00	1070.00	1600.00	1940.00	2300.00
CROSS-SECTION	2	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	3	BST ...	40.00	105.00	300.00	680.00	770.00	850.00	980.00	1190.00
CROSS-SECTION	3	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	4	BST ...	13.00	35.00	165.00	250.00	315.00	432.00	560.00	620.00
CROSS-SECTION	4	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	5	BST ...	5.00	10.00	180.00	470.00	1060.00	1180.00	1230.00	1450.00
CROSS-SECTION	5	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	6	BST ...	5.00	100.00	276.00	356.00	506.00	680.00	960.00	2395.00
CROSS-SECTION	6	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	7	BST ...	5.00	100.00	276.00	356.00	506.00	680.00	960.00	2395.00
CROSS-SECTION	7	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	8	BST ...	19.00	39.00	180.00	263.00	350.00	637.00	785.00	978.00
CROSS-SECTION	8	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	9	BST ...	29.00	65.00	240.00	420.00	510.00	590.00	695.00	1185.00
CROSS-SECTION	9	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	10	BST ...	21.00	30.00	55.00	170.00	290.00	380.00	455.00	590.00
CROSS-SECTION	10	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	11	BST ...	18.00	41.00	125.00	255.00	320.00	435.00	560.00	650.00
CROSS-SECTION	11	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	12	BST ...	28.00	46.00	140.00	240.00	425.00	520.00	710.00	790.00
CROSS-SECTION	12	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	13	BST ...	50.00	90.00	330.00	470.00	700.00	790.00	845.00	1020.00
CROSS-SECTION	13	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	14	BST ...	17.00	90.00	330.00	470.00	700.00	790.00	845.00	1020.00
CROSS-SECTION	14	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	15	BST ...	23.00	40.00	145.00	285.00	380.00	450.00	630.00	850.00
CROSS-SECTION	15	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	16	BST ...	30.00	250.00	540.00	830.00	985.00	1135.00	1290.00	1450.00
CROSS-SECTION	16	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	17	BST ...	30.00	250.00	540.00	830.00	985.00	1135.00	1290.00	1450.00
CROSS-SECTION	17	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	18	BST ...	35.00	115.00	300.00	530.00	665.00	780.00	915.00	1095.00
CROSS-SECTION	18	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00

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CROSS-SECTION	1	BST ...	300.00	450.00	630.00	840.00	1070.00	1600.00	1940.00	2300.00
CROSS-SECTION	1	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	2	BST ...	300.00	450.00	630.00	840.00	1070.00	1600.00	1940.00	2300.00
CROSS-SECTION	2	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	3	BST ...	40.00	105.00	300.00	680.00	770.00	850.00	980.00	1190.00
CROSS-SECTION	3	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	4	BST ...	13.00	35.00	165.00	250.00	315.00	432.00	560.00	620.00
CROSS-SECTION	4	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	5	BST ...	5.00	10.00	180.00	470.00	970.00	1180.00	1230.00	1450.00
CROSS-SECTION	5	BSST ...	.00	.00	.00	.00	90.00	.00	.00	.00
CROSS-SECTION	6	BST ...	5.00	100.00	276.00	356.00	506.00	680.00	930.00	2395.00
CROSS-SECTION	6	BSST ...	.00	.00	.00	.00	.00	.00	30.00	.00
CROSS-SECTION	7	BST ...	5.00	100.00	276.00	356.00	506.00	680.00	930.00	2395.00
CROSS-SECTION	7	BSST ...	.00	.00	.00	.00	.00	.00	30.00	.00
CROSS-SECTION	8	BST ...	19.00	39.00	180.00	263.00	350.00	637.00	785.00	978.00
CROSS-SECTION	8	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	9	BST ...	29.00	65.00	240.00	420.00	510.00	590.00	695.00	1185.00
CROSS-SECTION	9	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	10	BST ...	21.00	30.00	55.00	170.00	290.00	380.00	455.00	590.00
CROSS-SECTION	10	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	11	BST ...	18.00	41.00	125.00	255.00	320.00	435.00	560.00	650.00
CROSS-SECTION	11	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	12	BST ...	28.00	46.00	140.00	240.00	425.00	520.00	710.00	790.00
CROSS-SECTION	12	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	13	BST ...	50.00	90.00	330.00	470.00	700.00	790.00	845.00	1020.00
CROSS-SECTION	13	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	14	BST ...	17.00	90.00	330.00	470.00	700.00	790.00	845.00	1020.00
CROSS-SECTION	14	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	15	BST ...	23.00	40.00	145.00	285.00	380.00	450.00	630.00	850.00
CROSS-SECTION	15	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	16	BST ...	30.00	250.00	540.00	830.00	985.00	1135.00	1290.00	1450.00
CROSS-SECTION	16	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	17	BST ...	30.00	250.00	540.00	830.00	985.00	1135.00	1290.00	1450.00
CROSS-SECTION	17	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00
CROSS-SECTION	18	BST ...	35.00	115.00	300.00	530.00	665.00	780.00	915.00	1095.00
CROSS-SECTION	18	BSST ...	.00	.00	.00	.00	.00	.00	.00	.00

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Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

CROSS-SECTION	1	HST	...	1530.00	1540.00	1560.00	1580.00	1600.00	1620.00	1640.00	1650.00
CROSS-SECTION	2	HST	...	1529.00	1540.00	1560.00	1580.00	1600.00	1620.00	1640.00	1650.00
CROSS-SECTION	3	HST	...	1515.00	1520.00	1540.00	1560.00	1580.00	1590.00	1600.00	1610.00
CROSS-SECTION	4	HST	...	1490.00	1495.00	1500.00	1510.00	1520.00	1540.00	1560.00	1564.00
CROSS-SECTION	5	HST	...	1464.00	1470.00	1480.00	1490.00	1500.00	1510.00	1520.00	1540.00
CROSS-SECTION	6	HST	...	1430.00	1460.00	1470.00	1480.00	1490.00	1500.00	1505.00	1540.00
CROSS-SECTION	7	HST	...	1429.00	1460.00	1470.00	1480.00	1490.00	1500.00	1505.00	1540.00
CROSS-SECTION	8	HST	...	1424.00	1425.00	1430.00	1440.00	1450.00	1460.00	1470.00	1484.00
CROSS-SECTION	9	HST	...	1395.00	1400.00	1410.00	1420.00	1425.00	1430.00	1440.00	1488.00
CROSS-SECTION	10	HST	...	1390.00	1395.00	1400.00	1405.00	1420.00	1430.00	1440.00	1462.00
CROSS-SECTION	11	HST	...	1360.00	1365.00	1370.00	1390.00	1400.00	1420.00	1440.00	1450.00
CROSS-SECTION	12	HST	...	1340.00	1345.00	1350.00	1360.00	1380.00	1390.00	1420.00	1430.00
CROSS-SECTION	13	HST	...	1330.00	1340.00	1350.00	1360.00	1380.00	1390.00	1400.00	1410.00
CROSS-SECTION	14	HST	...	1329.00	1340.00	1350.00	1360.00	1380.00	1390.00	1400.00	1410.00
CROSS-SECTION	15	HST	...	1300.00	1305.00	1310.00	1320.00	1330.00	1340.00	1360.00	1390.00
CROSS-SECTION	16	HST	...	1295.00	1325.00	1330.00	1340.00	1350.00	1360.00	1370.00	1380.00
CROSS-SECTION	17	HST	...	1294.00	1325.00	1330.00	1340.00	1350.00	1360.00	1370.00	1380.00
CROSS-SECTION	18	HST	...	1278.00	1280.00	1300.00	1320.00	1340.00	1360.00	1380.00	1400.00

1

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

MANNING N ROUGHNESS COEFFICIENTS FOR THE GIVEN REACHES
(CM(K,I),K=1,NCS) WHERE I = REACH NUMBER

REACH 1 ...	.050	.060	.100	.120	.150	.150	.180	.180
REACH 2 ...	.050	.060	.100	.120	.150	.150	.180	.180
REACH 3 ...	.050	.060	.100	.120	.150	.150	.180	.180
REACH 4 ...	.050	.060	.100	.120	.150	.150	.180	.180
REACH 5 ...	.055	.060	.100	.120	.150	.150	.180	.180
REACH 6 ...	.060	.070	.100	.120	.150	.150	.180	.180
REACH 7 ...	.060	.070	.100	.120	.150	.150	.180	.180
REACH 8 ...	.050	.060	.100	.120	.150	.150	.180	.180
REACH 9 ...	.050	.060	.100	.120	.150	.150	.180	.180
REACH 10 ...	.050	.060	.100	.120	.150	.150	.180	.180
REACH 11 ...	.055	.060	.100	.120	.150	.150	.180	.180
REACH 12 ...	.050	.060	.100	.120	.150	.150	.180	.180
REACH 13 ...	.055	.060	.100	.120	.150	.150	.180	.180
REACH 14 ...	.055	.060	.100	.120	.150	.150	.180	.180
REACH 15 ...	.055	.060	.100	.120	.150	.150	.180	.180
REACH 16 ...	.055	.060	.100	.120	.150	.150	.180	.180
REACH 17 ...	.055	.060	.100	.120	.150	.150	.180	.180

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

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CROSS-SECTIONAL VARIABLES FOR Lake Petit Dam
BELOW Emerg. Action Plan

PARAMETER	UNITS	VARIABLE
MINIMUM COMPUTATIONAL DISTANCE USED BETWEEN CROSS-SECTIONS	MILE	DXM(I)
CONTRACTION - EXPANSION COEFFICIENTS BETWEEN CROSS-SECTIONS		FKC(I)

REACH NUMBER	DXM(I)	FKC(I)
1	.050	.000
2	.000	.000
3	.050	.250
4	.050	.000
5	.050	-.400
6	.000	.000
7	.050	.000
8	.000	.250
9	.050	-.400
10	.050	.250
11	.050	.000
12	.000	.000
13	.000	.000
14	.000	.000
15	.050	.000
16	.000	-.300
17	.000	.000

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

DOWNSTREAM FLOW PARAMETERS FOR Lake Petit Dam
BELOW Emerg. Action Plan

PARAMETER	UNITS	VARIABLE	VALUE
MAX DISCHARGE AT DOWNSTREAM EXTREMITY	CFS	QMAXD	.0
MAX LATERAL OUTFLOW PRODUCING LOSSES	CFS /FEET	QLL	.000
INITIAL SIZE OF TIME STEP	HOUR	DTHM	-27.0000
DOWNSTREAM BOUNDARY PARAMETER	FEET	YDN	.000000
SLOPE OF CHANNEL DOWNSTREAM OF DAM	FPM	SOM	.00
THETA WEIGHTING FACTOR		THETA	.00
CONVERGENCE CRITERION FOR STAGE	FEET	EPSY	.000000
TIME AT WHICH DAM STARTS TO FAIL	HOUR	TFI	.00

