

Florida Electrical Power Plant Siting Act Site Certification Application

Volume 2 of 3

Cane Island Power Park – Unit 4



Submitted by:
**Florida Municipal Power Agency
Kissimmee Utility Authority**

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Florida Municipal Power Agency
Community Power. Statewide Strength.



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10.0 Permit Applications

This section identifies the permits, approvals, and agreements that are required to construct and operate Unit 4. The permit applications for federal, state, and local authorizations are included for informational purposes and to support agency review of the Unit 4 Project. The site certification application and any final site certification constitute the sole license of the state and any regional or state agency for the construction and operation of Unit 4 in accordance with Section 403.511(1), Florida Statutes (FS).

10.1 Existing Federal Permits

10.1.1 *Notice of Intent to Use Multi-Sector Generic Permit for Storm Water Discharge Associated with Industrial Activity*

KUA holds a valid NPDES multi-sector permit for uncontaminated storm water discharges from the CIPP. A copy of that permit is included herein. The existing Storm Water Pollution Prevention Plan in effect at the CIPP will be revised to incorporate Unit 4. Copies of this plan are available from KUA.

10.1.2 *Oil Pollution Prevention*

The amount of reserve fuel oil stored at the CIPP requires KUA to comply with the EPA oil pollution prevention regulations. The existing CIPP Integrated Contingency Plan is in compliance with those regulations. This plan will be revised to incorporate Unit 4 facilities prior to operation. Copies of the plan are available from KUA.



Jeb Bush
Governor

Department of Environmental Protection

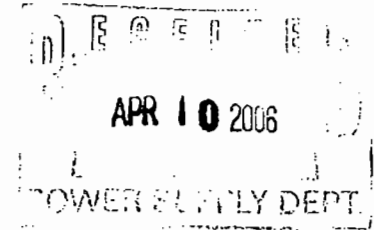
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Original: Larry M
Copy: Mike Saitys
Javon Guit
File
Ben
4/10

Colleen M. Castille
Secretary

March 1, 2006

A. K. Sharma
Kissimmee Utility Authority
PO Box 423219
Kissimmee, FL 34742



RE: Facility ID: FLR05B763
Cane Island Power Park
6075 Old Tampa Hwy
Intercession City, FL 34848

Dear Permittee:

The Florida Department of Environmental Protection has received and processed your *Notice of Intent to Use Multi-Sector Generic Permit for Stormwater Discharge Associated with Industrial Activity (NOI)*, and the accompanying processing fee, for the facility referenced above. This letter serves to acknowledge that your NOI is complete, your fee is paid-in-full, and your facility is covered under the generic permit effective February 16, 2006. Your coverage under the generic permit will expire February 15, 2011.

The *Multi-Sector Generic Permit (MSGP)* was issued under the provisions of Section 403.0885, Florida Statutes, and applicable rules of the Florida Administrative Code. Stormwater discharge associated with industrial activity requires a permit under 40 CFR Part 122.26(a) (ii). This permit constitutes authorization to discharge stormwater associated with industrial activity to surface waters under the National Pollutant Discharge Elimination System (NPDES). Until this permit is terminated, modified or revoked, permittees that have properly obtained coverage under this permit are authorized to operate facilities and to discharge to surface waters in accordance with the terms and conditions of this permit.

Your facility identification number is FLR05B763. Please make reference to this number on all future correspondence including any checks made out to the Department.

This letter is not your permit. Your NOI allows you to discharge stormwater associated with industrial activities by complying with the terms and conditions of the MSGP which you may obtain by contacting the NPDES Stormwater Notices Center or online at www.dep.state.fl.us/water/stormwater/npdes/industrial5.htm

Key provisions of the permit are (1) implementation of your storm water pollution prevention plan (SWPPP) that was required to be developed prior to NOI submittal, (2) retention of records required by the permit, including retention of a copy of the SWPPP at the facility, and

"More Protection, Less Process"

Printed on recycled paper.

Facility ID: FLR05B763
March 1, 2006

(3) routine stormwater monitoring with results submitted to Florida DEP. Attached is a copy of the discharge monitoring report (DMR) forms that should be used to submit your monitoring results.

Your facility falls under Sector O of the MSGP. Consequently, a DMR form must be completed and submitted for monitoring results obtained in years 2 and 4 of your 5-year MSGP coverage cycle. Your year two monitoring period begins January 1, 2007 and ends December 31, 2007. Your year four monitoring period begins January 1, 2009 and ends December 31, 2009.

Monitoring results for each monitoring period are due by March 31st of the year following each monitoring period (for example, monitoring results for 2007 would be due March 31, 2008). Mail the completed DMR forms to the following address:

NPDES Stormwater MSGP DMR, MS #2511
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

If your facility will continue discharging stormwater associated with industrial activity beyond expiration of the current coverage, request for continued coverage shall be made by filing a completed NOI at least 2 days before expiration of the current coverage period. If you discontinue discharging stormwater associated with industrial activity, are no longer the operator of the facility, or otherwise qualify to discontinue coverage under the MSGP, you may terminate permit coverage by filing a Notice of Termination of Generic Permit Coverage (NOT).

If you have any questions concerning this acknowledgment letter, please contact the NPDES Stormwater Notices Center at (866) 336-6312 or (850) 297-1232.

CERTIFICATE OF SERVICE

THE UNDERSIGNED HEREBY CERTIFIES that the foregoing acknowledgment of coverage under the Multi-Sector Generic Permit, Rule 62-621.300(5), F.A.C., was mailed by Science Applications International Corporation working under FDEP Contract Number WM788, on behalf of the Florida Department of Environmental Protection, on the date indicated below via the United States Postal Service.



Name

3/1/2006

Date

**Guidance for the Reporting Requirements
of the State of Florida's
Multi-Sector Generic Permit for Stormwater Discharges
Associated with Industrial Activity (MSGP)**

The following are step-by-step instructions for completing Discharge Monitoring Reports (DMRs), as required under the MSGP. The words and phrases in italics refer to specific locations or headings on the DMR. If more than one storm event was sampled for a given quarter, the additional monitoring data must be submitted on a separate quarterly DMR for each outfall and for each storm event sampled.

General Instructions:

Name/Address

Enter the *Permittee Name* and *Mailing Address*. Enter the *Facility Name and Location* only if different from the permittee name and mailing address.

Permit Number

Enter the Facility Identification number for the facility.

Discharge Number

Enter the facility's *Discharge Number*. If the facility is submitting monitoring results for more than one outfall, each outfall's results must be recorded on a separate DMR page and must display the outfall's *Discharge Number*. A unique discharge number (e.g., 001, 002, etc.) must be assigned to each outfall.

No Discharge

Check the box labeled *Check here if No Discharge* if no storm water discharge occurred from the outfall during the monitoring period.

Recording of Sample Results

Enter the monitoring results for each parameter in the specified units.

Sample Type

Enter "Grab" for the sample type, as required by the MSGP.

Identification/Certification

Enter *Name/Title of the Principal Executive Officer, Signature of the Principal Executive Officer or Authorized Agent, Telephone Number, and Date* at the bottom of the DMR after reading the Certification Statement.

Comments and Explanation of Any Violations

The facility's applicable sector, subsector, and SIC code will be preprinted on the DMR in the *Comments* section. Any corrections, comments, or references to attachments should be recorded here by the permittee.

**Additional Instructions for
Completing the PER STORM EVENT
DMR:**

Monitoring Period

Enter the quarter period covered by the DMR (e.g., for the first quarter of 2002, enter 01/01/02-03/31/02).

Date of Storm Event

Enter the date the sample was taken.

Storm Event Characteristics

Record the duration of the storm, as well as the time elapsed (in days) since the last measurable storm greater than 0.1 inch.

Recording Estimated Rainfall

Enter the estimated rainfall for the given storm event in inches.

Recording Estimated Storm Discharge Volume

Enter the estimated total volume of stormwater discharge in gallons.

Frequency of Analysis

Enter the sampling frequency (frequency should correspond to the preprinted permit requirement). Required sampling frequency, at a minimum, is once per quarter for a storm event greater than 0.1 inch of rainfall.

**Additional Instructions for
Completing the ANNUAL DMR:****Monitoring Period**

Enter the annual period covered by the DMR (e.g., for year 2002, enter 01/01/02 - 12/31/02).

**Recording of Sample Results –
Average**

Enter the annual average monitoring results for each parameter.

Frequency of Analysis

Enter the sampling frequency (i.e., the actual total number of sampling events per year).

**Additional Instructions for
Completing the ANNUAL DMR
WITH NUMERIC EFFLUENT
LIMITATIONS:****Monitoring Period**

Enter the annual period covered by the DMR (e.g., for year 2002, enter 01/01/02 - 12/31/02).

Recording of Sample Results

Enter the monitoring results for each parameter in the *Minimum, Maximum, or Average* (30-day average) column as appropriate.

No.Ex.

Under the *No. Ex* column, enter the number of sample measurements during the monitoring period that exceeded the effluent limitation for that parameter. If none, enter "0".

Frequency of Analysis

Enter the sampling frequency (i.e., the actual total number of sampling events per year).

*****REMEMBER*******Before Submitting Your DMR Please
Check:**

- If there is no discharge for the monitoring period, the *Check here if No Discharge* box must be marked accordingly.
- If there is a discharge for the monitoring period, ALL blanks on the DMR must be completed.
- If the DMR is signed and dated by the Principal Executive Officer or Authorized Agent.

Send Completed DMRs to:

Florida Department of Environmental
Protection
NPDES Stormwater MSGP DMR
Mail Station #2511
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)
NAME

ADDRESS

FACILITY
LOCATION

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

FLR05 PERMIT NUMBER	DISCHARGE NUMBER
------------------------	------------------

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY
(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

Check here if No Discharge

NOTE: Read Instructions before completing this form

PARAMETER (32-37)	X	(3 Card Only) QUANTITY OR LOADING (46-53)			(4 Card Only) QUALITY OR CONCENTRATION (38-45)				NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)	
		AVERAGE (54-56)	MAXIMUM (57-59)	UNITS (60-61)	MINIMUM (38-40)	AVERAGE (41-43)	MAXIMUM (44-46)	UNITS (47-49)				
IRON, TOTAL RECOVERABLE 00980 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****	*****		*****			MG/L	**			
	PERMIT REQUIREMENT	*****	*****		*****	1.0 ANNL AVG	*****			ONCE/ OTR	GRAB	
	SAMPLE MEASUREMENT											
	PERMIT REQUIREMENT											
	SAMPLE MEASUREMENT											
	PERMIT REQUIREMENT											
	SAMPLE MEASUREMENT											
	PERMIT REQUIREMENT											
	SAMPLE MEASUREMENT											
	PERMIT REQUIREMENT											
	SAMPLE MEASUREMENT											
	PERMIT REQUIREMENT											
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	<small>I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED, BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION. THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS. SEE RULE 62-620.305, F.A.C.</small>							TELEPHONE		DATE		
TYPED OR PRINTED								SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
SECTOR O: STEAM ELECTRIC POWER GENERATING FACILITIES
SIC CODE: N/A

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)
NAME

ADDRESS

FACILITY
LOCATION

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

FLR05	
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY

FROM (20-21) (22-23) (24-25) TO (26-27) (28-29) (30-31)

Check here if No Discharge

NOTE: Read Instructions before completing this form

PARAMETER (32-37)	SAMPLE MEASUREMENT / PERMIT REQUIREMENT	(3 Card Only) QUANTITY OR LOADING (46-53) (54-61)			(4 Card Only) QUALITY OR CONCENTRATION (38-45) (46-53) (54-61)			NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM				UNITS
DATE OF STORM EVENT	SAMPLE MEASUREMENT	*****	*****		*****	*****	*****	**	*****	*****
	PERMIT REQUIREMENT	*****	*****		*****	*****	*****		*****	*****
DURATION OF - ___ HRS STORM ELAPSED SINCE ___ DAYS LAST STORM > 0.1 INS	SAMPLE MEASUREMENT	*****		INS	*****	*****		GALS	**	*****
	PERMIT REQUIREMENT	*****	ESTIMATE RAINFALL		*****	*****	ESTIMATE VOL DIS		QTRLY	*****
IRON, TOTAL RECOVERABLE 00980 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****	*****		*****	*****		MG/L	**	
	PERMIT REQUIREMENT	*****	*****		*****	*****	REPORT DAILY MAX		QTRLY	GRAB
	SAMPLE MEASUREMENT									
	PERMIT REQUIREMENT									
	SAMPLE MEASUREMENT									
	PERMIT REQUIREMENT									
	SAMPLE MEASUREMENT									
	PERMIT REQUIREMENT									

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS. SEE RULE 62-620.305, F.A.C.	TELEPHONE		DATE		
		TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
SECTOR O: STEAM ELECTRIC POWER GENERATING FACILITIES
SIC CODE: N/A

10.2 Federal Permits Applications and Approvals

10.2.1 NPDES Applications

Florida has been delegated authority by the EPA to administer the NPDES wastewater and storm water programs in the state.

10.2.1.1 Wastewater Discharge to Surface Waters. In the event the Toho pipeline is out of service and unavailable for return of site wastewaters, FMPA and KUA request an NPDES wastewater permit to allow discharge of process wastewaters to the onsite storm water basins as a temporary disposal method. The discharge structures of the basins can be plugged to prevent the discharge of these wastewaters to the Reedy Creek Swamp; however, if the pipeline is out of service for any length of time (several days), the basins may require discharge. An NPDES permit application (Form 62-620.910(5) FAC; Form 2CS) for this emergency discharge is included herein.



WASTEWATER FACILITY OR ACTIVITY PERMIT APPLICATION FORM 1 GENERAL INFORMATION

This form must be completed by all persons applying for a permit for a wastewater facility or activity under Chapter 62-620, F.A.C. See Form 1 to determine which other application forms you will need.

DESCRIPTION OF PERMIT APPLICATION FORMS

Form 1 - General information. This booklet includes general information on applying for a permit for a wastewater facility or activity under Chapter 62-620, Florida Administrative Code (F.A.C.). **Form 1 is required for all permit applications.**

Form 2 - Specific information. This group of forms includes the specific information required for the type of wastewater facility or activity for which a permit is needed. Select the appropriate form(s) to be submitted with Form 1.

- Form 2A - Domestic Wastewater Facilities.
- Form 2B - Concentrated Animal Feeding Operations and Aquatic Animal Production Facilities.
- Form 2CS -Industrial Wastewater Facilities (discharging process wastewater to surface waters).
- Form 2CG -Industrial Wastewater Facilities (discharging process wastewater to ground water).
- Form 2ES -Industrial Wastewater Facilities (discharging non-process wastewater to surface waters).
- Form 2EG -Industrial Facilities (discharging non-process wastewater to ground water).
- Form 2F - Stormwater Discharge Associated with Industrial Activity
- Form 2CR -Non-Discharging/Closed Loop Recycle System.

SECTION A - GENERAL INSTRUCTIONS

Who Must Apply:

Persons who are or are going to discharge wastewater to waters of Florida or the United States must file for and be granted a permit under Sections 403.087, 403.088, or 403.0885, Florida Statutes (F.S.). Persons that discharge stormwater associated with industrial activity to surface waters of the state must file for and be granted a permit under Section 403.0885, F.S. There are severe penalties for discharging without a permit.

There are some exceptions to this requirement. Discharges of domestic sewage from vessels and discharges from properly operating marine engines are not required to have a permit under the laws listed above. However, discharges of rubbish, trash, garbage or other such materials discharged overboard do require permits. Vessels operated in a capacity other than as a means of transportation are required to have a permit if they are discharging to waters. These types include vessels used as an energy or mining facility, a storage facility, a seafood processing facility, or an anchored facility for the purpose of mineral or oil exploration or development.

The introduction of sewage, industrial wastes, or other pollutants into a domestic wastewater treatment facility does not need a permit under Sections 403.087, 403.088 or 403.0885, F.S. Persons discharging to permitted wastewater treatment facilities must comply with all applicable pretreatment standards. If a person has a plan or an agreement to switch from direct discharge into waters of the state to discharge to a domestic treatment facility, it does not relieve the person from obtaining a permit for the discharge until such time as the connection is made and the discharge is stopped.

Most discharges from agricultural and silvicultural activities to waters of the state do not require a permit under Sections 403.087, 403.088, or 403.0885, F.S. However, permits under those sections are required for discharges from concentrated animal feeding operations, concentrated aquatic animal production facilities, activities associated with approved aquaculture projects, and silvicultural point sources.

Where to Apply:

Permit applications must be filed with the Department of Environmental Protection (DEP) district office shown in Figure 1 for the county in which the wastewater facility or activity is located, except for permit applications for steam electrical generating power plants which are filed with the DEP office in Tallahassee. DEP offices are located at

Figure 1. State Map Showing DEP District Offices



NORTHWEST DISTRICT
160 Government Center, Ste 308
Pensacola, Florida 32501-5794
Phone No. (850) 585-8300

NORTHEAST DISTRICT
7825 Baymeadows Way, Suite B-200
Jacksonville, Florida 32256-7577
Phone No. (904) 448-4300

SOUTHWEST DISTRICT
3804 Coconut Palm Drive
Tampa, Florida 33619-8318
Phone No. (813) 744-6100

CENTRAL DISTRICT
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767
Phone No. (407) 894-7555

SOUTH DISTRICT
2295 Victoria Avenue, Suite 364
Fort Myers, Florida 33901
Phone No. (239) 332-6975

SOUTHEAST DISTRICT
400 North Congress Avenue
West Palm Beach, Florida 33401
Phone No. (561) 681-6600

When to Apply:

Applications must be filed with the appropriate DEP office 180 days before your current permit expires or 180 days before startup of a new or modified facility. If the submitted application is for a new facility or for a modification of an existing facility, the information required for describing the construction must be filed at least 90 days before construction begins. The DEP encourages applicants to file the materials describing the construction of a new facility or the modification of an existing facility as early as possible to avoid problems with delays in startup or facility redesign to achieve effluent limitations.

Federal regulations provide that a new source in the NPDES program may not be constructed or started to be constructed before the issuance of an operation permit. Because of this regulation, a permit application for a new source may need to be submitted well in advance of the required 180 days.

Fees:

Application fees are listed in Section 62-4.050, Florida Administrative Code (F.A.C.). An application will not be processed until the application fee has been paid. If the DEP determines that a permit should be issued for less than five years duration, the application fee will be pro rated.

If a permit is issued for a surface water discharge, the permittee will be assessed a regulatory and surveillance program fee annually. Those fees are listed in Section 62-4.052, F.A.C. Failure to pay the annual fee may result in revocation of the permit.

Availability of Information to the Public:

Information contained in these applications forms will, upon request, be made available to the public for inspection and copying. However, you may request confidential treatment for certain information which you may submit to supplement the information requested on these forms. Section 62-620.302, F.A.C., and 40 CFR 2 provide set forth the procedures for making the claim. No information on Forms 1 and 2A through 2EG may be claimed as confidential.

Completion of Forms:

Unless otherwise specified in instructions to the forms, each item in each form must be answered. To indicate that each item has been considered, enter "NA", for not applicable, if a particular item does not fit the circumstances or characteristics of your facility or activity.

If you have previously submitted information to the DEP which answers a question, you may either repeat the information in the space provided or attach a copy of the previous submission. **DO NOT WRITE "ON FILE"**. Some items in the form require narrative explanation. If more space is necessary to answer a question, attach a separate sheet entitled "Additional Information."

SECTION B - FORM 1 LINE-BY-LINE INSTRUCTIONS

This form must be completed by all applicants.

Completing This Form:

Please type or print in the underlined areas only. Some items have a limited number of spaces or characters so that your response may be entered into a computer program. Please do not exceed this maximum number with your response. Abbreviate if necessary to stay within the number of characters allowed for each item. Use one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response.

Item I

Space is provided at the upper right hand corner of Form 1 for insertion of your Facility Identification Number. If you have an existing facility, enter your identification number. If you don't know your identification number, please contact the appropriate DEP office which will provide you with your number. If your facility is new (not yet constructed), leave this item blank.

Item II

Answer each question to determine which supplementary forms you need to fill out. Be sure to check the glossary in Section C of these instructions for the legal definitions of any words you are not certain of their meaning.

If you answer "no" to every question, then you may not need a permit. However, you should call the appropriate district office to determine if you have made a correct determination. If you answer "yes" to any question, then you must complete and file the supplementary form by the deadline listed in Section A along with this form.

Item III

Enter the facility's official or legal name. Do not use a colloquial name.

Item IV

Give the name, title, and work telephone number of a person who is thoroughly familiar with the operation of the facility, with the facts reported in this application, and who can be contacted by reviewing offices if necessary.

Item V

Give the complete mailing address of the office where correspondence should be sent. This often is not the address used to designate the location of the facility or activity.

Item VI

Give the address or location of the facility identified in Item III of this form. If the facility lacks a street name or route number, give the most accurate alternative geographic information (for example, section number or quarter section number from county records or at intersection of Rts 426 and 22).

Item VII

List four, in descending order of significance, 4-digit standard industrial classification (SIC) codes which best describe your facility in terms of the principal products or services you produce or provide. Also, specify each classification in words. These classifications may differ from the SIC codes describing the operation generating the discharge from the facility.

SIC code numbers are descriptions which may be found in the "Standard Industrial Classification Manual" prepared by the Executive Office of the President, Office of Management and Budget, which is available from the Government Printing Office, Washington, D.C. Your local library may have a copy of this publication which you may use. Use the current edition of the manual. If you have any questions concerning the appropriate SIC code for your facility, please contact the appropriate DEP district office.

Item VIII-A

Give the name, as it is legally referred to, of the person, firm, public organization, or any other entity which operates the facility described in this application. This may or may not be the same name as the facility. The operator of the facility is the legal entity which controls the facility's operation rather than the plant or site manager. Do not use a colloquial name.

Item VIII-B

Indicate whether the entity which operates the facility also owns it by marking the appropriate box.

Item VIII-C

Enter the appropriate letter to indicate the legal status of the operator of the facility. Indicate "public" for a facility solely owned by a local government, such as a city, town, county, etc.

Items VIII-D through H

Enter the telephone number and address of the operator identified in Item VIII-A.

Item IX

Indicate whether the facility is located on Indian Lands.

Item X

Give the number of each presently effective wastewater and stormwater permit issued to the facility listed in this application. List relevant federal, state, and local permits. **DO NOT LIST ALL YOUR PERMITS. LIST ONLY CURRENT ENVIRONMENTAL PERMITS RELATING TO THIS PROJECT.**

Item XI

Provide a topographic map or maps of the area extending at least to one mile beyond the property boundaries of the facility which clearly show the following:

- The legal boundaries of the facility;

- The location and serial number of each of your existing and proposed intake and discharge structures;
- All hazardous waste management facilities;
- Each well where you inject fluids underground; and
- All springs and surface water bodies in the area, plus all drinking water wells within 1/4 mile of the facility which are identified in the public record or otherwise known to you.

If an intake or discharge structure, hazardous waste disposal site, or injection well associated with the facility is located more than one mile from the plant, include it on the map, if possible. If not, attach additional sheets describing the location of the structure, disposal site, or well, and identify the U.S. Geological Survey (or other) map corresponding to the location.

On each map, include the map scale, a meridian arrow showing north, and latitude and longitude at the nearest whole second. On all maps of rivers, show the direction of the current, and in tidal waters, show the directions of the ebb and flow tides. Use a 7-1/2 minute series map published by the U.S. Geological Survey. If a 7-1/2 minute series map has not been published for your facility site, then you may use a 15 minute series map from the U.S. Geological Survey. If neither a 7-1/2 nor 15 minute series map has been published for your facility site, use a plat map or other appropriate map, including all the requested information; in this case, briefly describe land uses in the map area (for example, residential, commercial).

You may trace your map from a geological survey chart, or other map meeting the above specifications. If you do, your map should bear a note showing the number or title of the map or chart from which it was traced. Include the names of nearby towns, water bodies, and other prominent points.

You may obtain a topographic map from:

Eastern Mapping Center
National Cartographic Information Center
U.S. Geological Survey
536 National Center
Reston, VA 22092

Item XII

Briefly describe the nature of your business (for example, products produced or services provided).

Item XIII

Section 403.161, F.S., provides severe penalties for submitting false information on this application form or any reports or records required by a permit, if issued. There are both civil and criminal penalties, in addition to the revocation of the permit.

Rule 62-620.305, F.A.C., requires that the application and any reports required by the permit, if issued, to be signed as follows:

- A. For a corporation, by a responsible corporate officer as described in Rule 62-620.305, F.A.C.;
- B. For partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- C. For a municipality, state, federal or other public facility, by a principal executive officer or elected official.

SECTION C - GLOSSARY

NOTE: This Glossary includes terms used in the instructions and in Forms 1, 2A through 2EG. If you have any questions concerning the meaning of any of these terms, please contact your DEP district office.

Activity means any action which results in a discharge of wastes into waters of the State or that is reasonably expected to be a source of water pollution.

Aliquot means a sample of specified volume used to make up a total composite sample.

Animal Feeding Operation means a lot or facility (other than an aquatic animal production facility) where the following conditions are met:

A. Animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12 month period; and

B. Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.

Two or more animal feeding operations under common ownership are a single animal feeding operation if they adjoin each other or if they use a common area or system for the disposal of wastes.

Animal Unit means a unit of measurement for any animal feeding operation calculated by adding the following number: The number of slaughter and feeder cattle multiplied by 1.0; plus the number of mature dairy cattle multiplied by 1.4; plus the number of swine weighing over 25 kilograms (approximately 55 pounds) multiplied by 0.4; plus the number of sheep multiplied by 0.1; plus the number of horses multiplied by 2.0.

Application means the approved DEP standard forms for applying for a permit, including any approved additions, revisions, or modifications to the forms. Approved forms are numbered, Form 62-620.910, and have an effective date of October 1, 1994, or later.

Aquifer means a geological formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring.

Best Management Practices (BMP) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs include treatment requirements, operation procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Biological Monitoring Test means any test which include the use of aquatic algal, invertebrate, or vertebrate species to measure acute or chronic toxicity, and any biological or chemical measure of bioaccumulation.

Bypass means the intentional diversion of wastes from any portion of a treatment facility.

Concentrated Animal Feeding Operation means an animal feeding operation which meets the criteria set forth in Chapter 62-670, F.A.C.

Concentrated Aquatic Animal Production Facility means a hatchery, fish farm, or other facility which contains, grows or hold aquatic animals as set forth in Chapter 62-660, F.A.C.

Contact Cooling Water means water used to reduce temperature which comes into contact with a raw material, intermediate product, waste product other than heat, or finished product.

CWA means the Clean Water Act as amended, 33 U.S.C. 1251 et seq.

Dike means any embankment or ridge of either natural or manmade materials used to prevent the movement of liquids, sludges, solids, or other materials.

Discharge (of a Pollutant) means any addition of any pollutant or combination of pollutants to waters of the State from any point source; or any addition of any pollutant or combination of pollutants to the marine waters of the State from any point source other than a vessel or other floating craft which is being used as a means of transportation.

This definition includes discharges into waters of the State from surface runoff which is collected or channelled by man; discharges through pipes, sewers, or other conveyances owned by the State, a municipality, or other person which do not lead to POTWs; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any indirect discharge.

Effluent Limitation mean any restriction imposed by the DEP on quantities, discharge rates, and concentrations of pollutants which are discharged from point sources into waters of the State.

Effluent Limitation Guideline means a regulation published under Section 304(b) of the Clean Water Act to adopt or revise effluent limitations.

EPA means the United States Environmental Protection Agency.

Existing Source or Existing Discharger means any source which is not a new source or a new discharger.

Facility or wastewater facility means any facility which can reasonably be expected to be a source of pollution and includes any or all of the following: a collection and transmission system, a wastewater treatment works, a reuse or disposal system, and a residuals management facility.

Ground Water means water below the land surface in a zone of saturation.

Indirect Discharger means an industrial discharger introducing pollutants to a publicly owned treatment works.

Injection Well mean a well into which fluids are injected.

MGD means millions of gallons per day.

Municipality means a city, village, town, borough, county, district, association, or other public body created by or under State law and have jurisdiction over disposal of sewage, industrial wastes, or other wastes.

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking and reissuing, termination, monitoring and enforcing permits and imposing and enforcing pretreatment requirements, under Sections 307, 318, 402, and 405 of the CWA. The term includes a State program which has been authorized by EPA under 40 CFR Part 123.

New Discharger mean any building, structure, facility, or installation: (A) from which there is or may be a new or additional discharge of pollutants at a site at which on October 18, 1972, it had never discharged pollutants; (B) which has never received a finally effective NPDES permit for discharges at that site; and (C) which is not a "new source." This definition includes an indirect discharger which commences discharging into water of the State. It also includes any existing mobile point source, such as an offshore oil drilling rig, seafood processing vessel, or aggregate plant that begins discharging at a location for which it does not have an existing permit.

New Source means any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced: (A) after promulgation of standards of performance under Section 306 of the CWA which are applicable to such source; or (B) after proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

Non-Contact Cooling Water means water used to reduce temperature which does not come into direct contact with any raw material, intermediate produce, waste product (other than heat), or finished product.

Off-Site means any site which is not "on-site."

On-Site means on the same or geographically contiguous property which may be divided by public or private right(s)-of-way, provided the entrance and exit between the properties is at a cross-roads intersection, and access is by crossing as opposed to going along, the right(s)-of-way. Non-contiguous properties owned by the same person, but connected by a right-of-way which the person controls and to which the public does not have access, is also considered on-site property.

Operator means the person responsible for the overall operation of a facility.

Outfall means a point source.

Owner means the person who owns a facility or part of a facility.

Permit means an authorization, license, or equivalent control document issued by the State to implement the requirements of 40 CFR 122, 123, and 124 and Chapter 403, F.S.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture.

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical waste, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended), heat, wrecked or discarded equipment, rocks, sand, cellar dirt and industrial, municipal, and agriculture waste discharged into water. It does NOT mean: (A) sewage from vessels; or (B) water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Privately Owned Treatment Works means any device or system which is used to treat domestic wastewater from any facility which is not a POTW.

Process Wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Publicly Owned Treatment Works (POTW) means any device or system used in the treatment (including recycling and reclamation) of domestic sewage or industrial wastes of a liquid nature which is owned by a State or municipality. This definition includes any sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

Residuals means the solid, semisolid, or liquid residue generated during the treatment of domestic wastewater. Not included are solids removed from pump stations and lift stations, and screenings and grit removed from the headworks of domestic wastewater treatment facilities. Also not included are other solids removed prior to treatment of the residuals to meet the stabilization standards of Chapter 62-640, F.A.C., or ash generated during the incineration of residuals.

Sewage From Vessels means human body wastes and the wastes from toilets and other receptacles intended to receive or retain body wastes that are discharged from vessels and regulated under Section 312 of the CWA.

Sewage Sludge means residuals.

Silvicultural Point Source means any discernable, confined and discrete conveyance related to rock crushing, gravel washing, log sorting, or log storage facilities which are operated in connection with silvicultural activities and from which pollutants are discharged into water of the State.

Stormwater Discharge Associated with Industrial Activity is as defined in 40 CFR 122.26(b)(14).

Surface Impoundment or Impoundment means a facility or part of a facility which is a natural topographic depression, manmade excavation, or diked area formed primarily of earthen materials (although it may be lined with manmade materials), which is designed to hold an accumulation of liquid wastes or wastes containing free liquids, and which is not an injection well. Examples of surface impoundments are holding, storage, settling, and aeration pits, ponds, and lagoons.

Toxic Pollutant means any pollutant listed as toxic under Section 307(a)(1) of the CWA.

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

Waters of the State means the waters defined in Section 403.031, F.S., and including waters of the United States to the seaward boundaries of the State.



WASTEWATER FACILITY OR ACTIVITY PERMIT APPLICATION FORM 1 GENERAL INFORMATION

I - IDENTIFICATION NUMBER:

Facility ID _____

II - CHARACTERISTICS:

INSTRUCTIONS: Complete the questions below to determine whether you need to submit any permit application forms to the Department of Environmental Protection. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the blank in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements. See Section B of the instructions. See also, Section C of the instructions for definitions of the terms used here.

SPECIFIC QUESTIONS	YES	NO	FORM ATTACHED
A. Is this facility a domestic wastewater facility which results in a discharge to surface or ground waters?		X	
B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters?		X	
C. Does or will this facility (other than those describe in A. or B.) discharge process wastewater, or non-process wastewater regulated by effluent guidelines or new source performance standards, to surface waters?	X		X
D. Does or will this facility (other than those described in A. or B.) discharge process wastewater to ground waters?	X		X (See Section 10.5.10)
E. Does or will this facility discharge non-process wastewater, not regulated by effluent guidelines or new source performance standards, to surface waters?		X	
F. Does or will this facility discharge non-process wastewater to ground waters?		X	
G. Does or will this facility discharge stormwater associated with industrial activity to surface waters?		X	Stormwater to be discharged under multi-sector permit
H. Is this facility a non-discharging/closed loop recycle system?		X	
I. Is this facility a public water system whose primary purpose is the production of potable water for public consumption and which discharges demineralization concentrate to surface water or groundwater?		X	

III - NAME OF FACILITY: (80 characters and spaces)

Cane Island Unit 4

Facility ID _____

IV - FACILITY CONTACT: (A. 30 characters and spaces)

A. Name and Title (Last, first, & title)	B. Phone (area code & no.)
Jay Butters	407-933-9853

V - FACILITY MAILING ADDRESS: (A. 30 characters and spaces; B. 25 characters and spaces)

A. Street or P.O. Box: 6075 Old Tampa Hwy		
B. City or Town: Intercession City	State: FL	Zip Code: 33848

VI - FACILITY LOCATION: (A. 30 characters and spaces; B. 24 characters and spaces; C. 3 spaces (if known); D. 25 characters and spaces; E. 2 spaces; F. 9 spaces)

A. Street, Route or Other Specific Identifier: 6075 Old Tampa Hwy		
B. County Name: Osceola	C. County Code (if known):	
D. City or Town: Intercession City	E. State: FL	F. Zip Code: 33848

VII - SIC CODES: (4-digit, in order of priority)

1. Code #: 4911	(Specify) Steam/Electric Power Generator	2. Code #:	(Specify)
3. Code #:	(Specify)	4. Code #:	(Specify)

VIII - OPERATOR INFORMATION: (A. 40 characters and spaces; B. 1 character; C. 1 character (if other, specify); D. 12 characters; E. 30 characters and spaces; F. 25 characters and spaces; G. 2 characters; H. 9 characters)

A. Name: KUA		B. Is the name in VIII A. the owner?	
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
C. Status of Operator: F = Federal; S = State; P = Private; O = Other; M = Public (other than F or S)	(code) M	(specify) Municipality	D. Phone No.: 407-933-7777
E. Street or P. O. Box: 1701 W Carroll St			
F. City or Town: Kissimmee		G. State: FL	H. Zip Code: 34741-6804

IX - INDIAN LAND:

A. Is the facility located on Indian lands?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Facility ID _____

X - EXISTING ENVIRONMENTAL PERMITS:

A. NPDES Permit No.	B. UIC Permit No.	C. Other (specify)	D. Other (specify)
Multi-sector General Permit	None	Site Certification PA 98-38	FAC 62-621.300(5)

XI - MAP: Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

See Attachment A

XII - NATURE OF BUSINESS (provide a brief description)

KUA and FMPA propose to construct, install and operate a 300 MW natural gas-fired, combined cycle, combustion Turbine Unit 4 at the existing Cane Island Power Park.

XIII - CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

_____ A. Name (type or print)

_____ B. Signature

_____ Official Title (type or print)

_____ C. Date Signed



WASTEWATER APPLICATION FORM 2CS

PERMIT TO DISCHARGE PROCESS WASTEWATER
FROM NEW OR EXISTING
INDUSTRIAL WASTEWATER FACILITIES
TO SURFACE WATER

INSTRUCTIONS - FORM 2CS

This form must be completed by all applicants who check "yes" to Item II-C in DEP Form 62-620.910(1).

Public Availability of Submitted Information.

You may not claim as confidential any information required by this form or DEP Form 62-620.910(1), whether the information is reported on the forms or in an attachment. This information will be made available to the public upon request. Any information you submit to the Department which goes beyond that required by this form or DEP Form 62-620.910(1) you may claim as confidential, but claims for information which is effluent data will be denied. If you do not assert a claim of confidentiality at the time of submitting the information, the Department may make the information public without further notice to you. Claims of confidentiality must be in accordance with Rule 62-620.302, Florida Administrative Code.

Completeness

Your application will not be considered complete unless you answer every question on this form (DEP Form 62-620.910(5)) and on Form I (DEP Form 62-620.910(1)). If an item does not apply to you, enter "NA" (for "not applicable") to show that you considered the question. Also, you may need a Plan of Study (POS) to develop Water Quality Effluent Limitations (WQBEL) required by Rule 62-650, F.A.C. Please contact the Department for information.

Follow-up Requirements (for New or Substantially Modified Facilities)

Although you are now required to submit estimated data on this form, please note that no later than six months after you begin discharging from the proposed or substantially modified facility, you must complete and submit items VII and VIII of this Form 2CS (DEP Form 62-620.910(5)). However, you need not complete those portions of Item V requiring test which you have already performed under the discharge monitoring requirements of your permit.

Definitions

All significant terms used in these instructions and in the form are defined in the glossary found in the General Instructions which accompany Form 1.

DEP ID Number

If you are applying for a renewal of an existing permit or for a substantial revision to an existing permit, fill in your DEP Identification Number at the top of each page of Form 2CS. You may copy this number directly from Item I of Form I. If you are applying for a permit for a proposed facility, leave the DEP Identification Number blank. The Department will assign a number.

Item I

You may use the map you provided for Item XI of Form I to determine the latitude and longitude of each of your discharge locations.

Item II

Describe the design of each outfall, including construction materials used or to be used.

Item III

Describe the surface water body which will be or is receiving effluent from the wastewater facility.

Item IV

A. The line drawing should show generally the route taken by water in your facility from intake to discharge. Show all operations contributing wastewater, including process and production areas, sanitary flows, cooling water, and stormwater runoff. You may group similar operations into a single unit, labeled to correspond to the more detailed listing in Item III B. The water balance should show average flows. Show all significant losses of water to products, atmosphere, and discharge. You should use actual measurements whenever available; otherwise, use your best estimate.

B. List all sources of wastewater to each discharge point. Operations may be described in general terms (for example, "dye-making reactor" or "distillation tower"). You may estimate the flow contributed by each source if no data are available. For stormwater discharges you may estimate the average flow, but you must indicate the rainfall event upon which the estimate is based and the method of estimation. For each treatment unit, indicate its size, flow rate, and retention time, and describe the ultimate disposal of any solid or liquid wastes not discharged. Treatment units should be listed in order and you should select the proper code from Table 2CS-1 to fill in column 3-b for each treatment unit. Insert "XX" into column 3-b if no code corresponds to a treatment unit you list.

C. A discharge is intermittent unless it occurs without interruption during the operating hours of the facility, except for infrequent shut-downs for maintenance, process changes, or other similar activities. A discharge is seasonal if it occurs only during certain parts of the year. Fill in every applicable column in this item for each source of intermittent or seasonal discharges. Base your answers on actual data whenever available; otherwise, provide your best estimate. Report the highest daily value for flow rate and total volume in the "Max. Daily" columns (columns 4-a and 4-b). Report the average of all daily values measured during days when the discharge occurred within the last year in the "Long Term Avg." columns (columns 4-a and 4-b).

Item V

"Production" in this question refers to those goods which the proposed, substantially modified, or existing facility will produce or is producing, not to "wastewater" production. This information is only necessary where production-based new source performance standards (NSPS) or effluent guidelines apply to your facility. Your estimated production figures should be based on a realistic projection of actual daily production level (not design capacity) for each of the first three operating years of the facility. This estimate must be a long-term-average estimate (e.g., average production on an annual basis). If production will vary depending on long-term shifts in operating schedule or capacity, you may report alternate production estimates and the basis for the alternate estimates.

A. All NSPS and effluent guidelines promulgated by EPA appear in the Federal Register and are published annually in 40 CFR Subchapter N. A guideline applies to you if you have any operations contributing process wastewater in any subcategory covered by a BPT, BCT, or BAT guideline. If you are unsure whether you are covered by a promulgated NSPS or effluent guideline, check with your DEP district office (*Figure 1 in the Form 1 instructions*). You must check "yes" if an applicable NSPS or effluent guideline has been promulgated, even if the guideline limitations are being contested in court. If you believe that a promulgated NSPS or effluent guideline has been remanded for reconsideration by a court and does not apply to your operations, you may check "no."

B. An NSPS or effluent guideline is expressed in terms of production (*or other measure of operation*) if the limitation is expressed as mass of pollutant per operational parameter: for example, "pounds of BOD per cubic foot of logs from which bark is removed," or "pounds of TSS per megawatt hour of electrical energy consumed by smelting furnace." An example of a guideline not expressed in terms of a measure of operation is one which limits the concentration of pollutants.

C. This item must be completed only if you checked "yes" to Item V-B. The production information requested here is necessary to apply effluent guidelines to your facility and you cannot claim it as confidential. However, you do not have to indicate how the reported information was calculated. Report quantities in the units of measurement used in the applicable NSPS or effluent guideline. The production figures provided must be based on actual daily production and not on design capacity or on predictions of future operations. To obtain alternate limits under Rule 62-620.620(2)(b)3., F.A.C., you must define your maximum production capability and demonstrate to the Department that your actual production is substantially below maximum production capability and that there is a reasonable potential for an increase above actual production during the duration of the permit.

Item VI

- A. If you check "yes" to this question, complete all parts of the chart, or attach a copy of any previous submission you have made to the Department containing the same information.
- B. You are not required to submit a description of future pollution control projects if you do not wish to or if none is planned.

Item VII (A, B, C, and D, including Tables VII-A, VII-B, and VII-C)

This item requires you to collect and report data on the pollutants discharged from each of your discharge points. Each part of this item addresses a different set of pollutants and must be completed in accordance with the specific instructions for that part. The following general instructions apply to the entire item.

General Instructions

Part A requires you to report at least one analysis for each pollutant listed. Parts B and C require you to report analytical data in two ways. For some pollutants, you may be required to mark "X" in the "Testing Required" column (*column 2-a, Part C*), and test (*sample and analyze*) and report the levels of the pollutants in your discharge whether or not you expect them to be present in your discharge. For all other, you must mark "X" in either the "Believe Present" column or the "Believe Absent" column (*columns 2-a or 2-b, Part B, and Columns 2-b or 2-c, Part C*) based on your best estimate, and test for those which you believe to be present. (*See specific instructions on the form and below for Parts A through D.*) Base your determination that a pollutant is present in or absent from your discharge on your knowledge of your raw materials, maintenance chemicals, intermediate and final products and by-products, and any previous analyses known to you of your effluent or similar effluent. (*For example, if you manufacture pesticides, you should expect those pesticides to be present in contaminated stormwater runoff.*) If you would expect a pollutant to be present solely as a result of its presence in your intake water, you must mark "Believe Present" but you are not required to analyze for that pollutant. Instead, mark an "X" in the "Intake" column.

A. Reporting

All levels must be reported as concentration and as total mass. You may report some or all of the required data by attaching separate sheets of paper instead of filling out pages VII-1 to VII-10 if the separate sheets contain all the required information in a format which is consistent with pages VII-1 to VII-10 in spacing and in identification of pollutants and columns. (*For example, the data systems used in your GC/MS analysis may be able to print data in the proper format.*) Use the following abbreviations in the columns headed "Units" (*column 3, Part A, and Column 4, Parts B and C*).

Concentration
ppm - parts per million
mg/l - milligrams per liter
ppb - parts per billion
µg/l - micrograms per liter

Mass
lbs - pounds
ton - tons (English tons)
mg - milligrams
g - grams
kg - kilograms
T - tonnes (metric tons)

All reporting of values for metals must be in terms of "total recoverable metal," unless (1) an applicable, promulgated effluent limitation or standard specifies the limitation for the metal in dissolved, valent, or total form; or (2) all approved analytical methods for the metal inherently measure only its dissolved form (e.g., hexavalent chromium). If you measure only one daily value, complete only "Max. Daily Values" columns and insert "1" into the "Number of Analyses" column (*columns 2-a and 2-d, Part A, and column 3-a, 3-d, Parts B and C*). The Department may require you to conduct additional analyses to further characterize your discharges. For composite sample, the daily value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24-hour period; for grab samples, the daily value is the arithmetic or flow-weighted total mass or average concentration found in a series of at least

four grab samples taken over the operating hours of the facility during a 24-hour period. If you measure more than one daily value for a pollutant and those values are representative of your waste stream, you must report them. You must describe your method of testing and data analysis. You also must determine the average of all values within the last year and report the concentration and mass under the "Long Term Avg. Values" columns (*column 2-c, Part A, and column 3-c, Parts B and C*), and the total number of daily values under the "Number of Analyses" columns (*column 2-d, Part A, and columns 3-d, Parts B and C*). Also determine the average of all daily values taken during each calendar month, and report the highest average under the "Max. 30-day Values" columns (*column 2-c, Part A, and column 3-b, Parts B and C*).

B. Sampling

The collection of the samples for the reported analyses should be supervised by a person experienced in performing sampling of industrial wastewater. Any specific requirements contained in the applicable analytical methods should be followed for sample containers, sample preservation, holding times, the collection of duplicate samples, etc. The time when you sample should be representative of your normal operation, to the extent feasible, with all processes which contribute wastewater in normal operation, and with your treatment system operating properly with no system upsets. Samples should be collected from the center of the flow channel, where turbulence is at a maximum, at a site specified in your present permit, or at any site adequate for the collection of a representative sample. Sampling for metals that are hardness-dependent shall also include sampling for hardness.

For pH, temperature, cyanide, total phenols, residual chlorine, oil and grease, and fecal coliform, grab samples must be used. For all other pollutants 24-hour composite samples must be used. However, a minimum of one grab sample may be taken for effluents from holding ponds, or other impoundments with a retention period of greater than 24 hours. For stormwater discharges a minimum of one to four grab samples may be taken, depending on the duration of the discharge. One grab must be taken in the first hour (*or less*) of discharge, with one additional grab (*up to a minimum of four*) taken in each succeeding hour of discharge for discharges lasting four or more hours. The Department may waive composite sampling for any discharge point for which you demonstrate that use of an automatic sampler is infeasible and that a minimum of four grab samples will be representative of your discharge.

Grab and composite samples¹ are defined as follows:

Grab sample: An individual sample or at least 100 milliliters collected at a randomly-selected time over a period not exceeding 15 minutes.

¹Sampling requirements are periodically reviewed in light of recent research on testing methods. Upon completion of the review, changes to sampling requirements may be made. Before starting any required sampling or submitting past sampling to the Department, be sure that you have a current copy of 40 CFR Part 136 or Chapter 160, Florida Administrative Code.

Composite sample: A combination of at least 8 sample aliquots of a least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24-hour period. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically. For GC/MS Volatile Organic Analysis (VOA), aliquots must be combined in the laboratory immediately before analysis. Four (4) (*rather than eight*) aliquots or grab samples should be collected for VOA. These four samples should be collected during actual hours of discharge over a 24-hour period and need not be flow proportioned. Only one analysis is required.

Data from samples taken in the past may be used if all data requirements are met; sampling was done no more than three years before submission; and all data are representative of the present discharge. Among the factors which would cause the data to be unrepresentative are significant changes in production level; changes in raw materials, processes, or final products; and changes in wastewater treatment. When EPA promulgates new analytical methods in 40 CFR Part 136, EPA will provide information as to when you should use the new methods to generate data on your discharges. The Department may promulgate new methods in Chapter 160, Florida Administrative Code, with the date when the new methods are to be used. Always be sure you have current copies of these two documents before you take samples or submit sampling data to the Department. If you have submitted data from past sampling, the Department may request additional information, including current quantitative data, if it is determined to be necessary to assess your discharges.

C. Analysis

You must use test methods promulgated in 40 CFR Part 136 or Chapter 160, Florida Administrative Code; however, if none has been promulgated for a particular pollutant, you may use any suitable method for measuring the level of the pollutant in your discharge if you submit a description of the method or a reference to a published method. Your description should include the sample holding time, preservation techniques, and the quality control measures which you used. If you have two or more substantially identical discharge points, you may request permission from the Department to sample and analyze only one point and submit the results of the analysis for other substantially identical points. If your request is granted by the Department, or a separate sheet attached to the application form identify which point you did test, and describe why the other points you did not test are substantially identical to the point which you did test.

D. Reporting of Intake Data

You are not required to report data under the "Intake" columns unless you wish to demonstrate your eligibility for a "net" effluent limitation for one or more pollutants, that is, an effluent limitation adjusted by subtracting the average level of the pollutant(s) present in your intake water. To demonstrate your eligibility, under the "Intake" columns report the average of the results of analyses on your intake water (*If your water is treated before use, test the water after it is treated.*), and discuss the requirements for a new limitation with the appropriate district office.

Part VII-A

Part VII-A must be completed by all applicants for all discharge points including discharges of non-contact cooling water or storm runoff. However, at your request, the Department may waive the requirement to test for one or more of these pollutants, upon a determination that available information is adequate to support issuance of the permit with less stringent reporting requirements for these pollutants. Use composite samples for all pollutants in this Part, except use grab samples for pH and temperature. See the discussion in General Instructions to item *VII* for definitions of the columns in Part A. The "Long Term Avg. Values" column (*column 2-c*) and "Max. 30-day Values" column (*column 2-b*) are not compulsory but should be filled out if data are available.

Part VII-B

Part VII-B must be completed by all applicants for all discharge points, including points containing only non-contact cooling water or storm runoff. You must report quantitative data if the pollutant(s) in question is limited in an effluent limitation either directly or indirectly but expressly through a limitation on an indicator (*e.g., use of TSS as an indicator to control the discharge of iron and aluminum*). For other discharged pollutants you must provide quantitative data or explain their presence in your discharge. The Department will consider a request to eliminate the requirement to test for pollutants for an industrial category or subcategory. Your request must be supported by data representative of the industrial category or subcategory in question. The data must demonstrate that individual testing for each applicant is unnecessary, because the facilities in the category or subcategory discharge substantially identical levels of the pollutant or discharge the pollutant uniformly at sufficiently low levels. Use composite samples for all pollutants you analyze for in this part, except use grab samples for residual chlorine, oil and grease, and fecal coliform. The "Long Term Avg. Values" column (*column 2-c*) and "Max. 30-day Values" column (*column 2-b*) are not compulsory but should be filled out if data are available.

Part VII-C

Table 2CS-2 at the end of these instructions lists 34 primary industry categories. For each discharge point, if any of your processes which contribute wastewater falls into one of those categories, you must mark "X" in "Testing Required" column (*column 2-a*) and test for (1) all of the toxic metals, cyanide, and total phenols; and (2) the organic toxic pollutants contained in Table 2CS-3 as applicable to your category. The organic toxic pollutants are listed by GC/MS fractions on pages VII-4 to VII-10 in Part VII-C. The inclusion of total phenols in Part VII-C is not intended to classify total phenols as a toxic pollutant. When you determine which industry category you are in to find your testing requirements, you are not determining your category for any other purpose and you are not giving up your right to challenge your inclusion in that category before your permit is issued. For all other cases (*secondary industries, non-process wastewater discharge points, and GC/MS fractions that are not required*), you must mark "X" in either the "Believed Present" column or the "Believed Absent" column for each pollutant.

You must report quantitative data as follows:

For every pollutant you know or have reason to believe is present in your discharge in concentrations of 10 ppb or greater;

For acrolein; acrylonitrile; 2,4 dinitrophenol; and 2-methyl-4,6 dinitrophenol where you expect these four pollutants to be discharged in concentrations of 100 ppb or greater; and

For every pollutant expected to be discharged in concentrations less than the thresholds specified above. For pollutants in this last category, in lieu of quantitative data, you may briefly describe the reasons the pollutant is expected to be discharged.

You are required to mark "Testing Required" for dioxin if you use or manufacture one of the following compounds:

- (a) 2,4,5-trichlorophenoxy acetic acid, (2,4,5-T);
- (b) 2-(2,4,5-trichlorophenoxy) propanoic acid, (Silvex, 2,4,5-TP);
- (c) 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate, (Erbon);
- (d) 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate, (Ronnel);
- (e) 2,4,5-trichlorophenol, (TCP); or
- (f) hexachlorophene, (HCP).

If you mark "testing Required" or "Believed Present," you must perform a screening analysis for dioxin, using gas chromatography with an electron capture detector. A TCDD standard for quantitation is not required. Describe the results of this analysis in the space provided: for example, "no measurable baseline deflection at the retention time of TCDD" or "a measurable peak within the tolerances of the retention time of TCDD." The Department may require you to perform a quantitative analysis if you report a quantitative analysis if you report a positive result.

Part VII-D

List any pollutants in Table 2CS-3 that you believe to be present and explain why you believe them to be present. No analysis is required, but if you have analytical data, you must report it. For discharges of the hazardous substances listed in Table 2CS-4, you may be exempt from the reporting requirements of section 311 of the Clean Water Act. Please contact the Department for information.

Item VIII

This requirement applies to current use or manufacture of a toxic pollutant as an intermediate or final product or by-product. The Department may waive or modify the requirement if you demonstrate that it would be unduly burdensome to identify each toxic pollutant and the Department has adequate information to issue your permit. You may not claim this information as confidential; however, you do not have to distinguish between use or production of the pollutants or list the amounts.

Item IX

This item is self explanatory.

Item X

This item is self explanatory.

Item XI

This item is self explanatory.

Item XII

There are severe penalties for submitting false information on this application form. Chapter 62-620, Florida Administrative Code, requires, in addition to the certification provided by a professional engineer, a certification from the owner or responsible authority of the facility as follows:

A. For a corporation: by a responsible corporate official. For purposes of this section, a responsible corporate official means (1) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or (2) the manager of one or more manufacturing, production or operating facilities employing more than 250 person or have gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

B. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

C. For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official. A principal executive officer includes the chief executive officer of the agency or a senior executive officer having the responsibility for the overall operations of a principal geographic unit of the agency, for example, a regional or district administrator.

**TABLE 2CS-1
CODES FOR TREATMENT UNITS**

PHYSICAL TREATMENT PROCESSES			
1-A	Ammonia Stripping	1-N	Microstraining
1-B	Dialysis	1-O	Mixing
1-C	Diatomaceous Earth Filtration	1-P	Moving Bed Filters
1-D	Distillation	1-Q	Multimedia Filtration
1-E	Electrodialysis	1-R	Rapid Sand Filtration
1-F	Evaporation	1-S	Reverse Osmosis (Hyperfiltration)
1-G	Flocculation	1-T	Screening
1-H	Flotation	1-U	Sedimentation (Settling)
1-I	Foam Fractionation	1-V	Slow Sand Filtration
1-J	Freezing	1-W	Solvent Extraction
1-K	Gas-Phase Separation	1-X	Sorption
1-L	Grinding (Comminutors)	1-Y	Percolation Pond
1-M	Grit Removal		
CHEMICAL TREATMENT PROCESSES			
2-A	Carbon Adsorption	2-G	Disinfection (<i>Ozone</i>)
2-B	Chemical Oxidation	2-H	Disinfection (<i>Other</i>)
2-C	Chemical Precipitation	2-I	Electrochemical Treatment
2-D	Coagulation	2-J	Ion Exchange
2-E	Dechlorination	2-K	Neutralization
2-F	Disinfection (<i>Chlorine</i>)	2-L	Reduction
BIOLOGICAL TREATMENT PROCESSES			
3-A	Activated Sludge	3-E	Pre-Aeration
3-B	Aerated Lagoons	3-F	Spray Irrigation/Land Application

Table 2CS-1, Codes for Treatment Units contd.

3-C	Anaerobic Treatment	3-G	Stabilization Ponds
3-D	Nitrification-Denitrification	3-H	Trickling Filter
OTHER PROCESSES			
4-A	Discharge to Surface Water	4-C	Reuse/Recycle of Treated Effluent
4-B	Ocean Discharge Through Outfall	4-D	Underground Injection
SLUDGE TREATMENT AND DISPOSAL PROCESSES			
5-A	Aerobic Digestion	5-M	Heat Drying
5-B	Anaerobic Digestion	5-N	Heat Treatment
5-C	Belt Filtration	5-O	Incineration
5-D	Centrifugation	5-P	Land Application
5-E	Chemical Conditioning	5-Q	Landfill
5-F	Chlorine Treatment	5-R	Pressure Filtration
5-G	Composting	5-S	Pyrolysis
5-H	Drying Beds	5-T	Sludge Lagoons
5-I	Elutriation	5-U	Vacuum Filtration
5-J	Flotation Thickening	5-V	Vibration
5-K	Freezing	5-W	Wet Oxidation
5-L	Gravity Thickening		

**TABLE 2CS-2
TESTING REQUIREMENTS FOR ORGANIC TOXIC POLLUTANTS INDUSTRY CATEGORY**

INDUSTRY CATEGORY	GC/MS FRACTION ¹			
	Volatile	Acid	Bas e/Neutral	Pesticide
Adhesives and sealants	X	X	X	
Aluminum forming	X	X	X	
Auto and other laundries	X	X	X	X
Battery manufacturing	X		X	
Coal mining	X	X	X	X

Table 2CS-2, Testing Requirements for Organic Toxic Pollutants Industry Category contd.

Coil coating	X	X	X	
Copper forming	X	X	X	
Electric and electronic compounds	X	X	X	X
Electroplating	X	X	X	
Explosives manufacturing		X	X	
Foundries	X	X	X	
Gum and wood chemicals	X	X	X	X
Inorganic chemicals manufacturing	X	X	X	
Iron and steel manufacturing	X	X	X	
Leather tanning and finishing	X	X	X	X
Mechanical products manufacturing	X	X	X	
Nonferrous metals manufacturing	X	X	X	X
Ore mining	X	X	X	X
Organic chemicals manufacturing	X	X	X	X
Paint and ink formulation	X	X	X	X
Pesticides	X	X	X	X
Petroleum refining	X	X	X	X
Pharmaceutical preparations	X	X	X	
Photographic equipment and supplies	X	X	X	X
Plastic and synthetic materials manufacturing	X	X	X	X
Plastic processing	X			
Porcelain enameling	X		X	X
Printing and publishing	X	X	X	X
Pulp and paperboard mills	X	X	X	X
Rubber processing	X	X	X	
Soap and detergent manufacturing	X	X	X	
Steam electric power plants	X	X	X	
Textile mills	X	X	X	X
Timber products processing	X	X	X	X

The pollutants in each fraction are listed in Item VII-C. X = Testing required.

**TABLE 2CS-3
TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES
REQUIRED TO BE IDENTIFIED BY APPLICANTS
IF EXPECTED TO BE PRESENT**

<u>Toxic Pollutant</u>	<u>Hazardous Substances</u>	<u>Hazardous Substances</u>
Asbestos	2,2 Dichloropropionic acid	Monomethyl amine
	Dichlorvos	Naled
<u>Hazardous Substances</u>	Diethyl amine	Naphthenic acid
Acetaldehyde	Dimethyl amine	Nitrotoluene
Allyl alcohol	Dintrobenzene	Parathion
Allylchloride	Diquat	Phenolsulfonate
Amyl acetate	Disulfoton	Phosgene
Aniline	Diuron	Propargite
Benzonitrile	Epichlorohydrin	Propylene oxide
Benzyl chloride	Ethion	Pyrethrins
Butyl acetate	Ethylene diamine	Quinoline
Butylamine	Formaldehyde	Resorcinol
Captan	Furfural	Strontium
Carbaryl	Guthion	Strychnine
Carbofuran	Isoprene	2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)
Carbon disulfide	Isopropanolamine	TDE (Terochlorodiphenyl ethane)
Chlopyrifos	dodecylbenzenesulfonate	2,4,5-TP [2-(2,4,5-Trichlorophenoxy)propanic acide]
Coumpahos	Kelthane	Trichlorofon
Cresol	Kepone	Triethanolamine dodecylbenzenesulfonate
Crotonaldehyde	Malathion	Triethylamine
Cyclohexane	Mercaptodimethur	Uranium
2,4-D (2,4-Dichlorophinoxyacetic acid)	Methoxychlor	Vanadium
Diazinon	Methyl mercaptan	Vinyl acetate
Dicamba	Methyl methacrylate	Xylene
Dichlobenil	Methyl parathion	Xylenol
Dichlone	Mevinphos	Zirconium
	Mexacarbate	
	Monoethyl amiine	

**TABLE 2CS-4
HAZARDOUS SUBSTANCES**

- | | | |
|---------------------------------|-------------------------------------|---|
| 1. Acetaldehyde | 49. Arsenic trisulfide | 97. Cupric nitrate |
| 2. Acetic acid | 50. Barium cyanide | 98. Cupric oxalate |
| 3. Acetic anhydride | 51. Benzene | 99. Cupric sulfate |
| 4. Acetone cyanohydrin | 52. Benzoic acid | 100. Cupric sulfate ammoniated |
| 5. Acetyl bromide | 53. Benzonitrile | 101. Cupric tartrate |
| 6. Acetyl chloride | 54. Benzoyl chloride | 102. Cyanogen chloride |
| 7. Acrolein | 55. Benzyl chloride | 103. Cyclohexane |
| 8. Acrylonitrile | 56. Beryllium chloride | 104. 2,4-D acid (2,4-Dichlorophenoxyacetic acid) |
| 9. Adipic acid | 57. Beryllium fluoride | 105. 2,4-D esters (2,4-Dichlorophenoxyacetic acid esters) |
| 10. Aldrin | 58. Beryllium nitrate | 106. DDT |
| 11. Allyl alcohol | 59. Butylacetate | 107. Diazinon |
| 12. Allyl chloride | 60. n-Butylphthalate | 108. Dicamba |
| 13. Aluminum sulfate | 61. Butylamine | 109. Dichlobenil |
| 14. Ammonia | 62. Butyric acid | 110. Dichlone |
| 15. Ammonium acetate | 63. Cadmium acetate | 111. Dichlorobenzene |
| 16. Ammonium benzoate | 64. Cadmium bromide | 112. Dichloropropane |
| 17. Ammonium bicarbonate | 65. Cadmium chloride | 113. Dichloropropene |
| 18. Ammonium bichromate | 66. Calcium arsenate | 114. Dichloropropene-Dichloropropane mix |
| 19. Ammonium bifluoride | 67. Calcium arsenite | 115. 2,2-Dichloropropionic acid |
| 20. Ammonium bisulfite | 68. Calcium carbide | 116. Dichlorvos |
| 21. Ammonium carbamate | 69. Calcium chromate | 117. Dieldrin |
| 22. Ammonium carbonate | 70. Calcium cyanide | 118. Diethylamine |
| 23. Ammonium chloride | 71. Calcium dodecylbenzenesulfonate | 119. Dimethylamine |
| 24. Ammonium chromate | 72. Calcium hypochlorite | 120. Dinitrobenzene |
| 25. Ammonium citrate | 73. Captan | 121. Dinitrophenol |
| 26. Ammonium fluoroborate | 74. Carbaryl | 122. Dinitrotoluene |
| 27. Ammonium fluoride | 75. Carbofuran | 123. Diquat |
| 28. Ammonium hydroxide | 76. Carbon disulfide | 124. Disulfoton |
| 29. Ammonium oxalate | 77. Carbon tetrachloride | 125. Diuron |
| 30. Ammonium silicofluoride | 78. Chlordane | 126. Dodecylbenzenesulfonic acid |
| 31. Ammonium sulfamate | 79. Chlorine | 127. Endosulfan |
| 32. Ammonium sulfide | 80. Chlorobenzene | 128. Endrin |
| 33. Ammonium sulfite | 81. Chloroform | 129. Epichlorohydrin |
| 34. Ammonium tartrate | 82. Chloropyrifos | 130. Ethion |
| 35. Ammonium thiocyanate | 83. Chlorosulfonic acid | 131. Ethylbenzene |
| 36. Ammonium thiosulfate | 84. Chromic acetate | 132. Ethylenediamine |
| 37. Amyl acetate | 85. Chromic acid | 133. Ethylene dibromide |
| 38. Aniline | 86. Chromic sulfate | 134. Ethylene dichloride |
| 39. Antimony pentachloride | 87. Chromous chloride | 135. Ethylene Diaminetetracetic acid (EDTA) |
| 40. Antimony potassium tartrate | 88. Cobaltous bromide | 136. Ferric ammonium citrate |
| 41. Antimony tribromide | 89. Cobaltous formate | 137. Ferric ammonium oxalate |
| 42. Antimony trichloride | 90. Cobaltous sulfamate | 138. Ferric chloride |
| 43. Antimony trifluoride | 91. Coumaphos | 139. Ferric fluoride |
| 44. Antimony trioxide | 92. Cresol | 140. Ferric nitrate |
| 45. Arsenic disulfide | 93. Crotonaldehyde | |
| 46. Arsenic pentoxide | 94. Cupric acetate | |
| 47. Arsenic trichloride | 95. Cupric acetoarsenite | |
| 48. Arsenic trioxide | 96. Cupric chloride | |

HAZARDOUS SUBSTANCES (contd.)

- | | | |
|--|--------------------------------------|---|
| 141. Ferric sulfate | 190. Naled | 240. Sodium hydrosulfide |
| 142. Ferrous ammonium sulfate | 191. Naphthalene | 241. Sodium hydroxide |
| 143. Ferrous chloride | 192. Naphthenic acid | 242. Sodium hypochlorite |
| 144. Ferrous sulfate | 193. Nickel ammonium sulfate | 243. Sodium methylate |
| 145. Formaldehyde | 194. Nickel chloride | 244. Sodium nitrate |
| 146. Formic acid | 195. Nickel hydroxide | 245. Sodium phosphate (dibasic) |
| 147. Fumaric acid | 196. Nickel nitrate | 246. Sodium phosphate (tribasic) |
| 148. Furfural | 197. Nickel sulfate | 247. Sodium selenite |
| 149. Guthion | 198. Nitric acid | 248. Strontium chromate |
| 150. Heptachlor | 199. Nitrobenzene | 249. Strychnine |
| 151. Hexachlorocyclopentadiene | 200. Nitrogen dioxide | 250. Styrene |
| 152. Hydrochloric acid | 201. Nitrophenil | 251. Sulfuric acid |
| 153. Hydrofluoric acid | 202. Nitrotoluene | 252. Sulfur monochloride |
| 154. Hydrogen cyanide | 203. Paraformaldehyde | 253. 2,4,5-T acid (2,4,5-
Trichlorophenoxy acetic acid) |
| 155. Hydrogen sulfide | 204. Parathion | 254. 2,4,5-T amines (2,4,5-
Trichlorophenoxy acetic acid
amines) |
| 156. Isoprene | 205. Pentachlorophenol | 255. 2,4,5-T esters (2,4,5-
Trichlorophenoxy acetic acid esters) |
| 157. Isopropanolamine
dodecylbenzenesulfonate | 206. Phenol | 256. 2,4,5-T salts (2,4,5-
Trichlorophenoxy acetic acid salts) |
| 158. Kelthane | 207. Phosoeene | 257. 2,4,5-TP acid (2,4,5-
Trichlorophenoxy propanoic acid) |
| 159. Kepone | 208. Phosphoric acid | 258. 2,4,5-TP acid esters (2,4,5-
Trichlorophenoxy propanoic acid
esters) |
| 160. Lead acetate | 209. Phosphorus | 259. TDE (Tetrachlorodiphenyl ethane) |
| 161. Lead arsenate | 210. Phosphorus oxychloride | 260. Tetraethyl lead |
| 162. Lead chloride | 211. Phosphorus pentasulfide | 261. Tetraethyl pyrophosphate |
| 163. Lead fluoborate | 212. Phosphorus trichloride | 262. Thallium sulfate |
| 164. Lead fluorite | 213. Polychlorinated biphenyls (PCB) | 263. Toluene |
| 165. Lead iodide | 214. Potassium arsenate | 264. Toxaphene |
| 166. Lead nitrate | 215. Potassium arsenite | 265. Trichlorofon |
| 167. Lead stearate | 216. Potassium bichromate | 266. Trichloroethylene |
| 168. Lead sulfate | 217. Potassium chromate | 267. Trichlorophenol |
| 169. Lead sulfide | 218. Potassium cyanide | 268. Triethanolamine
dodecylbenzenesulfonate |
| 170. Lead thiocyanate | 219. Potassium hydroxide | 269. Triethylamine |
| 171. Lindane | 220. Potassium permanganate | 270. Trimethylamine |
| 172. Lithium chromate | 221. Propargite | 271. Uranyl acetate |
| 173. Malathion | 222. Propionic acid | 272. Uranyl nitrate |
| 174. Maleic acid | 223. Propionic anhydride | 273. Vanadium pentoxide |
| 175. Maleic anhydride | 224. Propylene oxide | 274. Vanadyl sulfate |
| 176. Mercaptodimethur | 225. Pyrethrins | 275. Vinyl acetate |
| 177. Mercuric cyanide | 226. Quinoline | 276. Vinylidene chloride |
| 178. Mercuric nitrate | 227. Resorcinol | 277. Xylene |
| 179. Mercuric sulfate | 228. Selenium oxide | 278. Xylenol |
| 180. Mercuric thiocyanate | 229. Silver nitrate | 279. Zinc acetate |
| 181. Mercurous nitrate | 230. Sodium | 280. Zinc ammonium chloride |
| 182. Methoxychlor | 231. Sodium arsenate | |
| 183. Methyl mercaptan | 232. Sodium arsenite | |
| 184. Methyl methacrylate | 233. Sodium bichromate | |
| 185. Methyl parathion | 234. Sodium bifluoride | |
| 186. Mevinphos | 235. Sodium bisulfite | |
| 187. Mexacarbate | 236. Sodium chromate | |
| 188. Monoethylamine | 237. Sodium cyanide | |
| 189. Monomethylamine | 238. Sodium dodecylbenzenesulfonate | |
| | 239. Sodium fluoride | |

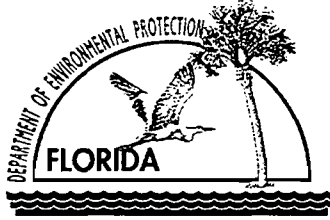
HAZARDOUS SUBSTANCES (contd.)

281. Zinc borate
282. Zinc bromide
283. Zinc carbonate
284. Zinc chloride
285. Zinc cyanide
286. Zinc fluoride

287. Zinc formate
288. Zinc hydrosulfite
289. Zinc nitrate
290. Zinc phenolsulfonate
291. Zinc phosphide
292. Zinc silcofluoride

293. Zinc sulfate
294. Zirconium nitrate
295. Zirconium potassium fluoride
296. Zirconium sulfate
297. Zirconium tetrachloride

FORM
2CS



WASTEWATER APPLICATION FOR PERMIT TO DISCHARGE
PROCESS WASTEWATER FROM NEW OR EXISTING
INDUSTRIAL WASTEWATER FACILITIES
TO SURFACE WATERS

Facility I.D. Number: _____

Please print or type information in the appropriate areas.