AT REACH= 2 DXM WAS CHANGED TO .016 DUE TO EXP/CONTRACT CRITERIA

AT REACH= 3 DXM SHOULD BE CHANGED TO .043 DUE TO EXP/CONTRACT CRITERIA

AT REACH= 5 DXM SHOULD BE CHANGED TO .009 DUE TO EXP/CONTRACT CRITERIA

AT REACH= 7 DXM SHOULD BE CHANGED TO .001 DUE TO EXP/CONTRACT CRITERIA

AT REACH= 8 DXM WAS CHANGED TO .048 DUE TO EXP/CONTRACT CRITERIA

AT REACH= 9 DXM SHOULD BE CHANGED TO .017 DUE TO EXP/CONTRACT CRITERIA

AT REACH= 12 DXM WAS CHANGED TO .039 DUE TO EXP/CONTRACT CRITERIA

AT REACH= 14 DXM WAS CHANGED TO .166 DUE TO EXP/CONTRACT CRITERIA

AT REACH= 15 DXM SHOULD BE CHANGED TO .004 DUE TO EXP/CONTRACT CRITERIA

AT REACH= 17 DXM WAS CHANGED TO .010 DUE TO EXP/CONTRACT CRITERIA

COMPUTATIONS WILL USE THE FOLLOWING DXM VALUES

```
101.000    .016    .050    .050    .050 101.000    .050    .048    .050    .050    .050    .039 101.000    .166    .050
101.000    .010
```

LATERAL INFLOW REACH NUMBER

LQX(I)

2 7

(QL(L, 1),L=1,ITEH)

```
50.      500.     1000.
```

(QL(L, 2),L=1,ITEH)

```
 0.        0.     1000.
```

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

TOTAL NUMBER OF CROSS SECTIONS (ORIGINAL+INTERPOLATED) (N) = 88 (MAXIMUM ALLOWABLE = 200

RE-NUMBERED VALUES FOR IDAM

IDAM(1) = 1

IDAM(2) = 27

IDAM(3) = 54

IDAM(4) = 60

INITIAL CONDITIONS

INITIAL CONDITIONS

(QDI(I),I=1,N)

100.	1100.	1150.	1150.	1150.	1150.	1150.	1150.
0.	1150.	1150.	1150.	1150.	1150.	1150.	1150.
150.	1150.	1150.	1150.	1150.	1150.	1150.	1150.
1150.	1150.	1027.	1027.	1027.	1027.	1027.	1027.
1027.	1027.	1027.	1027.	1027.	1027.	1027.	1027.
1027.	1027.	1027.	1027.	1027.	1027.	1027.	1027.
1027.	1027.	1027.	1027.	1027.	503.	503.	503.
503.	503.	503.	503.	503.	503.	503.	503.
503.	503.	503.	503.	503.	503.	503.	503.
503.	503.	503.	503.	503.	503.	503.	503.
503.	503.	503.	503.	503.	503.	503.	503.

(YI(I),I=1,N)

1648.00	1530.02	1528.68	1527.35	1526.04	1524.75	1523.48	1522.26
1521.12	1520.18	1519.40	1518.18	1513.41	1508.86	1504.18	1500.67
1496.62	1490.84	1485.01	1479.68	1473.72	1465.83	1464.26	1464.31
1464.31	1464.30	1464.30	1437.41	1428.06	1424.11	1420.04	1415.96
1411.50	1407.59	1402.37	1399.78	1395.64	1392.33	1389.00	1385.67
1382.34	1378.99	1375.64	1372.26	1368.80	1364.99	1360.75	1356.71
1352.32	1348.63	1343.63	1340.51	1335.86	1335.00	1332.67	1322.70
1313.26	1303.22	1300.44	1300.00	1296.67	1296.06	1295.46	1294.86
1294.26	1293.65	1293.05	1292.45	1291.84	1291.24	1290.64	1290.03
1289.43	1288.82	1288.22	1287.61	1287.00	1286.39	1285.78	1285.17
1284.55	1283.93	1283.31	1282.68	1282.03	1281.36	1280.65	1280.04

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

TIME PARAMETERS OF OUTFLOW HYDROGRAPH IMMEDIATELY DOWNSTREAM OF DAM

PARAMETER	UNITS	VARIABLE	VALUE
TIME TO FAILURE	HR	TFH	.500
TIME TO START OF RISING LIMB OF HYDROGRAPH	HR	TFO	.810
TIME TO PEAK	HR	TP	24.000
TIME STEP SIZE	HR	DTHI	.019

ROUTING COMPLETED.

KTIME= 139 ALLOWABLE KTIME= 699 TT= .8

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

PROFILE OF CRESTS AND TIMES FOR Lake Petit Dam
BELOW Emerg. Action Plan

DISTANCE FROM DAM MILE	MAX ELEV FEET	MAX FLOW CFS	TIME MAX ELEV-HRS	MAX VEL FPS	FLOOD ELEV FEET	TIME FLOOD ELEV-HRS
.000	1647.99	225253	.000	4.85	.00	.00
.010	1573.75	225253	.415	10.47	.00	.00
.026	1573.30	224588	.419	10.13	.00	.00
.042	1572.80	224134	.419	9.72	.00	.00
.058	1572.26	223785	.419	9.87	.00	.00
.074	1571.66	223415	.419	10.06	.00	.00
.090	1571.00	223027	.419	10.28	.00	.00
.106	1570.25	222618	.422	10.53	.00	.00
.122	1569.42	222188	.422	10.84	.00	.00
.138	1568.46	221823	.422	11.24	.00	.00
.154	1567.35	221441	.426	11.79	.00	.00
.170	1566.04	221077	.426	12.78	.00	.00
.224	1562.29	220031	.430	12.07	.00	.00
.278	1558.11	219241	.430	11.86	.00	.00
.332	1553.61	218685	.433	12.35	.00	.00
.386	1548.18	218370	.437	13.56	.00	.00
.440	1538.49	218198	.437	17.69	.00	.00
.500	1530.55	217791	.448	14.21	.00	.00
.560	1524.87	216161	.470	11.78	.00	.00
.620	1521.66	212547	.481	9.53	.00	.00
.680	1519.81	207154	.485	8.04	.00	.00
.730	1518.17	202213	.493	15.41	.00	.00
.780	1516.32	198214	.496	678.21	.00	.00
.830	1514.17	194569	.500	23.92	.00	.00
.880	1511.56	191643	.504	12.35	.00	.00
.930	1508.17	189187	.507	14.82	.00	.00
.980	1503.47	188110	.511	52.90	.00	.00
.990	1498.02	188110	.515	******	.00	.00
1.050	1440.73	187902	.504	263.91	.00	.00
1.100	1474.10	187009	.533	33.16	.00	.00
1.150	1472.01	185210	.537	98.88	.00	.00
1.200	1429.45	184534	.511	64.78	.00	.00
1.250	1460.64	183271	.556	9.45	.00	.00
1.300	1458.53	180525	.563	9.61	.00	.00
1.350	1456.87	177649	.567	9.04	.00	.00
1.400	1455.56	174969	.567	6.53	.00	.00
1.480	1451.95	172268	.574	10.01	.00	.00
1.530	1448.51	171083	.581	10.35	.00	.00
1.580	1444.83	169890	.585	10.68	.00	.00
1.630	1440.84	168703	.589	10.98	.00	.00
1.680	1436.56	167644	.593	11.28	.00	.00
1.730	1432.29	166790	.596	11.58	.00	.00
1.780	1428.02	166109	.600	11.90	.00	.00
1.830	1423.73	165584	.604	12.24	.00	.00
1.880	1419.42	165159	.607	12.63	.00	.00
1.930	1414.63	164765	.611	13.22	.00	.00
1.984	1409.65	164317	.619	12.95	.00	.00
2.038	1404.72	163797	.622	12.67	.00	.00

1

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PROFILE OF CRESTS AND TIMES FOR Lake Petit Dam
BELOW Emerg. Action Plan

DISTANCE FROM DAM MILE	MAX ELEV FEET	MAX FLOW CFS	TIME MAX ELEV-HRS	MAX VEL FPS	FLOOD ELEV FEET	TIME FLOOD ELEV-HRS
2.092	1399.91	163110	.633	12.40	.00	.00
2.146	1395.38	162188	.641	12.11	.00	.00
2.200	1391.28	160903	.648	11.97	.00	.00
2.243	1389.18	159642	.652	10.28	.00	.00
2.287	1387.74	158460	.656	8.44	.00	.00
2.330	1386.73	157479	.656	6.90	.00	.00
2.340	1379.03	157479	.674	9.62	.00	.00
2.527	1369.62	151707	.696	9.29	.00	.00
2.713	1361.17	147058	.715	9.27	.00	.00
2.900	1350.53	144487	.730	9.83	.00	.00
2.950	1348.55	144036	.730	7.36	.00	.00
3.000	1345.94	143793	.733	7.93	.00	.00
3.010	1324.73	143793	.622	50.52	.00	.00
3.020	1339.38	143748	.748	21.29	.00	.00
3.030	1338.41	143615	.752	20.58	.00	.00
3.040	1337.45	143469	.752	20.11	.00	.00
3.050	1336.51	143334	.756	19.75	.00	.00
3.060	1335.59	143185	.756	19.36	.00	.00
3.070	1334.69	143040	.759	19.01	.00	.00
3.080	1333.80	142892	.759	18.64	.00	.00
3.090	1332.93	142730	.763	18.24	.00	.00
3.100	1332.08	142582	.763	17.77	.00	.00
3.110	1331.25	142422	.767	17.42	.00	.00
3.120	1330.44	142254	.767	16.96	.00	.00
3.130	1329.64	142096	.770	16.51	.00	.00
3.140	1328.86	141924	.770	16.04	.00	.00
3.150	1328.09	141751	.774	15.57	.00	.00
3.160	1327.34	141583	.774	15.06	.00	.00
3.170	1326.60	141402	.778	14.56	.00	.00
3.180	1325.87	141225	.778	14.05	.00	.00
3.190	1325.16	141048	.781	13.57	.00	.00
3.200	1324.45	140859	.781	13.20	.00	.00
3.210	1323.76	140678	.785	12.98	.00	.00
3.220	1323.07	140494	.785	12.82	.00	.00
3.230	1322.38	140299	.789	12.82	.00	.00
3.240	1321.70	140113	.789	12.83	.00	.00
3.250	1321.02	139923	.793	12.85	.00	.00
3.260	1320.34	139722	.796	12.90	.00	.00
3.270	1319.66	139533	.796	12.98	.00	.00
3.280	1318.98	139337	.800	13.10	.00	.00

1

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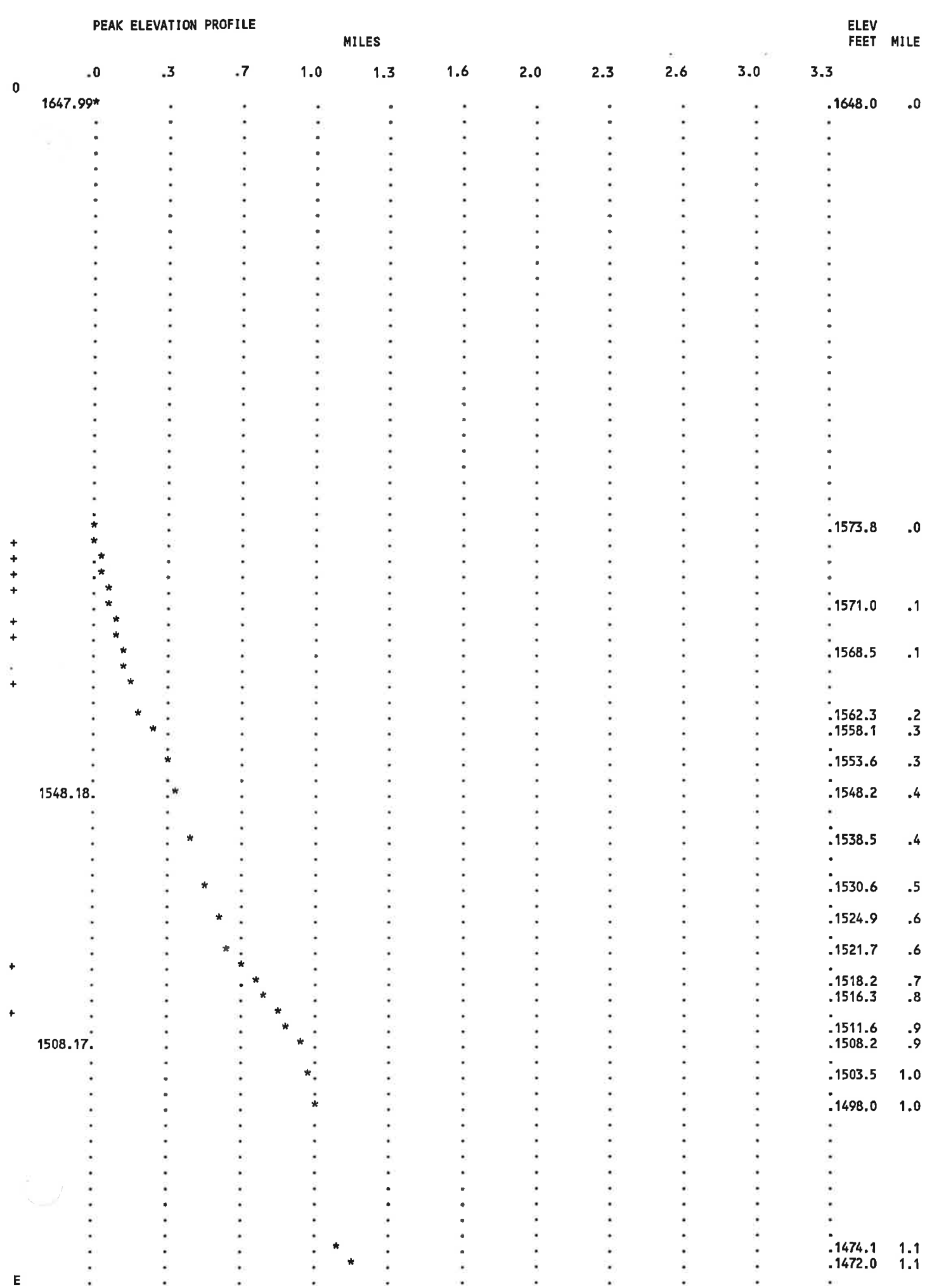

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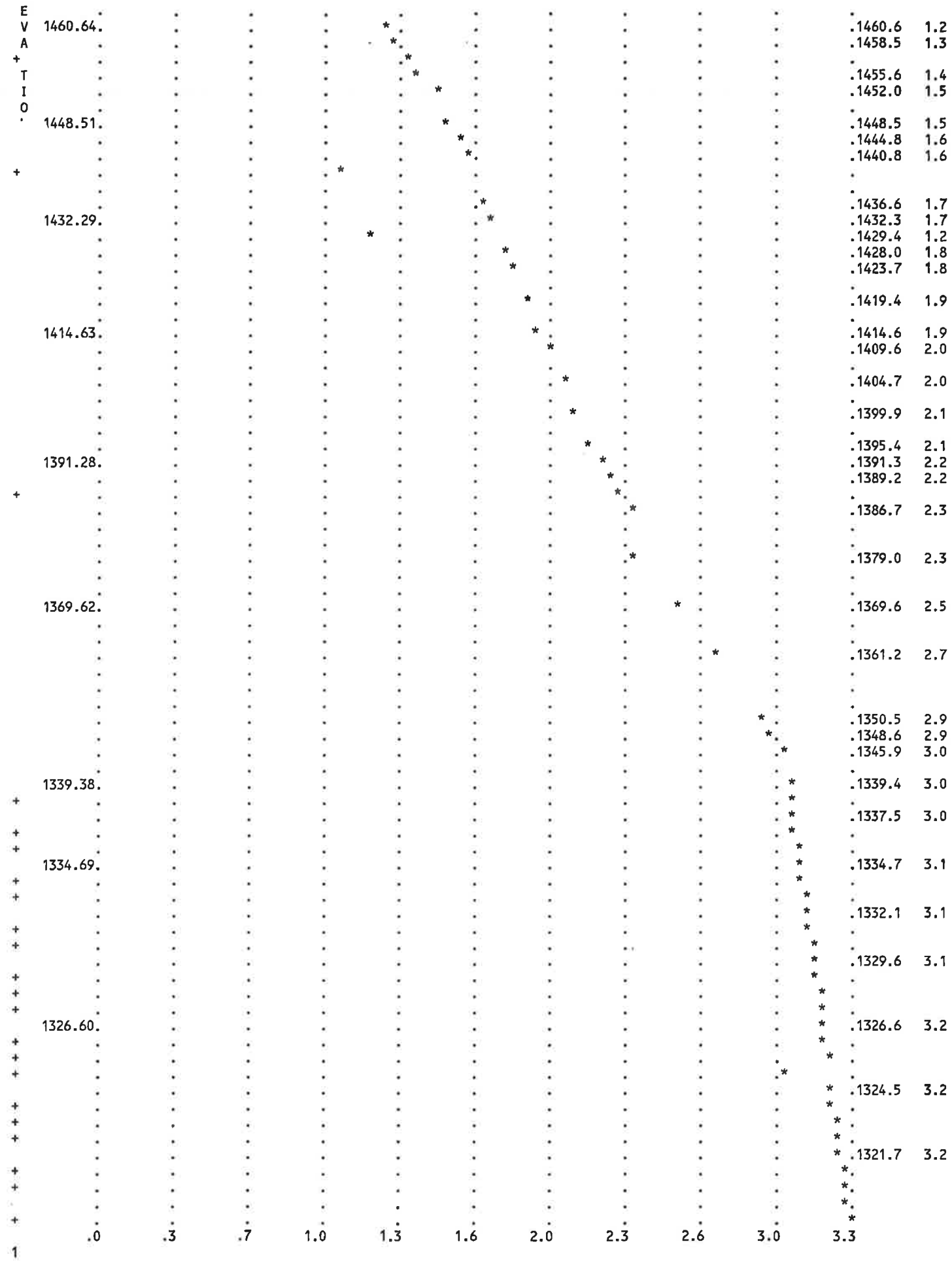

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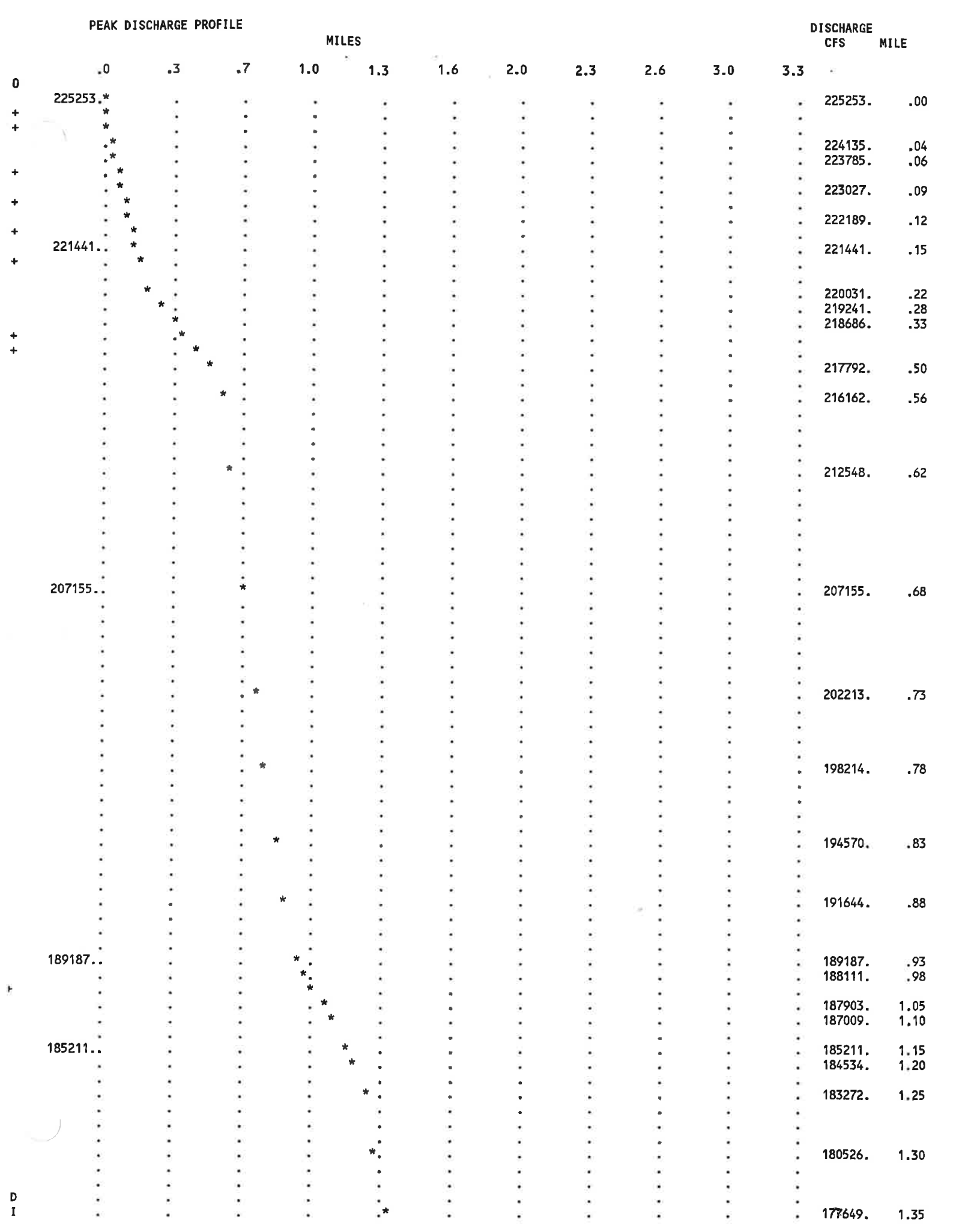