I OUTFALL LOCATION For each outfall, list the X,Y coordinates and the name of the receiving water.
(latitude/longitude to the nearest 15 seconds)

A. Outfall No. (List)	B. Latitude			C. Longitude			D. Name of Receiving Water
	Deg.	Min.	Sec.	Deg.	Min.	Sec.	
1	28	16	31N	81	31	54W	Reedy Creek
2	28	16	40	81	31	54	Reedy Creek

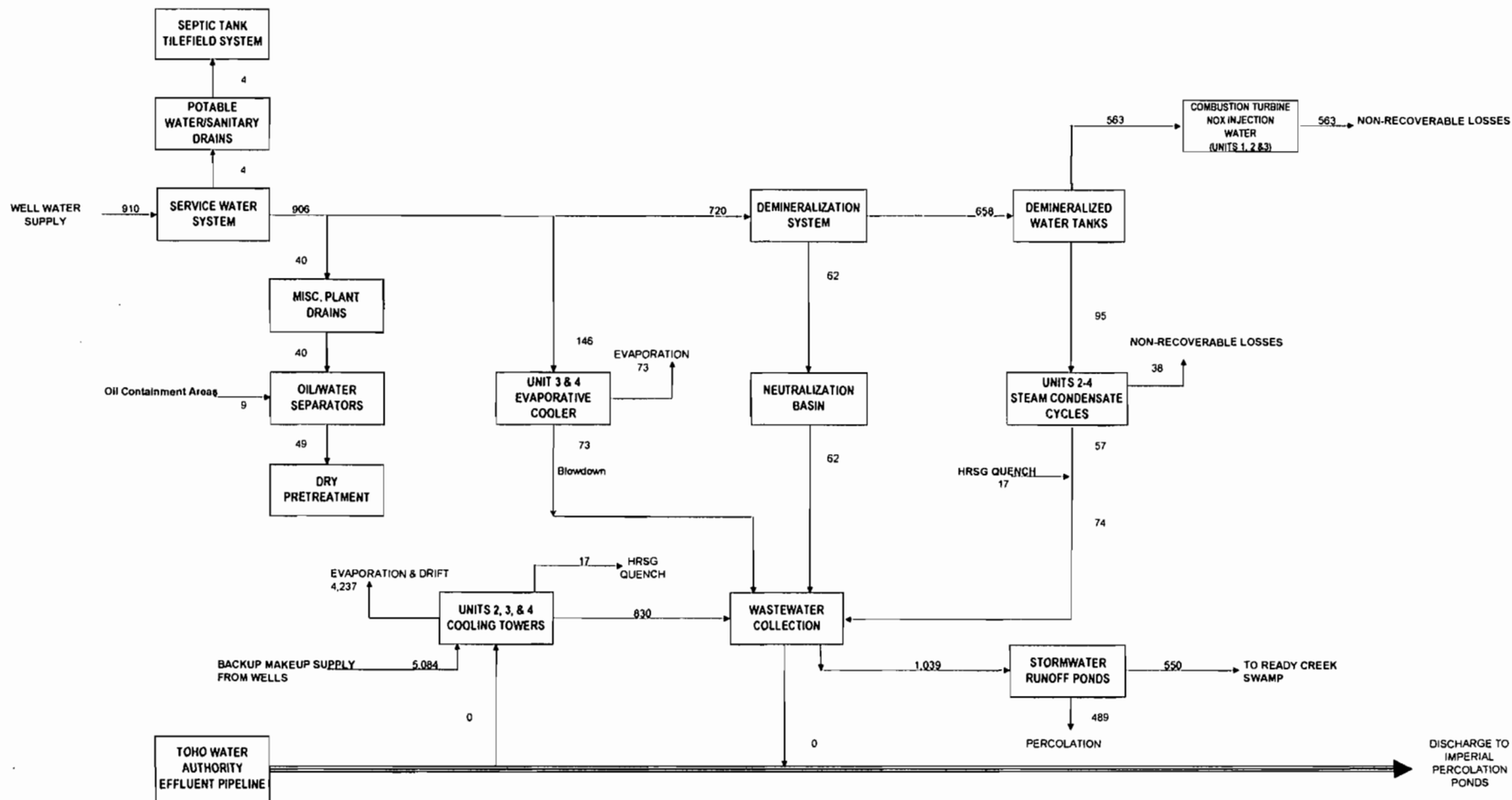
II OUTFALL DESIGN

A. Outfall No. (List)	B. Design Configuration and Construction Materials	C. Distance from shore	D. Diameter	E. Elevation of Discharge Invert (MSL)	F. Receiving Water Depth at POD (MSL)
1	Spillway	NA	NA	76.5	NA
2	Spillway	NA	NA	78.25	NA

Attachment to KUA Cane Island Wastewater Application Form 2CS

KUA is proposing to build a new Unit 4 at its Cane Island Power Park. As a part of the operations of the expanded facility, KUA is requesting the option to discharge cooling tower flows from all 4 power generating units, estimated maximum flow of 0.55 MGD total, for short-term/emergency periods when the main cooling water source and discharge point, the Tohopekaliga Water Authority (Toho) reuse water pipeline access, is not available. The water to be discharged will not be chlorinated and will be discharged via existing stormwater detention ponds. The only treatment of the recycled cooling tower water is possible pH control with sulfuric acid.

Since this discharge activity is anticipated to be an infrequent, emergency situation, actual discharge analysis data is not available.



NOTE:
 1. FLOWS ARE IN 1000 GALLONS PER Day (gpd).
 2. FLOWS INCLUDE UNITS 1-3 FLOWS FROM FIG. 3.5-4 IN THE UNIT 3 SITE CERT APPLICATION EXCEPT CLG TWR CYCLES ADJUSTED TO 36.0

COMBUSTION TURBINE FUEL	Units 1-3 Oil, Unit 4 Natural Gas
GROSS UNIT 4 OUTPUT (MW)	327.4
UNIT 4 TURBINE CONFIGURATION	1 x 1
AMBIENT TEMP (°F)	73
DUCT FIRING UNIT 4	On
DEMINERALIZER EFFICIENCY	90%
CYCLE MAKEUP RATE	2.00%
LOAD FACTOR	100%
CYCLES OF CONCENTRATION	6.0

BLACK & VEATCH LLP

Eng: SAA Dwg: SAA

Check: Date:

KISSIMMEE UTILITY AUTHORITY
 CANE ISLAND POWER PARK

UNITS 1 - 4 WATER MASS BALANCE
 UNIT 4 AT 73 °F AMBIENT, FIRED, 100% LOAD, Gas

UNITS 1, 2, & 3 OIL FIRED - TOHO PIPELINE UNAVAILABLE

Project	147851	Drawing	WMB-3	Rev	0
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III RECEIVING WATER INFORMATION

For each surface water that will receive effluent, supply the following information:

A. Name of Receiving Water	B. Check One		C. Classification (See Ch. 62-302, F.A.C.)	D. Type of Receiving Water (canal, river, lake, etc.)
	Fresh	Salt or Brackish		
Reedy Creek (and Swamp)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Class III	swamp to creek
	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>		

E. Minimum 7-day 10-year low flow of the receiving water at each outfall (if appropriate).

F. Identify and describe the flow of effluent from each outfall to a major body of water. A suitably marked map or aerial photograph may be used.

G. Do you request a mixing zone under Rule 62-4.244, F.A.C.? If yes, for what parameters or pollutants?

IV FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of:

1. All operations contributing wastewater to the effluent; including process wastewater, sanitary wastewater, cooling water, and stormwater runoff;
2. The average flow contributed by each operation; and
3. The treatment received by the wastewater.

Use the space on the next page. Continue on additional sheets, if necessary.

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?
 Yes (complete the following table) No (go to D. below)

(1) Outfall No. (List)	(2) Operation(s) Contributing Flow(List)	(3) Frequency		(4) Flow				
		(a) Days per Week (specify avg.)	(b) Months per Yr. (specify avg.)	(a) Flow Rate (in mgd)		(b) Total Volume (specify with units)		(c) Duration (in days)
				Long Term Avg.	Max. Daily	Long Term Avg.	Max. Daily	
1	Cooling water (backup discharge system if reuse water pipeline not available)	0	0	0	0.275 MGD	0	0.275 MGD	< 30 days/yr
2	Cooling water (backup discharge system if reuse water pipeline not available)	0	0	0	0.275 MGD	0	0.275 MGD	< 30 days/yr

D. Describe practices to be followed to ensure adequate wastewater treatment during emergencies such as power loss and equipment failures causing shutdown of pollution abatement equipment of the proposed/permitted facilities.

E. List the method(s) and location(s) of flow measurement.

V PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

Yes (complete Item V-B) No (go to Section VI)

B. Are the limitations in the applicable guideline expressed in terms of production (or other measure of operation)?

Yes (complete Item V-C) No (go to Section VI)

C. If you answered "yes" to Item V-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION			2. Affected Outfalls (list outfall nos.)
a. Quantity per Day	b. Units of Measure	c. Operation, Product, Materials, Etc. (specify)	

VI IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement order, enforcement compliance schedule letter, stipulations, court orders, and grant or loan conditions.

Yes (complete the following table) No (go to Item VI-B)

1. Identification of Condition, Agreement, Etc.	2. Affected Outfalls		3. Brief Description of Project	4. Final Compliance Date	
	a. No.	b. Source of Discharge		a. Required	B. Projected

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (or other environmental projects which may affect your discharges) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

Mark "X" if description of additional control programs is attached.

VII INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding--Complete one set of tables for each outfall -- Annotate the outfall number in the space provided. NOTE: Tables VII-A, VII-B, and VII-C are included on separate sheets number VII-1 through VII-9.

D. Use the space below to list any of the pollutants listed in Table 2CS-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. Pollutant	2. Source	1. Pollutant	2. Source
NONE			

VIII POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item VII-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or by-product?

- YES (list all such pollutants below) NO (go to IX)

IX BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

- YES (identify the test(s) and describe their purposes below) NO (go to Section X)

X CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item VII performed by a contract laboratory or consulting firm?

- YES (list the name, address, telephone number, and certification number of, and pollutants analyzed by each such laboratory or firm below) NO (go to Section XI)

A. Name	B. Address	C. Telephone (area code & no.)	D. Pollutants Analyzed (list)

XI CONNECTION TO REGIONAL POTW

A. Indicate the relationship between this project and area regional planning for wastewater treatment. List steps to be taken for this industrial wastewater facility to become part of an area-wide wastewater treatment system.

Connection exists to a recycle system with a POTW (TOHO) . This application is for only backup, emergency discharge.

XII-A CERTIFICATIONS FOR NEW OR MODIFIED FACILITIES

This is to certify the engineering features of this pollution control project have been designed by me and found to be in conformity with sound engineering principles, applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules of the Department. It is also agreed that the undersigned, if authorized by the owner, will furnish the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signature	EPC ENGINEER
EPC ENGINEER	Company Name
Name (please type)	Address
(Affix Seal)	Florida Registration No.: _____
	Telephone No.: _____
	Date _____

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Larry Mattern, Vice President of Power	Signature
Name & Official Title (Please type or print)	Date Signed
407-933-7777, ext.1232	
Telephone No. (area code & No.)	

XII-B CERTIFICATIONS FOR PERMIT RENEWALS

This is to certify the engineering features of this pollution control project have been examined by me and found to be in conformity with sound engineering principles, applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules of the Department.

Signature	Company Name
Name (please type)	Address
(Affix Seal)	Florida Registration No.: _____
	Telephone No.: _____
	Date _____

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name & Official Title (Please type or print)	Signature
Telephone No. (area code & No.)	Date Signed

PLEASE PRINT OR TYPE ONLY: You may report some or all of this information on separate sheets instead of completing these pages. Use the same format. SEE INSTRUCTIONS.

VII. INTAKE AND EFFLUENT CHARACTERISTICS

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. Pollutant	2. Effluent						d. No. of Analyses	3. Units		4. Intake (optional)		
	a. Max. Daily Value		b. Max. 30-day Value		c. Annual Avg. Value			a. Concentration	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
a. Carbonaceous Biochemical Oxygen Demand (CBOD)												
b. Chemical Oxygen Demand (COD)												
c. Total Organic Carbon (TOC)												
d. Total Suspended Solids (TSS)												
e. Total Nitrogen (as N)												
f. Total Phosphorus (as P)												
g. Ammonia (as N)												
h. Flow - actual or projected	Value 0.55 MGD total		Value		Value			MGD		Value		
i. Flow - design	Value 0.55 MGD total		Value		Value			MGD		Value		
j. Specific Conductivity	Value 1195 (est)		Value		Value		0	uS/cm	NA	Value est.		
k. Temperature (winter)	Value		Value		Value			°C		Value		
l. Temperature (summer)	Value		Value		Value			°C		Value		
m. pH	Min. 7.5 (est)	Max 8.0 (est)	Min.	Max.			0	STANDARD UNITS				

PART B - Mark "X" in column 2a for each pollutant you know or have reason to believe is present. Mark "X" in column 2b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. Pollutant and CAS No. (if available)	2. Mark "X"		3. Effluent						d. No. of Analyses	4. Units		5. Intake (optional)		
	a. believed present	b. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)			a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
			(1) Conc...	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
a. Bromide (24949-67-9)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
b. Chlorine, Total Residual	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
c. Color	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	< 5	NA					est					
d. Fecal Coliform	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
e. Fluoride (16984-48-8)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	37					est	mg/l	lb/day			
f. Nitrate-Nitrite (as N)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10	46					est	mg/l	lb/day			

: Item VII-B Contd.

Facility ID. Number _____ Outfall No. Both

1. Pollutant and CAS No. (if available)	2. Mark "X"		3. Effluent						4. Units		5. Intake (optional)			
	a. believed present	b. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
			(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
g. Nitrogen, Total Organic (as N)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
h. Oil and grease	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
i. Phosphorus, Total (as P) (7723-14-0)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<0.5					est.	mg/l as PO4					
j. Radioactivity														
(1) Alpha, Total	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
(2) Beta, Total	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
(3) Radium, Total	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
(4) Radium 226, Total	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
k. Sulfate (as SO ₄) (14808-79-8)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	306	1400				est.	mg/l	lb/day				
l. Sulfide (as S)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
m. Sulfite (as SO ₃) (14265-45-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
n. Surfactants	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
o. Aluminum, Total (7429-90-5)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
p. Barium, Total (7440-39-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
q. Boron, Total (7440-42-8)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
r. Cobalt, Total (7440-48-4)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
s. Iron, Total (7439-89-6)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.06	0.28				est.	mg/l	lb/day				
t. Magnesium, Total (7439-95-4)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
u. Molybdenum, Total (7439-98-7)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
v. Manganese, Total (7439-96-5)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
w. Tin, Total (7440-31-5)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
x. Titanium, Total (7440-32-6)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												

Facility ID. Number: _____ Outfall No. _____ Both _____

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2a for all GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2a (secondary industries, non-process wastewater outfalls, and non-required GC/MS fractions), mark "X" in column 2b for each pollutant you know or have reason to believe is present. Mark "X" in column 2c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4,6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent						4. Units		5. Intake (optional)			
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
2M. Arsenic, Total (7723-14-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
3M. Beryllium, Total (7440-41-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
4M. Cadmium, Total (7440-43-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
5M. Chromium, Total (7440-47-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
6M. Copper, Total (7440-50-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
7M. Lead, Total (7439-92-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
8M. Mercury, Total (7439-97-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
9M. Nickel, Total (7440-02-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
10M. Selenium, Total (7782-49-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
11M. Silver, Total (7440-22-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
12M. Thallium, Total (7440-28-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
13M. Zinc, Total (7440-66-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
14M. Cyanide, Total (57-12-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
15M. Phenols, Total	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
DIOXIN															
2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
GC/MS FRACTION VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
2V. Acrylonitrile (107-13-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												

Facility ID. Number: _____ Outfall No. Both

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent						4. Units		5. Intake (optional)			
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
GC/MS FRACTION - VOLATILE COMPOUNDS (continued)															
3V. Benzene (71-43-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
4V. Bis (Chloromethyl) Ether (542-88-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
5V. Bromoform (75-25-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
6V. Carbon Tetrachloride (56-23-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
7V. Chlorobenzene (108-90-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
8V. Chlorodibromomethane (124-8-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
9V. Chloroethane (74-00-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
10V. 2-Chloro-ethylvinyl Ether (110-75-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
11V. Chloroform (67-86-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
12V. Dichlorobromomethane (75-24-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
13V. Dichlorodifluoromethane (75-71-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
14V. 1,1-Dichloroethane (75-34-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
15V. 1,2-Dichloroethane (107-06-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
16V. 1,1-Dichloroethylene (75-35-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
17V. 1,2-Dichloropropane (78-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
18V. 1,3-Dichloropropylene (542-75-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
19V. Ethylbenzene (100-41-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
20V. Methyl Bromide (74-83-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
21V. Methyl Chloride (74-87-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
22V. Methylene Chloride (74-98-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
23V. 1,1,2,2-Tetrachloroethane (79-34-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
24V. Tetrachloroethylene (127-18-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												

Facility ID. Number: _____ Outfall No. Both

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent						4. Units		5. Intake (optional)			
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
GC/MS FRACTION- VOLATILE COMPOUNDS (continued)															
25V. Toluene (108-88-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
26V. 1,2-Trans-Dichloroethylene (156-60-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
27V. 1,1,2-Trichloroethane (71-55-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
28V. 1,1,1,2-Trichloroethane (79-00-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
29V. Trichloroethylene (79-01-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
30V. Trichlorofluoromethane (75-69-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
31V. Vinyl Chloride (75-01-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
GC/MS FRACTION- ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
2A. 2,4-Dichlorophenol (120-83-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
3A. 2,4-Dimethylphenol (105-67-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
4A. 4,6-Dinitro-O-Cresol (534-53-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
5A. 2,4-Dinitrophenol (51-28-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
6A. 2-Nitrophenol (88-75-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
7A. 4-Nitrophenol (100-02-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
8A P-Chloro-M-Cresol (59-50-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
9A. Pentachlorophenol (87-86-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
10A. Phenol (108-95-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
11A. 2,4,5-Trichlorophenol (88-06-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
GC/MS FRACTION- BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (63-32-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
2B. Acenaphthylene (208-96-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
3B. Anthracene (120-12-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
4B. Benzidine (92-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												

Facility ID. Number: _____ Outfall No. Both

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent						4. Units		5. Intake (optional)			
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
5B. Benzo (a) Anthracene (56-55-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
6B. Benzo (a) Pyrene (50-32-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
7B. 3,4-Benzo-fluoranthene (205-99-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
8B. Benzo (ghi) Perylene (191-24-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
9B. Benzo (k) Fluoranthene (207-08-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
11B. Bis (2-chloroethyl) Ether (111-44-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
12B. Bis (2-Chloroethyl) Ether (102-60-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
15B. Butyl Benzyl Phthalate (84-68-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
16B. 2-Chloronaphthalene (91-58-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
18B. Chrysene (218-01-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
19B. Dibenzo (a,h) Anthracene (53-70-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
20B. 1,2-Dichlorobenzene (95-50-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
21B. 1,3-Dichlorobenzene (541-73-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
22B. 1,4-Dichlorobenzene (106-46-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
23B. 3,3-Dichlorobenzidine (92-94-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
24B. Diethyl Phthalate (84-66-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
25B. Dimethyl Phthalate (131-11-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
26B. Di-N-Butyl Phthalate (84-74-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
27B. 2,4-Dinitrotoluene (121-14-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
28B. 2,6-Dinitrotoluene (606-20-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												

Facility ID. Number: _____ Outfall No. _____ Both _____

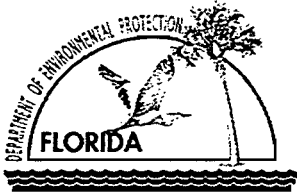
1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent						4. Units		5. Intake (optional)			
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
29B. Di-N-Octyl Phthalate (117-84-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
31B. Fluoranthene (206-44-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
32B. Fluorene (86-73-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
33B. Hexachlorobenzene (118-74-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
34B. Hexachlorobutadiene (87-68-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
35B. Hexachlorocyclopentadiene (77-47-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
36B. Hexachloroethane (67-72-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
38B. Isophorone (78-59-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
39B. Naphthalene (91-20-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
40B. Nitrobenzene (98-95-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
41B N-Nitrosodimethylamine (62-75-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
42B. N-Nitrosodi-N-Propylamine (621-64-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
43B. N-Nitro-sodiphenylamine (86-30-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
44B Phenanthrene (85-01-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
45B. Pyrene (129-00-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
46B. 1,2,4-Trichlorobenzene (120-82-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
GC/MS EXTRACTION PESTICIDES															
1P. Aldrin (309-00-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
2P. -BHC (319-84-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
3P -BHC (319-85-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
4P. -BHC (58-89-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
5P. -BHC (319-86-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												

Facility ID. Number: _____ Outfall No. Both

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent						4. Units		5. Intake (optional)			
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
6P. Chlordane (57-74-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
7P. 4,4'-DDT (50-29-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
8P. 4,4'-DDE (72-55-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
9P. 4,4'-DDD (72-54-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
10P. Dieldrin (60-57-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
11P. -Endosulfan (115-29-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
12P. -Endosulfan (115-29-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
13P. Endosulfan Sulfate (1031-07-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
14P. Endrin (72-20-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
15P. Endrin Aldehyde (7421-92-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
16P. Heptachlor (76-44-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
17P. Heptachlor Epoxide (1024-57-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
18P. PCB-1242 (53469-21-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
19P. PCB-1254 (11097-69-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
20P. PCB-1221 (11104-28-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
21P. PCB-1232 (11141-16-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
22P. PCB-1248 (12672-29-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
23P. PCB-1260 (11096-82-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
24P. PCB-1016 (12674-11-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
25P. Toxaphene (8001-35-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												

10.2.1.2 Notice of Intent to Use Generic Permit for Storm Water Discharge from Large and Small Construction Activities. The Notice of Intent (NOI) form must be completed and submitted to the FDEP prior to Unit 4 construction activities at the CIPP site. A partially completed NOI [Form 62-621.300(4)(b), FAC] is included herein. FMPA will require the contractor responsible for the site earthwork to obtain this authorization prior to construction.

A Storm Water Pollution Prevention Plan for Storm Water Discharges from Construction Activities will be prepared by the contractor for Unit 4 construction. The Storm Water Pollution Prevention Plan is required to be onsite and implemented during the construction period.



NOTICE OF INTENT TO USE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES (RULE 62-621.300(4), F.A.C.)

This Notice of Intent (NOI) form is to be completed and submitted to the Department before use of the Generic Permit for Stormwater Discharge From Large and Small Construction Activities provided in Rule 62-621.300(4), F.A.C. The type of project or activity that qualifies for use of the generic permit, the conditions of the permit, and additional requirements to request coverage are specified in the generic permit document [DEP Document 62-621.300(4)(a)]. **The appropriate generic permit fee, as specified in Rule 62-4.050(4)(d), F.A.C., shall be submitted with this NOI in order to obtain permit coverage. Permit coverage will not be granted without submittal of the appropriate generic permit fee.** You should familiarize yourself with the generic permit document and the attached instructions before completing this NOI form. **Please print or type information in the appropriate areas below.**

I. IDENTIFICATION NUMBER: Project ID _____

II. APPLICANT INFORMATION:

A. Operator Name: (EPC Contractor – to be completed later)		
B. Address:		
C. City:	D. State:	E. Zip Code:
F. Operator Status:	G. Responsible Authority:	
	H. Phone No.:	

III. PROJECT/SITE LOCATION INFORMATION:

A. Project Name: Cane Island Power Park, Unit 4		
B. Project Address/Location: 6075 Old Tampa Highway		
C. City: Intercession City	D. State: FL	E. Zip Code: 33848
F. County: Osceola	G. Latitude: 28 ° 16 ' 50 " N Longitude: 81 ° 32 ' 00 " W	
H. Is the site located on Indian lands? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	I. Water Management District: SFWMD	
J. Project Contact: Susan Schumann, Florida Municipal Power Agency,	K. Phone No.: (407) 355-7767	

IV. PROJECT/SITE ACTIVITY INFORMATION:

A. Indicate whether Large or Small Construction (check only one):		
<input checked="" type="checkbox"/> Large Construction (Project will disturb five or more acres of land.)		
<input type="checkbox"/> Small Construction (Project will disturb one or more acres but less than five acres of land.)		
B. Approximate total area of land disturbance from commencement through completion of construction: <u>24.2</u> Acres		
C. SWPPP Location		
<input type="checkbox"/> Address in Part II above <input checked="" type="checkbox"/> Address in Part III above <input type="checkbox"/> Other address (specify below)		
D. SWPPP Address: N/A		
E. City: N/A		F. State: N/A
G. Zip Code: N/A		
H. Construction Period		
Start Date: 07/01/09		Completion Date: 05/01/11

V. DISCHARGE INFORMATION

A. MS4 Operator Name (if applicable): N/A
B. Receiving Water Name: Storm water discharges to onsite pond, then to onsite Reedy Creek Swamp wetlands or onsite recharge.

VI. CERTIFICATION¹:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Official Title (Type or Print):

 Signature: EPC Contractor (to be completed later) _____
 Date Signed: _____

¹ Signatory requirements are contained in Rule 62-620.305, F.A.C.

**INSTRUCTIONS – DEP FORM 62-621.300(4)(b)
NOTICE OF INTENT (NOI) TO USE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE
AND SMALL CONSTRUCTION ACTIVITIES**

Who Must File an NOI:

Federal law at 40 CFR Part 122 prohibits the point source discharge of pollutants, including the discharge of stormwater associated with large construction activities as defined at 40 CFR 122.26(b)(14)(x) or small construction activities as defined at 40 CFR 122.26(b)(15), to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit. Under the State of Florida's authority to administer the NPDES stormwater program at 403.0885, F.S., operators that have stormwater discharge associated with large or small construction activities to surface waters of the State, including through a Municipal Separate Storm Sewer System (MS4), must obtain coverage either under a generic permit issued pursuant to Chapter 62-621, F.A.C., or an individual permit issued pursuant to Chapter 62-620, F.A.C.

Where to File NOI:

NOIs for coverage under this generic permit must be sent to the following address:

NPDES Stormwater Notices Center, MS #2510
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Permit Fee:

Permit fees for large and small construction activities to be covered under the generic permit are specified in Rule 62-4.050(4)(d), F.A.C. The appropriate generic permit fee (either for large or small construction activities) must be submitted along with the completed NOI in order to obtain coverage under the generic permit. **Generic permit coverage will not be granted without payment of the appropriate permit fee.**

The permit fee shall be paid by either check or money order made payable to: "Florida Department of Environmental Protection"

Part I – Identification Number

Enter the project's DEP identification number (generic permit coverage number) if known. If an ID number has not yet been assigned to this project (i.e., if this is a new project), leave this item blank.

Part II – Applicant Information

Item A.: Provide the legal name of the person, firm, contractor, public organization, or other legal entity that owns or operates the construction activity described in this NOI. The operator is the legal entity that has authority to control those activities at the project necessary to ensure compliance with the terms and conditions of the generic permit.

Items B. – E.: Provide the complete mailing address of the operator, including city, state, and zip code.

Item F.: Enter the appropriate one letter code from the list below to indicate the legal status of the operator:

F = Federal; S = State; P = Private; M = Public (other than federal or state); O = Other

Items G. – H.: Provide the name and telephone number (including area code) of the person authorized to submit this NOI on behalf of the operator (e.g., Jane Smith, President of Smith Construction Company on behalf of the operator, Smith Construction Company; John Doe, Public Works Director on behalf of the operator, City of Townsville; etc.). This should be the same person as indicated in the certification in Part VI.

Part III – Project/Site Location Information

Items A. – E.: Enter the official or legal name and complete street address, including city, state, and zip code of the project. Do not provide a P.O. Box number as the street address. If it lacks a street address, describe the project site location (e.g., intersection of State Road 1 and Smith Street).

Item F.: Enter the county in which the project is located.

Item G.: Enter the latitude and longitude, **in degrees-minutes-seconds format**, of the approximate center of the project.

Item H.: Indicate whether the project is located on Indian lands.

Item I.: Enter the appropriate five or six letter code from the list below to indicate the Water Management District the project is located within:

NFWWMD= Northwest Florida Water Management District
SRWMD = Suwannee River Water Management District
SFWMD = South Florida Water Management District
SWFWMD = Southwest Florida Water Management District
SJRWMD = St. John's River Water Management District

Items J. – K.: Give the name, title, and telephone number (including area code) of the project contact person. The project contact is the person who is thoroughly familiar with the project, with the facts reported in this NOI, and who can be contacted by the Department if necessary.

Part IV – Project/Site Activity Information:

Item A.: Check the appropriate box to indicate whether the project involves large construction activity or small construction activity. **Check one box only.**

“Large Construction Activity” means construction activity that results in the disturbance of five (5) or more acres of total land area. Large construction activity also includes the disturbance of less than five acres of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb five acres or more.

“Small Construction Activity” means construction activity that results in the disturbance of equal to or greater than one (1) acre and less than five (5) acres of total land area. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one acre and less than five acres.

Item B.: Provide the approximate total area of land disturbance in acres that the project will involve from commencement of construction through completion.

Items C. - G.: Indicate the location where the Stormwater Pollution Prevention Plan (SWPPP) can be viewed. Provide the address where the SWPPP can be viewed if other than as provided in Parts II or III of the NOI. **Note that to be eligible for coverage under the generic permit, the SWPPP must have been prepared prior to filing this NOI.**

Item H.: Enter the estimated construction start and completion dates in the MM/DD/YY format.

Part V – Discharge Information

Item A.: If stormwater from the project discharges to a municipal separate storm sewer system (MS4), enter the name of the operator of the MS4 (e.g., City of Tallahassee MS4, Orange County MS4, FDOT MS4, etc.). If stormwater from the project does not discharge to an MS4 but rather discharges to surface waters of the State, leave this item blank or indicate “N/A” and skip to Item B of this part. **Please note that if the project discharges stormwater to an MS4, you must provide the MS4 operator with a copy of the completed NOI.**

Item B.: If the project discharges stormwater to surface waters of the State, and not to an MS4, enter the name of the receiving water body to which the stormwater is discharged. Please provide the first named water body to which the stormwater from the project is discharged (e.g., Cypress Creek, Tampa Bay, unnamed ditch to St. Johns River, Tate’s Hell Swamp, etc.).

Part VI – Certification

Type or print the name and official title of the person signing the certification. Please note that this should be the same person as indicated in Item II.G. as the Responsible Authority. Sign and date the certification.

Section 403.161, F.S., provides severe penalties for submitting false information on this application (NOI) or any reports or records required by a permit. There are both civil and criminal penalties, in addition to the revocation of permit coverage for submitting false information.

Rule 62-620.305, F.A.C., requires that the NOI and any reports required by the permit to be signed as follows:

- A. For a corporation, by a responsible corporate officer as described in Rule 62-620.305, F.A.C.;
- B. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or,
- C. For a municipality, state, federal or other public facility, by a principal executive officer or elected official.

10.2.2 Department of Energy Self-Certification

The primary and only fuel for Unit 4 is natural gas. FMPA has also requested LNG as a fuel for the existing units, Unit 4, and future units.

The Power Plant and Industrial Fuel Use Act requires FMPA to certify that, with the installation of additional equipment, Unit 4 would be capable of firing coal or another alternate fuel such as gasified coal or biomass as the primary energy source. A draft copy of the Self-Certification is included herein.



Florida Municipal Power Agency

Roger A. Fontes
General Manager and CEO

February 28, 2008

Director
US Department of Energy
Office of Electricity Delivery and Energy Reliability
OE-20, Room 6H-034
1000 Independence Avenue, S.W.
Washington, DC 20585

Subject: Self-Certification under the Fuel Use Act

Gentlemen:

Pursuant to Section 201(d) of the Powerplant and Industrial Fuel Use Act of 1978, as amended (42 USC 8311 (d)), the Florida Municipal Power Agency (FMPA) hereby submits the attached Certification of Compliance attesting to the alternate fuels capability of the proposed Unit 4 at the Cane Island Power Park in Osceola County, Florida. Unit 4 will be a nominal 300 megawatt combined cycle combustion turbine unit constructed and owned by the Florida Municipal Power Agency (FMPA), and operated by Kissimmee Utility Authority (KUA). Additional information on the project can be obtained from FMPA at 8553 Commodity Circle, Orlando, Florida, 32819.

Sincerely,

Roger Fontes
GM and CEO, FMPA

Enclosure
cc: Susan Schumann, FMPA

UNITED STATES OF AMERICA
BEFORE THE DEPARTMENT OF ENERGY
OFFICE OF FUELS PROGRAMS

IN THE MATTER OF:
FLORIDA MUNICIPAL POWER AGENCY

ALTERNATE FUELS CAPABILITY OF NEW ELECTRIC POWERPLANT
CERTIFICATION OF COMPLIANCE
PURUSANT TO THE POWERPLANT AND INDUSTRIAL FUEL USE ACT,
AS AMENDED

I, Roger Fontes, do hereby certify that I am President and General Manager of the Florida Municipal Power Agency, a public, non-profit, joint action agency, formed by 30 municipal electric utilities, operating under the laws of the State of Florida. The Florida Municipal Power Agency (FMPA) is planning to construct and own the proposed new Unit 4 at the existing Cane Island Power Park, property owned by the Kissimmee Utility Authority (KUA), in Osceola County, Florida. Unit 4 will be a nominal 300 megawatt combined cycle combustion turbine unit, operated by KUA on behalf of FMPA.

I do hereby further certify that, pursuant to Section 201(d) of the Powerplant and Industrial Fuel Use Act of 1978, as amended (42 USC 8311(d)), Unit 4 as planned:

- (1) has sufficient inherent design characteristics to permit the addition of equipment (including all necessary pollution control devices) necessary to render it capable of using gasified coal or another alternate fuel as its primary energy source; and,
- (2) is not physically, structurally, or technologically precluded from using gasified coal or another alternate fuel as its primary energy source.

A description of Unit 4 is attached to this Certification as Exhibit A.

IN WITNESS WHEREOF, I have hereupon set my hand this ____ day of ____, 2008.

Roger Fontes
President and General Manager
Florida Municipal Power Agency
8553 Commodity Circle
Orlando, Florida, 32819

SWORN AND SUBSCRIBED to me this ____ day of ____, 2008.

Notary of Public

My Commission Expires:

(Seal)

EXHIBIT A
CANE ISLAND POWER PARK UNIT 4 DESCRIPTION

The proposed Cane Island Power Park Unit 4 (Unit 4) will be constructed and owned by the Florida Municipal Power Agency. Unit 4 will be a nominal 300 megawatt combined cycle combustion turbine unit operated as a baseload facility. The Cane Island Power Park site, located near Intercession City, in Osceola County, Florida, is owned by the Kissimmee Utility Authority, which will operate the unit.

The Unit 4 combustion turbine generator will be rated at approximately 150 megawatts; the steam turbine generator will be rated at approximately 150 megawatts. The primary and only fuel will be natural gas. Unit 4 will be installed with modern pollution control devices to meet environmental quality standards. Unit 4 could be converted to burn low Btu gas from a coal gasification facility.

Unit 4 is scheduled for commercial operation in May, 2011. The net electricity generated will be supplied to the Florida Municipal Power Agency system.

10.2.3 Federal Aviation Administration - Determination of No Hazard to Air Navigation

The FAA requires that structures over 200 feet in height or within a specified distance of an airport be marked and lighted in accordance with the standards of the FAA Advisory Circular AC 70/7460-1K Obstruction Marking and Lighting. Although the Unit 4 stack will be less than 200 feet in height, a construction crane, likely 200 feet or greater in height, will be onsite during construction. The application for a construction crane is completed on FAA Form 7460-1 is included herein.

NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION

§77.13 Construction or alteration requiring notice.

(a) Except as provided in §77.15, each sponsor who proposes any of the following construction or alteration shall notify the Administrator in the form and manner prescribed in §77.17:

(1) Any construction or alteration of more than 200 feet in height above the ground level at its site.

(2) Any construction or alteration of greater height than an imaginary surface extending outward and upward at one of the following slopes:

(i) 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each airport specified in paragraph (a) (5) of this section with at least one runway more than 3,200 feet in actual length, excluding heliports.

(ii) 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each airport specified in paragraph (a) (5) of this section with its longest runway no more than 3,200 feet in actual length, excluding heliports.