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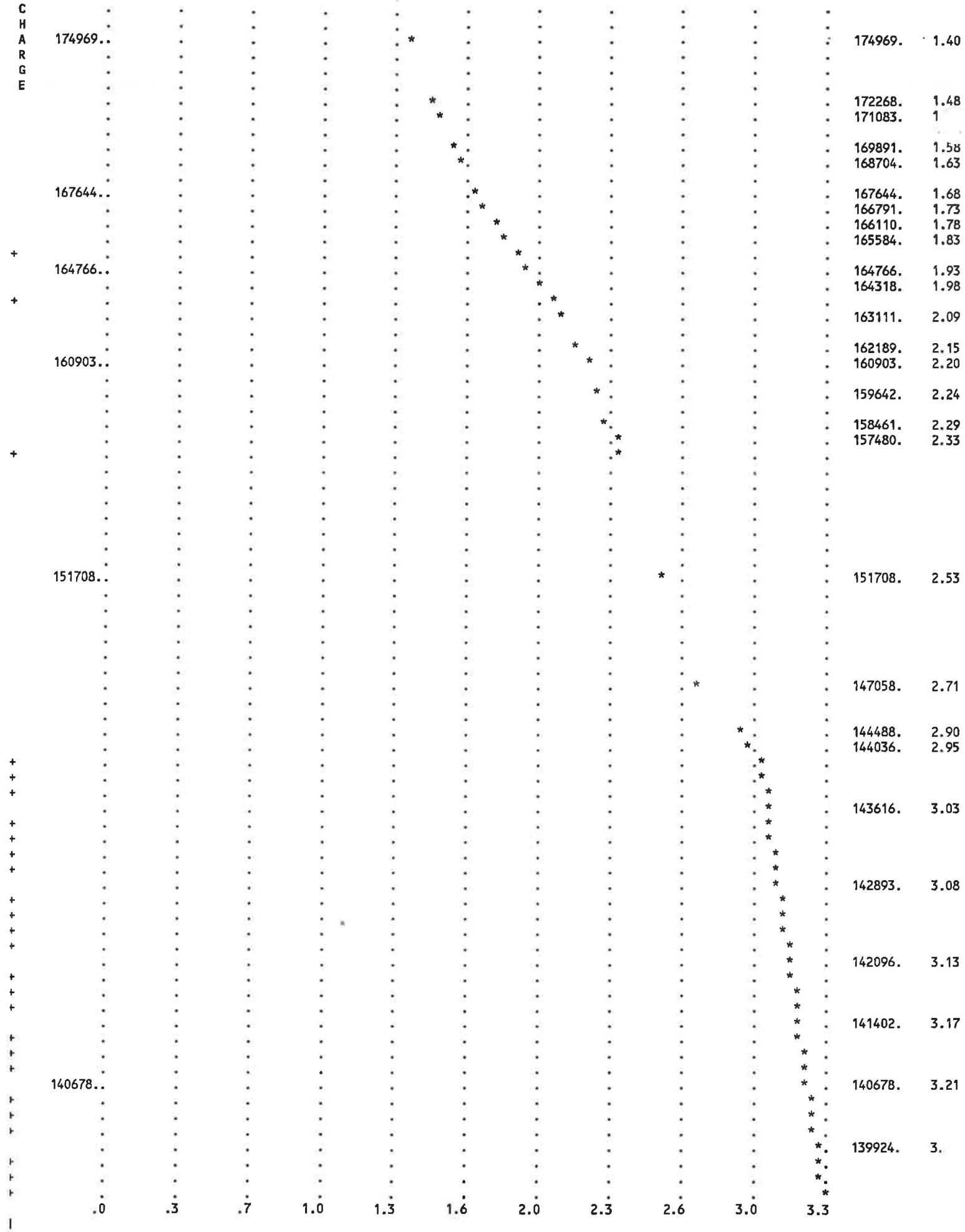

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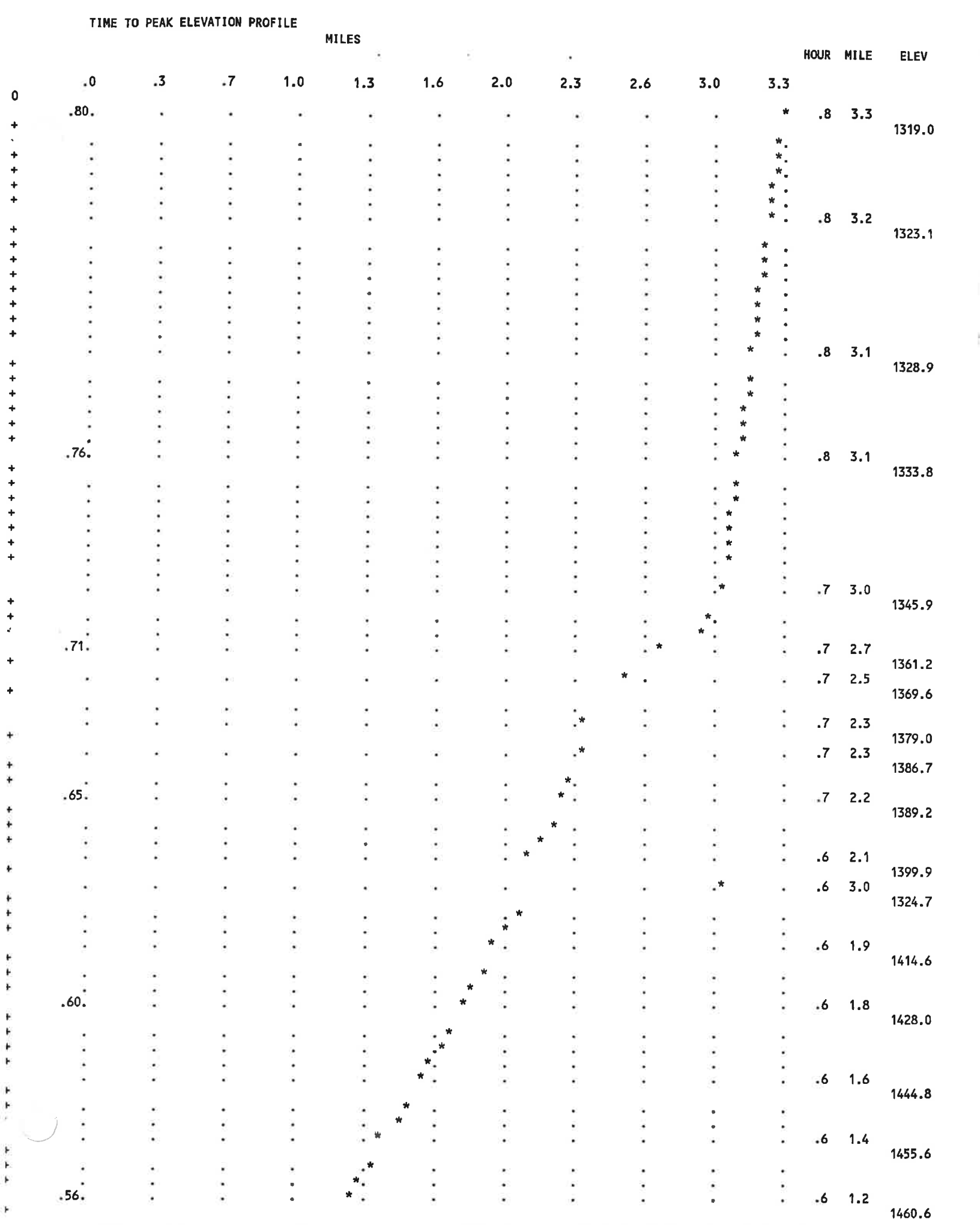

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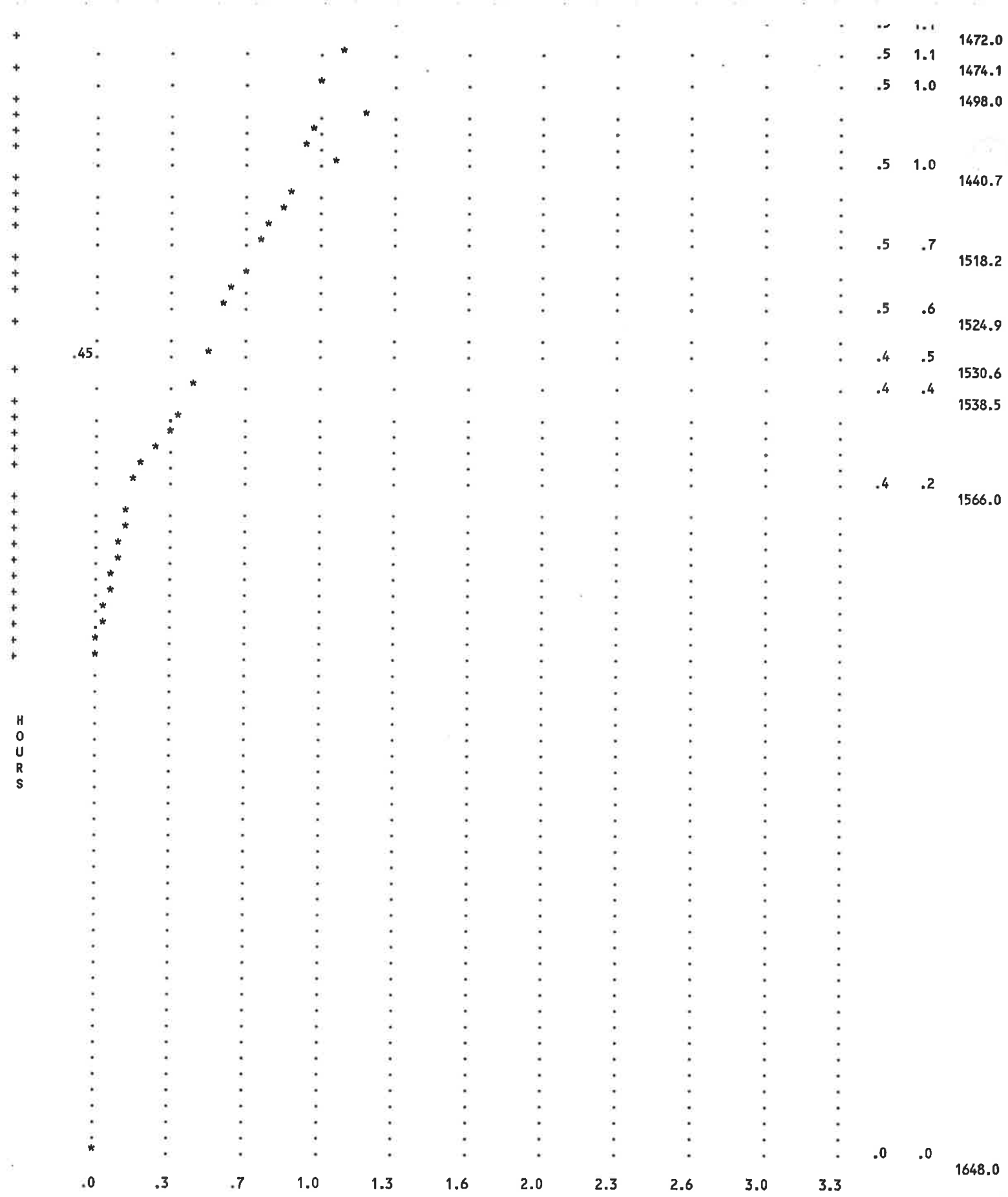

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

DISCHARGE HYDROGRAPH FOR Lake Petit Dam ... STATION NUMBER 1
BELOW Emerg. Action Plan AT MILE .00

GAGE ZERO = 1530.00 FEET MAX ELEVATION REACHED BY FLOOD WAVE = 1647.98 FEET
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 117.98 FEET AT TIME = .000 HOURS
MAX FLOW = 225253 CFS AT TIME = .389 HOURS

TIME HR	STAGE FEET	FLOW CFS	0 50000 100000 150000 200000 250000
.00	118.0	1100	* . . . . .
.02	118.0	1400	* . . . . .
.04	117.9	2635	.* . . . . .
.06	117.9	5366	.* . . . . .
.08	117.8	9664	. * . . . . .
.10	117.7	15858	. * . . . . .
.12	117.4	24096	. * . . . . .
.14	117.1	34207	. * . . . . .
.16	116.6	46266	. *. . . . .
.18	116.0	60097	. * . . . . .
.20	115.2	75855	. * . . . . .
.22	114.1	93104	. *. . . . .
.24	112.8	111586	. * . . . .
.26	111.2	130717	. * . . . .
.28	109.3	150167	. * . . . .
.30	106.9	169111	. * . . . .
.32	104.1	186788	. * . . . .
.34	100.8	202388	. * . . . .
.36	96.9	214908	. * . . .
.38	92.3	222881	. * . . .
.40	86.7	224884	. * . . .
.42	80.2	220766	. * . . .
.44	72.3	206897	. * . . .
.46	62.3	180378	. * . . .
.48	49.2	136350	. * . . .
.50	33.6	54294	.* . . . .
.52	22.6	14978	. * . . . .
54	15.7	7954	. * . . . .
6	9.9	3870	.* . . . .
.58	5.7	1660	* . . . . .
.60	3.4	1100	* . . . . .
.62	1.6	1100	* . . . . .
.64	.7	1100	* . . . . .
.66	.7	1100	* . . . . .
.68	.7	1100	* . . . . .
.70	.7	1100	* . . . . .
.72	.7	1100	* . . . . .
.74	.7	1100	* . . . . .
.76	.7	1100	* . . . . .
.78	.7	1100	* . . . . .
.80	.7	1100	* . . . . .