(iii) 25 to 1 for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of each heliport specified in paragraph (a) (5) of this section.

(3) Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted upward 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance, 15 feet for any other public roadway, 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road, 23 feet for a railroad, and for a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it, would exceed a standard of paragraph (a) (1) or (2) of this section.

(4) When requested by the FAA, any construction or alteration that would be in an instrument approach area (defined in the FAA standards governing instrument approach procedures) and available information indicates it might exceed a standard of Subpart C of this part.

(5) Any construction or alteration on any of the following airports (including heliports):

(i) An airport that is available for public use and is listed in the Airport Directory of the current Airman's Information Manual or in either the Alaska or Pacific Airman's Guide and Chart Supplement.

(ii) An airport under construction, that is the subject of a notice or proposal on file with the Federal Aviation Administration, and except for military airports, it is clearly indicated that that airport will be available for public use.

(iii) An airport that is operated by an armed force of the United States.

(b) Each sponsor who proposes construction or alteration that is the subject of a notice under paragraph (a) of this section and is advised by an FAA regional office that a supplemental notice is required shall submit that notice on a prescribed form to be received by the FAA regional office at least 48 hours before the start of construction or alteration.

(c) Each sponsor who undertakes construction or alteration that is the subject of a notice under paragraph (a) of this section shall, within 5 days after that construction or alteration reaches its greatest height, submit a supplemental notice on a prescribed form to the FAA regional office having jurisdiction over the region involved, if —

(1) The construction or alteration is more than 200 feet above the surface level of its site; or

(2) An FAA regional office advises him that submission of the form is required.

§77.15 Construction or alteration not requiring notice.

No person is required to notify the Administrator for any of the following construction or alteration:

(a) Any object that would be shielded by existing structures of a permanent and substantial character or by natural terrain or topographic features of equal or greater height, and would be located in the congested area of a city, town, or settlement where it is evident beyond all reasonable doubt that the structure so shielded will not adversely affect safety in air navigation.

(b) Any antenna structure of 20 feet or less in height except one that would increase the height of another antenna structure.

(c) Any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device, of a type approved by the Administrator, or an appropriate military service on military airports, the location and height of which is fixed by its functional purpose.

(d) Any construction or alteration for which notice is required by any other FAA regulation.

§77.17 Form and time of notice.

(a) Each person who is required to notify the Administrator under §77.13 (a) shall send one executed form set of FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the Manager, Air Traffic Division, FAA Regional Office having jurisdiction over the area within which the construction or alteration will be located. Copies of FAA Form 7460-1 may be obtained from the headquarters of the Federal Aviation Administration and the regional offices.

(b) The notice required under §77.13 (a) (1) through (4) must be submitted at least 30 days before the earlier of the following dates —

(1) The date the proposed construction or alteration is to begin.

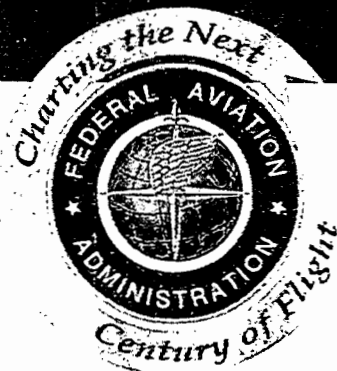
(2) The date an application for a construction permit is to be filed.

However, a notice relating to proposed construction or alteration that is subject to the licensing requirements of the Federal Communications Act may be sent to the FAA at the same time the application for construction is filed with the Federal Communications Commission, or at any time before that filing.

(c) A proposed structure or an alteration to an existing structure that exceeds 2,000 feet in height above the ground will be presumed to be a hazard to air navigation and to result in an inefficient utilization of airspace and the applicant has the burden of overcoming that presumption. Each notice submitted under the pertinent provisions of this part 77 proposing a structure in excess of 2,000 feet above ground, or an alteration that will make an existing structure exceed that height, must contain a detailed showing, directed to meeting this burden. Only in exceptional cases, where the FAA concludes that a clear and compelling showing has been made that it would not result in an inefficient utilization of the airspace and would not result in a hazard to air navigation, will a determination of no hazard be issued.

(d) In the case of an emergency involving essential public services, public health, or public safety that requires immediate construction or alteration, the 30 day requirement in paragraph (b) of this section does not apply and the notice may be sent by telephone, telegraph, or other expeditious means, with an executed FAA Form 7460-1 submitted within five (5) days thereafter. Outside normal business hours, emergency notices by telephone or telegraph may be submitted to the nearest FAA Flight Service Station.

(e) Each person who is required to notify the Administrator by paragraph (b) or (c) of §77.13, or both, shall send an executed copy of FAA Form 7460-2, Notice of Actual Construction or Alteration, to the Manager, Air Traffic Division, FAA Regional Office having jurisdiction over the area involved.



Announcement

Please send all future FAA form 7460-1 notices to the FAA's new...

EXPRESS PROCESSING CENTER

Federal Aviation Administration
Southwest Regional Office
Air Traffic Airspace Branch, ASW-520
2601 Meacham Blvd.
Fort Worth, TX 76137-4298
Phone: (817) 838-1990

Visit the FAA's new Obstruction Evaluation web site at <http://oeaaa.faa.gov>

INSTRUCTIONS FOR COMPLETING FAA FORM 7460-1

PLEASE TYPE or PRINT

ITEM #1. Please include the name, address, and phone number of a personal contact point as well as the company name.

ITEM #2. Please include the name, address, and phone number of a personal contact point as well as the company name.

ITEM #3. New Construction would be a structure that has not yet been built.

Alteration is a change to an existing structure such as the addition of a side mounted antenna, a change to the marking and lighting, a change to power and/or frequency, or a change to the height. The nature of the alternation shall be included in **ITEM #21** "Complete Description of Proposal". Existing would be a correction to the latitude and/or longitude, a correction to the height, or if filing on an existing structure which has never been studied by the FAA. The reason for the notice shall be included in **ITEM #21** "Complete Description of Proposal".

ITEM #4. If Permanent, so indicate. If Temporary, such as a crane or drilling derrick, enter the estimated length of time the temporary structure will be up.

ITEM #5. Enter the date that construction is expected to start and the date that construction should be completed.

ITEM #6. Please indicate the type of structure. **DO NOT LEAVE BLANK.**

ITEM #7. In the event that obstruction marking and lighting is required, please indicate type desired. If no preference, check 'other' and indicate 'no preference'. **DO NOT LEAVE BLANK. NOTE: High intensity lighting shall be used only for structures over 500' AGL.** In the absence of high intensity lighting for structures over 500' AGL, marking is also required.

ITEM #8. If this is an existing tower that has been registered with the FCC, enter the FCC Antenna Structure Registration number here.

ITEM #9. and #10. Latitude and longitude must be geographic coordinates, accurate to within the nearest second or to the nearest hundredth of a second if known. Latitude and longitude derived solely from a **hand-held GPS instrument is acceptable.** This data, when plotted, should match the site depiction submitted under **ITEM #20.**

ITEM #11. NAD 83 is preferred; however, latitude/longitude may be submitted in NAD 27. Also, in some geographic areas where NAD 27 and NAD 83 are not available other datums may be used. It is important to know which datum is used. **DO NOT LEAVE BLANK.**

ITEM #12. Enter the name of the nearest city/state to the site. If the structure is or will be in a city, enter the name of that city/state.

ITEM #13. Enter the full name of the nearest public-use (not private-use) airport (or heliport) or military airport (or heliport) to the site.

ITEM #14. Enter the distance **from** the airport or heliport listed in **#13 to the structure.**

ITEM #15. Enter the direction **from** the airport or heliport listed in **#13 to the structure.**

ITEM #16. Enter the site elevation above mean sea level and expressed in **whole feet** rounded to the nearest foot (e.g. 17' 3" rounds to 17', 176" rounds to 18'). This data should match the ground contour elevations for site depiction submitted under **ITEM #20.**

ITEM #17. Enter the total structure height **above ground level** in **whole feet** rounded to the **next highest foot** (e.g. 173" rounds to 18'). **The total structure height shall include anything mounted on top of the structure, such as antennas, obstruction lights, lightning rods, etc.**

ITEM #18. Enter the overall height above mean sea level and expressed in **whole feet.** This will be the total of **ITEM #16 + ITEM #17.**

ITEM #19. If an FAA aeronautical study was previously conducted, enter the previous study number.

ITEM #20. Enter the relationship of the structure to roads, airports, prominent terrain, existing structures, etc. Attach an 8-1/2" X 11" non-reduced copy of the appropriate 7.5 minute U.S. Geological Survey (USGS) Quadrangle Map **MARKED WITH A PRECISE INDICATION OF THE SITE LOCATION.** To obtain maps, Contact USGS at 1-888-275-8747 or via Internet at <http://store.usgs.gov/>. If available, attach a copy of a documented site survey with the surveyor's certification stating the amount of vertical and horizontal accuracy in feet.

ITEM #21.

- For transmitting stations, include maximum effective radiated power (ERP) and all frequencies.
- For antennas, include the type of antenna and center of radiation (*Attach the antenna pattern, if available*).
- For microwave, include azimuth relative to true north.
- For overhead wires or transmission lines, include size and configuration of wires and their supporting structures (*Attach depiction*).
- For **each** pole/support, include coordinates, site elevation, and structure height above ground level or water.
- For buildings, include site orientation, coordinates of **each** corner, dimensions, and construction materials,
- For alterations, explain the alteration thoroughly,
- For existing structures, thoroughly explain the reason for notifying the FAA (*e.g. corrections, no record of previous study, etc.*).

Filing this information with the FAA does not relieve the sponsor of this construction or alteration from complying with any other federal state or local rules or regulations. If you are not sure what other rules or regulations apply to your proposal, contact local/state aviation and zoning authorities.

Paperwork Reduction Work Act Statement: This information is collected to evaluate the effect of proposed construction or alteration on air navigation and is not confidential. Providing this information is mandatory for anyone proposing construction or alteration that meets or exceeds the criteria contained in 14 CFR , part 77. We estimate that the burden of this collection is an average 19 minutes per response. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless R displays a currently valid OMB control number. The OMB control number for this collection is 2120-0001.

FAA Form 7460-1 (2-99) Supersedes Previous Edition
0008

NSN: 0052-00-012-

**10.2.4 Army Corps of Engineers and Fish and Wildlife Service
Notification**

The Corps of Engineers and the Fish and Wildlife Service were notified of the Unit 4 project in March 2008. Copies of the notification letters are included herein. No impacts to waters or wetlands, and no adverse impacts to threatened or endangered species are anticipated from construction or operation of Unit 4.



FMPA/KUA
Cane Island Power Park Unit 4

B&V Project 147651
B&V File 31.1000
March 21, 2008

Ms. Irene Sadowski, Team Leader
U.S. Army Corps of Engineers
Cocoa Regulatory Office
400 High Point Drive - Suite 600
Cocoa, Florida 32926

Subject: Project Notification

Dear Ms. Sadowski:

The Florida Municipal Power Agency (FMPA) and the Kissimmee Utility Authority (KUA) propose to construct and operate a new electrical generating unit (Unit 4) at the Cane Island Power Park located near Intercession City in Osceola County. The Cane Island Power Park is a power plant that currently includes three combustion turbine units and associated support facilities, certified under the Florida Electrical Power Plant Siting Act in 1999. Units 1 and 2 began commercial operation in 1995; Unit 3 in 2001. Unit 4 will also be reviewed and approved by the state and local agencies under the authority of the Florida Electrical Power Plant Siting Act.

Unit 4 is proposed as a nominal 300 megawatt, one-on-one combined cycle combustion turbine unit firing natural gas as the only fuel, scheduled for commercial operation in May 2011. Construction of Unit 4 will begin in July 2009 entirely within the previously permitted area on the central portion of the geographic feature known as Cane Island (Section 29, Township 25 South, Range 28 East). Approximately 25 acres of the permitted generation area will be impacted during construction of Unit 4; 9 acres will support permanent facilities. There will be no new off-site linear facilities. There will be no waters or wetlands impacts associated with Unit 4 development. A project location map and aerial are enclosed for your reference.

Although we anticipate no permit action by the Corps concerning Unit 4, FMPA and KUA wish to advise you of this project in your region. If you have any questions regarding the project, please contact me at (913) 458-7563 or soltysjm@bv.com.

Very truly yours,
BLACK & VEATCH

Michael Soltys
Site Certification Coordinator

Enclosures

cc: Ms. Susan Schumann, FMPA
Mr. Jay Butters, KUA



FMPA/KUA
Cane Island Power Park Unit 4

B&V Project 147651
B&V File 31.2000
March 21, 2008

Mr. Paul Souza
South Florida Ecological Services Office
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, FL 32960-3559

Subject: Project Notification

Dear Mr. Souza:

The Florida Municipal Power Agency (FMPA) and the Kissimmee Utility Authority (KUA) propose to construct and operate a new electrical generating unit (Unit 4) at the Cane Island Power Park located near Intercession City in Osceola County. The Cane Island Power Park is a power plant that currently includes three combustion turbine units and associated support facilities, certified under the Florida Electrical Power Plant Siting Act in 1999. Units 1 and 2 began commercial operation in 1995; Unit 3 in 2001. Unit 4 will also be reviewed and approved by the state and local agencies under the authority of the Florida Electrical Power Plant Siting Act.

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In June 1998, in association with the development of Unit 3, the Service was requested to review the site and project area for known or potential federally listed species. The Service responded in July 1998, indicating that there were no known listed species or critical habitats designated onsite. A copy of that letter is also enclosed for your reference.

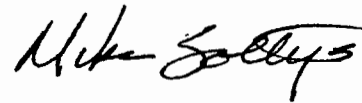
FMPA/KUA
Mr. Souza

B&V Project 147651
March 21, 2008

Although we anticipate no permit action by the Corps of Engineers concerning Unit 4, FMPA and KUA wish to advise you of this project in your region. If you have any questions regarding the project, please contact me at (913) 458-7563 or soltysjm@bv.com.

Very truly yours,

BLACK & VEATCH

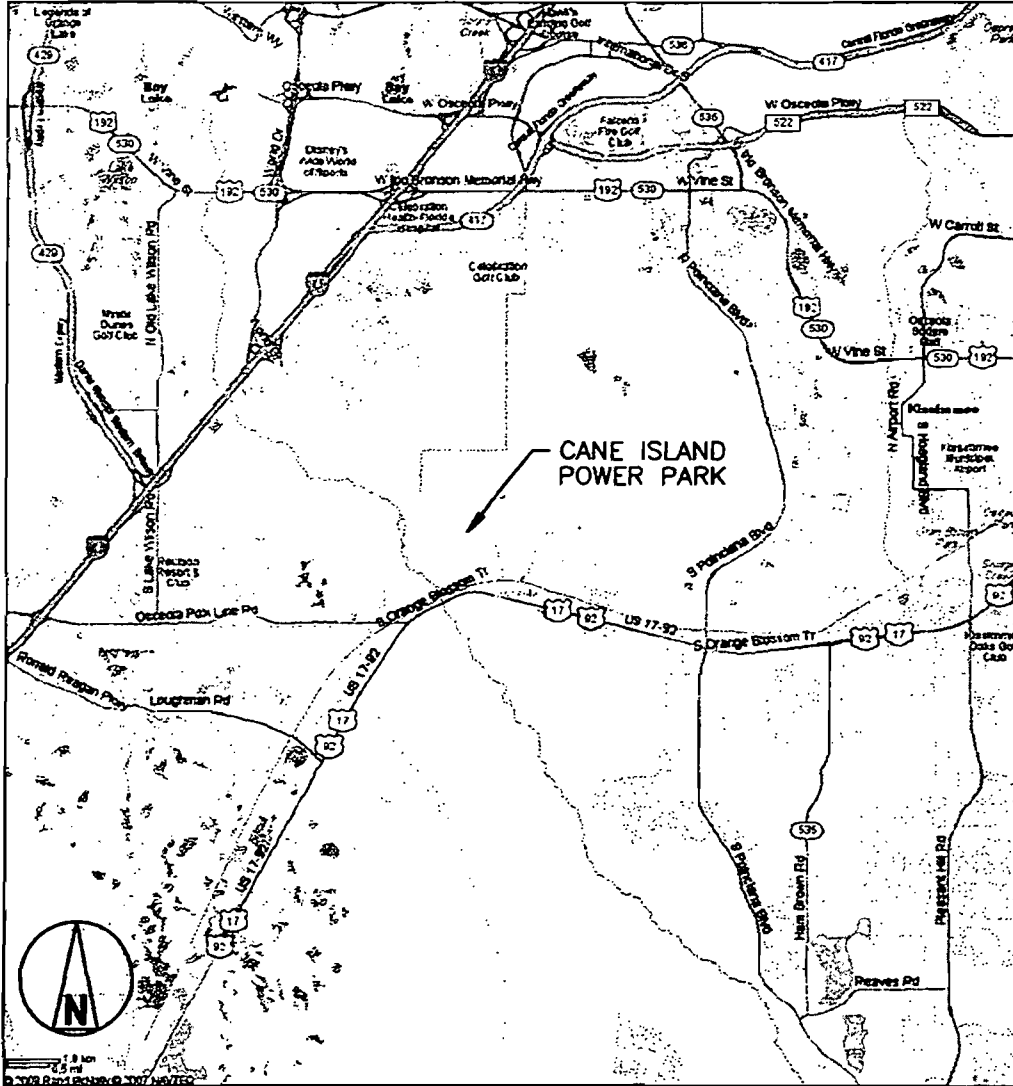
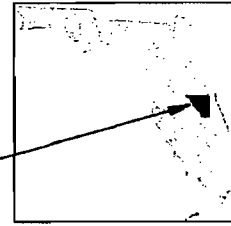


Michael Soltys
Site Certification Coordinator

Enclosures

cc: Ms. Susan Schumann, FMPA
Mr. Jay Butters, KUA

LOCATION OF
OSCEOLA COUNTY IN
THE STATE OF FLORIDA



RUM02825
ACAD 16.1s (LMS Tech)
A1ASL011 A2 1=1
02/13/08 10:13:18

BLACK & VEATCH CORPORATION

ENGINEER	ALM	DRAWN	MRR	A	02/15/2008	ISSUED FOR CLIENT REVIEW	MRR	ALM	MJS	
CHECKED	DATE	NO	DATE	REVISIONS AND RECORD OF ISSUE		DRN	DES	CHK	PDE	APP

FLORIDA MUNICIPAL POWER AGENCY CANE ISLAND POWER PARK UNIT 4		PROJECT	DRAWING NUMBER	REV
		147651-4STA-S1002		A

REGIONAL SITE LOCATION	CODE	FIGURE 2.1-1
	AREA	

10.2.5 316 Demonstrations

Not required.

10.2.6 Hazardous Waste Disposal Application

Not required.

10.2.7 Environmental Resource Permit Application (Section 10 or 404 Permit)

The Corps of Engineers has the authority to review the potential environmental impacts associated with the construction and operation of Unit 4 and associated facilities. Although there will be no waters or wetlands impacts due to Unit 4 construction or operation, the Corps was notified of the project by letter in March 2008. A copy of this letter is included in Subsection 10.2.4 above.

10.2.8 Prevention of Significant Deterioration Permit Application

The construction and operation of Unit 4 will require a PSD air construction permit. The FDEP will review the PSD application in coordination with the EPA. The PSD Air Permit Application is attached under separate cover as Volume 3 of this SCA.

10.2.9 Title IV Acid Rain Part Application

Modification of the existing Title IV Permit will be required with the addition of Unit 4. Attachment 7 of Appendix A to SCA Volume 3 lists the Acid Rain Part Application.

10.3 Zoning Descriptions

A copy of the Osceola County Conditional Use/Site Development Plan Permit issued for Unit 3 and the zoning categories identified in the Osceola County Land Development Code applicable to the CIPP site are included herein.

10.3.1 Conditional Use/Site Development Plan

CU/SDP 92-86 was issued to KUA by the Osceola Board of County Commissioners for development of the property as a power generating station. A copy of this permit is included herein. A completed CU/SDP application to incorporate Unit 4 into the County records is also included herein.

10.3.2 Building Permit Exemption

A Building Permit would normally be required from Osceola County to construct several of the Unit 4 facilities. However, the Site Certification process exempts the project from the need to obtain a Building Permit. The project will still have to meet county codes and regulations. The construction contractor will be required to meet with county building officials to ascertain their requirements prior to start of construction.



O S C E O L A C O U N T Y
BOARD OF COUNTY COMMISSIONERS 4

PHONE: 407 / 847-1200 17 SOUTH VERNON AVENUE, ROOM 155 KISSIMMEE, FLORIDA 34741-5481

January 25, 1993

Mr. Ben Sharma
Kissimmee Utility Authority
1701 West Carroll Street
Kissimmee, FL 34741

REF: CU/SDP 92-86 -- Kissimmee Utility Authority (Combustion
Turbine Power Plant)

Dear Mr. Sharma:

Your referenced request for a Conditional Use/Site Development Plan approval was granted by the Osceola Board of County Commissioners at their meeting of January 11, 1993, subject to compliance with the following conditions:

A. STANDARD CONDITIONS:

1. Drainage and Stormwater Management Plans and Calculations to be approved by County Engineer prior to submitting plans for building permits. A benchmark will be required at a location to be noted on the approved drainage plans. The project engineer shall pick up a brass disk for the BM at the County Engineer's Office. All paving and drainage to be constructed per approved plans prior to receiving a Certificate of Occupancy.
3. South Florida Water Management District permit is required for surface water system evaluation.
20. Stop signs and stop bars required at project entrance and exit to Old Tampa Highway.
23. Applicant must maintain tree canopy based on tree-point requirement of County Tree Ordinance.
26. Applicant will need to obtain a tree removal permit prior to removing any trees (4 inches DBH) from the site.
28. Applicant shall provide 1/2" dry pre-treatment retention.
32. Applicant will need to submit a tree planting plan showing all trees to be removed, retained, and/or replanted, noting their size (in DBH), type and location on the site plan, to meet the tree point requirement.
33. Applicant will need to submit a copy of the tree removal permit to the County Engineering Department prior to final engineering/construction plans approval.

Mr. Ben Sharma
Page Two
January 25, 1993

B. SPECIAL AND VOLUNTARY AGREEMENT CONDITIONS:

1. Approved copies of any required dredge and fill permits to be filed with the County Engineer.
2. Approved copies of any required DER permits for above ground storage tanks to be filed with the County Engineer.
3. Applicant shall pave the entrance road approach to Old Tampa Highway with 24' width pavement and required radii.
4. Approval of this Conditional Use shall void CU/SDP 91-90 as approved by the Board of County Commissioners on February 17, 1992.
5. Provide for compensating storage within the 100 year flood plain.
6. Access road 24' pavement and minimum 50' curb radius shall be a private easement.
7. Applicant to address KUA's intention to meander transmission lines within the 300 ft. corridor to avoid clear cutting.
8. Applicant shall submit SFWMD, DER and ACOE jurisdictional line determinations. Jurisdictional line approvals or acceptance will need to be indicated on all plans.
9. Any proposed alterations of State or federal jurisdictional areas will need to be approved by those agencies. The applicant shall submit letters of conceptual approval or approved permits and approvals from the applicable agencies to the Zoning Division prior to construction plan or building permit approval.
10. The Conditional Use/Site Development Plan requirement of submittal of a building permit will be satisfied if one of the following is submitted within the time frame allowed: dredge and fill permit from DER or a storm water management permit from SFWMD.
11. Within 30 days of commencement of operation of each phase of the combustion turbine power plant (the Facility), applicant shall monitor and model the noise impacts from the Facility at the boundaries of KUA site to ensure that the noise impact generated by the Facility complies with EPA, State and County regulations. The applicant shall forward the results of the monitoring and modelling to the County Zoning Division. If the noise impacts exceed the respective standards of the EPA, State or County regulations, the applicant shall immediately take corrective action to bring operation of the Facility into compliance with the respective regulations.
12. Draft conservation easement agreement language shall be amended to include the submittal of copies of the monitoring reports to the Zoning Division (Item 3.e.).

Mr. Ben Sharma
Page Three
January 25, 1993

13. No construction will be allowed until the conservation easement agreement is finalized and executed.
14. KUA agrees to increase the height of the utility lines ten feet (10') higher than the State requirements.
15. KUA agrees not to exceed the sound level of 55 (db) at the property line in the residential areas.
16. If Osceola County can negotiate the establishment of a site for a future park with the South Florida Water Management District, KUA will not object.
17. KUA agrees to comply with any future changes which relate to the magnetic field which would cause the regulatory agencies to change the regulations.
18. KUA agrees that replacement plants will include evergreen trees around the facility and along the easement for an additional buffer and would not clear cut the right-of-way.
19. KUA agrees to work with residents concerning the spacing of utility poles along the easement.

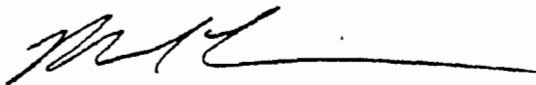
Note: Staff recommends that the applicant recognize the existence of an easement for adjacent property owner to existing crossing of Seaboard Coastline Railroad.

The Conditional Use/Site Development Plan requirement of submittal of a building permit will be satisfied if one of the following is submitted within the time frame allowed: dredge and fill permit from DER or a storm water management permit from SFWMD. The dredge and fill permit or the storm water management permit must be submitted within one year of the approval date by the Board of County Commissioners or the approval will become void.

If we can be of further assistance, please contact the Planning Department at 847-1380.

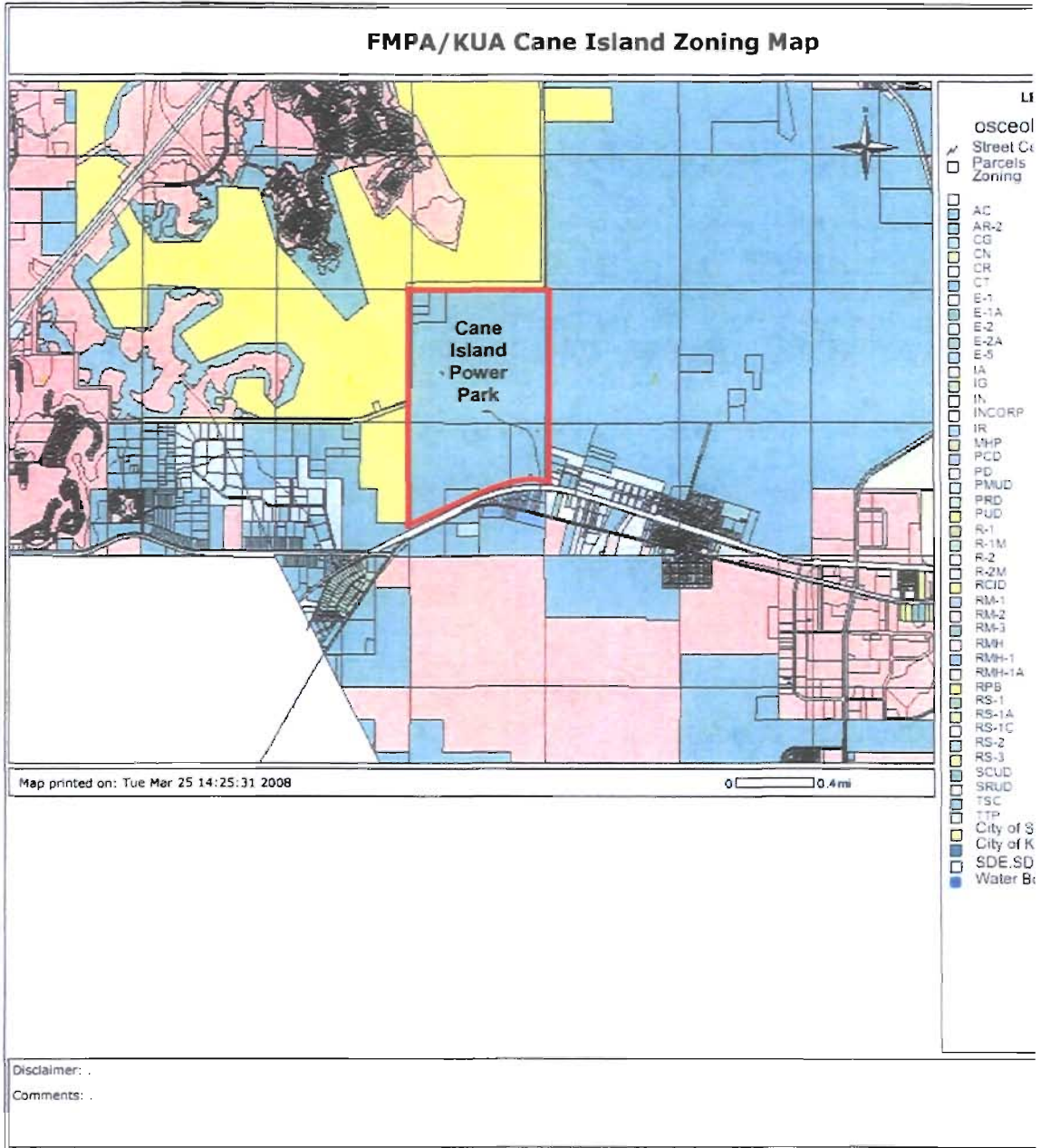
Respectfully,

PLANNING DEPARTMENT


Michael Kloehn
Planning Director

vj

c: Mr. David M. Lefebvre



CHAPTER 14 - ZONING

COUNTY POLICY, ESTABLISHMENT OF DISTRICTS, DISTRICT BOUNDARIES ON ZONING MAP AND RESTRICTIONS UPON LAND, WATER, BUILDING AND STRUCTURES

14.1 COUNTY POLICY

The regulations contained in Chapter 14 implement policy of the Board of County Commissioners and policies of the Osceola County Comprehensive Plan.

14.2 ESTABLISHMENT OF DISTRICTS

In order to classify, regulate and restrict the uses of land, water, building and structures, and to regulate and restrict the height and bulk of building, and to regulate the area of yards, courts and open spaces about buildings, Osceola County, not part of any municipality, is divided into districts.

14.3 DISTRICTS SHOWN ON MAPS

The boundaries of the various districts in Osceola County, Florida, are shown on maps in the zoning office, entitled "Zoning Map", which is made a part of this Ordinance.

14.4 RULES FOR INTERPRETATION OF DISTRICT BOUNDARIES AND URBAN DEVELOPMENT AREA BOUNDARIES

Where uncertainty exists with respect to the boundaries of the districts as shown on the official Zoning Map, the following rules shall apply:

- A. Where district boundaries are indicated as following the center lines of streets, highways or alleys, such center lines shall be construed to be such boundaries.
- B. Where district boundaries are indicated as approximately parallel to the center lines of streets or highways, such district boundaries shall be construed as being parallel thereto and at such distance there from as indicated on the official zoning map. If no distance is indicated specifically on the zoning map, the scale of the map shall determine.
- C. Where district boundaries run to, but do not extend into water areas, they shall be considered to run into such water areas in a straight line continuing the prevailing direction of the boundary as it approached the water until they intersect other district boundaries or the geographic limits of the County. Boundaries which run through water-courses, lakes and other water areas shall be assumed to be located midway in such water areas unless otherwise indicated.
- D. Where district boundaries are indicated as following platted lot lines, such lot lines shall be construed to be the district boundaries.
- E. Where district boundaries are indicated by specific dimensions, such specific dimensions shall control.
- F. Where district boundaries divide platted lots or cross unsubdivided property, and where no specific dimensions are indicated on the official zoning map, the scale of the official zoning map shall control.

14.5 RESTRICTIONS UPON LAND, BUILDINGS AND STRUCTURES

A. USE

No building or structure shall be erected and no existing building shall be moved, altered, added to, or enlarged, nor shall any land, building, structure or premises be used or designed to be used for any purpose or in any manner other than a use designated in this chapter or amendments thereto, as permitted in the district in which such land, building, structure or premises is or are located, without obtaining the necessary land use, zoning and/or building permits, except when exempt according to Florida Statutes.

B. HEIGHT

No structure or building shall be erected, nor shall any existing building be moved, reconditioned or structurally altered so as to exceed in height the limit, if any, established in this chapter or amendments thereto, for the district in which such building or structure is located.

C. SITE REQUIREMENTS

No building or structure shall be erected, nor shall any existing building or structure be moved, altered, enlarged or rebuilt, nor shall any open space surrounding any building or structure be encroached upon or reduced in any manner, in size or area, except in conformity with the building site requirements, and the area and parking space and yard regulations established by this Ordinance, or amendments thereto, for the district in which such building or structure is located.

D. REQUIRED LOT AND OCCUPANCY

Every building or structure hereafter erected shall be located on a lot or tract as defined herein; and in no case shall there be more than one principal building or use on one (1) lot except as hereinafter provided.

E. FRONT YARD/LOT WIDTH DETERMINATION

Lot front determination shall be where the principal vehicular access to the lot abuts the approved public or private right-of-way.

If the principal vehicular access is served by alley way design, then the Zoning Director shall determine the lot front.

Lot width determination shall be measured at the mid-point of the side lot lines.

F. ZONING DISTRICT CATEGORIES

The following list identifies various zoning districts classified according to general zoning objectives.

1. CLASSIFICATION

Agriculture

GENERAL OBJECTIVES

Development of suitable areas for agriculture production.

ZONING DISTRICTS

AC

2. CLASSIFICATION
Rural
GENERAL OBJECTIVES
Development of suitable areas for very low density residential single family use and areas for limited agriculture production.
ZONING DISTRICTS
R-1, R-1M, R-2, R-2M
3. CLASSIFICATION
Estate
GENERAL OBJECTIVES
Development of suitable areas for select types of very low density country estates for single family use.
ZONING DISTRICTS
E-1, E-1A, E-2, E-2A, E-5
4. CLASSIFICATION
Residential
GENERAL OBJECTIVES
Development of suitable areas for residential low density, single family dwellings.
ZONING DISTRICTS
RS-1, RS-2, RS-3, RS-1A, RS-1C, RMH, RMH-1, RMH-1A, Residential P.D.
5. CLASSIFICATION
Multi-Family
GENERAL OBJECTIVES
Development of suitable areas for attached residential units at medium to high density.
ZONING DISTRICTS
RM-1, RM-2, RM-3, Residential P.D.
6. CLASSIFICATION
Commercial
GENERAL OBJECTIVES
Development of suitable areas for commercial activities which offer a variety of goods and services to the community.
ZONING DISTRICTS
CR, CG, CT, CN, RPB, Commercial P.D., Special Complex P.D.
7. CLASSIFICATION
Industrial
GENERAL OBJECTIVES
Development of suitable areas for various types of industry providing for local employment and adult entertainment.
ZONING DISTRICTS
IB, IR, IG, Industrial P.D.
8. CLASSIFICATION
Institutional
GENERAL OBJECTIVES
Development of suitable areas for public and quasi-public facilities, institutions and/or improvements intended to promote public health, safety and welfare.

ZONING DISTRICTS
IN

G. REZONINGS

All rezonings of sub-DRI development, equal to or larger than the sites listed below, shall be submitted as planned developments.

- | | |
|----------------------|---------------------------------|
| A. Commercial | 10 acres |
| B. Industrial | 20 acres |
| C. Residential | 100 acres or 500 dwelling units |
| D. Mixed Use | 20 acres |
| E. Short Term Rental | 20 acres |

Developments smaller than those listed above, may also be submitted as planned developments. These parcels, as with all development parcels, must have been created in compliance with the subdivision regulations found in Chapter 8.

14.6 AGRICULTURAL DEVELOPMENT AND CONSERVATION (AC)

A. OBJECTIVES

To promote the orderly growth and development of the community, protect the value of property, limit the expenditure of public funds, improve the opportunity for local employment and economic activity, and achieve the intent of land use regulations. Further this district is established to:

1. Encourage the retention and development of suitable areas for agricultural production, the preservation of open spaces, and the conservation and management of soil, water, air, game and other natural resources and amenities; and,
2. Discourage the creation or continuation of conditions which could detract from the function, operation, and appearance of rural areas by limiting the ability of such areas to provide food supplies or to effectively compete with other regions producing agricultural products.