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

DISCHARGE HYDROGRAPH FOR Lake Petit Dam ... STATION NUMBER 2
BELOW Emerg. Action Plan AT MILE .01

GAGE ZERO = 1529.00 FEET MAX ELEVATION REACHED BY FLOOD WAVE = 1573.75 FEET
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 44.75 FEET AT TIME = .415 HOURS
MAX FLOW = 225253 CFS AT TIME = .389 HOURS

TIME HR	STAGE FEET	FLOW CFS	0 50000 100000 150000 200000 250000
.00	1.0	1100	* . . . . .
.02	1.2	1400	* . . . . .
.04	1.7	2635	.* . . . . .
.06	2.6	5366	.* . . . . .
.08	3.8	9664	. * . . . . .
.10	5.2	15858	. * . . . . .
.12	6.9	24096	. * . . . . .
.14	9.1	34207	. * . . . . .
.16	12.0	46266	. *. . . . .
.18	15.6	60097	. . * . . . .
.20	19.5	75855	. . * . . . .
.22	23.5	93104	. . *. . . .
.24	27.1	111586	. . . * . . .
.26	30.5	130717	. . . * . . .
.28	33.5	150167	. . . . * . .
.30	36.1	169111	. . . . * . .
.32	38.5	186788	. . . . * . .
.34	40.6	202388	. . . . . * .
.36	42.4	214908	. . . . . * .
.38	43.7	222881	. . . . . * .
.40	44.5	224884	. . . . . * .
.42	44.7	220766	. . . . . * .
.44	44.2	206897	. . . . . * .
.46	42.4	180378	. . . . * . .
.48	39.0	136350	. . . . * . .
.50	31.5	54294	. .* . . . .
.52	22.7	14978	. * . . . . .
.54	16.0	7954	. * . . . . .
.56	10.5	3870	.* . . . . .
.58	5.9	1660	* . . . . .
.60	2.5	1100	* . . . . .
.62	1.0	1100	* . . . . .
.64	1.0	1100	* . . . . .
.66	1.0	1100	* . . . . .
.68	1.0	1100	* . . . . .
.70	1.0	1100	* . . . . .
.72	1.0	1100	* . . . . .
.74	1.0	1100	* . . . . .
.76	1.0	1100	* . . . . .
.78	1.0	1100	* . . . . .
.80	1.0	1100	* . . . . .

1

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

DISCHARGE HYDROGRAPH FOR Lake Petit Dam ... STATION NUMBER 27
BELOW Emerg. Action Plan AT MILE .98

GAGE ZERO = 1430.00 FEET MAX ELEVATION REACHED BY FLOOD WAVE = 1503.47 FEET
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 73.47 FEET AT TIME = .511 HOURS
MAX FLOW = 188111 CFS AT TIME = .507 HOURS

TIME HR	STAGE FEET	FLOW CFS	0 50000 100000 150000 200000 250000
.00	33.4	2613	.* . . . . .
.02	30.3	5121	.* . . . . .
.04	25.7	4811	.* . . . . .
.06	23.6	2317	* . . . . .
.08	20.8	2631	.* . . . . .
.10	16.6	2779	.* . . . . .
.12	13.6	1726	* . . . . .
.14	11.6	1523	* . . . . .
.16	10.0	1801	* . . . . .
.18	29.0	69005	. . * . . . .
.20	43.8	15079	. * . . . . .
.22	42.4	16540	. * . . . . .
.24	44.2	17191	. * . . . . .
.26	45.8	23296	. * . . . . .
.28	47.6	31563	. * . . . . .
.30	49.5	41665	. * . . . . .
.32	51.7	54403	. .* . . . . .
.34	54.6	71766	. . * . . . .
.36	58.3	94191	. . *. . . . .
.38	62.5	118573	. . . * . . .
.40	66.0	139640	. . . * . . .
.42	68.6	155628	. . . .* . . .
.44	70.3	166552	. . . . * . .
.46	71.6	175582	. . . . * . .
.48	72.7	183127	. . . . * . .
.50	73.4	187740	. . . . * . .
.52	73.4	186728	. . . . * . .
54	72.5	178620	. . . . * . .
6	70.7	164887	. . . . * . .
.58	68.4	148320	. . . . * . .
.60	65.1	126451	. . . * . . .
.62	61.6	106542	. . . .* . . .
.64	58.2	89562	. . . * . . .
.66	55.3	76051	. . . * . . .
.68	52.5	65301	. . . * . . .
.70	50.0	55438	. . .* . . . .
.72	47.4	45864	. . *. . . . .
.74	44.6	36657	. . * . . . .
.76	41.7	28345	. . * . . . .
.78	38.6	21912	. * . . . . .
.80	35.7	17148	. * . . . . .

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

DISCHARGE HYDROGRAPH FOR Lake Petit Dam ... STATION NUMBER 54
BELOW Emerg. Action Plan AT MILE 2.33

GAGE ZERO = 1330.00 FEET MAX ELEVATION REACHED BY FLOOD WAVE = 1386.73 FEET
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 56.73 FEET AT TIME = .656 HOURS
MAX FLOW = 157480 CFS AT TIME = .644 HOURS

TIME HR	STAGE FEET	FLOW CFS	0	50000	100000	150000	200000	250000
.00	7.5	915	*	.	.	.	.	.
.02	8.6	1132	*	.	.	.	.	.
.04	9.1	1227	*	.	.	.	.	.
.06	9.3	1286	*	.	.	.	.	.
.08	9.5	1326	*	.	.	.	.	.
.10	9.6	1330	*	.	.	.	.	.
.12	9.5	1326	*	.	.	.	.	.
.14	9.5	1325	*	.	.	.	.	.
.16	9.5	1313	*	.	.	.	.	.
.18	9.5	1326	*	.	.	.	.	.
.20	9.7	1351	*	.	.	.	.	.
.22	9.7	1353	*	.	.	.	.	.
.24	9.8	1373	*	.	.	.	.	.
.26	9.9	1393	*	.	.	.	.	.
.28	10.0	1420	*	.	.	.	.	.
.30	10.2	1471	*	.	.	.	.	.
.32	10.8	1600	*	.	.	.	.	.
.34	12.1	1889	*	.	.	.	.	.
.36	14.3	2430	*	.	.	.	.	.
.38	17.3	3846	.*	.	.	.	.	.
.40	20.7	7632	. *	.	.	.	.	.
.42	23.8	13680	. *	.	.	.	.	.
.44	26.7	21861	. *	.	.	.	.	.
.46	29.6	33046	. *	.	.	.	.	.
.48	32.9	47341	. *	.	.	.	.	.
.50	36.7	64808	. *	.	.	.	.	.
.52	41.0	84332	. *	.	.	.	.	.
.54	45.3	104049	. *	.	.	.	.	.
.56	49.0	121940	. *	.	.	.	.	.
.58	51.9	136965	. *	.	.	.	.	.
.60	54.2	147251	. *	.	.	.	.	.
.62	55.7	154076	. *	.	.	.	.	.
.64	56.5	157351	. *	.	.	.	.	.
.66	56.7	156324	. *	.	.	.	.	.
.68	56.4	151808	. *	.	.	.	.	.
.70	55.6	144971	. *	.	.	.	.	.
.72	54.6	136606	. *	.	.	.	.	.
.74	53.3	127580	. *	.	.	.	.	.
.76	51.8	118358	. *	.	.	.	.	.
.78	50.2	109405	. *	.	.	.	.	.
.80	48.6	100733	. *	.	.	.	.	.

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Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

DISCHARGE HYDROGRAPH FOR Lake Petit Dam ... STATION NUMBER 60
BELOW Emerg. Action Plan AT MILE 3.00

GAGE ZERO = 1295.00 FEET MAX ELEVATION REACHED BY FLOOD WAVE = 1345.94 FEET
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 50.94 FEET AT TIME = .733 HOURS
MAX FLOW = 143793 CFS AT TIME = .733 HOURS

TIME HR	STAGE FEET	FLOW CFS	0	50000	100000	150000	200000	250000
.00	5.0	505	*	.	.	.	.	.
.02	5.0	507	*	.	.	.	.	.
.04	5.1	517	*	.	.	.	.	.
.06	5.3	550	*	.	.	.	.	.
.08	5.7	615	*	.	.	.	.	.
.10	6.3	718	*	.	.	.	.	.
.12	7.0	837	*	.	.	.	.	.
.14	7.6	951	*	.	.	.	.	.
.16	8.1	1045	*	.	.	.	.	.
.18	8.5	1121	*	.	.	.	.	.
.20	8.8	1178	*	.	.	.	.	.
.22	9.0	1219	*	.	.	.	.	.
.24	9.2	1247	*	.	.	.	.	.
.26	9.3	1267	*	.	.	.	.	.
.28	9.3	1282	*	.	.	.	.	.
.30	9.4	1296	*	.	.	.	.	.
.32	9.5	1310	*	.	.	.	.	.
.34	9.5	1324	*	.	.	.	.	.
.36	9.6	1339	*	.	.	.	.	.
.38	9.7	1353	*	.	.	.	.	.
.40	9.7	1365	*	.	.	.	.	.
.42	9.9	1392	*	.	.	.	.	.
.44	10.2	1472	*	.	.	.	.	.
.46	10.3	1491	*	.	.	.	.	.
.48	10.1	1451	*	.	.	.	.	.
.50	12.6	2011	*	.	.	.	.	.
.52	19.5	3879	.*	.	.	.	.	.
54	27.2	6399	.*	.	.	.	.	.
56	34.3	15838	. *	.	.	.	.	.
.58	39.5	35940	. *	.	.	.	.	.
.60	43.8	60671	.	. *	.	.	.	.
.62	46.7	86636	.	. *	.	.	.	.
.64	48.2	110188	.	.	. *	.	.	.
.66	48.6	127851	.	.	. *	.	.	.
.68	49.7	135012	.	.	. *	.	.	.
.70	50.5	140586	.	.	. *	.	.	.
.72	50.9	143373	.	.	. *	.	.	.
.74	50.9	143598	.	.	. *	.	.	.
.76	50.6	141501	.	.	. *	.	.	.
.78	50.0	137503	.	.	. *	.	.	.
.80	49.3	132271	.	.	. *	.	.	.