B. PERMITTED USES

The following uses listed below are authorized in this district, when such uses comply with the requirements contained in these regulations.

1. Groves and farms for the cultivation and propagation of citrus, vegetables, fruits, berries, nuts, grass, sod and trees.
2. Pastures and grasslands for the cultivation and propagation of livestock except for swine and poultry.
3. Greenhouse or nursery for domestic plants and landscaping materials when accessory and incidental to the principal dwelling.
4. Wholesale commercial greenhouses and nurseries, if located in the rural land use category as illustrated on the Osceola County Comprehensive Plan, future land use map.
5. Lakes and ponds for the cultivation and propagation of fish and marine foods for personal

consumption only.

6. Areas for the cultivation and propagation of bees, earthworms and similar insects.
7. Dairy farms.
8. Barns, stables, and silos for the housing of livestock, hay, and feed.
9. Buildings, structures, equipment and work animals utilized for bonafide agricultural activities.
10. Single family residence, including customary uses such as a garage, carport, and porch, when accessory and incidental to the principal dwelling.
11. Single family manufactured home and mobile home, including customary uses such as a garage, carport, and porch, when accessory and incidental to the principal dwelling.
12. Swimming pool, spa, recreation room, screen room, boathouse and other customary uses when accessory and incidental to the principal dwelling.
13. Guest home or quarters for domestic employees, when accessory and incidental to the principal dwelling, in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
14. Pier, dock or boathouse, when accessory and incidental to the principal dwelling.
15. Dwellings (5 or less) and customary uses for farm workers, ranch hands and seasonal laborers, when accessory and incidental to a bonafide agricultural activity, provided the overall density does not exceed 1 dwelling unit/5 acres. These dwellings may include single family dwellings, standard design manufactured homes, residential design manufactured homes or mobile homes.
16. Swine and poultry not exceeding a limit of two (2) swine and six (6) fowl, provided they are contained in a pen or fenced enclosure that maintains a minimum 100 feet setback from any property boundary.
17. Buildings, yards, pens and or fenced yards, when accessory and incidental to the principal dwelling, for the keeping of no more than four (4) canine. Pens shall maintain a minimum setback of ten (10) feet from any property boundary.
18. Silviculture and forestry operations when operated in accordance with other provisions of this Ordinance.
19. Community Residential Home A in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
20. Agricultural stands in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
21. Class I aircraft landing fields in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.

22. Temporary residences in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
23. Storage buildings, hobby shop and tool sheds, when accessory and incidental to the principal dwelling, in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
24. Distribution electric substations, except on property that is designated as preservation, conservation or historic preservation on the future land use map, in accordance with Section 163.3208, Florida Statutes, as amended.

C. CONDITIONAL USES

The following uses may be permitted as conditional uses provided that an application has been approved pursuant to Chapter 2 and Chapter 17 of this Ordinance.

1. Parks, playgrounds, libraries and similar neighborhood activities not operated for profit.
2. Substations for telephone, or other utilities, and for fire fighting or law enforcement services.
3. Houses of worship in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance, and customary accessory facilities such as a chapel and educational buildings for religious training.
4. Kindergartens and child care centers for pre-school children and nursing homes for the sick and elderly.
5. Schools and customary accessory facilities such as cafeterias, auditoriums, gymnasiums, and ball fields.
6. Marinas, golf courses, country clubs, and customary accessory facilities such as clubhouses, swimming pools, cabanas, tennis courts, maintenance buildings, and structures for storage of golf carts.
7. Dwellings (6 or more) and customary uses for farm workers, ranch hands and seasonal laborers, when accessory and incidental to a bonafide agricultural activity, provided the overall density does not exceed 1 dwelling unit/5 acres. These dwellings may include single family dwellings, standard design manufactured homes, residential design manufactured homes or mobile homes.
8. Packing houses for the processing and packaging of citrus, vegetables, and fruits.
9. Processing plants for the dressing and packaging of beef, poultry, swine and fish.
10. Sawmills for the cutting, sizing and curing of lumber.
11. Commercial retail sales of nursery plants and landscaping materials in conjunction with wholesale nursery operations.
12. Commercial fish farms and similar aquacultural operations.
13. Plants for the production and processing of feed and fertilizer.

14. Brooders and pens for the husbandry of poultry, swine and similar farm animals exceeding the limits for permitted uses.
15. Aviaries, commercial riding stables and sites for the raising or possession of exotic animals as recognized by the Florida Fish and Wildlife Conservation Commission.
16. Veterinary clinics in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
17. Tourist attractions featuring animals, reptiles or other wildlife.
18. Recreational vehicle parks and campgrounds, when approved in accordance with other provisions of this Ordinance.
19. Recreation facilities for special groups, e.g., athletic associations, girl scouts and boys clubs.
20. Utility plants, landfills (all classes as regulated by the Florida Department of Environmental Protection, and construction and demolition debris disposal sites, in accordance with - Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
21. Cemeteries and customary accessory uses in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
22. Pug mills and/or temporary plants for the production or batching of concrete, asphalt soil cement or asphaltic concrete in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
23. Soil excavation, mining or quarry operations when approved in accordance with other provisions of this Ordinance.
24. Plants for the processing of fertilizer or animal hides.
25. Communication towers in accordance with Chapter 9.
26. Hunting camps and fishing camps in accordance with the Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
27. Temporary parking and storage areas for construction equipment, provided the temporary period does not exceed 5 years.
28. Class II aircraft landing fields in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
29. Community Residential Home B in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
30. Land application disposal in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
31. Areas for the display, sale, assembly and maintenance of agricultural equipment.

32. Outdoor firing ranges provided the property has a rural land use designation in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
33. Membership organizations including fraternal organizations in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
34. Commercial kennels for the raising, breeding and or boarding of domestic animals including, but not limited to, canines or felines in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
35. Bed-and-breakfast establishment in accordance with Conditional Use and Site Standard (C.U.S.S.) of this Ordinance.
36. Other similar uses which are reasonably implied and are consistent with the objectives of this district, based on appropriate consideration of the nature of the intended activity, the character of the proposed development, the location of the site, and its compatibility with adjacent parcels. These above determinations shall be made by the Zoning Director.

D. SPECIAL EXCEPTIONS

The following uses may be permitted as a special exception by the Board of Adjustment provided an application has been approved pursuant to other provisions of this Ordinance.

1. Home occupations.
2. Buildings, yards, pens and/or fenced yards, when accessory and incidental to the principal dwelling, for the keeping of canine exceeding the permitted maximum of four (4) canine, up to a maximum of six (6) canine.
3. Pigeon coops, when accessory and incidental to the principal structure.

E. PROHIBITED USES

All uses not specified as a permitted use, conditional use, or a special exception, shall be prohibited. In cases where a use is not listed as a permitted use, conditional use or special exception anywhere in these regulations, the Zoning Director shall determine whether a use would be permitted, conditional or a special exception. Appeals of the Zoning Director's decision shall be as provided for according to Chapter 2.

F. DEVELOPMENT STANDARDS

Minimum Lot Area	5 acres
Minimum Lot Width	200 feet
Maximum Building Height	2 stories
Minimum Conditioned Floor Area	600 square feet

MINIMUM BUILDING SETBACKS

(THE FOLLOWING SETBACKS ARE MEASURED FROM THE EXISTING PROPERTY LINE)

Front yard	25 feet
Rear yard	25 feet
Side yard	25 feet

Corner lots or lots having double road frontage shall measure setbacks from both roads as front yards. For those properties abutting a collector or arterial roadway, refer to Osceola County Ordinance 84-2, as amended by Ordinance 89-25.

ACCESSORY STRUCTURE/CONDITIONAL USE

See Chapter 14, Conditional Use and Site Standard (C.U.S.S.)

Minimum Off-Street Parking	Refer to Chapter 7 of this Ordinance.
Signage	Refer to Chapter 15 of this Ordinance.
Landscaping	Refer to Chapter 10 of this Ordinance.

14.7 RURAL DEVELOPMENT - ONE ACRE (R-1; R-1M)

A. OBJECTIVES

To promote the orderly growth and development of the community, protect the value of property, improve the opportunity for local employment and economic activity, and achieve the intent of land use regulations. Further this district is established to:

1. Encourage the retention and development of suitable areas for agricultural production, and the provision of necessary goods and services required to support rural areas; and
2. Discourage the creation or continuation of conditions which could detract from the function, operation and appearance of rural areas by permitting uses of land and densities of population which more properly belong in urban places.

B. PERMITTED USES

The following uses listed below are authorized in this district, when such uses comply with the requirements contained in these regulations.

1. Single family residence, including customary uses such as a garage, carport and porch, when accessory and incidental to the principal dwelling;
2. Single family manufactured home and mobile home, including customary uses such as a

Memo

To: Conditional Use / Site Development Plan Applicant
From: Osceola County Planning Department
Subject: **Applying for a Conditional Use/Site Development Plan**

This package is intended to provide you with the information necessary for you to complete an application for a Conditional Use/Site Development Plan. The information requested to be a part of your application represents the minimum requirements for submittal under the Osceola Land Development Code. You are encouraged to submit whatever additional information you feel necessary to enhance the reviewers understanding of what is being proposed.

Following this page is a form which is intended to serve as the first two pages and/or the cover pages of your application. This form is available from this office via diskette or we will gladly email it to you. You are encouraged to take advantage of working directly on electronic copies of our form.

Following the two page form is a Conditional Use/Site Development Plan Checklist along with an application for Concurrency Review. **The Checklist is a listing of the information that is required to be included within your application in order for it to be processed.** The requirements for this information can be found in Chapters 2 and 17 of the Osceola County Land Development Code. The requirements for the Concurrency Review are found in Chapter 5 of the Land Development Code. The Land Development Code can be viewed on our Website (www.osceola.org). You are encouraged to study the appropriate portions of the Code before proceeding with your application. You are also encouraged to use the outline of this checklist as your table of contents for your application. In that way, you will know that your packet contains all of the information required by the Code.

Attached to this packet is a schedule of submission dates and hearings for the remainder of this year. Adherence to this schedule is based totally upon the thoroughness of the information you have provided. Our objective in this process is to make it as clearly understandable as we can so that you are able to gain all approvals you seek in a timely manner.

CONDITIONAL USE / SITE DEVELOPMENT PLAN APPLICATION PACKAGE

Osceola County Board of County Commissioners
 Planning Department
 1 Courthouse Square, Suite 1400
 Kissimmee, Florida 34741
 Phone (407) 343-3100 Fax (407) 343-2277

Appl. No.
 Date Received
 TRC Meeting
 OCPC Meeting
 BCC Meeting

GENERAL INSTRUCTIONS: This application must be completed and submitted to the Planning Department along with the required fee and additional information necessary to be considered by the Technical Review Committee. **The County can provide you with a copy of this form via email upon request.**

I APPLICANT INFORMATION

	Applicant	Owner	Agent/Engineer
Contact:	Larry Mattern	Kissimmee Utility Authority Florida Municipal Power Agency	Stanley Armbruster, P.E.
Address:	1701 West Carroll St. Kissimmee, FL 34741 8553 Commodity Circle Orlando, FL 32819	1701 West Carroll St. Kissimmee, FL 34741 8553 Commodity Circle Orlando, FL 32819	Black & Veatch Corporation 11401 Lamar Ave. Overland Park, KS 66211
Phone:	407-933-7777 ext. 1233 407-355-7767	407-933-7777 407-355-7767	913-458-2763
Fax:	407-847-0787 407-355-5794	407-847-0787 407-355-5794	913-458-2934
Email:	LMattem@KUA.COM	Not Applicable	ArmbrusterSA@BV.COM

II PROPERTY

LEGAL DESCRIPTION: Provide a complete legal description. Include the complete parcel number of the **property** as well as Plat Book and Page (if applicable) or attach a copy of the deed(s) of record for all lands within the project boundary. (Deeds of record are available from the County Clerks Office.) You may submit a digital CAD file of the boundary survey in AutoCAD or Microstation compatible form. If applicable, include the street address.

Parcel number: 29-25-28-0000-0010-0000 and 32-25-28-0000-0010-0000

Legal Description:

A copy of Kissimmee Utility Authority's deed is included herein.

III APPLICANT'S REQUEST (DETAILED DESCRIPTION INCLUDING ANY VARIANCES AND HOW THEY APPLY TO YOUR PROJECT)

The Kissimmee Utility Authority and the Florida Municipal Power Agency request conditional use/site development plan (CD/SDP) approval and a concurrency review for the construction of a new nominal 300 MW combined cycle combustion turbine unit (Unit 4) at the Cane Island Power Park (CIPP). No variances are requested.

Is the Project Residential? Yes ___ No <input checked="" type="checkbox"/>	Single Family? Yes ___ No
Is the Project Multi-Family? Yes ___ No <input checked="" type="checkbox"/>	
Is the Project Commercial? Yes ___ No <input checked="" type="checkbox"/>	
Square Footage and use of Buildings:	Miscellaneous Services Building = Approximately 9,350 sq. ft. Unit 4 specific operations (pumps, electrical equipment, water quality lab)
Size of the Property in Square Feet or Acres: 1,027 Acres	
Number of Lots _____ Tracts _____ Parcels <u>2</u>	Total: 1.027 Acres
Amount of Fee Submitted \$ 3,043.50	

IV GENERAL INFORMATION

Future Land Use Classification

Agriculture - Industrial is a permitted conditional use

Zoning Classification

Agriculture - Industrial is a permitted conditional use

Water Supply

Well <input checked="" type="checkbox"/>	Utility <input checked="" type="checkbox"/>	Utility Name: Tohopekaliga Water Authority
--	---	--

Method of Sewage Disposal

Septic <input checked="" type="checkbox"/>	Utility	Utility Name:
--	---------	---------------

Name of the Access Road: 6075 Old Tampa Highway	
Is the road county maintained? Yes <input checked="" type="checkbox"/> No	Is the road paved? Yes <input checked="" type="checkbox"/> No

V SITE INFORMATION

1. Public Safety: Where are the two nearest fire stations located?

Kissimmee Fire Department in Kissimmee, FL
Osceola County Fire Department in Kissimmee, FL

Do you propose any offsets for law enforcement impacts? If so, please specify.

No offsets proposed. Construction workforce anticipated to be local/regional. Only two additional permanent employees.

2. Residential: Will there be any impacts to the schools? If there is, how will the developer offset them?

No

Will there be a site dedicated to the school district?

No

If yes, which phase will contain the school site?

3. Access: What road will the project get access from?

Old Tampa Highway

Are there, or will there be sidewalks, if this development is within 2 miles of the school servicing the development? Not Applicable

Will this development construct sidewalks? Interior _____ Exterior

Not Applicable

4. Design: What design criteria will be used for this development? (ie: traditional neighborhood, townhome)

Florida Building Code, applicable power industry standards

5. Water/Sewer: Where are the closest water, sewer and re-use lines?

Water/Septic systems on-site. The Tohopekaliga Water Authority's re-use line is located adjacent to the southern boundary of the site.

To assist you in determining information on the water/sewer facilities, you may want to contact your local provider listed below:

Kissimmee area: 407-518-2160

St. Cloud area: 407-957-7222

Poinciana area: 407-933-5302 ext. 20

BVL area: 407-598-4160

****An accessible map is provided in the map room of the Growth Management Division to aid you in responding to this question.**

VI **CERTIFICATION** (Please check one)

I CERTIFY THAT, to the best of my knowledge and belief, all information supplied with this application is true and accurate, and that I am:

Landowner: A landowner, or his/her agent where authorized in writing, provided however that:

Where the fee owner has entered into a contract for the sale of the property, whether it be an agreement for deed, sales contract, or otherwise, then the purchaser may initiate the application when specifically authorized in the contract to do so or by another legal document authorizing same.

Where there is more than one owner, **then all such owners must jointly initiate application or petition.**

Trustee: Where the property is subject to a land trust agreement, the trustee may initiate the application when the trustee has submitted evidence that he/she is authorized by the trust document to do so, either individually or with trustees.

Corporation/Partnership: Where the fee owner is a corporation or partnership then the president or general partner may initiate the application and must provide proof that the corporation or partnership exists including Certificate from Secretary of State stating that the corporation is in good standing.

Association: Where the fee owner is an association, the association or its governing body may appoint an agent, in writing, to initiate the application on behalf of the association. Proof that the association exists must accompany the application.

DATE: _____

SIGNATURE

Owner/Agent/Corporation/Association

*****Please list signature of all owners of the property**

James C. Welsh, on behalf of Kissimmee Utility Authority as its President and General Manager

Please print name(s) listed above

******It is advised that the applicant inquire about the possibility of impact fee assessments on this project.**

**CONDITIONAL USE/SITE DEVELOPMENT PLAN
SUBMISSION REQUIREMENTS**

The applicant shall submit a site development plan and supporting documentation with each conditional use application. The following shall constitute a conditional use/site development plan and its supporting documentation.

A. A location map indicating existing zoning on the site and adjacent properties.

See attached drawing 147651-4STA-S1002

B. Site plan at no less than one (1) inch equals one hundred (100) feet portraying the following information:

See attached drawings 147651-4STA-S1000 and 147651-4STA-S1001

- < Lot lines and setbacks;
- < Location, shape, size and height of existing and proposed buildings, decorative walls and elements of entrance features; See attached drawing 147651-4STA-S1005.
- < Existing and proposed landscaping;
Site was landscaped in accordance with CU/SDP 92-86
- < Recreation facilities (if applicable); NA
- < Phases of development (if any); NA
- < Location of off-street parking; None, on-site parking provided.
- < Indication of exterior signage; NA
- < Estimated delineation of jurisdictional wetlands; See attached drawing 147651-4STA-S1000
- < Location of all trees to be preserved, including dripline of existing trees shown to be preserved; NA
- < Tree survey. NA

C. Narrative information indicating the following: See attached narrative

- < Gross and net acreage, net acreage shall indicate building area and preserve area;
- < Lot sizes (dimensions and square footage);
- < Building heights in feet and number of stories;
- < Building coverage for each lot indicated in percentage of gross lot area;
- < Amount of common open space in square feet together with percentage of gross lot area (if applicable);
- < Total number and size by type of trees provided and total trees (existing to be preserved and new plantings);
- < Parking required and provided;
- < Such other architectural and engineering data as may be required to evaluate the project; and,
- < Such other information requested, which due to the nature of the requested conditional use, will assist in the explanation of the operational aspects of the requested use.

Item C. Narrative Information

The CIPP site has three existing units that were certified under the Power Plant Siting Act, Site Certification Order, PA 98-38. Conditional use/site development plan approval was previously granted for Units 1, 2 (CU/SDP 91-90, now VOID), and Unit 3 under CU/SDP 92-86. The CIPP site encompasses 1,027 acres, of which 860 acres is in conservation easement granted to South Florida Water Management District and the Florida Fish and Wildlife Conservation Commission. Unit 4 will result in the permanent use of 9 acres in the power block area. The tallest structure will be the new Unit 4 exhaust stack. The height of the stack will be approximately 160 feet. Compliance with the tree removal ordinance was previously provided through issuance of CU/SDP 91-90. The new Unit 4 engineering design will be completed by the engineering/ procurement/ construction contractor when awarded at a later date.

**CONDITIONAL USE
SUBMITTAL CHECKLIST**

- X **Conditional Use / Site Development Plan application.**
- X **Authority:** The name of all parties having interest in the subject property, or certification that the applicant is authorized to sign the application as the agent pursuant to the Osceola Land Development Code, Chapter 2, Section 2.4. **All letters of authorization must be notarized.**
- X **Parcel Number:** Include parcel number of subject property. Parent parcel number may be referenced.
- X **Legal Description:** A legal description of the subject property sufficiently detailed so as to locate said property on county maps or aerial photographs sufficient for recording in public records. If the application includes multiple contiguous parcels, the legal description shall describe the perimeter boundary of the total area, but need not describe each individual parcel, unity of title is necessary however. Any legal description, which is not sufficiently detailed so as to locate said property on County maps shall be rejected and owner may be required to provide a certified survey boundary sketch. Please include a digital CAD file of the boundary survey in AutoCAD or Microstation compatible format (if applicable).
- X **Area Location Map:** The location of the subject property indicated on a Map or an aerial photograph. This map shall reference known major streets and geographic features with sufficient clarity as to be recognizable by the general public.
- X **Existing State of the Parcel:** A map or visual display that depicts all existing structures, easements, rights-of-ways, platted roads, rights of ingress and egress, drainage easements, drainage swales, etc. and any other features existing on the land in question.
- ~~X~~ **Affidavit:** If buildings or structures exist on the property, the applicant shall submit an affidavit that the buildings and structures will be removed or that the proposed use of the building, structures, and land is, or will be, in compliance with all applicable requirements of the land development code.
- X **Application for Concurrency Review:** For more information regarding Concurrency, please refer to Osceola Land Development Code, Chapter 15 or contact the Planning and Environmental Services Department at (407) 343-3100.
- X **Narrative** (Describing the proposed use in full detail, as well as the requirements listed in the Submission Requirements)
- X **Number of Copies:** **Twenty-eight (28) folded copies** each of the Site Development Plan, Narrative and supporting documents.
- X **Provide Proof of Ownership:** A copy of the tax bill or a print out from the Property Appraiser's office is required.
- X **Application Fee:** Up to and including 2 acres \$2,512.70 or **Greater than 2 acres \$3,043.50.**

2008 OSCEOLA COUNTY SCHEDULE FOR REVIEW AND HEARING

Application Submission Deadline	Review By Technical Review Staff	Hearing by the Planning Commission	Hearing by County Commissioners
Nov. 5(2007) → Nov. 19 (2007) →	Dec. 5(2007) → Dec. 19 (2007) →	Jan. 3 → Jan. 17 →	Feb. 4 → Feb. 25 →
Dec. 3 (2007) → Dec. 17 (2007) →	Jan. 9 → Jan. 23 →	Feb. 7 → Feb. 21 →	Mar. 10 → Mar. 24 →
Jan. 7 → Jan. 21 →	Feb. 6 → Feb. 20 →	Mar. 6 → Mar. 20 →	Apr. 14 → Apr. 28 →
Feb. 4 → Feb. 18 →	Mar. 5 → Mar. 19 →	Apr. 3 → Apr. 17 →	May 5 → May 12 →
Mar. 3 → Mar. 17 →	Apr. 9 → Apr. 23 →	May 8 → May 22 →	Jun. 9 → Jun. 23 →
Apr. 7 → Apr. 21 →	May 7 → May 21 →	Jun. 5 → Jun. 19 →	Jul. 14 → Jul. 28 →
May 5 → May 19 →	Jun. 4 → Jun. 18 →	Jul. 10 → Jul. 24 →	Aug. 11 → Aug. 25 →
Jun. 2 → Jun. 16 →	Jul. 9 → Jul. 23 →	Aug. 7 → Aug. 21 →	Sep. 8 → Sep. 22 →
Jul. 7 → Jul. 21 →	Aug. 6 → Aug. 20 →	Sep. 4 → Sep. 18 →	Oct. 13 → Oct. 27 →
Aug. 4 → Aug. 18 →	Sep. 3 → Sep. 17 →	Oct. 2 → Oct. 16 →	Nov. 3 → Nov. 17 →
Sep. 8 → Sep. 22 →	Oct. 8 → Oct. 22 →	Nov. 6 → Nov. 20 →	Dec. 8 → Dec. 22 →
Oct. 6 → Oct. 20 →	Nov. 5 → Nov. 19 →	Dec. 4 → Dec. 18 →	Jan. 5(2009) → Jan. 12(2009) →

NOTE: To be eligible for processing, requests must be accompanied by a complete application, supporting materials and the required fee. The deadline for submissions is 4:30pm on the dates listed above. Applications submitted after the deadline will follow the next review schedule.

Technical Review Staff meetings begin at 9:00am. The applicant will receive an agenda and comments prior to the meeting. Planning Commission meetings begin at 7:00pm and the agenda is available at the meeting. County Commission meetings begin at 1:30pm, unless otherwise noted, and the agenda is available online at www.osceola.org or at the meeting.

NOTICE TO APPLICANTS:

This application will require one or more public hearings. Attendance at all hearings by the Applicant or a representative is recommended. Inquiries from the public, the Planning Commission or the Board of County Commissioners for information or clarification may necessitate a response from the Applicant. Consequently, non-attendance may result in a vote for denial or continuance to a future hearing date.

Planning Office

P25
16.00
11,600.00

ORDKO 938 PG2 799

documentary Tax Pd. \$ 11000.00
 Intangible Tax Pd. 0
 MEL WILLS JR., CLERK OF COURT
 OSCEOLA COUNTY BY [Signature]

WARRANTY DEED

This Warranty Deed made this 4th day of October, 1990, between NATIONAL OIL & GAS, INC., an Indiana corporation, as the successor by merger with National Petroleum, Inc. and National Oil Corporation, (the "Grantor"), and KISSIMMEE UTILITY AUTHORITY, a body politic, (the "Grantee"), whose post office address is Post Office Box 423219, Kissimmee, Florida 34742:

WITNESSETH:

That the Grantor, for and in consideration of the sum of ten and 00/100 dollars (\$10.00) and other good and valuable considerations to Grantor in hand paid by the Grantee, the receipt of which is hereby acknowledged, has granted, bargained and sold to the Grantee the following parcel of land situated in Osceola County, Florida, as described on attached Exhibit "A".

Subject to:

- (1) Real estate taxes for the current year and subsequent years.
- (2) Zoning and other prohibitions, rules and regulations imposed by governmental authorities.
- (3) Utility easements, restrictions and reservations described on Exhibit "B"

The Grantor does hereby fully warrant title to the aforesaid parcel of land and will defend same against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, the Grantor has executed this Warranty Deed on the day and year first above written.

Signed, sealed and delivered in the presence of:
[Signature]
[Signature]

NATIONAL OIL & GAS, INC.
By: William Moser
Its President
[Corporate Seal]

STATE OF INDIANA
COUNTY OF WELLS

Before me the undersigned authority personally appeared WILLIAM MOSER, President of NATIONAL OIL & GAS, INC., well known to me to be the person named in this instrument and he acknowledged that he executed this instrument for the purposes therein expressed.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 4 day of October, 1990.

[Signature]
Notary Public

My Commission Expires: 4-18-92

Prepared by: William A. Zeiher, Esq.
William A. Zeiher, P.A.
2780 East Oakland Park Boulevard
Fort Lauderdale, Florida 33306

Exhibit "A"

Section 29 - The northwest quarter (NW 1/4) of the northwest quarter (NW 1/4) of the northwest quarter (NW 1/4); the east one half (E 1/2) of the northwest quarter (NW 1/4); the southwest quarter (SW 1/4) of the northwest quarter (NW 1/4); the east one half (E 1/2); and the southwest quarter (SW 1/4) all in Section 29, Township 25 South, Range 28 East.

Section 32 - The north one half (N 1/2), lying north of Atlantic Coastline Railroad right-of-way; and the west one half (W 1/2) of the southwest quarter (SW 1/4), lying north of the Atlantic Coast Line Railroad right-of-way, and all of the southeast quarter (SE 1/4), lying north of the Atlantic Coast Line right-of-way, all in Section 32, Township 25 South, Range 28 East.

The north one half (N 1/2) of the northeast one quarter (NE 1/4) of the southwest one quarter (SW 1/4), except the right-of-way of Atlantic Coast Line Railroad in Section 32, Township 25 South, Range 28 East, and less beginning at the southeast corner of north one half (N 1/2) of northeast one quarter (NE 1/4) of the southwest one quarter (SW 1/4) of said Section, run thence west 75.9 feet, thence north 19 10' west 39 feet to the southern boundary of Old State Road No. 2, thence north 63 14' east 96.3 feet, thence south 77.3 feet to the point of beginning, all lying and being in Coacola County, Florida, and except right-of-way of Old State Road No. 2.

2014

ORDKO 988 P62801

Exhibit "B"

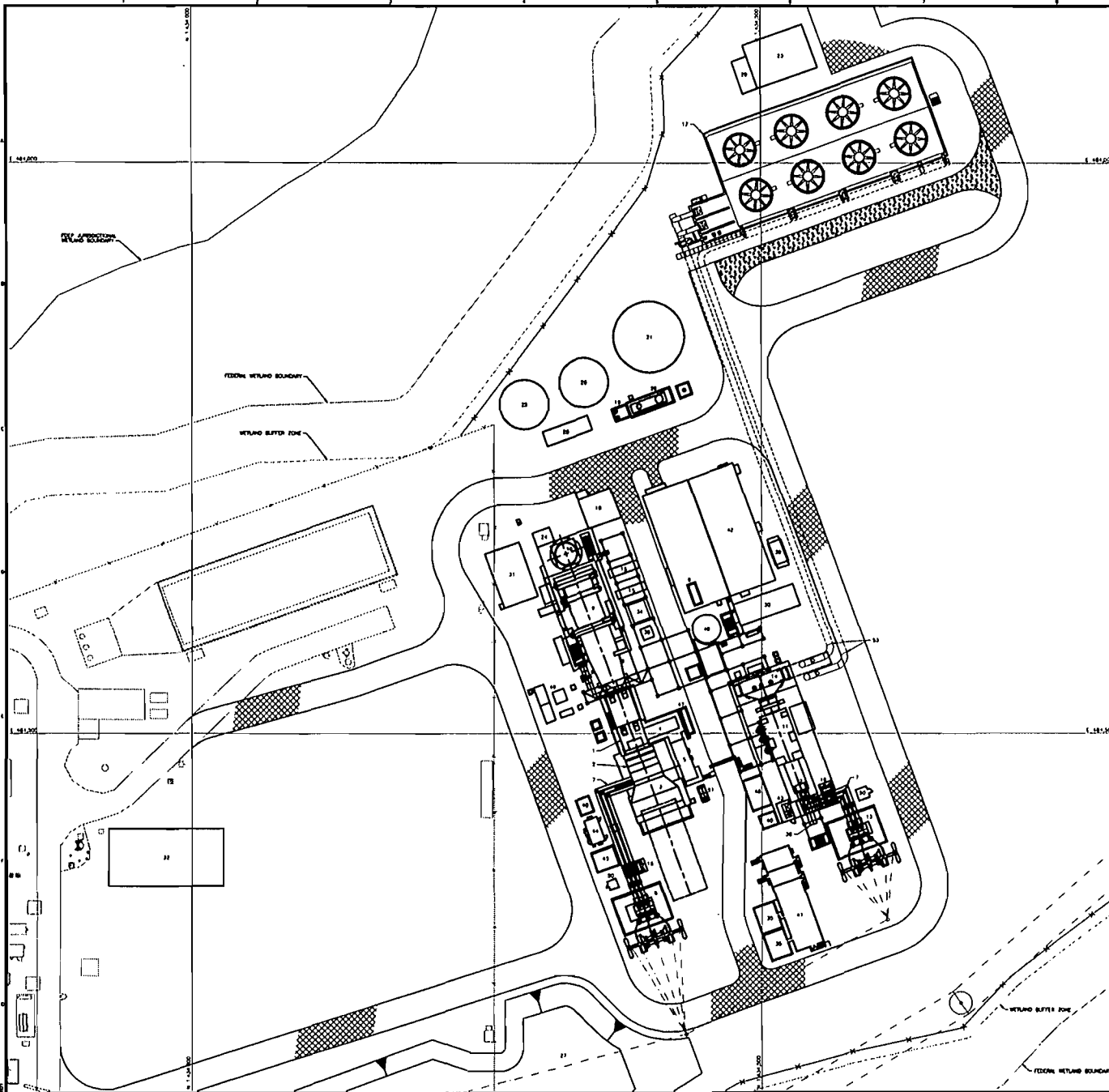
1. Encroachments, overlaps and any other matters which would be disclosed by an accurate survey.
2. Easement Deed recorded in Official Records Book 925, Page 210, of the Public Records of Osceola County, Florida.
4. Reservations to Trustees of the Tufts College, a non-profit Massachusetts corporation, contained in Deed Book 107, Page 564, Public Records of Osceola County, Florida, except those released by Deed from the Trustees of Tufts College to National Petroleum, Inc. dated July 29, 1974, and filed in Official Records Book 320, Page 25, of the Public Records of Broward County, Florida.
5. Reservations of Compass Rose Corporation under instrument recorded November 13, 1967, Official Records Book 168, Page 223, (Affects all property in question in Section 29, except the Northwest quarter (NW 1/4) of the Northwest quarter [NW 1/4] of the Northwest quarter (NW 1/4)], except those released by instrument of conveyance from Compass Rose Corporation to National Oil & Gas, Inc., dated March 27, 1986 and recorded in Official Records Book 815, Page 2150, of Osceola County, Florida. The above described property is also subject to the conditions of the General Release and Covenants Not To Sue, dated July 7, 1986, recorded in Official Records Book 815, Page 2152, of the Public Records of Osceola County, Florida.
6. An undivided one-half interest of all gas petroleum and petroleum products in J.W. Zantrell reserved in Warranty Deed recorded March 27, 1958 in Deed Book 146, Page 262, Public Records of Osceola County, Florida. Affects the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of Section 29.
7. Reservations by the Trustees of the Internal Improvement Fund of the State of Florida as contained in that certain Deed No. 132 dated February 10, 1941, and filed April 10, 1941, in Deed Book 104, Page 132, Public Records of Osceola County, Florida. Affects the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) in Section 29.
8. Easement to Florida Public Service Company as evidenced by said instrument dated October 25, 1928 and filed November 19, 1928 in Miscellaneous Book L, Page 620. Affects lands in the South one-half (S 1/2) of Section 32.
9. The warranties in this deed do not warrant access to the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of Section 29, Township 25 South, Range 28 East, nor title to the submerged land under the waters of Reedy Creek which meanders through the property described on Exhibit "A".

(tilnatcom.kis)

FILED, RECORDED AND
RECORD VERIFIED
MEL WILLS, JR, CLK CIR CI
OSCEOLA COUNTY
BY JB D.C.

900063897

REC'D OCT 18 AM 10:13



FACILITIES LEGEND	
NO	FACILITY
1	COMBUSTION FURNACE
2	COMBUSTION FURNACE GENERATOR
3	COMBUSTION FURNACE MOUNT AIR FILTER
4	COMBUSTION FURNACE ACCESSORY MODULE
5	COMBUSTION FURNACE ELECTRICAL PACKAGE
6	COMBUSTION FURNACE SOOT WATER BOSS
7	ISOLATED PHASE BUS DUCT
8	ET GENERATOR STARTUP TRANSFORMER
9	HEAT RECOVERY STEAM GENERATOR
10	HEAT RECOVERY STEAM GENERATOR EXHAUST STACK
11	STEAM PUMP
12	STEAM FURNACE GENERATOR
13	STEAM FURNACE GENERATOR STARTUP TRANSFORMER
14	CONDENSER
15	WATER FEED PUMPS
16	GENERATOR BREAKER
17	COOLING TOWER
18	COOL WINDROCK N. & WINDROCK STORAGE
19	WATERWAVE COLLECTOR BUMP
20	SEA WATER SERVICE
21	CONDENSATE WATER TANK
22	COOLING WATER CYCLE CHEMICAL FEED STRUCTURE
23	CEMEX ENCLOSURE
24	PIPE PROTECTION/PURCHASE WATER LINE
25	FIRE PROTECTION/PURCHASE WATER LINE
26	DETENTION POND
27	STEAM PUMP ENCLOSURE
28	COOLING WATER CYCLE CHEMICAL ENCLOSURE
29	CLOSED CYCLE COOLING WATER PUMPS/HEAT EXCHANGER
30	MATERIAL STORAGE TANK
31	SEA WATERING & AIR PRESSURE REGULATION STATION
32	WIND BREAKDOWN TANK
33	LIMIT AUXILIARY TRANSFORMER
34	STEAM FURNACE GENERATOR MOTOR REMOVAL
35	EMERGENCY WIND-UP WELLS
36	BLOCKDOWN TANK SWAMP & PUMPS
37	SAFE BLOWDOWN DETAIL GENERATOR
38	EXHAUST TRANSFORMER
39	POWER DISTRIBUTION CENTER
40	UNION/VENTILATION SERVICE BUILDING
41	STEAM EXHAUSTION ENCLOSURE
42	LONG COMPACTED WALKWAY (LCC)
43	WELLING TRANSFORMER
44	PLAS GAS CONDENSING EQUIPMENT
45	WELLING MODULE CONTAINMENT TRENCH AND WALL
46	STEAM FURNACE LINE OIL SOOT AREA
47	CONDENSATE STORAGE TANK
48	RELIEF HOUSE
49	COOLING WATER PIP

LEGEND	
-----	WETLAND BUFFER ZONE
-----	OVERHEAD TRANSMISSION LINE
-----	FIELD ASSIGNATIONS WETLAND BOUNDARY
-----	36" - 36" FENCE LINE
-----	CONCRETE TYPICAL HATCH

NOTES

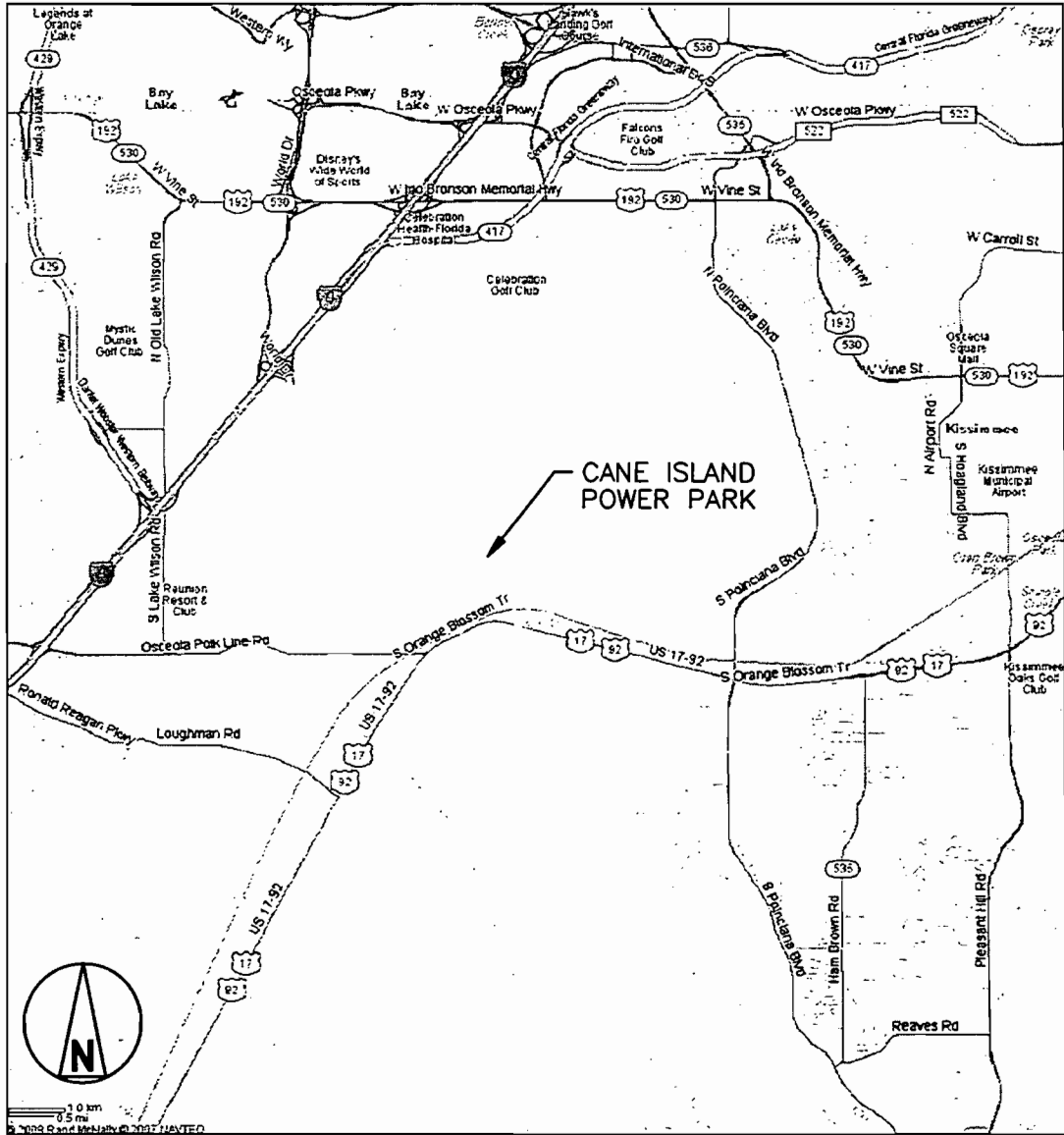
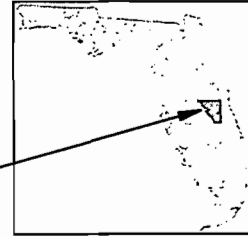
FOR PERMITTING PURPOSE ONLY
APPROVED FOR CONSTRUCTION

BLACK & VEATCH CORPORATION
FLORIDA MUNICIPAL POWER AGENCY
CALUMET ISLAND POWER PARK UNIT 4
LIMIT 4 SITE ARRANGEMENT

147851-4STA-31001
FIGURE 3.1-1

DATE	DESCRIPTION	BY	CHECKED
8/24/01	REVISED FOR CONSTRUCTION	...	...
...

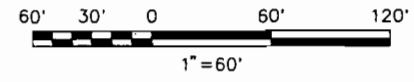
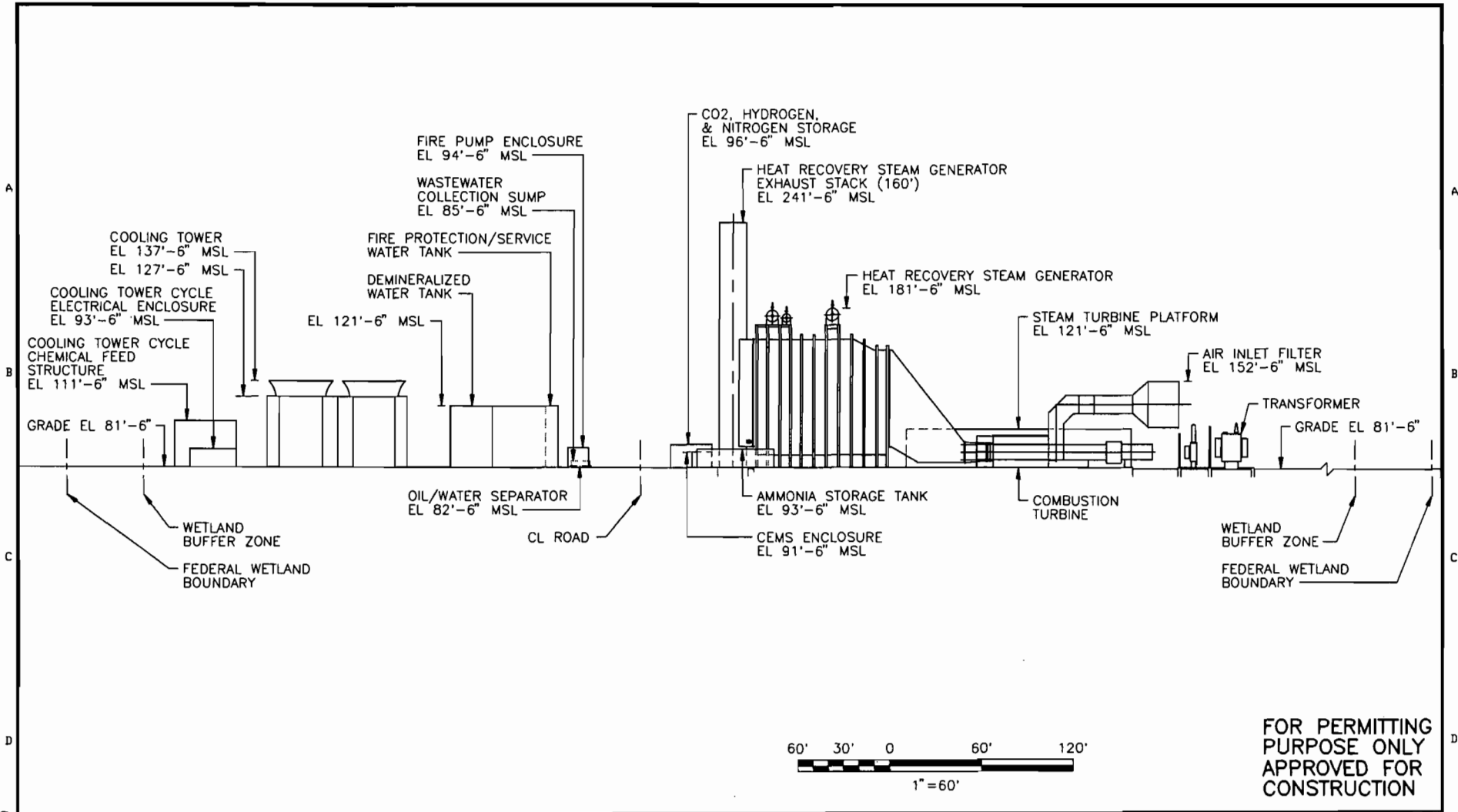
LOCATION OF OSCEOLA COUNTY IN THE STATE OF FLORIDA



RUM02825 ACAD 16.1s (LMS Tech)
 A1ASL011 A2 1=1
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ENGINEER	JMS	DRAWN	MRR	0	04/01/2008	ISSUED FOR CONSTRUCTION	MRR	JMS	MJS	MJS	SAA
CHECKED	MJS	DATE	04/01/2008	NO	DATE	REVISIONS AND RECORD OF ISSUE	DRN	DES	CHK	PDE	APP
FLORIDA MUNICIPAL POWER AGENCY CANE ISLAND POWER PARK UNIT 4						PROJECT	DRAWING NUMBER			REV	
						147651-4STA-S1002				0	
REGIONAL SITE LOCATION						CODE	FIGURE 2.1-1				
						AREA					

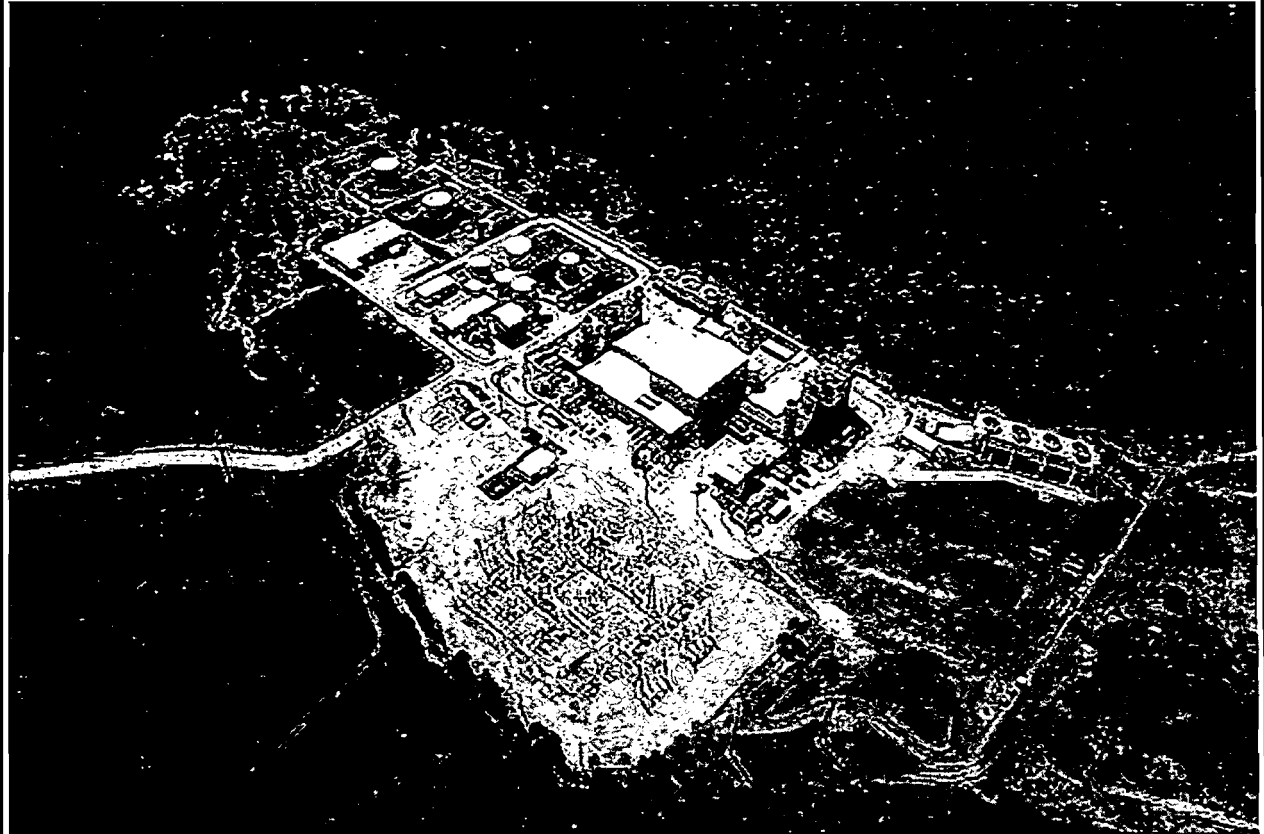
1 2 3 4 5 6 7




FOR PERMITTING
PURPOSE ONLY
APPROVED FOR
CONSTRUCTION

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A1/ASLO12 B1 1=1
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													FLORIDA MUNICIPAL POWER AGENCY CANE ISLAND POWER PARK UNIT 4			PROJECT 147651-4STA-S1005		DRAWING NUMBER 	REV 0	
0	04/01/2008	ISSUED FOR CONSTRUCTION				MRR	JMS	MJS	MJS	CAA	ENGINEER JMS		DRAWN MRR		PROFILE			CODE	FIGURE 3.2-1	
NO	DATE	REVISIONS AND RECORD OF ISSUE				DRN	DES	CHK	PDE	APP	CHECKED MJS		DATE 04/01/2008		AREA					



RUM02825 ACAD 16.1s (LMS Tech)
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 03/26/08 09:30:23

 BLACK & VEATCH CORPORATION														
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CHECKED	MJS	DATE	04/01/2008	NO	DATE	REVISIONS AND RECORD OF ISSUE	DRN	DES	CHK	PDE	APP			
FLORIDA MUNICIPAL POWER AGENCY CANE ISLAND POWER PARK UNIT 4						PROJECT	DRAWING NUMBER				REV			
						147651-4STA-S1006					0			
EXISTING STATE OF PARCEL						CODE								
						AREA								



Application Number: _____ CMS Tracking Number _____

OSCEOLA COUNTY

Application for Concurrency Review

CONCURRENCY MANAGEMENT

General instructions: Complete and submit this application to the Planning Office along with the application for public hearing. No fee is to be submitted with the concurrency application. Staff will determine whether the application is to be reviewed as a Preliminary Concurrency Application or a Final Concurrency Application. At such time comments will be generated to ask the applicant to pay either a non-refundable fee of \$302.50 for preliminary concurrency review or a non-refundable fee of \$344.95 for final concurrency review.

If the space provided is not adequate, please attach separate sheets and reference by item number. Should you wish to make an appointment to discuss the concurrency application or any other issues involving concurrency during the application process, please contact the Transportation Office at (407) 742-0589.

I. APPLICANT INFORMATION

Applicant Name: James C. Welsh, President and General Manager, Kissimmee Utility Authority
 Address: 1701 West Carroll Street
 Phone: 407-933-7777 Fax: 407-847-0787 E-mail: LMATTERN@KUA.COM
 Contact Name: Larry Mattern, Vice President, Power Supply
 Owner Name: Kissimmee Utility Authority

II. PROPERTY INFORMATION

Project Name: Cane Island Power Park - Unit 4
 Parcel Identification Number: 32-25-28-0000-0010-0000 and 29-25-28-0000-0010-0000
 Parcel
 Size: 1,027 Acres
 General Location: 6075 Old Tampa Highway

Project Description (including number of employees for non-residential development):
See narrative under Section IV
 Future Land Use
 Designation: Agriculture-Industrial permitted under conditional use Zoning: Industrial

III. TYPE OF REQUEST

This request is for a Concurrency Review for the following type of Development Order:

- Preliminary:**
- Zoning Map Amendment (PD or non-PD)
 - Preliminary Subdivision Plan (no construction authorized)
 - Conditional Use (New Construction)
 - Comprehensive Development Plan (CDP)

Please choose one of the following options:

- I hereby wish to defer capacity reservation until final Development Order (requires submittal of **Affidavit of Capacity Deferral**).
- I hereby wish to reserve capacity, if available, at this time (payment equal to 20% of the transportation impact fee is required within 30 days of the preliminary DO approval).

Please note: should there be insufficient capacity for any project, the applicant shall consult with Chapter 5.5.D.2, of the Osceola County Land Development Code (LDC) and choose one of the options outlined.

- Final:**
- Engineering Improvement Plan (EIP)
 - Final Subdivision Plan (FS)
 - Conditional Use (in existing building)

***A letter of water/sewer service intent and capacity from the service provider must be attached with all Final Concurrency Applications and applications requesting reservation. Applications will not be scheduled for the Planning Commission Hearing without the applicable utility service letter.**

IV. PROPOSED DEVELOPMENT (*)Include square feet and number of employees for non-residential. Use best available data for number of employees or use the numbers provided below**

Phase	Start Date	Finish Date	Attached Single-Family Units	Detached Single-Family units	Multi-Family Units	Commercial (2.5 per ksf)	Office (4.0 per ksf)	Industrial (1.8 per ksf)	Other (Describe)
Phase I	2009	2011						See Explanation	
Phase II									
Phase III									
Phase IV									
Phase V									
Total									

*** Timetable is binding upon reservation of capacities.**

- Explain**
- This proposed construction is for the installation of a new 300 MW combined cycle combustion turbine electrical generation unit and support facilities at the Cane Island Power Park. Construction will require 22 months and at peak construction a total of 313 construction workers will be on site - anticipated in month 15. Over the 22 month construction period, an average of 182 workers are expected per month.
 - Operation of Unit 4 will require two permanent employees that will be hired by KUA.
 - The Miscellaneous Services Building to be constructed as part of Unit 4 support facilities will house equipment and is approximately 7,200 square feet in size. This building will not be regularly or permanently occupied (no restrooms / no officers).

V. PUBLIC FACILITY IMPACTS

1. Water/Sewer

Utility Service Toho Water Authority
Location of nearest water line: on-site
Location of nearest sewer on-site septic system

A letter of water/sewer service intent and capacity from service provider must be attached with all applications requesting reservation and Final Concurrency Applications. Should central water/sewer be unavailable, the utility letter should also state the distance of the water/sewer lines nearest to the proposed project. Applications will not be scheduled for the Planning Commission Hearing without the applicable utility service letter.

2. Transportation

Based on the total build-out of the property, identify the primary roadway links (attached) that will provide access to the site: Old Tampa Highway

Using 7th Edition ITE generation rates, provide the total number of daily trips (ADT) and Peak Hour Trips (Peak) hour trips to be generated by the proposed development:

ADT: Occasional supply deliveries and addition of two operations staff associated with operations. Plant access will not back up normal traffic flows. Peak: _____

3. Drainage

Describe generally how the drainage system will function for the proposed _____ On-site stormwater will be directed to a new on-site stormwater detention pond designed and constructed to SFWMD requirements.

Describe any existing water management _____ Stormwater detention pond.

Indicate any constraints in the vicinity of the property which would effect or inhibit the ability to obtain

District permits: No constraints are present

4. Parks and Recreation **Not Applicable**

Based on a population calculation of 2.78 residents per single-family conventional unit, mobile home unit, or multi-family unit, the County requires one acre per 1,000 residents.

Residents, please provide the total number of park acres required by the proposed development:

Required Acres: _____ Proposed Acres: _____

5. Solid Waste

Based on best available data, provide the estimated pounds per day of solid waste generated for the proposed project at build-out: Approximately 5 pounds per day.

6. *Mass Transit* **Not Applicable**

Describe generally how the project will be served by mass transit. If served by LYNX, indicate the _____ that will provide service to the site: _____

CERTIFICATION

I certify that, to the best of my knowledge and belief, all information supplied with this application is true and accurate, and that I am:

- Owner of the property described herein;
- Party to an agreement for the purchase of this property; or
- An agent for the owner or purchaser of this property.

DATE: _____ SIGNATURE: _____

James C. Welsh on behalf of Owner, Kissimmee Utility Authority,
as President and General Manager.

Note: The current owner of the property must sign the application or a written authorization for applicant or agent to apply on the owner (s) behalf must accompany this request.

Please do not write below this line

FOR STAFF USE ONLY

Concurrency Impacts						
Phase	Roadway Link	Average Daily Trips (AADT)	Peak Hour Trips	Solid Waste (PPD)	Park required (Acres)	Estimated School Age*
I						
II						
III						
IV						
V						
Total						

* School age population is estimated at 20% of total population

- _____ The applicant has provided a letter of service intent from the Utility Provider.
- _____ Utility Provider _____
- _____ The effected roadways are operating at an acceptable LOS.
- _____ The effected roadways will continue to operate at an acceptable LOS.
- _____ There is available drainage capacity to serve the project at the appropriate LOS.
- _____ There is available solid waste capacity to serve the project at the appropriate LOS.
- _____ There is available parks capacity to serve the project at the appropriate LOS.
- _____ There is available mass transit capacity to serve the project at the appropriate LOS.

Recommended Conditions of Approval:

Concurrency Analyst: _____ Date Reviewed: _____

County Roadway Links (Road Name and Segment)

Bass Hwy.	Pine Grove Rd. / End
Bass Rd	Yowell Rd / US 192
Bill Beck Blvd.	US 192-441 (Bron. Hwy / Boggy Creek Rd.
Boggy Creek Rd. E	Narcoossee Rd (CR 15) / Boggy Creek Rd. W.
Boggy Creek Rd.	Boggy Creek Rd E / Osceola Pkwy
	Osceola Pkwy / Buenaventura Blvd.
	Buenaventura Blvd / Simpson Rd
	Simpson Rd / Bill Beck Blvd.
	Bill Beck Blvd. / US 192-441
Broadway	Emmett Street / Drury Ave
Brown Chapel Rd	13 th St. (US 192-441) / Lakeshore Blvd
Buenaventura Blvd	Boggy Creek Rd /Orange County Line
Canoe Creek Rd	Keenansville / Sullivan Rd
	Sullivan Rd / Deer Run Rd
	Deer Run Rd / Old Canoe Rd
	Old Canoe Rd / Nolte Rd
	Nolte Rd / US 192 - 441
Carroll St	Hoagland (@ Columbia) / Thacker Ave
	Thacker Ave / John Young Pkwy
	John Young Pkwy / Main Street (US 441)
	Main St (US 441) / Old Dixie Hwy
	Old Dixie Hwy / Michigan Ave
Celebration Ave	US 192 (Bronson Hwy) / Celebration Blvd
Celebration Blvd	Celebration Ave / World Drive
Central Ave	US 192 (Vine St) / Donegan Ave
Central Drury	Broadway (US 17-92) / US 192 (Vine St)
Clay Street	Thacker Ave / Pleasant Hill Rd
Columbia Ave	Hoagland Blvd / Thacker Avenue
	Thacker Avenue / John Young Pkwy
	John Young Pkwy / Central Ave
	Central Ave / Main Street (US 441)
Cord Ave	Deer Run Rd / Pine Tree Rd
Creek Woods Drive	Canoe Creek Rd / Michigan Ave
Cypress Pkwy	Marigold Ave / Pleasant Hill Rd
Deer Park Rd	US 192 / Nova Rd (CR 532)
Deer Run Rd	Canoe Creek Rd / Hickory Tree Rd
Denn John Lane	US 192 (Vine St) / Mill Slough Rd
Donegan Ave	Thacker Ave / John Young Pkwy
	John Young Pky / US 17-92-441 (O.B.T.)
	US 17-92-441 (O.B.T.) / Michigan Ave
Doverplum Ave	Pleasant Hill Rd / Koa Ave
Dyrer Blvd	Airport / Middle School
Eden Drive	Nova Rd / End
Emmett St	John Young Pky / Broadway
Enterprise-Mercantil	Poinciana Blvd / Ham Brown Rd
Fifth St., St Cloud	Vermont Ave / US 192-441
Florida Pkwy	Osceola Pkwy / Buenaventura Blvd
Florida Tumpike	Indian River county / US 192-441 Exit
	US 192-441 Exit / Osceola Pkwy
	Osceola Pkwy / Orange County Line

Formosa Gardens Blvd	Formosa Ave / US 192
Fortune Rd	Boggy Creek Rd (CR 530) / Lakeshore Blvd
Funie Steed Rd	Old Lake Wilson Rd / Goodman Rd
Goodman Rd	Championsgate Blvd / Funie Steed Rd
Griffin Rd	US 192 / World Drive
Ham Brown Rd	Reaves Rd / Us 17-92 (O.B.T.)
Hickory Tree Rd	US 192 / Deer Run Rd (east-west)
	Deer Run Rd / 13th St (US 192) (north-south)
Hoagland Blvd	Old Tampa Hwy/Clay St. / Suhl's Lane
	Suhl's Lane / US 192 (Vine Street)
	US 192 (Vine Street) / Columbia Ave
International Drive S.	US 192 (Bron. Hwy) / Orange County Line
Interstate 4	CR 532 (Osc-Polk Ln Rd) / World Drive
	World Drive / US 192 (Bronson Hwy)
	US 192 Bronson Hwy / Orange Co. Line
Jack Brack Rd.	Narcoossee Rd (CR 15) / Bay Branch Rd.
John Young Pkwy	US 192 / Columbia Ave
	Columbia Ave / Carroll St
	Carroll St / Orange County Line
Jones Rd	Narcoossee Road / End
Kings Hwy	Pine Island Rd / Neptune Rd
Kissimmee Park Rd	US 192 (Bronson Hwy) / Neptune Rd
	Neptune Rd / Old Canoe Creek Rd
	Old Canoe Creek Rd / Lake Tohopekaliga
Koa St	Rhododendrum / Doverplum Ave
Lakeshore Blvd	Fortune Rd / Partin Settlement Rd
	Partin Settlement Rd / Brown Chapel Rd
	Brown Chapel Rd / Mississippi Ave
	Clyde St / Neptune Rd
Lakeside Drive	Boggy Creek Rd / Boggy Creek Rd
Lindfields Blvd	Funie Steed Rd / US 192 (Bronson Hwy)
Main St	Drury Ave / US 192 (Vine Street)
Marigold Ave	Cypress Pkwy / EastBourne
Michigan Ave	Osceola Pkwy / Carroll St
	Carroll St / Donegan Ave
	Donegan Ave / US 192-441 (Vine St)
Michigan Ave, St Cloud	Lakeshore Blvd / US 192-441 (13 th St)
	US 192 (13 th St) / New Nolte Rd
	New Nolte Rd / Creek Woods Ave
Mill Slough Blvd	Michigan Ave / Denn John Lane
Narcoossee Rd	US 192-441 / 10 th St
	10 th St / Rummel Rd
	Rummel Rd / Orange County Line
Neptune Rd	US 17-92 (Broadway) / Lakeshore Blvd
	Lakeshore Blvd / Kings Hwy
	Kings Hwy / Partin Settlement Rd
	Partin Settlement Rd / Kissimmee Park Rd
	Kissimmee Park Rd / US 192-441
Nova Rd (CR 432)	US 192-441 / Orange County Line
Oak St	Dyer Blvd / Thacker Ave

County Roadway Links (Road Name and Segment)

Oak St	Thacker Ave / John Young Pkwy John Young Pkwy / US 17-92 (Main St) Main St / US 192-441 (Vine St)
Old Canoe Creek Rd	Kiss. Park Rd / Canoe Creek Rd (CR 523)
Old Dixie Hwy	Donegan Ave / Osceola Pkwy Osceola Pkwy / Orange County Line
Old Hickory Tree Lane	Nolte Road / US 192
Old Lake Wilson Rd (CR 545)	US 192 / Westgate Westgate / Indian Ridge Trail Indian Ridge Tr / CR 532 (Osc. Polk Line Rd)
Old Melbourne Rd	US 192 (Bronson Hwy) / Bronco Drive
Old Tampa Hwy	US 17-92 (S.O.B.T.) / Poinciana Blvd Pleasant Hill Rd / Poinciana Blvd
Old Vineland Rd	US 192 Brons. Hwy / US 192 Brons. Hwy
Orange Ave	Rummel Road / US 192-441 (13 th St)
Oren Brown Rd	Poinciana Blvd / US 192 (Bronson Hwy)
Osceola Pkwy	World Drive / Interstate 4 Interstate 4 / Southern Connector Southern Connector / Vineland Rd (SR 535) Vineland Rd (SR 535) / John Young Pkwy John Young Pkwy / US 17-92-441 (O.B.T.) US 17-92-441 (O.B.T.) / Floridas Turnpike Floridas Turnpike / Buenaventura Blvd Buenaventura Blvd / Boggy Creek Rd
Osceola -Polk Line Rd (CR 532)	US 17-92 / Old Lake Wilson Rd Old Lake Wilson Rd / Interstate 4
Partin Settlement Rd	Neptune Rd / US 192-44 (Bronson Hwy.) US 192-441 / Lakeshore Blvd
Pine Grove Road	US 192-441 / Nova Rd (CR 532)
Pine Tree Road	Canoe Creek Rd (cord) / Hickory Tree Rd
Pleasant Hill Road	Cypress Pkwy / Poinciana Blvd Poinciana Blvd / Stewart Blvd Stewart Blvd / US 17-92 (John Young Pkwy) US 17-92 (John Young Pkwy) / Clay St
Poinciana Blvd	Pleasant Hill Rd / Reaves Rd Reaves Rd / Us 17-92 US 17-92 / One Mile N Of CSX RR One Mile N Of CSX RR / Oren Brown Rd Oren Brown Rd / US 192 (Bronson Hwy) US 192 (Bronson Hwy) / Vineland Rd SR 535
Polynesian Isle Blvd	US 192 / Vineland Rd (SR 535)
Princess Way -7 dwarf	US 192 (Bronson Hwy) / Old Vineland Rd
Reaves Rd	Poinciana Blvd / Pleasant Hill Rd
Royal Palm Rd	Buenaventura Blvd / Boggy Creek Rd
Rummel Rd	Mississippi Ave / Narcoossee Rd (CR 15)
Sand Hill Rd	Old Lake Wilson Rd / Formosa Gardens
Shady Lane	Partin Settlement Rd / US 192-44(B. Hwy)
Sherberth Rd	US 192(Bronson Hwy / Orange County Line)
Siesta Lago Drive	US 192 (Bronson Hwy) / Poinciana Blvd
Simpson Rd	Boggy Creek Rd / US 192-441

Southport Rd	Pleasant Hill Rd / Southport
SR 60	Yeehaw JCT / Polk County
SR 417 Southern Conn.	County Line / Osceola Pkwy Osceola Pkwy / Celebration Ave Celebration Ave / Interstate 4
Tenth St	Narcoossee Rd (CR 15) / Michigan Ave Michigan Avenue / US 192-441 (13 th St)
Thacker Ave	Clvde St / Oak St Oak St / US 192 (Vine St) US 192 (Vine St) / Columbia St Columbia St / Carroll St
US 17-92 (S.O.B.T)	Polk County Line / Osc. Polk Line Rd (CR532) Osc. Polk Ln Rd (CR532 / Old Tampa Hwy Old Tampa Hwy / Poinciana Blvd Poinciana Blvd / Ham Brown Rd Ham Brown Rd / Pleasant Hill Rd
US 17-92 (John Young)	Pleasant Hill Rd / Martin St Martin St / Emmett St Emmett St / Oak St Oak St / US 192
US 17-92-441 (O.B.T.)	Orange County Line / Osceola Pkwy Osceola Pkwy / Carroll St Carroll St / Donegan Ave
US 17-92-441 (Main St)	Donegan Ave / US 192-441 (Vine St)
US 192	Lake County Line / Black Lake Rd Black Lake Rd / World Drive World Drive / Interstate 4 I-4 / Parkway Blvd Parkway Blvd / Poinciana Blvd Poinciana Blvd / Vineland Rd (SR 535) Vineland Rd (SR 535) / Hoagland Blvd Hoagland Blvd / Thacker Ave Thacker Ave / Main St
US 192-441	Main Street (US 441) / Michigan Ave Michigan Ave / Boggy Creek Rd Boggy Creek Rd / Shady Ln
US 192-441	Shady Lane / Partin Settlement Rd Partin Settlement Rd / Kissimmee Park Rd Kissimmee Park Rd / Columbia / Budinger Columbia / Budinger / Mississippi Ave Mississippi Ave / Narcoossee Rd (CR 15) Narcoossee Rd CR 15 / Nova Rd CR 532 Nova Rd (CR 532) / Pine Grove Rd Pine Grove Rd / Old Melbourne Hwy Old Melbourne Hwy / SR 15 Holopaw SR 15 Holopaw / Brevard County Line
US 441 (SR 15)	Yeehaw JCT / Kenansville Kenansville / Holopaw
Vermont Ave	Lakeshore Blvd / US 192-441 (13 th St)
SR 535 (Vineland Rd)	US 192 (Bronson Hwy) / Orange County Line
Woodcrest Blvd	Michigan Ave / Bill Beck Blvd
World Drive	I-4 / US 192 (Bronson Highway) US 192 (Bronson Hwy) / Osceola Pky



Application Number:

Tracking Number:

**Osceola County Affidavit of Capacity Deferral
Concurrency Management System**

I, _____ acting as the agent and /or owner, hereby defer Concurrency Reservation until the final development order for the following project:

Kissimmee Utility Authority _____.

By deferring reservation, I understand that capacities are not guaranteed to me at the time of Final Development Order Concurrency Review.

Applicant

Kissimmee Utility Authority

Owner

Witness

Witness

**STATE OF FLORIDA
COUNTY OF OSCEOLA**

The forgoing document was (or affirmed) and subscribed to before me this day of _____, 2007, by _____

Who is personally known to me or who produced an identification.