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

DISCHARGE HYDROGRAPH FOR Lake Petit Dam ... STATION NUMBER 88
BELOW Emerg. Action Plan AT MILE 3.28

GAGE ZERO = 1278.00 FEET MAX ELEVATION REACHED BY FLOOD WAVE = 1318.98 FEET
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 40.98 FEET AT TIME = .800 HOURS
MAX FLOW = 139337 CFS AT TIME = .767 HOURS

TIME HR	STAGE FEET	FLOW CFS	0	50000	100000	150000	200000	250000
.00	2.0	505	*	.	.	.	.	.
.02	2.0	505	*	.	.	.	.	.
.04	2.0	506	*	.	.	.	.	.
.06	2.0	508	*	.	.	.	.	.
.08	2.0	517	*	.	.	.	.	.
.10	2.0	531	*	.	.	.	.	.
.12	2.1	574	*	.	.	.	.	.
.14	2.2	649	*	.	.	.	.	.
.16	2.3	754	*	.	.	.	.	.
.18	2.4	873	*	.	.	.	.	.
.20	2.6	980	*	.	.	.	.	.
.22	2.7	1073	*	.	.	.	.	.
.24	2.7	1141	*	.	.	.	.	.
.26	2.8	1195	*	.	.	.	.	.
.28	2.8	1232	*	.	.	.	.	.
.30	2.9	1257	*	.	.	.	.	.
.32	2.9	1276	*	.	.	.	.	.
.34	2.9	1291	*	.	.	.	.	.
.36	2.9	1305	*	.	.	.	.	.
.38	2.9	1320	*	.	.	.	.	.
.40	2.9	1334	*	.	.	.	.	.
.42	3.0	1348	*	.	.	.	.	.
.44	3.0	1362	*	.	.	.	.	.
.46	3.0	1395	*	.	.	.	.	.
.48	3.1	1447	*	.	.	.	.	.
.50	3.1	1473	*	.	.	.	.	.
.52	3.1	1532	*	.	.	.	.	.
.54	3.9	2442	*	.	.	.	.	.
.56	5.6	4916	.*	.	.	.	.	.
.58	9.5	13544	. *	.	.	.	.	.
.60	15.4	30856	. *	.	.	.	.	.
.62	20.6	48247	.	*	.	.	.	.
.64	24.9	66440	.	. *	.	.	.	.
.66	30.2	93452	.	.	*.	.	.	.
.68	34.0	113083	.	.	. *	.	.	.
.70	36.4	124862	.	.	. *	.	.	.
.72	38.2	132544	.	.	. *	.	.	.
.74	39.5	137176	.	.	. *	.	.	.
.76	40.4	139188	.	.	. *	.	.	.
.78	40.8	138883	.	.	. *	.	.	.
.80	41.0	136648	.	.	. *	.	.	.

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Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

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*                                           *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)       *
*              MAY   1991                   *
*            VERSION 4.0.1E                 *
*                                           *
*  RUN DATE  09/18/1998  TIME  08:45:56     *
*                                           *
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*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*         609 SECOND STREET         *
*       DAVIS, CALIFORNIA 95616     *
*           (916) 756-1104          *
*                                   *
*************************************
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X                X
XXXXXXX  XXXX     X        XXXXX   X
X     X  X        X                X
X     X  X        X     X          X
X     X  XXXXXXX   XXXXX          XXX
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:::                                     :::
:::  Full Microcomputer Implementation  :::
:::                 by                  :::
:::        Haestad Methods, Inc.        :::
:::                                     :::
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37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

```
LINE      ID.....1.....2.....3.....4.....5.....6.....7..  ...8.....9.....10

  47      PC  0.0800 0.08181 0.08364 0.08549 0.08736 0.08925 0.09116 0.09309 0.09504 0.09701
  48      PC  0.0990 0.10101 0.10304 0.10509 0.10716 0.10925 0.11136 0.11349 0.11564 0.11781
  49      PC  0.1200 0.12225 0.12460 0.12705 0.12960 0.13225 0.13500 0.13785 0.14080 0.14385
  50      PC  0.1470 0.15020 0.15340 0.15660 0.15980 0.16300 0.16628 0.16972 0.17332 0.17708
  51      PC  0.1810 0.18512 0.18948 0.19408 0.19892 0.20400 0.20940 0.21520 0.22140 0.22800
  52      PC  0.2350 0.24268 0.25132 0.26092 0.27148 0.28300 0.30684 0.35436 0.43079 0.56786
  53      PC  0.6630 0.68196 0.69864 0.71304 0.72516 0.73500 0.74344 0.75136 0.75876 0.76564
  54      PC  0.7720 0.77796 0.78364 0.78904 0.79416 0.79900 0.80360 0.80800 0.81220 0.81620
  55      PC  0.8200 0.82367 0.82726 0.83079 0.83424 0.83763 0.84094 0.84419 0.84736 0.85047
  56      PC  0.8535 0.85647 0.85936 0.86219 0.86494 0.86763 0.87024 0.87279 0.87526 0.87767
  57      PC  0.8800 0.88229 0.88455 0.88679 0.88900 0.89119 0.89335 0.89549 0.89760 0.89969
  58      PC  0.9018 0.90379 0.90580 0.90779 0.90975 0.91169 0.91360 0.91549 0.91735 0.91919
  59      PC  0.9210 0.92279 0.92455 0.92629 0.92800 0.92969 0.93135 0.93299 0.93460 0.93619
  60      PC  0.9377 0.93929 0.94080 0.94229 0.94375 0.94519 0.94660 0.94799 0.94935 0.95069
  61      PC  0.9520 0.95330 0.95459 0.95588 0.95716 0.95844 0.95971 0.96098 0.96224 0.96350
  62      PC  0.9647 0.96600 0.96724 0.96848 0.96971 0.97094 0.97216 0.97338 0.97459 0.97580
  63      PC  0.9770 0.97820 0.97939 0.98058 0.98176 0.98294 0.98411 0.98528 0.98644 0.98760
  64      PC  0.9887 0.98990 0.99104 0.99218 0.99331 0.99444 0.99556 0.99668 0.99779 0.99890
  65      PC  1.0000 1.00000 1.00000 1.00000 1.00000
  66      LS            60
  67      UD   0.85
          *

  68      KK    SC24Sconti Lake 24-Hour PMP
  69      KO      0       0
  70      BA    3.3
  71      PB     41
          *
          * 5 RAINFL 3 0.1 TYPE II
          *
  72      IN      6
  73      PC  0.0000 0.00101 0.00202 0.00305 0.00408 0.00513 0.00618 0.00725 0.00832 0.00941
  74      PC  0.0105 0.01161 0.01272 0.01385 0.01498 0.01613 0.01728 0.01845 0.01962 0.02081
  75      PC  0.0220 0.02321 0.02442 0.02565 0.02688 0.02813 0.02938 0.03065 0.03192 0.03321
  76      PC  0.0345 0.03581 0.03712 0.03845 0.03978 0.04113 0.04248 0.04385 0.04522 0.04661
  77      PC  0.0480 0.04941 0.05084 0.05229 0.05376 0.05525 0.05676 0.05829 0.05984 0.06141
  78      PC  0.0630 0.06461 0.06624 0.06789 0.06956 0.07125 0.07296 0.07469 0.07644 0.07821
  79      PC  0.0800 0.08181 0.08364 0.08549 0.08736 0.08925 0.09116 0.09309 0.09504 0.09701
  80      PC  0.0990 0.10101 0.10304 0.10509 0.10716 0.10925 0.11136 0.11349 0.11564 0.11781
  81      PC  0.1200 0.12225 0.12460 0.12705 0.12960 0.13225 0.13500 0.13785 0.14080 0.14385
  82      PC  0.1470 0.15020 0.15340 0.15660 0.15980 0.16300 0.16628 0.16972 0.17332 0.17708
  83      PC  0.1810 0.18512 0.18948 0.19408 0.19892 0.20400 0.20940 0.21520 0.22140 0.22800
  84      PC  0.2350 0.24268 0.25132 0.26092 0.27148 0.28300 0.30684 0.35436 0.43079 0.56786
  85      PC  0.6630 0.68196 0.69864 0.71304 0.72516 0.73500 0.74344 0.75136 0.75876 0.76564
  86      PC  0.7720 0.77796 0.78364 0.78904 0.79416 0.79900 0.80360 0.80800 0.81220 0.81620
  87      PC  0.8200 0.82367 0.82726 0.83079 0.83424 0.83763 0.84094 0.84419 0.84736 0.85047
  88      PC  0.8535 0.85647 0.85936 0.86219 0.86494 0.86763 0.87024 0.87279 0.87526 0.87767
  89      PC  0.8800 0.88229 0.88455 0.88679 0.88900 0.89119 0.89335 0.89549 0.89760 0.89969
  90      PC  0.9018 0.90379 0.90580 0.90779 0.90975 0.91169 0.91360 0.91549 0.91735 0.91919
  91      PC  0.9210 0.92279 0.92455 0.92629 0.92800 0.92969 0.93135 0.93299 0.93460 0.93619
  92      PC  0.9377 0.93929 0.94080 0.94229 0.94375 0.94519 0.94660 0.94799 0.94935 0.95069
  93      PC  0.9520 0.95330 0.95459 0.95588 0.95716 0.95844 0.95971 0.96098 0.96224 0.96350
  94      PC  0.9647 0.96600 0.96724 0.96848 0.96971 0.97094 0.97216 0.97338 0.97459 0.97580
  95      PC  0.9770 0.97820 0.97939 0.98058 0.98176 0.98294 0.98411 0.98528 0.98644 0.98760
  96      PC  0.9887 0.98990 0.99104 0.99218 0.99331 0.99444 0.99556 0.99668 0.99779 0.99890
```