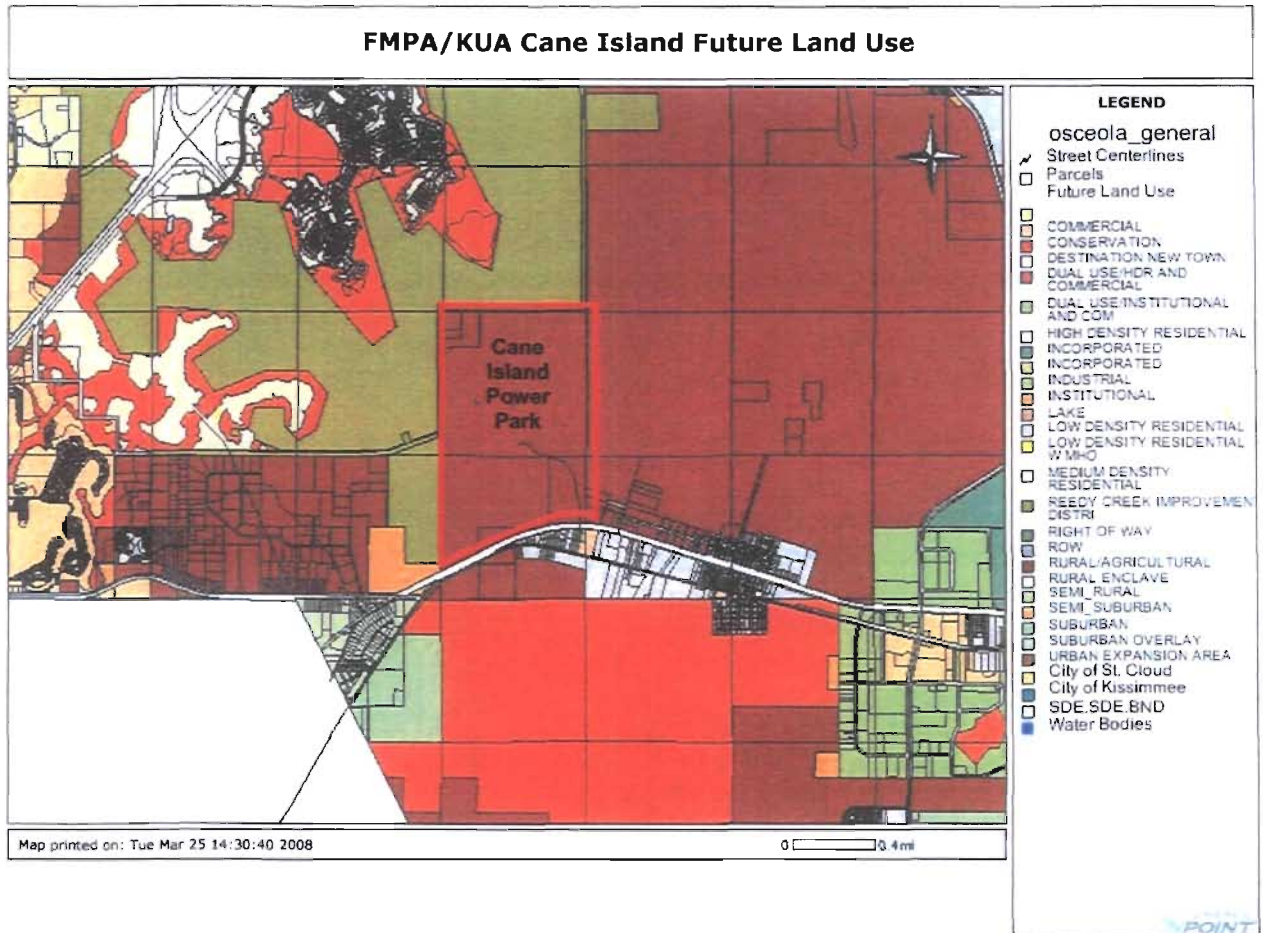
Public Notary Seal:

Signature of Notary

10.4 Land Use Plan Descriptions

A copy of the Osceola County Future Land Use Designation element of the Comprehensive Plan of Osceola County applicable to the CIPP site is included herein.

PRINT:FMPA/KUA Cane Island Future Land Use



Disclaimer: .
Comments: .

<http://maps.osceola.org/public/onpoint>

**OSCEOLA COUNTY
COMPREHENSIVE PLAN**

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FUTURE LAND USE

**Adopted
April 22, 1991**

**Amended Thru
April 30, 1997**

Ordinance Numbers

93-11	95-12
93-14	96-24
93-15	96-25
94-11	97-7
94-22	

Updated: 4-24-97

the understanding that services and facilities will be available to support the higher intensity land uses.

10. Suburban Residential

The suburban area at a maximum density of three dwelling units per acre, allow the highest residential density outside of the urban service area. It is composed in large part by committed or built areas which are outside of the service areas of the four primary central and water purveyors. It also factors as a transition area for the urban low density area which allows five dwelling units per acre.

Rezoning to residential zoning districts shall comply with the three dwelling unit per acre maximum density. Assuming that the appropriate services and facilities are available and the development is properly designed, an applicant may expect a rezoning to be granted in the upper density range. However, this density may be limited by existing zoning and residential development in the vicinity, i.e., a project's intensity must be compatible with surrounding residential properties.

11. Semi-Suburban

The Semi-Suburban land use category is primarily residential in nature. It allows a maximum density of one dwelling unit/acre.

12. Semi Rural

This land use category is primarily rural residential in nature. It is intended to provide an opportunity for residents to enjoy a rural lifestyle that includes limited agricultural uses such as the keeping of animals. This land use category also provides a transition in density from the Suburban categories to the Rural/Agricultural land use category. Residential development will be allowed at a maximum of one unit per two acres.

13. Rural/Agricultural

The Rural/Agricultural land use category is intended to recognize and designate those areas of the county which are currently used primarily for agricultural purposes and are expected to remain in those uses during the 20-year planning time-frame. These properties encompass a majority of Osceola County and include property used for cattle ranching, sod farming and citrus production.

The allowable maximum density for this land use category shall be one dwelling unit per five acres. As a part of the Land Development Code adopted pursuant to this Plan criteria for subdivisions in the rural/agricultural area will be addressed to assure that appropriate standards exist to recognize the land use category specific constraints and needs.

Agriculture is one of the major industries of Osceola County. Based on the amount of land designated for agriculture, the revenue generated and the number of employees, one of the most important resources of the County to be preserved is agricultural land. While planning for rural areas, the following issues must be considered: maintaining the rural character of rural areas by separation of urban and rural land uses, protecting natural systems and environmentally sensitive areas, permitting the conversion of agricultural lands to other uses when and where appropriate, and maximizing the efficient provisions and use of public facilities and services.

The further intent of the agricultural designation is to protect agricultural land from encroachment by urban and even low density residential development. Such development impacts the natural environment and may cause such potential adverse impacts as erosion, run-off, sedimentation and flood damage, all of which render the impacted land less adaptive to agricultural productivity.

However, it is recognized that a mechanism should exist to allow well planned developments that operate as new rural communities to provide an attractive and functional mix of working, shopping and recreational manner. As an incentive for private industry to promote this goal, it is the policy of Osceola County to allow new rural communities within the rural/agricultural area at a density greater than shown on the Future Land Use Map if such rural communities are otherwise consistent with the goals, objectives, and policies in this Plan. A new rural community may consist of a single development or of multiple developments planned on an areawide basis. Following the adoption of this Plan, a Plan amendment shall be required for the approval of each new rural community. Data and Analysis shall be provided which establishes that sufficient growth will occur to justify the need for the rural community, taking into account the increased demand, if any, that will be created by the rural community. A new rural community must meet the following requirements:

1. The Rural Communities must include residential, commercial and office or industrial uses and have a minimum parcel size of 5,000 acres.
2. The Rural Community must include development that potentially meets 100% of the neighborhood and community shopping needs and 50% of the employment needs for the residents of the rural community; the non-residential uses shall be developed and constructed concurrently with the residential uses in a timely manner to ensure that the rural community develops in a mixed nature as proposed.
3. If the Rural Community consists of a single development, the development must be designated as a Florida Quality Development or development of Regional Impact pursuant to Chapter 380, Florida Statutes and submitted as a planned unit development.
4. If the Rural Community consists of multiple developments, the multiple developments must be approved as an area wide development of regional impact pursuant to Chapter 380, Florida Statutes and submitted as a planned unit development.

5. Submittal of an application for approval of a Rural Community as an FQD or DRI must be accompanied with an application for an amendment to the Future Land Use Map. The application shall include data and analysis that substantiate that sufficient population growth will occur in Osceola County to justify the need for the land use as proposed to be allocated as part of the Rural community. Approval of a Rural Community will require a plan amendment.
6. The Rural Community may not have a density greater than two dwelling units per gross acre if it has 50% to 70% open space, and a density greater than three dwelling units per gross acre if it has more than 70% open space.
7. Residential densities must be linked to a pedestrian-oriented town center, with higher density development generally occurring in the core of the town center.
8. The Rural Community must utilize central water and sewer services.
9. The Rural Community must contain a mix of land uses that complement single-use developments that already exist in the area.
10. The Rural Community must have at least 50% open space; the development activities must not encroach upon wetlands except for crossings; and measures must be taken to conserve environmentally sensitive lands. "Open Space" consists of wetlands, conserved environmentally sensitive lands and agricultural lands. Open space may be used for passive recreational activities in conjunction with the underlying use of the land.
11. At least 20% of the residences constructed within the Rural Community must be affordable to low-income households.
12. The development shall bear all costs for extension of services and facilities needed to serve the development.
13. The project will not be approved unless financial assurances are provided that the levels of service for any County or State facility will not be lowered by the development below the adopted standard.

14. Urban Service Line

In the northwest part of the County is an Urban Service Line. This line is a composite of the areas within the sewer and water service areas of the Cities of St. Cloud (5-year projection) and Kissimmee and Orange/Osceola Utilities. Within this area are the

POLICY 2.1.7.1

Public utilities which provide essential service to existing and future land uses authorized by this plan shall be permitted in all future land use categories provided the performance standards in the Power Plant Siting Act, Transmission Line Siting Act, Osceola County Future Land Use Element, Osceola County Zoning Regulations, and any other applicable land development regulations are met.

OBJECTIVE 2.1.8

Assist the Osceola County Historical Society in identifying and providing landmark designation for historically significant housing in the County.

POLICY 2.1.8.1

See Policy 6.1.1.2 of the Housing Element.

POLICY 2.1.8.2

See Policy 6.1.1.3 of the Housing Element.

OBJECTIVE 2.1.9

By 1992, the County shall inventory those areas identified as blighted i.e. developed areas containing substandard or lacking infrastructure including roads, central sewer and central water and initiate a program to address those needs.

POLICY 2.1.9.1

Osceola County shall prioritize needed improvements and secure funding for said improvements through local funding, interlocal agreements with St. Cloud and Kissimmee and grants from various state and federal agencies.

OBJECTIVE 2.1.10

Osceola County shall coordinate with and participate in the implementation of the Resource Management Plan for the Lower Kissimmee River and Taylor Creek Drainage Basins to the extent that such would not result in inverse condemnation.

POLICY 2.1.10.1

The intent of the Resource Management Plan for the Lower Kissimmee River and Taylor Creek Drainage Basin is implemented by the following Osceola County Comprehensive Plan policies:

Uplands Protection

POLICY 8.1.6.3

The County shall replace County Ordinance 86-8, 87-15 (Tree Protection Ordinance) with rules and standards for land clearing and landscaping which are inclusive of and supersede the Tree

10.5 State Permits and Applications

As an existing certified power plant site, KUA and FMFA hold an active Site Certification Order (PA 98-38) for the CIPP and associated facilities. Certification of Unit 4 and modification of the Conditions of Certification are required for installation and operation of Unit 4. The following applications have been prepared to support state agency reviews of these requests.

10.5.1 Environmental Resource Permit Application

FMFA and KUA will request that the construction, operation, and environmental impacts associated with Unit 4 be reviewed by SFWMD through interagency agreement with DEP during the certification process. The SFWMD has the complete storm water permitting history with the CIPP. An ERP Application demonstrating compliance with the state storm water permitting requirements is included herein to assist in this review.

No impacts to waters/wetlands, and no adverse impacts to threatened or endangered species are anticipated from construction or operation of Unit 4.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

**FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION/
WATER MANAGEMENT DISTRICTS/
U.S. ARMY CORPS OF ENGINEERS**

**JOINT APPLICATION FOR
ENVIRONMENTAL RESOURCE PERMIT/
AUTHORIZATION TO USE
STATE OWNED SUBMERGED LANDS/
FEDERAL DREDGE AND FILL PERMIT**

INSTRUCTIONS FOR JOINT APPLICATION FOR ENVIRONMENTAL RESOURCE PERMIT/AUTHORIZATION TO USE STATE OWNED SUBMERGED LANDS/FEDERAL DREDGE AND FILL PERMIT

INTRODUCTION

Attached is a joint application for:

- 1) activities regulated under Part IV of Chapter 373, F.S.;
- 2) activities which require authorization to use state owned submerged lands; and
- 3) activities which require a federal dredge and fill permit.

Certain activities may qualify for an exemption. If an activity qualifies for an exemption, an application is not required, although the use of this application form is the most expeditious way for the agencies to make the determination that the activity qualifies for an exemption. Attachment 2 lists activities and type of permit required for each activity.

If you have any questions please contact the staff of the nearest office of either the Florida Department of Environmental Protection (DEP) or a Water Management District (WMD).

PROCESSING AGENCY/DISTRICT SERVICE CENTERS

The Department of Environmental Protection ("Department" or "DEP") permits some types of activities, and the Water Management Districts ("WMDs") permits others. See Attachment 1, DEP/WMD Permitting Responsibilities, if you do not know which agency should receive your application. Environmental Resource Permit Applications shall be made to the appropriate District/Department Service Center serving the area in which the activity is proposed. Attachment 4 designates the appropriate Services Centers for each geographic area.

COPIES/APPLICATION FEES

Submit an original signed application form plus **four** copies of the form, and **five** complete sets of all the requested drawings and other information to the appropriate DEP or WMD office. Submit the appropriate fee with your application. Application fees are listed in Attachment 3.

DISTRIBUTION TO THE U.S. ARMY CORPS OF ENGINEERS

When activities are proposed in, on or over wetlands or other surface waters, a copy of the application will be forwarded to the Army Corps of Engineers (ACOE) by the reviewing agency. The ACOE will advise you of any additional information required to obtain a federal dredge and fill permit. It is not necessary for the applicant to submit a separate application to the ACOE. The information requested in this application form may be more than required to make a complete application to the Corps. However, it is useful and essential for subsequent evaluation. Reducing unnecessary paperwork and delays is a continuing Corps goal.

DISTRIBUTION TO THE WATER MANAGEMENT DISTRICT FOR STATE LAND APPROVAL

The Water Management District will process all applications for authorization to use state owned submerged lands for those projects for which the WMD also processes the Environmental Resource Permit pursuant to Rule 18-21, F.A.C.

FOR AGENCY USE ONLY	
ACOE Application # _____	DEP/WMD Application # _____
Date Application Received _____	Date Application Received _____
Proposed Project Lat. _____ N _____ O	Fee Received _____
Proposed Project Long. _____ N _____ O	\$ _____
	Fee Receipt # _____

SECTION A

Are any of the activities described in this application proposed to occur in, on, or over wetlands or other surface waters?

yes no

Is this application being filed by or on behalf of a government entity or drainage district?

yes no

A. Type of Environmental Resource Permit Requested (check at least one)

Noticed General - include information requested in Section B.

Standard General (Single Family Dwelling)-include information requested in Sections C and D.

Standard General (all other projects) - include information requested in Sections C and E.

Individual (Single Family Dwelling) - include information requested in Sections C and D.

Individual (all other projects) - include information requested in Sections C and E.

Conceptual - include information requested in Sections C and E.

Mitigation Bank Permit (construction) - include information requested in Section C and F.
(If the proposed mitigation bank involves the construction of a surface water management system requiring another permit defined above, check the appropriate box and submit the information requested by the applicable section.)

Mitigation Bank (conceptual) - include information requested in Section C and F.

B. Type of activity for which you are applying (check at least one)

Construction or operation of a new system including dredging or filling in, on or over wetlands and other surface waters.

Alteration or operation of an existing system which was not previously permitted by a WMD or DEP.

Modification of a system previously permitted by a WMD or DEP. Provide previous permit numbers. Site Certification PA 98-38

Alteration of a system Extension of permit duration Abandonment of a system

Construction of additional phases of a system Removal of a system

C. Are you requesting authorization to use State Owned Lands? yes no
(If yes include the information requested in Section G.)

D. For activities in, on or over wetlands or other surface waters, check type of federal dredge and fill permit requested:

Individual Programmatic General

General Nationwide Not Applicable

E. Are you claiming to qualify for an exemption? yes no
If yes provide rule number if known. _____

OWNER(S) OF LAND	ENTITY TO RECEIVE PERMIT (IF OTHER THAN OWNER)
NAME Kissimmee Utility Authority (KUA)	NAME KUA/FLORIDA MUNICIPAL POWER AGENCY (FMPA)
ADDRESS 1701 W.Carroll Street	ADDRESS
CITY, STATE, ZIP Kissimmee, FL 34741	CITY, STATE, ZIP
COMPANY AND TITLE KUA	COMPANY AND TITLE
TELEPHONE (407) 933-7777 FAX (407) 847-0787	TELEPHONE FAX
AGENT AUTHORIZED TO SECURE PERMIT (IF AN AGENT IS USED)	CONSULTANT (IF DIFFERENT FROM AGENT)
NAME Mike Soltys	NAME
COMPANY AND TITLE Black & Veatch	COMPANY AND TITLE
ADDRESS 11401 Lamar	ADDRESS
CITY, STATE, ZIP Overland Park, KS	CITY, STATE, ZIP
TELEPHONE (913) 458-7563 FAX (913) 458-2934	TELEPHONE () FAX ()
<p>Name of project, including phase if applicable <u>Cane Island Power Park Unit 4</u></p> <p>Is this application for part of a multi-phase project? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p> <p>Total applicant-owned area contiguous to the project <u>1,027</u> ac</p> <p>Total project area for which a permit is sought <u>24.2</u> ac See attached additional information sheet.</p> <p>Impervious area for which a permit is sought <u>5.03</u> AC See attached additional information sheet.</p> <p>What is the total area (metric equivalent for federally funded projects) of work in, on, or over wetlands or other surface waters? Not Applicable</p> <p>___ acres ___ square feet ___ hectares ___ square meters</p> <p>Number of new boat slips proposed. <u>n/a</u></p> <p>Project location (use additional sheets, if needed)</p> <p>County(ies) <u>Osceola County</u></p> <p>Section(s) <u>29</u> Township <u>25 S</u> Range <u>28 E</u></p> <p>Section(s) <u>32</u> Township <u>25 S</u> Range <u>28 E</u></p> <p>Land Grant name, if applicable <u>n/a</u></p> <p>Tax Parcel Identification Number <u>29-25-28-0000-0010-0000 and 32-25-28-0000-0010-0000</u></p> <p>Street address, road, or other location <u>6075 Old Tampa Highway</u></p> <p>City, Zip Code if applicable <u>Intercession City, Florida 33848</u></p>	

Describe in general terms the proposed project, system, or activity:

The Kissimmee Utility Authority and Florida Municipal Power Agency propose to construct, install and operate a nominal 300 MW combined cycle combustion turbine, Unit 4.
 The storm water pond for Unit 3 will be modified to receive, treat, and discharge site runoff from Units 3 and 4.

If there have been any pre-application meetings, including at the project site, with regulatory staff, please list the date(s), location(s), and names of key staff and project representatives. _____

Please identify by number any MSSW/Wetland resource/ERP/ACOE Permits pending, issued or denied for projects at the location, and any related enforcement actions.

Agency	Date	No.\Type of Application	Action Taken
N/A			

Note: The following information is required **only** for projects proposed to occur in, on or over wetlands that need a federal dredge and fill permit and/or authorization to use state owned submerged lands and is not necessary when applying solely for an Environmental Resource Permit. Please provide the names, addresses and zip codes of property owners whose property directly adjoins the project (excluding applicant). Please attach a plan view showing the owner's names and adjoining property lines. Attach additional sheets if necessary.

1. N/A	2.
3.	4.

By signing this application form, I am applying, or I am applying on behalf of the applicant, for the permit and any proprietary authorizations identified above, according to the supporting data and other incidental information filed with this application. I am familiar with the information contained in this application and represent that such information is true, complete and accurate. I understand this is an application and not a permit, and that work prior to approval is a violation. I understand that this application and any permit issued or proprietary authorization issued pursuant thereto, does not relieve me of any obligation for obtaining any other required federal, state, water management district or local permit prior to commencement of construction. I agree, or I agree on behalf of my corporation, to operate and maintain the permitted system unless the permitting agency authorizes transfer of the permit to a responsible operation entity. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.

Typed/Printed Name of Applicant (If no Agent is used) or Agent (If one is so authorized below)

Signature of Applicant/Agent

Date

(Corporate Title if applicable)

AN AGENT MAY SIGN ABOVE ONLY IF THE APPLICANT COMPLETES THE FOLLOWING:

I hereby designate and authorize the agent listed above to act on my behalf, or on behalf of my corporation, as the agent in the processing of this application for the permit and/or proprietary authorization indicated above; and to furnish, on request, supplemental information in support of the application. In addition, I authorize the above-listed agent to bind me, or my corporation, to perform any requirement which may be necessary to procure the permit or authorization indicated above. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.

Typed/Printed Name of Applicant

Signature of Applicant/Agent

Date

(Corporate Title if applicable)

Please note: The applicant's original signature (not a copy) is required above.

PERSON AUTHORIZING ACCESS TO THE PROPERTY MUST COMPLETE THE FOLLOWING:

I either own the property described in this application or I have legal authority to allow access to the property, and I consent, after receiving prior notification, to any site visit on the property by agents or personnel from the Department of Environmental Protection, the Water Management District and the U.S. Army Corps of Engineers necessary for the review and inspection of the proposed project specified in this application. I authorize these agents or personnel to enter the property as many times as may be necessary to make such review and inspection. Further, I agree to provide entry to the project site for such agents or personnel to monitor permitted work if a permit is granted.

Typed/Printed Name of Applicant

Signature of Applicant/Agent

Date

(Corporate Title if applicable)

SECTION B NOT APPLICABLE

**INFORMATION FOR NOTICED
GENERAL ENVIRONMENTAL RESOURCE PERMITS**

INSTRUCTIONS: To qualify for a Noticed General Permit (NGP) for specific activities, the project must strictly comply with all of the terms, conditions, requirements, limitations and restrictions applicable to the desired NGP. A summary of the types of NGP's available is contained in Attachment 1. Carefully review the rule section of the NGP for which you are applying to ensure that your project meets the requirements of that NGP. **PLEASE PROVIDE THE INFORMATION REQUIRED BELOW ON PAPER NO LARGER THAN 2' x 3'.**

1. Indicate the project boundaries on a USGS quad map, reduced or enlarged as necessary to legibly show the entire project. If not apparent from the quad map, provide a location map (in sufficient detail to allow a person unfamiliar with the site to find it), containing a north arrow and a graphic scale and showing the boundary of the proposed activity and Section(s), Township(s), and Range(s).
2. A legible site plan showing the following features:
 - a) property boundaries and dimensions
 - b) name and location of any adjoining public streets or roads
 - c) location and dimensions of all existing structures
 - d) label all impervious and pervious area and indicate their size (area)
 - e) please provide arrows indicating the direction of drainage from the proposed improvements
 - f) locations of all proposed works
 - g) permanent and temporary erosion, sedimentation and turbidity controls
 - h) boundaries of wetlands and other surface waters, identifying open water areas
 - i) boundary area and volume of all temporary and permanent earthwork, including pre and post construction grades
3. Description of wetland or aquatic habitat.
4. Construction methods and schedule.
5. Additional information that would show that you qualify for the general permit, addressing all the parameters, thresholds and conditions required in the general permit. Errors and omissions will be identified within 30 days by the processing agency.
6. Provide the rule section number of the NGP for which you are applying.

SECTION C

Environmental Resource Permit Notice of Receipt of Application

This information is required in addition to that required in other sections of the application. Please submit five copies of this notice of receipt of application and all attachments with the other required information. **PLEASE SUBMIT ALL INFORMATION ON PAPER NO LARGER THAN 2' x 3'.**

Project Name: Cane Island Power Park - Unit 4
County: Osceola
Owner: FMPA/KUA
Applicant: FMPA/KUA
Applicant's Address: _____

1. Indicate the project boundaries on a USGS quadrangle map. Attach a location map showing the boundary of the proposed activity. The map should also contain a north arrow and a graphic scale; show Section(s), Township(s), and Range(s); and must be of sufficient detail to allow a person unfamiliar with the site to find it.
See Drawing Number 14751-4STA-S1003 SITE VICINITY
2. Provide the names of all wetlands, or other surface waters that would be dredged, filled, impounded, diverted, drained, or would receive discharge (either directly or indirectly), or would otherwise be impacted by the proposed activity, and specify if they are in an Outstanding Florida Water or Aquatic Preserve:
Reedy Creek Swamp will receive stormwater detention pond discharge.
3. Attach a depiction (plan and section views), which clearly shows the works or other facilities proposed to be constructed. Use multiple sheets, if necessary. Use a scale sufficient to show the location and type of works. See Drawing Number 147651-4STA-S1000, SITE PLAN; 147651-4STA-S1001, UNIT 4 SITE ARRANGEMENT; 147651-4STA-S1005, PROFILE
4. Briefly describe the proposed project (such as "construct a deck with boatshelter", "replace two existing culverts", "construct surface water management system to serve 150 acre residential development"):
Modify existing basin and construct surface water management system to serve Unit 4, and industrial (power plant).
5. Specify the acreage of wetlands or other surface waters, if any, that are proposed to be disturbed, filled, excavated, or otherwise impacted by the proposed activity:
No wetlands or surface waters will be disturbed by this construction activity
6. Provide a brief statement describing any proposed mitigation for impacts to wetlands and other surface waters (attach additional sheets if necessary):
No mitigation proposed because there are no wetlands or surface waters at CIPP, Unit 4.

FOR AGENCY USE ONLY
Application Name:
Application Number:
Office where the application can be inspected:

NOTE: ALL DRAWINGS REFERENCED ARE IN SECTION 3.8 OF THE SCA.

SECTION D NOT APPLICABLE

INFORMATION FOR STANDARD GENERAL OR INDIVIDUAL ENVIRONMENTAL RESOURCE PERMITS FOR PROJECTS RELATED TO A SINGLE FAMILY DWELLING UNIT

Complete this Section only if your project does not qualify for an exemption or noticed general permit. The information requested below is for projects related to an individual, single family dwelling unit, duplex or quadraplex which is not part of a larger common plan of development proposed by the applicant. Please contact the local office of the DEP or WMD if you are unsure whether your project would fit this description.

PLEASE SUBMIT ALL INFORMATION ON PAPER NO LARGER THAN 2' x 3'

A. SITE INFORMATION

1. Directions: Provide written directions to the property.
2. Indicate how the location of work marked on site: for example, the center line of the road is flagged, a string running between stakes identifies the bulkhead location, etc.

B. DRAWINGS

Drawings should be of sufficient detail to clearly show the existing physical conditions of the site, and the extent, type, and location of the proposed activities. The drawings should clearly show waters/wetlands to be impacted, either temporarily or permanently. Any water/wetland areas proposed to be created, enhanced, restored, preserved, or which will remain undisturbed should be clearly identified and labeled. The following drawings are required:

1. PLAN VIEW (TOP VIEW)

This shows the work as viewed from above. A survey of the project site is very useful as a starting point for preparing plan views of the project. Include the following:

- a. Applicant name, property line, north arrow and graphic scale or dimensions of proposed work on each drawing sheet.
- b. Representative land elevations (spot elevations or contour lines) referred to National Geodetic Vertical Datum (NGVD), as is used on the U.S.G.S. contour maps, if available.
- c. The limits of wetlands and other surface waters and open water areas in the vicinity of the proposed work. Describe how the wetland limits were determined. If there has ever been a jurisdictional declaratory statement, a formal wetland determination, a formal determination, validated informal determination, or a revalidated jurisdictional determination, provide the identifying number.
- d. All proposed work, including dredging, filling or structures. Where possible, differentiate between work in open water, marshes, swamps, or tidal flats and uplands.
- e. Show selected water depths in and adjacent to the project site. For dock projects, show water depths at all mooring sites. These depths should be determined at approximate mean low water (MLW) or seasonal low water. Include the approximate tidal range (the difference between approximate mean high water (MHW) elevation and approximate MLW elevation) if the project is in a tidal waterbody.
- f. Label all existing structures in wetlands or other surface waters at or adjacent to the proposed activity, such as docks, bulkheads, riprap, or buildings.

- g. If dredging or dewatering is involved, show the location of proposed spoil sites. Include any levees, control structures or other methods for retaining or detaining return water. Also include locations of discharge sites where appropriate. **(Note that a consumptive or water use permit may be required for dewatering.)**
- h. For piling supported structures over wetlands or other surface waters, show the entire structure. Indicate the location of any aquatic vegetation in the vicinity of the proposed structure.
- i. Show distance between the most waterward point of the proposed facility and the nearest edge of any navigation channel, where appropriate. If the project is on a waterway that has a federally maintained channel, a survey may be required to establish the distance from the waterward points of the structure to the near edge of the federal channel. Also indicate the width of the waterway.
- j. Clearly show the locations of all corresponding cross-sectional or profile views on the plan view drawings.

2. CROSS-SECTIONAL AND PROFILE VIEWS

The cross-sectional view should show a "cut-away" end or middle view of the project, while the profile view should show a side view as if cut length-wise. All drawings should include:

- a. Applicant name and graphic horizontal and vertical scales or dimensions of the proposed work on each drawing sheet.
- b. Show approximate mean or seasonal (high and low) water line elevations referenced to NGVD.

C. PROJECT DETAILS

Provide a detailed description of the proposed project, including the following:

1. The type of activity that is proposed, how the activity will be conducted, construction techniques and sequencing, including equipment to be used, and methods for moving the equipment to and from the site. For projects that involve any dredging or excavation, describe the method of excavation, the type of material to be excavated, and the disposal location for the excavated material. State whether spoil is to be placed (either temporarily or permanently) in a wetland or other surface water. Indicate the time period any temporary structures will be in place.
2. The acreage (or square footage) of excavation and fill and differentiate between temporary and permanent work.
3. Methods for controlling turbidity (muddy water caused by erosion or work in the water).
4. Methods for stabilizing any slopes that will be created or disturbed during construction, including times expected to elapse before stabilization is performed. Describe both temporary and permanent stabilization methods, such as staked hay bales, temporary grass seed, and permanent sod.
5. If pilings or a seawall are to be installed state whether pilings and seawall slabs are to be installed by jetting or driving.

For fill projects, describe the source and type of fill material to be used. For activities that involve the installation of riprap, describe the source, type and size of the rocks, concrete, or other material to be used for the riprap, and how these materials are to be placed. State whether the rocks will be underlain with filter cloth.

SECTION E

INFORMATION FOR STANDARD GENERAL, INDIVIDUAL AND CONCEPTUAL ENVIRONMENTAL RESOURCE PERMITS FOR PROJECTS NOT RELATED TO A SINGLE FAMILY DWELLING UNIT

Please provide the information requested below if the proposed project requires either a standard general, individual, or conceptual approval environmental resource permit and is not related to an individual, single family dwelling unit, duplex or quadraplex. The information listed below represents the level of information that is usually required to evaluate an application. The level of information required for a specific project will vary depending on the nature and location of the site and the activity proposed. Conceptual approvals generally do not require the same level of detail as a construction permit. However, providing a greater level of detail will reduce the need to submit additional information at a later date. If an item does not apply to your project, proceed to the next item. **PLEASE SUBMIT ALL INFORMATION ON PAPER NO LARGER THAN 24" X 36"**.

NOTE: ALL DRAWINGS REFERENCED ARE IN SECTION 3.8 OF THE SCA.

I. Site Information

- A. Provide a map(s) of the project area and vicinity delineating USDA/SCS soil types.
See Appendix E
- B. Provide recent aerials, legible for photointerpretation with a scale of 1" = 400 ft, or more detailed, with project boundaries delineated on the aerial.
See Drawing Number 147651-DS-0112, Project Aerial
- C. Identify the seasonal high water or mean high tide elevation and normal pool or mean low tide elevation for each on site wetland or surface water, including receiving waters into which runoff will be discharged. Include dates, datum, and methods used to determine these elevations.
N/A - There are no wetlands or surface waters associated with CIPP Unit 4.
- D. Identify the wet season high water tables at the locations representative of the entire project site. Include dates, datum, and methods used to determine these elevations.
See attached additional information sheet.

II. Environmental Considerations

- A. Provide results of any wildlife surveys that have been conducted on the site, and provide any comments pertaining to the project from the Florida Game and Fresh Water Fish Commission and the U.S. Fish and Wildlife Service.
See attached additional information sheet.
- B. Provide a description of how water quantity, quality, hydroperiod, and habitat will be maintained in on-site wetlands and other surface waters that will be preserved or will remain undisturbed.
See attached additional information sheet.
- C. Provide a narrative description of any proposed mitigation plans, including purpose, maintenance, monitoring, and construction sequence and techniques, and estimated costs.
No mitigation is proposed for this project-no wetlands or surface waters associated with CIPP Unit 4.
- D. Describe how boundaries of wetlands or other surface waters were determined. If there has ever been a jurisdictional declaratory statement, a formal wetland determination, a formal determination, a validated informal determination, or a revalidated jurisdictional determination, provide the identifying number.
Wetlands delineations of the project impact areas were performed prior to Unit 1 and 2 construction.
- E. Impact Summary Tables:
There are no wetlands or surface waters associated with CIPP, Unit 4.
 1. For all projects, complete Table 1, 2 and 3 as applicable.
 2. For docking facilities or other structures constructed over wetlands or other surface waters, provide the information requested in Table 4.
 3. For shoreline stabilization projects, provide the information requested in Table 5.

ERP Application
Section A and E
Additional Information Sheet

Section A, Page 2

Total project area for which permit is sought.

KUA/FMPA Response:

24.2 acres. This includes 12.9 acres of permanently disturbed land, and 11.3 acres of temporarily disturbed land, due to construction.

Impervious area for which a permit is sought.

KUA/FMPA Response:

5.03 acres impervious area for Unit 4 only. There are 7.88 acres total impervious area for Units 3 and 4.

Section E

Part I, Site Information

D. Identify the wet season high water tables at the locations representative of the entire project site. Include dates, datum, and methods used to determine these elevations.

KUA/FMPA Response:

From the Cane Island Power Park Unit 3 Site Certification Application, ground water conditions were determined from piezometer water level readings installed during the subsurface investigation, visual inspection of subsurface profiles in test pit excavations, and observation of the installed monitoring wells located in the Units 1 and 2 area. Data indicate ground water elevations ranging from approximately elevation 69.0 to 74.0 feet. Normal low ground water across Cane Island was estimated at Elevation 69.0 feet from the piezometer data. Normal high ground water across the island was estimated at Elevation 72.0 feet from the piezometer data. Historical maximum high ground water Elevation at Cane Island was estimated to be Elevation 74.0. Recent data reaffirms these levels, therefore these same ground water elevations will be used for Unit 4.

Part II Environmental Considerations

A. Provide results of any wildlife surveys that have been conducted on the site, and provide any comments pertaining to the project from the Florida Game and Fresh Water Fish Commission and the U.S. Fish and Wildlife Service.

KUA/FMPA Response:

The US Fish and Wildlife Service (USFWS) and Florida Fish and Wildlife Conservation Commission (FFWCC), previously known as the Florida Game and Freshwater Fish Commission, were consulted during the permitting efforts for Cane Island Power Plant (CIPP) Units 1-3. In March 1993, the Florida Game and Freshwater Fish Commission issued a permit for taking of gopher tortoises and their burrows. This permit was issued as part of the Unit 1-3 construction. A copy of this permit is included in Appendix D. The USFWS was contacted on March 21, 2008 to advise them of the proposed Unit 4 project. Copies of agency letters are provided in Subsection 10.2.4 and 10.5.4, respectively. The FFWCC inspects the site annually and participates in habitat management decisions.

Field surveys for endangered, threatened, and other sensitive species were conducted in 1991 and 1992 prior to site development. Additionally, qualitative vegetation and wildlife surveys are performed once every 5 years (beginning in 2005), as monitoring efforts required by the FFWCC and South Florida Water Management District (SFWMD) for construction of the CIPP.

No federally listed plant or animal species have been recorded onsite, none have been observed during surveys, and no critical habitat for federally listed species occurs within the CIPP boundaries. Marginal habitat for the Florida scrub jay (federally threatened) was discovered on the northern half of Cane Island, but no scrub jays have been observed during surveys.

Animals and vegetation observed onsite are listed in Tables C-1 and C-2, in Appendix C.

B. Provide a description of how water quantity, quality, hydroperiod, and habitat will be maintained in onsite wetlands and other surface waters that will be preserved or will remain undisturbed.

KUA/FMPA Response:

There are no wetlands associated with the CIPP Unit 4 project; however, storm water runoff is discharged to Reedy Creek Swamp. The first 0.5 inches of runoff from the power block area is detained and percolated from the detention ponds. Outlet structures at the ponds limit the post-development peak discharge to pre-development peak discharge rate.