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

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LINE      ID.....1.....2.....3.....4.....5.....6.....7.     .8.....9.....10
  97      PC  1.0000 1.00000 1.00000 1.00000 1.00000
  98      LS              60
  99      UD    1.66
          *
 100      KK    SC06Sconti Lake 6-Hour PMP
 101      KO       0       0
 102      BA     3.3
 103      PB    30.2
          *
          * 5 RAINFL 3 0.1 TYPE II
          *
 104      IN     1.5
 105      PC  0.0000 0.00101 0.00202 0.00305 0.00408 0.00513 0.00618 0.00725 0.00832 0.00941
 106      PC  0.0105 0.01161 0.01272 0.01385 0.01498 0.01613 0.01728 0.01845 0.01962 0.02081
 107      PC  0.0220 0.02321 0.02442 0.02565 0.02688 0.02813 0.02938 0.03065 0.03192 0.03321
 108      PC  0.0345 0.03581 0.03712 0.03845 0.03978 0.04113 0.04248 0.04385 0.04522 0.04661
 109      PC  0.0480 0.04941 0.05084 0.05229 0.05376 0.05525 0.05676 0.05829 0.05984 0.06141
 110      PC  0.0630 0.06461 0.06624 0.06789 0.06956 0.07125 0.07296 0.07469 0.07644 0.07821
 111      PC  0.0800 0.08181 0.08364 0.08549 0.08736 0.08925 0.09116 0.09309 0.09504 0.09701
 112      PC  0.0990 0.10101 0.10304 0.10509 0.10716 0.10925 0.11136 0.11349 0.11564 0.11781
 113      PC  0.1200 0.12225 0.12460 0.12705 0.12960 0.13225 0.13500 0.13785 0.14080 0.14385
 114      PC  0.1470 0.15020 0.15340 0.15660 0.15980 0.16300 0.16628 0.16972 0.17332 0.17708
 115      PC  0.1810 0.18512 0.18948 0.19408 0.19892 0.20400 0.20940 0.21520 0.22140 0.22800
 116      PC  0.2350 0.24268 0.25132 0.26092 0.27148 0.28300 0.30684 0.35436 0.43079 0.56786
 117      PC  0.6630 0.68196 0.69864 0.71304 0.72516 0.73500 0.74344 0.75136 0.75876 0.76564
 118      PC  0.7720 0.77796 0.78364 0.78904 0.79416 0.79900 0.80360 0.80800 0.81220 0.81620
 119      PC  0.8200 0.82367 0.82726 0.83079 0.83424 0.83763 0.84094 0.84419 0.84736 0.85047
 120      PC  0.8535 0.85647 0.85936 0.86219 0.86494 0.86763 0.87024 0.87279 0.87526 0.87767
 121      PC  0.8800 0.88229 0.88455 0.88679 0.88900 0.89119 0.89335 0.89549 0.89760 0.89969
 122      PC  0.9018 0.90379 0.90580 0.90779 0.90975 0.91169 0.91360 0.91549 0.91735 0.91919
 123      PC  0.9210 0.92279 0.92455 0.92629 0.92800 0.92969 0.93135 0.93299 0.93460 0.93619
 124      PC  0.9377 0.93929 0.94080 0.94229 0.94375 0.94519 0.94660 0.94799 0.94935 0.95069
 125      PC  0.9520 0.95330 0.95459 0.95588 0.95716 0.95844 0.95971 0.96098 0.96224 0.96350
 126      PC  0.9647 0.96600 0.96724 0.96848 0.96971 0.97094 0.97216 0.97338 0.97459 0.97580
 127      PC  0.9770 0.97820 0.97939 0.98058 0.98176 0.98294 0.98411 0.98528 0.98644 0.98760
 128      PC  0.9887 0.98990 0.99104 0.99218 0.99331 0.99444 0.99556 0.99668 0.99779 0.99890
 129      PC  1.0000 1.00000 1.00000 1.00000 1.00000
 130      LS              60
 131      UD    1.66
 132      ZZ
```

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

```
**********                              **********
*                                                *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)            *
*              MAY   1991                        *
*            VERSION 4.0.1E                      *
*                                                *
*  RUN DATE  09/18/1998  TIME  08:45:56          *
*                                                *
**************************************************
```

```
**************************************
*                                    *
*    U.S. ARMY CORPS OF ENGINEERS    *
*    HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET         *
*       DAVIS, CALIFORNIA 95616      *
*           (916) 756-1104           *
*                                    *
**************************************
```

Big Canoe - PMP Flood Hydrographs

```
  3 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           4  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN           6  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME         0000  STARTING TIME
                         NQ           70  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      1    0  ENDING DATE
                     NDTIME         0654  ENDING TIME
                      ICENT           19  CENTURY MARK

                  COMPUTATION INTERVAL     0.10 HOURS
                      TOTAL TIME BASE      6.90 HOURS

        ENGLISH UNITS
            DRAINAGE AREA         SQUARE MILES
            PRECIPITATION DEPTH   INCHES
            LENGTH, ELEVATION     FEET
            FLOW                  CUBIC FEET PER SECOND
            STORAGE VOLUME        ACRE-FEET
            SURFACE AREA          ACRES
            TEMPERATURE           DEGREES FAHRENHEIT


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          **************
          *            *
  4 KK    *      PT24  *     Pettit Lake 24-Hour PMP
          *            *
          **************

  5 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           4  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

  8 IN          TIME DATA FOR INPUT TIME SERIES
                      JXMIN           6  TIME INTERVAL IN MINUTES
```

```
                JXTIME           0  STARTING TIME

          SUBBASIN RUNOFF DATA

 6 BA       SUBBASIN CHARACTERISTICS
              TAREA        1.53  SUBBASIN AREA

            PRECIPITATION DATA

 7 PB         STORM       41.00  BASIN TOTAL PRECIPITATION

 9 PI       INCREMENTAL PRECIPITATION PATTERN
              0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
              0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
              0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
              0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
              0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
              0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
              0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

 34 LS      SCS LOSS RATE
              STRTL        1.33  INITIAL ABSTRACTION
              CRVNBR      60.00  CURVE NUMBER
              RTIMP        0.00  PERCENT IMPERVIOUS AREA

 35 UD      SCS DIMENSIONLESS UNITGRAPH
              TLAG         0.85  LAG

                                                  ***

                                              UNIT HYDROGRAPH
                                          45 END-OF-PERIOD ORDINATES
             31.       99.      189.      313.      473.      630.      744.      807.      821.      807.
            751.      684.      604.      504.      405.      333.      276.      230.      197.      164.
            137.      113.       95.       80.       66.       55.       45.       38.       32.       27.
             22.       19.       16.       13.       11.        9.        8.        7.        6.        5.
              4.        3.        2.        1.        0.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          **************
          *            *
 36 KK    *      PT06  *     Pettit Lake 6-Hour PMP
          *            *
          **************

 37 KO      OUTPUT CONTROL VARIABLES
              IPRNT            4  PRINT CONTROL
              IPLOT            0  PLOT CONTROL
              QSCAL           0.  HYDROGRAPH PLOT SCALE

 40 IN      TIME DATA FOR INPUT TIME SERIES
              JXMIN            1  TIME INTERVAL IN MINUTES
             JXDATE        1    0  STARTING DATE
             JXTIME             0  STARTING TIME

          SUBBASIN RUNOFF DATA

 38 BA      SUBBASIN CHARACTERISTICS
```

```
                    JXTIME           0  STARTING TIME

               SUBBASIN RUNOFF DATA

 6 BA            SUBBASIN CHARACTERISTICS
                       TAREA        1.53  SUBBASIN AREA

               PRECIPITATION DATA

 7 PB                  STORM       41.00  BASIN TOTAL PRECIPITATION

 9 PI              INCREMENTAL PRECIPITATION PATTERN
                     0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                     0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                     0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                     0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                     0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                     0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                     0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

 34 LS           SCS LOSS RATE
                       STRTL        1.33  INITIAL ABSTRACTION
                      CRVNBR       60.00  CURVE NUMBER
                       RTIMP        0.00  PERCENT IMPERVIOUS AREA

 35 UD           SCS DIMENSIONLESS UNITGRAPH
                       TLAG        0.85  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            45 END-OF-PERIOD ORDINATES
                    31.       99.      189.      313.      473.      630.      744.      807.      821.      807.
                   751.      684.      604.      504.      405.      333.      276.      230.      197.      164.
                   137.      113.       95.       80.       66.       55.       45.       38.       32.       27.
                    22.       19.       16.       13.       11.        9.        8.        7.        6.        5.
                     4.        3.        2.        1.        0.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


              **************
              *            *
 36 KK        *      PT06  *     Pettit Lake 6-Hour PMP
              *            *
              **************

 37 KO           OUTPUT CONTROL VARIABLES
                      IPRNT           4  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

 40 IN           TIME DATA FOR INPUT TIME SERIES
                      JXMIN           1  TIME INTERVAL IN MINUTES
                     JXDATE       1    0  STARTING DATE
                     JXTIME           0  STARTING TIME

               SUBBASIN RUNOFF DATA

 38 BA           SUBBASIN CHARACTERISTICS
```

```
           RECIPITATION DATA

39 PB            STORM       30.20  BASIN TOTAL PRECIPITATION

41 PI          INCREMENTAL PRECIPITATION PATTERN
                 0.01   0.01   0.01   0.01   0.01   0.01   0.01   0.01   0.01   0.01
                 0.01   0.01   0.01   0.01   0.02   0.02   0.02   0.03   0.05   0.39
                 0.08   0.04   0.03   0.02   0.02   0.02   0.01   0.01   0.01   0.01
                 0.01   0.01   0.01   0.01   0.01   0.01   0.01   0.01   0.01   0.01
                 0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00
                 0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00
                 0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00

66 LS          SCS LOSS RATE
                    STRTL        1.33  INITIAL ABSTRACTION
                   CRVNBR       60.00  CURVE NUMBER
                    RTIMP        0.00  PERCENT IMPERVIOUS AREA

67 UD          SCS DIMENSIONLESS UNITGRAPH
                    TLAG        0.85  LAG

                                                  ***

                                              UNIT HYDROGRAPH
                                          45 END-OF-PERIOD ORDINATES
                  31.    99.   189.   313.   473.   630.   744.   807.   821.   807.
                 751.   684.   604.   504.   405.   333.   276.   230.   197.   164.
                 137.   113.    95.    80.    66.    55.    45.    38.    32.    27.
                  22.    19.    16.    13.    11.     9.     8.     7.     6.     5.
                   4.     3.     2.     1.     0.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          **************
          *            *
68 KK     *      SC24  *     Sconti Lake 24-Hour PMP
          *            *
          **************

69 KO          OUTPUT CONTROL VARIABLES
                    IPRNT           4  PRINT CONTROL
                    IPLOT           0  PLOT CONTROL
                    QSCAL          0.  HYDROGRAPH PLOT SCALE

72 IN          TIME DATA FOR INPUT TIME SERIES
                    JXMIN           6  TIME INTERVAL IN MINUTES
                   JXDATE      1    0  STARTING DATE
                   JXTIME           0  STARTING TIME

             SUBBASIN RUNOFF DATA

70 BA          SUBBASIN CHARACTERISTICS
                    TAREA        3.30  SUBBASIN AREA

               PRECIPITATION DATA

71 PB            STORM       41.00  BASIN TOTAL PRECIPITATION
```

```
                0.00      0.00      0.00      0.00      0.00      0.00      0.0       0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.        0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

 98 LS          SCS LOSS RATE
                     STRTL       1.33  INITIAL ABSTRACTION
                    CRVNBR      60.00  CURVE NUMBER
                     RTIMP       0.00  PERCENT IMPERVIOUS AREA

 99 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG       1.66  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            85 END-OF-PERIOD ORDINATES
              16.       39.       77.      122.      171.      234.      303.      390.      485.      588.
             680.      766.      826.      877.      910.      926.      932.      927.      917.      884.
             849.      810.      768.      724.      669.      611.      546.      487.      433.      393.
             356.      324.      294.      266.      245.      225.      205.      187.      170.      154.
             138.      127.      116.      105.       95.       87.       79.       71.       65.       59.
              53.       48.       44.       40.       36.       33.       30.       27.       25.       23.
              21.       19.       17.       16.       14.       13.       12.       11.       10.        9.
               9.        8.        7.        7.        6.        5.        5.        4.        4.        3.
               2.        2.        1.        1.        0.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          **************
          *            *
100 KK    *      SC06  *     Sconti Lake 6-Hour PMP
          *            *
          **************

101 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          4  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

104 IN          TIME DATA FOR INPUT TIME SERIES
                     JXMIN          1  TIME INTERVAL IN MINUTES
                    JXDATE      1   0  STARTING DATE
                    JXTIME          0  STARTING TIME

              SUBBASIN RUNOFF DATA

102 BA          SUBBASIN CHARACTERISTICS
                     TAREA       3.30  SUBBASIN AREA

                PRECIPITATION DATA

103 PB               STORM      30.20  BASIN TOTAL PRECIPITATION

105 PI            INCREMENTAL PRECIPITATION PATTERN
                    0.01      0.01      0.01      0.01      0.01      0.01      .1        0.01      0.01      0.01
```

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.05	0.39
0.08	0.04	0.03	0.02	0.02	0.02	0.[illegible]	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.[illegible]	0.01	0.01	0.01
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

130 LS SCS LOSS RATE

STRTL	1.33	INITIAL ABSTRACTION
CRVNBR	60.00	CURVE NUMBER
RTIMP	0.00	PERCENT IMPERVIOUS AREA

131 UD SCS DIMENSIONLESS UNITGRAPH

TLAG	1.66	LAG

***

UNIT HYDROGRAPH
85 END-OF-PERIOD ORDINATES

16.	39.	77.	122.	171.	234.	303.	390.	485.	588.
680.	766.	826.	877.	910.	926.	932.	927.	917.	884.
849.	810.	768.	724.	669.	611.	546.	487.	433.	393.
356.	324.	294.	266.	245.	225.	205.	187.	170.	154.
138.	127.	116.	105.	95.	87.	79.	71.	65.	59.
53.	48.	44.	40.	36.	33.	30.	27.	25.	23.
21.	19.	17.	16.	14.	13.	12.	11.	10.	9.
9.	8.	7.	7.	6.	5.	5.	4.	4.	3.
2.	2.	1.	1.	0.					

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
6-HOUR	24-HOUR 72-HOUR								
HYDROGRAPH AT			PT24	7100.	6.90	4203.	3657.	3657.	1.53
HYDROGRAPH AT			PT06	14624.	2.90	3857.	3354.	3354.	1.53
HYDROGRAPH AT			SC24	13294.	6.90	6724.	5848.	5848.	3.30
HYDROGRAPH AT			SC06	18830.	3.80	7982.	6941.	6941.	3.30

*** NORMAL END OF HEC-1 ***

Note: Inundation analysis was performed by Jordan, Jones, and Goulding and provided by the Big Canoe Property Owner's Association for incorporation into this Emergency Action Plan.

APPENDIX C

DAM FEATURES AND PHOTOGRAPHS

Note:
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors
Approximate Image Date: March 2015

N

0 200 Feet

Petit Lake Dam Features

Big Canoe Property Owner's Association
Jasper, Georgia

Geosyntec consultants

Chattanooga, TN | May 2018

Figure C-1

N:\B\Big Canoe\Projects\TN6338 - 2017 EAP Lake Petit Dam\GIS\MXD\Dam_Features.mxd 5/16/2017 8:22:44 AM

Geosyntec consultants

PHOTOGRAPH LOG

PROJECT NAME: Emergency Action Plan for Dam Failure, Lake Petit Dam	PROJECT NO.: TN6338
CLIENT: Big Canoe Property Owner's Association	FILE NAME: AppD_Photos.ppt

Photograph 1: View of the low-level valve box

Photograph 2: View of the low-level valve box.

Geosyntec consultants

PHOTOGRAPH LOG

PROJECT NAME: Emergency Action Plan for Dam Failure, Lake Petit Dam	PROJECT NO.: TN6338
CLIENT: Big Canoe Property Owner's Association	FILE NAME: AppD_Photos.ppt

Photograph 3: Tail Water Creek, 2016 – Low-level drain outlet.

Photograph 4: Spillway, 2016 – general view with moderate flow during observation

APPENDIX D

EAP DISTRIBUTION AND ACCEPTANCE

APPENDIX D
EAP DISTRIBUTION

The following entities maintain a copy of the EAP. Contact information can be found on Figure 1. The EAP should be signed by all parties, including those listed below, involved in plan implementation on the following pages.

1. Big Canoe Property Owner's Association
2. Big Canoe Public Safety Director
3. Pickens County Emergency Management Agency (EMA)
4. Dawson County 911 Service
5. Big Canoe Engineer of Record
6. Georgia Department of Natural Resources (GA DNR)
7. Georgia Safe Dams Program
8. Pickens County Sheriff
9. Pickens County Public Works
10. Cox Lake Dam Owner, Cove Lake Property Association

EAP ACCEPTANCE

By my signature, I acknowledge that I am aware of the Emergency Action Plan for Petit Lake Dam and understand the agreed-upon responsibilities.

Organization: Big Canoe Property Owners Association

Name: Jason Brownell

Title: Director of Operations

Signature: Jason Brownell

Date: 10/16/18

EAP ACCEPTANCE

By my signature, I acknowledge that I am aware of the Emergency Action Plan for Petit Lake Dam and understand the agreed-upon responsibilities.

Organization: Big Canoe Public Safety

Name: Richard A. Jordan

Title: Public Safety Manager / Fire Chief

Signature:

Date: 10/25/2018

EAP ACCEPTANCE

By my signature, I acknowledge that I am aware of the Emergency Action Plan for Petit Lake Dam and understand the agreed-upon responsibilities.

Organization: Pickens County EMA

Name: John Nicholson

Title: EMA Director

Signature: John Nicholson

Date: Oct. 24 2018

EAP ACCEPTANCE

By my signature, I acknowledge that I am aware of the Emergency Action Plan for Petit Lake Dam and understand the agreed-upon responsibilities.

Organization:

Dawson County Fire & Emergency Services

Name:

Danny Thompson

Title:

Fire Chief / EMA Director

Signature:

Danny Thy

Date:

3-18-19

EAP ACCEPTANCE

By my signature, I acknowledge that I am aware of the Emergency Action Plan for Petit Lake Dam and understand the agreed-upon responsibilities.

Organization:
GEOSYNTEC CONSULTANTS

Name:
WESLEY MACDONALD

Title:
PROJECT ENGINEER/ ENGINEER OF RECORD

Signature:

Date:
9/25/2019

EAP ACCEPTANCE

By my signature, I acknowledge that I am aware of the Emergency Action Plan for Petit Lake Dam and understand the agreed-upon responsibilities.

Organization: EPD- GEORGIA SAFE DAMS PROGRAM

Name: TOM WOODLEY

Title: PROGRAM MANAGER

Signature: Tom Woo

Date: 8/22/2018

EAP ACCEPTANCE

By my signature, I acknowledge that I am aware of the Emergency Action Plan for Petit Lake Dam and understand the agreed-upon responsibilities.

Organization: Pickens Sheriff's Office

Name: Donald E Crews

Title: Sheriff.

Signature: Donald Crews

Date: 05-29-19.

EAP ACCEPTANCE

By my signature, I acknowledge that I am aware of the Emergency Action Plan for Petit Lake Dam and understand the agreed-upon responsibilities.

Organization:

PICKENS COUNTY PUBLIC WORKS 3043 CAMP ROAD JASPER, GA 30143

Name:

KIM QUINTON

Title:

DIRECTOR OF PUBLIC WORKS

Signature:

Date:

OCTOBER 9, 2019

EAP ACCEPTANCE

By my signature, I acknowledge that I am aware of the Emergency Action Plan for Petit Lake Dam and understand the agreed-upon responsibilities.

Organization: Cove Lake Property Owners Assoc.

Name: Robert L. Kenyon

Title: Board Chairperson

Signature: Robert L Kenyon

Date: 10/26/18

EAP ACCEPTANCE

By my signature, I acknowledge that I am aware of the Emergency Action Plan for Petit Lake Dam and understand the agreed-upon responsibilities.

Organization:

_____

Name:

_____

Title:

_____

Signature:

_____

Date:

_____

APPENDIX E

EAP REVIEW, REVISIONS, AND TESTING DOCUMENTATION

APPENDIX E

EAP REVIEW, REVISION, AND PERIODIC TEST

EAP Annual Review

An Annual Review should be conducted by the Big Canoe Property Owner's Association. The annual review should be documented in this appendix.

EAP Periodic Test

A periodic test of the EAP procedures is recommended every 5 years. Documentation for the test is provided in this appendix.

Revision

Revisions required from annual reviews or periodic testing should be documented in this appendix. Revisions shall be made in all copies of the EAP as provided in Appendix D.

RECORD OF ANNUAL REVIEW

Date	Conducted By	Notes and Observations

RECORD OF PERIODIC TESTING

Date	Conducted By	Observations

RECORD OF REVISIONS AND UPDATES

Revision Number	Date	Revisions Made
0	September 1998	Original Issue
1	April 2007	Contact information update
2	June 2017	Contact Information, Added Condition C, Updated Appendices
3	May 2018	Update Condition Identifications and added Table 3

APPENDIX F

LOCALLY AVAILABLE RESOURCES

APPENDIX F

LOCALLY AVAILABLE RESOURCES

The Pickens County Commissioner indicated the following heavy equipment may be available in the case of an emergency (for use, contact John Nicholson at Pickens County EMA at 706-253-8829 or Kim Quinton at the Pickens County Public Works Department at 770-893-9564):

- One (1) Caterpillar D6 Bulldozer;
- One (1) 330 Kobelco Excavator;
- One (1) Kubota 080 Excavator;
- One (1) Caterpillar 303 Excavator;
- One (1) Caterpillar 313 Rubber Tire Trackhoe;
- Two (2) Bobcat skid steers;
- Three (3) tandem dump trucks;
- Two (2) single axle box dump trucks; and
- Three (3) single axle flat bed trucks.

Other locally available resources include:

Heavy Equipment Service and Rental	Sand and Gravel Supply	Ready-mix Concrete Supply
Sunbelt Rentals 5290 Lake Pointe Center Drive Cumming, Georgia Main: 770-887-9966 Emergency: 800-667-9328 United Rentals 1151 Northpoint Parkway SE Acworth, Georgia 30102 Main: 770-974-3500 (On call service available 24/7)	Bluegrass Quarry 970 Old Nelson Road Ball Ground, Georgia 30107 678-641-7714 Vulcan Materials Company 4420 Hightower Road Ball Ground, Georgia 30107 Main: 678-947-3310 GA Services: 770-454-3691	Wayne Davis Concrete 115 River Mill Drive Ball Ground, Georgia 706-692-3464 Ernst Concrete 970 Old Nelson Road Ball Ground, Georgia 30107 770-853-0533 Argos Ready Mix 829 Univeter Road Canton, Georgia 770-704-7778
Pumps	**Diving Service**	**Sand Bags**
Xylem Cartersville 402 Old Mill Road Cartersville, Georgia 30120 770-415-8814 (On call service available 24/7) United Rentals 5260 Truman Drive Decatur, Georgia 30035 Main: 404-439-4322 (On call service available 24/7)	Georgia Department of Natural Resources, Law Enforcement Division, Search and Rescue Team 781 Red Top Mountain Road SE, Acworth, Georgia 30102 770-529-2424 (M-F 8am – 4:30pm) 1-800-241-4113 (After hours) Underwater Construction Corporation 8494 Gulf View Drive Soddy Daisy, TN 37379 423-332-6700	Hanes Geo Components 3105 Sweetwater Road, Shite 200 Lawrenceville, Georgia 30044 Main: 866-961-3565 Emergency: 678-221-7849