Part III Plans

D. If the project is in the known flood plain of a stream or other water course, identify the flood plain boundary and approximate flooding elevations; Identify the 100-year flood elevation and floodplain boundary of any lake, stream or other watercourse located on or adjacent to the site;

KUA/FMPA Response:

The Unit 4 power block will not be within the 100 year floodplain. The 100 year recurrence interval flood elevation of Reedy Creek Swamp surrounding Cane Island is 78.2 feet mean sea level. The 100-year flood elevation of the Unit 3 and 4 storm water pond is 79.97 ft.

I. Show pre- and post-development drainage patters and basin boundaries showing the direction of flows, including any off-site runoff being routed through or around the system; and connections between wetlands and other surface waters

KUA/FMPA Response:

For pre-development drainage patterns, refer to Drawing Number 147651-DS-0109, PRE-DEVELOPMENT SITE DRAINAGE PATTERN.

For post-development drainage patterns, refer to Drawing Numbers 147651-4STF-S3000, GRADING AND DRAINAGE – SITE GENERAL NOTES, ABBREVIATIONS, AND LEGEND; 147651-4STF-S3001, GRADING AND DRAINAGE – SITE SHEET 1; 147651-4STF-S3002, GRADING AND DRAINAGE – SITE SHEET 2; and 147651-4STF-S3050, GRADING AND DRAINAGE – SITE SECTION AND DETAILS.

P. Show location and details of the erosion, sediment and turbidity control measures to be implemented during each phase of construction and all permanent control measures to be implemented in post-development conditions.

KUA/FMPA Response:

For temporary erosion control, refer to Drawing Numbers 14761-4STE-S3100, EROSION CONTROL PLAN SHEET and 14761-4STE-S3150, EROSION CONTROL SECTIONS AND DETAILS. For permanent erosion control, refer to Drawing Number 147651-4STF-S3050, GRADING AND DRAINAGE – SITE SECTION AND DETAILS.

R. Show site grading details, including perimeter site grading;

KUA/FMPA Response:

Refer to Drawing Numbers 147651-4STF-S3000, GRADING AND DRAINAGE – SITE GENERAL NOTES, ABBREVIATIONS, AND LEGEND; 147651-4STF-S3001 GRADING AND DRAINAGE – SITE SHEET 1; 147651-4STF-S3002 GRADING AND DRAINAGE – SITE SHEET 2; and 147651-4STF-S3050 GRADING AND DRAINAGE – SITE SECTION AND DETAILS.

S. Show disposal sites for any excavated material, including temporary and permanent disposal sites:

KUA/FMPA Response:

No major excavations are anticipated for this project. The site itself will be raised approximately 3 feet. However temporary storage of top soil will be provided in the construction laydown area. For pile location, refer to B&V Drawing No. 147651-4STE-S3100, EROSION CONTROL PLAN SHEET.

Part IV Construction Schedule and Techniques

A. Provide method for installing any pilings or seawall slabs:

KUA/FMPA Response:

Cane Island Unit 4 construction currently has no pilings or sea wall slabs. The plan is to use the same foundations as the previous units. This consists of vibro-replacement stone columns and compaction grouting.

- i. Vibro-replacement (stone columns) should be used to decrease the settlement and increase the bearing capacity of heavily loaded, settlement sensitive structures. Vibro-replacement should be performed from the ground surface in a triangular grid pattern at a maximum 8-foot center to center spacing with at least a 3-foot diameter.*
- ii. Compaction grouting should be used to minimize the potential of raveling soils above the limestone. Compaction grouting should be performed in areas where the top of limestone was encountered deeper than normal top of limestone at approximately elevation +10 feet msl, which indicates previous karstic erosion activity. Compaction grouting should be performed from limestone encountered below elevation +10 msl up to at least the normal top of limestone at elevation +10 feet msl.*
- iii. Vibro-replacement stone columns involve the densification and/or reinforcement of the soil using compacted granular columns or “stone columns”. This is accomplished by either the top-feed or the bottom-feed method. Cohesive, mixed and layered soils generally do not densify easily when subjected to vibration alone. The Vibro-replacement stone column technique was developed specifically for these soils, effectively extending the range of soil types that can be improved with the deep vibratory process.*

With Vibro-replacement stone columns, columns of dense, crushed stone are designed to increase bearing capacity, reduce settlement, aid densification, mitigate the potential for liquefaction, and improve shear resistance.

- iv. *Compaction grouting uses displacement to improve ground conditions. A very viscous (low-mobility), aggregate grout is pumped in stages, forming grout bulbs, which displace and densify the surrounding soils.*

B. Provide schedule of implementation of temporary or permanent erosion and turbidity control measures.

KUA/FMPA Response:

The general sequence of construction for Unit 4 will be as follows.

- *Install erosion and sedimentation controls*
- *Rough grade construction areas*
- *Construct stormwater system; stabilize (fill) required areas*
- *Install major foundations*
- *Install turbine, equipment, and utilities*
- *Finish road/impervious surface areas*
- *Final grading/stabilization*

Temporary erosion and sediment control measures will be installed as necessary during construction to control sediment disposition. The primary destination of construction runoff will be to the Unit 3 and 4 stormwater detention basin. The Unit 3 and 4 stormwater detention basin will provide reduction of suspended solids load through detention.

- i. *Before construction begins, a silt fence or other appropriate control measures will be installed around the perimeter of construction areas. Drawing Numbers 147651-4STE-S3100 and 147651-4STE-S3150 show erosion control plans and details, respectively. Diversion ditches will be equipped with straw bale dikes to aid in minimizing the amount of sediments flowing into the onsite runoff basin and offsite. Construction access-ways and parking areas will be surfaced with aggregate to provide a stabilized subgrade. Erosion control measures will also include minimizing fugitive dust through the periodic spraying of water.*
- ii. *Initial construction will remove all significant vegetation (trees and brush). If possible, some trees will be retained in the construction lay-down/staging area. The runoff basin and associated drainage-ways will be constructed concurrently with initial clearing activities. Topsoil will be removed and stockpiled for finished grading and site restoration after construction is completed. Once the topsoil has been removed, site preparation will be directly related to the construction of specific power plant facilities. Once the earthmoving and construction are completed, the stockpiled topsoil will be used for finished grading. Seeding and mulching activities will begin immediately upon completion of construction.*

- iii. *In general, all erosion and sedimentation control measures will be checked weekly and after each significant rainfall event. Items including the following will be checked:*
 - 1. *Silt fences and straw bale dikes will be inspected after each significant rainfall and during prolonged periods of rainfall. Required repairs will be made within 24 hours.*
 - 2. *Sediment deposits at barriers will be removed when the deposit depth reaches approximately one half the height of the barrier.*
- iv. *Permanent erosion and sedimentation control measures within the CIPP will include the runoff collection system (ditches, culverts, trenches), surfaced traffic and work areas, nonworking areas with established vegetation, and the site runoff detention basin. These measures will minimize erosion and potential sedimentation into Reedy Creek Swamp. The permanent erosion and sediment control system will be installed as early as possible during construction and will remain in service throughout the life of the project. The primary components of this system will be established vegetation, surfacing, aggregate and concrete ditches, culverts, and trenches which will collect the site runoff and direct it to the site runoff basin. The system will be maintained and monitored during construction and operation. When the Unit 4 is constructed, uncontaminated stormwater will flow into the stormwater detention basin. In the event that the stormwater detention basin overflows, the overflow will be directed through a weir and the stormwater will then be allowed to sheet flow. The drainage system will require periodic inspection, maintenance, cleaning, and occasional repair work. Inspection will be completed on a seasonal basis and after any severe rainfall event. The condition of the ditches, culverts, and weirs will be noted. Cleaning or repair of the drainage structures will be completed as required.*

F. Provide the methods for transporting equipment and materials to and from the work site. If barges are required for access, provide the low water depths and draft of the fully loaded barge.

KUA/FMPA Response:

The major components associated with the Unit 4 installation include the following: Combustion Turbine Generator; Heat Recovery Steam Generator; Generator Step-up Transformers; Cooling Tower; Steam Turbine Generator; Miscellaneous Services Building; Power Distribution Center; and Water Storage Tanks. The major components and all other required equipment and materials will be delivered to the CIPP site by truck. All deliveries associated with construction and operation will utilize the site access road that connects to Old Tampa Highway. All deliveries will be cleared through a call-box at the main gate. Once onsite, construction materials will be directed to the construction lay-down area or its permanent location for offloading and transport to the proper storage area by portable cranes, forklifts, and trucks.

H. Identify the schedule and party responsible for completing monitoring, record drawings, and as-built certifications for the project when completed.

KUA/FMPA Response:

The schedule for completing monitoring, record drawings, and as-built certifications for the project, when completed, will be provided by FMPA, in compliance with the SFWMD Conditions of Certification Section XXIII.C.1A. Drawing will be the responsibility of the plant EPC Contractor.

Part V Drainage Information

A. Provide pre-development and post-development drainage calculations, sign and sealed, by an appropriate registered professional, as follows:

- 2) Water table elevations (normal and seasonal high) including aerial extent and magnitude of any proposed water table drawdown.

KUA/FMPA Response:

From the Cane Island Power Park Unit 3 Site Certification Application, ground water conditions were determined from piezometer water level readings installed during the subsurface investigation, visual inspection of subsurface profiles in test pit excavations, and observation of the installed monitoring wells located in the Units 1 and 2 area. Data indicate ground water elevations ranging from approximately elevation 69.0 to 74.0 feet. Normal low ground water across Cane Island was estimated at Elevation 69.0 feet from the piezometer data. Normal high ground water across the island was estimated at Elevation 72.0 feet from the piezometer data. Historical maximum high ground water Elevation at Cane Island was estimated to be Elevation 74.0. Recent data reaffirms these levels, therefore these same ground water elevations will be used for Unit 4.

B. Provide the results of any percolation tests, where appropriate, and soil borings that are representative of the actual site conditions.

KUA/FMPA Response:

For percolation tests results, refer to the "Double Ring Infiltration Test Results" completed by Ardaman & Associates, Inc. dated November 13, 2007 (File No. 07-6585) included as Appendix B. For soil borings, refer to Black & Veatch Transmittal to Barry Beck of P.E. LaMoreaux & Associates, Inc., dated November 14, 2007. Transmittal includes Phase 2 Geologic Hazard Investigation Boring Logs, Geologic Hazard Investigation Location Plan, and Geologic Hazard Investigation Summary is provided in Appendix A.

III. Plans

Provide clear, detailed plans for the system including specifications, plan (overhead) views, cross sections (with the locations of the cross sections shown on the corresponding plan view), and profile (longitudinal) views of the proposed project. The plans must be signed and sealed by an appropriate registered professional as required by law. Plans must include a scale and a north arrow. These plans should show the following:

- A. Project area boundary and total land area, including distances and orientation from roads or other land marks; See Drawing Number 147651-4STA-S1000, SITE PLAN
- B. Existing land use and land cover (acreage and percentages), and on-site natural communities, including wetlands and other surface waters, aquatic communities, and uplands. Use the Florida Land Use Cover & Classification System (FLUCCS) (Level 3) for projects proposed in the South Florida Water Management District, the St. Johns River Water Management District, and the Suwannee River Water Management District and use the National Wetlands Inventory (NWI) for projects proposed in the Southwest Florida Water Management District. Also identify each community with a unique identification number which must be consistent in all exhibits.
The entire site has been permitted for power plant operation through the original site certification for Units 1-3 in 1999.
- C. The existing topography extending at least 100 feet off the project area, and including adjacent wetlands and other surface waters. All topography shall include the location and a description of known benchmarks, referenced to NGVD. For systems waterward of the mean high water (MHW) or seasonal high water lines, show water depths, referenced to mean low water (MLW) in tidal areas or seasonal low water in non-tidal areas, and list the range between MHW and MLW. For docking facilities, indicate the distance to, location of, and depths of the nearest navigational channel and access routes to the channel. See Drawing Number 147651-DS -0109, Pre-Development Site Drainage Pattern MHW/MLW / Docking Facilities - Not Applicable
- D. If the project is in the known flood plain of a stream or other water course, identify the flood plain boundary and approximate flooding elevations; Identify the 100-year flood elevation and floodplain boundary of any lake, stream or other watercourse located on or adjacent to the site;
See attached additional information sheet
- E. The boundaries of wetlands and other surface waters within the project area. Distinguish those wetlands and other surface waters that have been delineated by any binding jurisdictional determination; See Drawing Number 147651-4STA-S1000, Site Plan. There are no wetlands or surface waters at CIPP Unit 4.
- F. Proposed land use, land cover and natural communities (acreage and percentages), including wetlands and other surface waters, undisturbed uplands, aquatic communities, impervious surfaces, and water management areas. Use the same classification system and community identification number used in III (B) above. N/A. There are no proposed land uses at the site. The entire site was permitted for power plant operation through the original site certification for Units 1-3 in 1999. See Drawing Number 147651-4STA-S1000, SITE PLAN.
- G. Proposed impacts to wetlands and other surface waters, and any proposed connections/outfalls to other surface waters or wetlands;
See Drawing Number 147651-4STA-S1000, Site Plan. There are no wetlands or surface waters at CIPP Unit 4.
- H. Proposed buffer zones;
See Drawing Number 147651-4STA-S1000, Site Plan. There are no wetlands or surface waters at CIPP Unit 4.
- I. Pre and post-development drainage patterns and basin boundaries showing the direction of flows, including any off-site runoff being routed through or around the system; and connections between wetlands and other surface waters;
See attached additional information sheet.
- J. Location of all water management areas with details of size, side slopes, and designed water depths;
See Drawing Number 147651-4STF-S3001, GRADING AND DRAINAGE - SITE SHEET 1
- K. Location and details of all water control structures, control elevations, any seasonal water level regulation schedules; and the location and description of benchmarks (minimum of one benchmark per structure);
See Drawing Number 147561-4STF-S3050. GRADING AND DRAINAGE - SITE SECTIONS AND DETAILS

- L. Location, dimensions and elevations of all proposed structures, including docks, seawalls, utility lines, roads, and buildings; See Drawing Numbers 147651-4STA-S1001, SITE ARRANGEMENT and 147651-4STA-S1005, PROFILE.
- M. Location, size, and design capacity of the internal water management facilities;
See Drawing Number 147651-4STA-S3001 Grading & Drainage, SH1 for location; size/design capacity shown on supporting calculations.
- N. Rights-of-way and easements for the system, including all on-site and off-site areas to be reserved for water management purposes, and rights-of-way and easements for the existing drainage system, if any; See Drawing Number 147651-4STA-S1000, SITE PLAN.
- O. Receiving waters or surface water management systems into which runoff from the developed site will be discharged;
Discharges from Unit 3 and Unit 4 Stormwater Pond will enter Reedy Creek swamp.
- P. Location and details of the erosion, sediment and turbidity control measures to be implemented during each phase of construction and all permanent control measures to be implemented in post-development conditions; See attached additional information sheet.
- Q. Location, grading, design water levels, and planting details of all mitigation areas;
N/A, no wetlands or surface water areas at CIPP, Unit 4.
- R. Site grading details, including perimeter site grading;
See attached additional information sheet.
- S. Disposal site for any excavated material, including temporary and permanent disposal sites;
See attached additional information sheet.
- T. Dewatering plan details;
See Drawing Number 147651-DS-0110, Dewatering Plan.
- U. For marina facilities, locations of any sewage pumpout facilities, fueling facilities, boat repair and maintenance facilities, and fish cleaning stations;
N/A
- V. Location and description of any nearby existing offsite features which might be affected by the proposed construction or development such as stormwater management ponds, buildings or other structures, wetlands or other surface waters.
N/A
- W. For phased projects, provide a master development plan.
N/A

IV. Construction Schedule and Techniques

Provide a construction schedule, and a description of construction techniques, sequencing and equipment. This information should specifically include the following:

- A. Method for installing any pilings or seawall slabs;
See attached additional information sheet.
- B. Schedule of implementation of a temporary or permanent erosion and turbidity control measures;
See attached additional information sheet.
- C. For projects that involve dredging or excavation in wetlands or other surface waters, describe the method of excavation, and the type of material to be excavated;
N/A - no wetlands or surface waters at CIPP, Unit 4.
- D. For projects that involve fill in wetlands or other surface waters, describe the source and type of fill material to be used. For shoreline stabilization projects that involve the installation of riprap, state how these materials are to be placed, (i.e., individually or with heavy equipment) and whether the rocks will be underlain with filter cloth;
N/A - no wetlands or surface waters at CIPP, Unit 4.
- E. If dewatering is required, detail the dewatering proposal including the methods that are proposed to contain the discharge, methods of isolating dewatering areas, and indicate the period dewatering structures will be in place (**Note: a consumptive use or water use permit may be required**);
See Drawing Number 147651-DS-0110, Dewatering Plan.

- F. Methods for transporting equipment and materials to and from the work site. If barges are required for access, provide the low water depths and draft of the fully loaded barge; and
See attached additional information sheet.
- G. Demolition plan for any existing structures to be removed;
See Drawing No. 147651-DS-0111, Demolition Plan.
- H. Identify the schedule and party responsible for completing monitoring, record drawings, and as-built certifications for the project when completed. See attached additional information sheet.

V. Drainage Information

- A. Provide pre-development and post-development drainage calculations, signed and sealed by an appropriate registered professional, as follows:
 - 1. Runoff characteristics, including area, runoff curve number or runoff coefficient, and time of concentration for each drainage basin;
See B&V calculations, No.s 52.5406.1101.01 through 1101.04.
 - 2. Water table elevations (normal and seasonal high) including aerial extent and magnitude of any proposed water table drawdown;
See attached additional information sheet.
 - 3. Receiving water elevations (normal, wet season, design storm);
N/A.
 - 4. Design storms used including rainfall depth, duration, frequency, and distribution;
See B&V calculation No. 52.5406.1101.04, Hydrologic Analysis.
 - 5. Runoff hydrograph(s) for each drainage basin, for all required design storm event(s);
See B&V calculation No. 52.5406.1101.04, Hydrologic Analysis.
 - 6. Stage-storage computations for any area such as a reservoir, close basin, detention area, or channel, used in storage routing;
See B&V calculation No. 52.5406.1101.03, Dry Detention Basin & Discharge Structure Design.
 - 7. Stage-discharge computations for any storage areas at a selected control point, such as control structure or natural restriction;
See B&V calculation No. 52.5406.1101.03, Dry Detention Basin & Discharge Structure Design.
 - 8. Flood routinas through on-site conveyance and storage areas;
See B&V calculation No. 52.5406.1101.04, Hydrologic Analysis.
 - 9. Water surface profiles in the primary drainage system for each required design storm event(s);
See B&V calculation No. 52.5406.1101.04, Hydrologic Analysis.
 - 10. Runoff peak rates and volumes discharged from the system for each required design storm event(s); and
See B&V calculation No. 52.5406.1101.04, Hydrologic Analysis.
 - 11. Tail water history and justification (time and elevation);
N/A.
 - 12. Pump specifications and operating curves for range of possible operating conditions (if used in system).
N/A.
- B. Provide the results of any percolation tests, where appropriate, and soil borings that are representative of the actual site conditions;
See attached additional information sheet.
- C. Provide the acreage, and percentages of the total project, of the following:
 - 1. impervious surfaces, excluding wetlands,
Total impervious area draining to Unit 3 & 4 Stormwater Pond is 7.89 ac.
 - 2. pervious surfaces (green areas, not including wetlands),
Total aggregate area draining to Unit 3 & 4 Stormwater Pond is 5 ac.
 - 3. lakes, canals, retention areas, other open water areas,
Unit 3 & 4 Stormwater Pond is 1.41 ac.
 - 4. wetlands:
No wetlands are being disturbed.

D. Provide an engineering analysis of floodplain storage and conveyance (if applicable), including:

N/A

1. Hydraulic calculations for all proposed traversing works;
2. Backwater water surface profiles showing upstream impact of traversing works;
3. Location and volume of encroachment within regulated floodplain(s); and
4. Plan for compensating floodplain storage, if necessary, and calculations required for determining minimum building and road flood elevations.

E. Provide an analysis of the water quality treatment system including:

1. A description of the proposed stormwater treatment methodology that addresses the type of treatment, pollution abatement volumes, and recovery analysis; and calculations are included in Appendix G.
2. Construction plans and calculations that address stage-storage and design elevations, which demonstrate compliance with the appropriate water quality treatment criteria. Calculations are included in Appendix G.

F. Provide a description of the engineering methodology, assumptions and references for the parameters listed above, and a copy of all such computations, engineering plans, and specifications used to analyze the system. If a computer program is used for the analysis, provide the name of the program, a description of the program, input and output data, two diskette copies, if available, and justification for model selection. See B&V calculations No. 52.5406.1101.01 through 52.5406.1101.04.

VI. Operation and Maintenance and Legal Documentation

A. Describe the overall maintenance and operation schedule for the proposed system.

The System(s) will be checked on a regular basis to ensure proper operation.

B. Identify the entity that will be responsible for operating and maintaining the system in perpetuity if different than the permittee, a draft document enumerating the enforceable affirmative obligations on the entity to properly operate and maintain the system for its expected life, and documentation of the entity's financial responsibility for long term maintenance. If the proposed operation and maintenance entity is not a property owner's association, provide proof of the existence of an entity, or the future acceptance of the system by an entity which will operate and maintain the system. If a property owner's association is the proposed operation and maintenance entity, provide copies of the articles of incorporation for the association and copies of the declaration, restrictive covenants, deed restrictions, or other operational documents that assign responsibility for the operation and maintenance of the system. Provide information ensuring the continued adequate access to the system for maintenance purposes. Before transfer of the system to the operating entity will be approved, the permittee must document that the transferee will be bound by all terms and conditions of the permit.

KUA is the permittee and operator

C. Provide copies of all proposed conservation easements, storm water management system easements, property owner's association documents, and plats for the property containing the proposed system.

Conservation easement documents are included in Appendix F.

D. Provide indication of how water and waste water service will be supplied. Letters of commitment from off-site suppliers must be included.

Water supply and wastewater treatment are provided on-site.

E. Provide a copy of the boundary survey and/or legal description and acreage of the total land area of contiguous property owned/controlled the applicant.

On File.

VII. Water Use

- A. Will the surface water system be used for water supply, including landscape irrigation, or recreation.
No
- B. If a Consumptive Use or Water Use permit has been issued for the project, state the permit number.
See Site Certification PA 98-38.
- C. If no Consumptive Use or Water Use permit has been issued for the project, indicate if such a permit will be required and when the application for a permit will be submitted.
Groundwater allocation is required to support Unit 4, and is requested in the Site Certification Application.
- D. Indicate how any existing wells located within the project site will be utilized or abandoned.
6 - Existing 5 - Proposal 0 - Abandoned

There are 6 existing wells within the project site, 4 or 5 new wells are planned. Wells 1 and 2 will be used to provide service water to the new unit. Wells 3 through 6 will be used to support construction of Unit 4. No wells will be abandoned.

TABLE ONE:

PROJECT WETLAND (WL) AND OTHER SURFACE WATER (SW) SUMMARY

WL & SW ID	WL & SW TYPE	WL & SW SIZE	WL & SW NOT IMPACTED	TEMPORARY WL & SW IMPACTS			PERMANENT WL & SW IMPACTS			MITIGATION ID
				WL & SW TYPE	IMPACT SIZE	IMPACT CODE	WL & SW TYPE	IMPACT SIZE	IMPACT CODE	
PROJECT TOTALS:										

NOT APPLICABLE

COMMENTS:

CODES (multiple entries per cell not allowed):
 Wetland Type: from an established wetland classification system
 Impact Type: D=dredge; F=fill; H=change hydrology; S=shading; C=clearing; O=other

TABLE TWO:

PROJECT ON-SITE MITIGATION SUMMARY

MITIGATION ID	CREATION		RESTORATION		ENHANCEMENT		WETLAND PRESERVE		UPLAND PRESERVE		OTHER	
	AREA	TARGET TYPE	AREA	TARGET TYPE	AREA	TARGET TYPE	AREA	TYPE	AREA	TYPE	AREA	TARGET TYPE
PROJECT TOTALS												

NOT APPLICABLE

COMMENTS:

CODES (multiple entries per cell not allowed):
 Target Type or Type = target or existing habitat type from an established wetland classification system or land use classification for non-wetland mitigation

TABLE THREE:

PROJECT OFF-SITE MITIGATION SUMMARY

MITIGATION ID	CREATION		RESTORATION		ENHANCEMENT		WETLAND PRESERVE		UPLAND PRESERVE		OTHER	
	AREA	TARGET TYPE	AREA	TARGET TYPE	AREA	TARGET TYPE	AREA	TYPE	AREA	TYPE	AREA	TARGET TYPE
PROJECT TOTALS												

NOT APPLICABLE

COMMENTS:

CODES (multiple entries per cell not allowed):
 Target Type=target or existing habitat type from an established wetland classification system or land use classification for non-wetland mitigation

Table 5: SHORELINE STABILIZATION IF YOU ARE CONSTRUCTING A SHORELINE STABILIZATION PROJECT, PLEASE PROVIDE THE FOLLOWING:

Stabilization					H: V:	
Vertical Seawall						
Seawall + Rip Rap	NOT APPLICABLE					
Rip Rap						
Rip Rap + Vegetation						
Other Shoreline Stabilization Type						

Size of Rip Rap _____

Type of Rip Rap _____

SECTION F

Information for Mitigation Banks

Please provide the information requested below if you are applying for a mitigation bank permit or a mitigation bank conceptual approval.

A. General Site Conditions. Provide the following:

1. A map, at regional scale, of the mitigation bank in relation to the regional watershed and proposed mitigation service area.
2. A vicinity map showing the mitigation bank in relation to adjacent lands and offsite areas of ecological or hydrologic significance which could affect the long term viability or ecological value of the bank;
3. A recent aerial photo of the mitigation bank (no photocopies) identifying boundaries of the project area;
4. A highway map showing points of access to the Mitigation Bank for site inspection;
5. A legal description of the proposed mitigation bank;
6. A description and assessment of current site conditions including:
 - (a) a soils map of the mitigation bank site;
 - (b) a topographic map of the mitigation bank site and adjacent hydrologic contributing and receiving areas;
 - (c) a hydrologic features map of the mitigation bank and adjacent hydrologic contributing and receiving areas;
 - (d) current hydrologic conditions in the mitigation bank site;
 - (e) a vegetation map of the mitigation bank site;
 - (f) ecological benefits currently provided to the regional watershed by the mitigation bank site;
 - (g) adjacent lands, including existing land uses and conditions, projected land uses according to comprehensive plans adopted pursuant to Chapter 163, F.S., by local governments having jurisdiction, and any special designations or classifications associated with adjacent lands or waters;
 - (h) a disclosure statement of any material fact which may affect the contemplated use of the property; and
 - (i) a Phase I environmental audit of the property. (Not required for a Conceptual Approval)

B. Mitigation Bank Information

1. A description of the ecological significance of the proposed mitigation bank to the regional watershed in which it is located.
2. A mitigation plan describing the actions proposed to establish, construct, operate, manage and maintain the Mitigation bank including:
 - (a) construction-level drawings detailing proposed topographic alterations and all structural components associated with proposed activities; (Not required for a Conceptual Approval)
 - (b) proposed construction activities, including a detailed schedule for implementation; (Not required for a Conceptual Approval)
 - (c) the proposed vegetation planting scheme and detailed schedule for implementation;
 - (d) measures to be implemented during and after construction to avoid adverse impacts related to proposed activities;
 - (e) a detailed long term management plan comprising all aspects of operation and maintenance, including water management practices, vegetation establishment, exotic and nuisance species control, fire management, and control of access; and

- (f) a proposed monitoring plan to demonstrate mitigation success.
3. An assessment of improvement or changes in ecological value anticipated as a result of proposed mitigation actions including:
 - (a) a description of anticipated site conditions in the Mitigation Bank after the mitigation plan is successfully implemented;
 - (b) a comparison of current fish and wildlife habitat to expected habitat after the mitigation plan is successfully implemented; and
 - (c) a description of the expected ecological benefits to the regional watershed.
 4. Evidence of sufficient legal or equitable interest in the property which is to become the Mitigation bank to meet the requirements of the Applicant's Handbook. (Not required for a Conceptual Approval)
 5. Draft documentation of financial responsibility meeting the requirements of the Applicant's Handbook. (Not required for a Conceptual Approval)
 6. Any engineering calculations and/or computer modeling (such as hydrograph or staging) needed to assess the effects of the project on the hydrologic characteristics of the Mitigation Bank site and upstream and downstream areas.

SECTION G

Application for Authorization to use State Owned Submerged Lands

Part I:

Sovereign Submerged Lands title (ownership) information: Please read and answer the applicable questions listed below:

- A. I have a sovereign submerged lands title check from the Division of State Lands which indicates that the proposed project is NOT ON sovereign submerged lands (Please attach a copy of the title determination to the application).
Yes No

If you answered Yes to Question A and you have attached a copy of the Division of State Lands Title Check to this application, you do not have to answer any other questions under Part I or II of Supplement B.

- B. I have a sovereign submerged lands title check from the Division of State Lands which indicates that the proposed project is ON sovereign submerged lands (Please attach a copy of the title determination to the application).
Yes No

If you answered yes to question B please provide the information requested in Part II. Your application will be deemed incomplete until the requested information is submitted.

- C. I am not sure if the proposed project is on sovereign submerged lands.
Please check here

If you have checked this box department staff will request that the Division of State Lands conduct a title check. If the title check indicates that the proposed project or portions of the project are located on sovereign submerged lands you will be required to submit the information requested in Part II of this application. The application will be deemed incomplete until the requested information is submitted.

- D. I am not sure if the proposed project is on sovereign submerged lands and I DO NOT WISH to contest the department's findings. Please check here

If you have checked this box refer to Part II of this application and provide the requested information. The application will be deemed incomplete until the requested information is submitted.

- E. It is my position that the proposed project is NOT on sovereign submerged lands. Please check here

If you have evidence that indicates that the proposed project is not on sovereign submerged lands please attach the documentation to the application. If the Division of State Lands title check indicates that your proposed project or portion of your proposed project are on sovereign submerged lands you will be required to provide the information requested in Part II of this application.

- F. If you wish to contest the findings of the title determination conducted by the Division of State Lands please contact the Department of Environmental Protection's General Council office. Your proposed project will be deemed incomplete until either the information requested in Part II is submitted or a legal ruling indicates that the proposed project is not on sovereign submerged lands.

Part II:

If you were referred to this section by Part I, please provide this additional information. Please note that if your proposed project is on sovereign submerged lands and the below requested information is not provided, your application will be considered incomplete.

- A. Provide evidence of title to the subject riparian upland property in the form of the recorded deed, title insurance, legal opinion of title, or a long-term lease which specifically includes riparian rights. Evidence submitted must demonstrate that the applicant has sufficient title interest in the riparian upland property.
- B. Provide a detailed statement describing the existing and proposed upland uses and activities. For commercial uses, indicate the specific type of activity, such as marina, ship repair, dry storage (including the number of storage spaces), commercial fishing/ seafood processing, fish camp, hotel, motel resort restaurant, office complex, manufacturing operation, etc.

For rental operations, such as trailer or recreational vehicle parks and apartment complexes, indicate the number of wetslip units/ spaces available for rent or lease and describe operational details (e.g., are spaces rented on a month to month basis or through annual leases).

For multi-family residential developments, such as condominiums, townhomes, or subdivisions, provide the number of living units/ lots and indicate whether or not the common property (including the riparian upland property) is or will be under the control of a homeowners association.

For projects sponsored by a local government, indicate whether or not the facilities will be open to the general public. Provide a breakdown of any fees that will be assessed, and indicate whether or not such fees will generate revenue or will simply cover costs associated with maintaining the facilities.

- C. Provide a detailed statement describing the existing and proposed activities located on or over the sovereign submerged lands at the project site. This statement must include a description of docks and piers, types of vessels (e.g., commercial fishing, leveaboards, cruise ships, tour boats), length and draft of vessels, sewage pumpout facilities, fueling facilities, boat hoists, boat ramps, travel lifts, railways, and any other structures or activities existing or proposed to be located waterward of the mean high water line/ ordinary high water line. If slips are existing and/or proposed, please indicate the number of powerboat slips and sailboat slips and the percentage of those slips available to the general public on a "first come, first serve" basis. This statement must include a description of channels, borrow sites, bridges, groins, jetties, pipelines or other utility crossings, and any other structures or activities existing or proposed to be located waterward of the mean high water line/ ordinary high water line. For shoreline stabilization activities, this statement must include a description of seawalls, bulkheads, riprap, filling activities, and any other structures or activities existing or proposed to be located along the shoreline.
- D. Provide the linear footage of shoreline at the mean high water line/ ordinary high water line owned by the applicant which borders sovereign submerged lands.
- E. Provide a recent aerial photo of the area. A scale of 1" = 200' is preferred. Photos are generally available at minimal cost from your local government property appraiser's office or from district Department of Transportation offices. Indicate on the photo the specific location of your property/ project site.

Proprietary Project Descriptions

Please check the most applicable activity which applies to your project(s):

Activity Description

Leases

- Commercial marinas (renting wetslips)/including condos, etc., if 50% or more of their wetslips are available to the general public
- Public/Local governments
- Yacht Clubs/Country Clubs (when a membership is required)
- Multi-family/but upland revenue generating (housing developments, trailer parks, apartments)
- Condominiums (requires upland ownership)
- Commercial Uplands Activity (Temporary Docking and/or fishing pier associated with upland revenue generating activities (i.e., restaurants, hotels, motels) for use of the customer at no charge
- Miscellaneous Commercial Upland Enterprises where there is a charge associated with the use of the overwater structure (Charter Boats, Tour Boats, Fishing Piers)
- Ship Building/Boat Repair Service Facilities
- Commercial Fishing Related (Offloading, Seafood Processing)
- Private Single-family Residential Docking Facilities; Townhome Docking Facilities; Subdivision Docking Facilities (upland lots privately owned)

Public Easements & Use Agreements

- Miscellaneous Public Easements and Use Agreements
- Bridge Right-of-way (DOT, local government)
- Breakwater or Groin
- Subaqueous Utility Cable (TV, telephone, electrical)
- Subaqueous Outfall or Intake
- Subaqueous Utility Water/Sewer
- Overhead Utility w/Support Structure on sovereign submerged lands
- Spoil Site
- Pipeline (gas)
- Borrow Site

Private Easements

- Miscellaneous Private Easements
- Bridge Right-of-way
- Breakwater or Groin
- Subaqueous Utility Cable (TV, telephone, electrical)
- Subaqueous Outfall or Intake
- Subaqueous Utility Water/Sewer
- Overhead Utility Crossing
- Spoil Site
- Pipeline (gas)

Consents of Use

- Aerial Utility Crossing w/no support structures on sovereign submerged lands
- Private Dock
- Public Dock
- Multi-family Dock
- Fishing Pier (Private or Multi-family)
- Private Boat Ramp
- Sea Wall
- Dredge
- Maintenance Dredge
- Navigation Aids/Markers
- Artificial Reef
- Riprap
- Public Boat Ramp
- Public Fishing Pier
- Repair/Replace Existing Public Fishing Pier
- Repair/Replace Existing Private Dock
- Repair/Replace Existing Public Dock
- Repair/Replace Existing Multi-family dock
- Repair/Replace Existing Fishing Pier (Private or Multi-family)
- Repair/Replace Existing Private Boat Ramp
- Repair/Replace Existing Sea Wall, Revetments or Bulkheads
- Repair/Replace/Modify structures/activities within an existing lease, easement, management agreement or use agreement area or repair/replace existing grandfathered structures
- Repair/Replace Existing Public Boat Ramp

Miscellaneous

- Biscayne Bay Letters of Consistency/Inconsistency w/258.397, F.S.
- Management Agreements - Submerged Lands
- Reclamation
- Purchase of Filled, Formerly Submerged Lands
- Purchase of Reclaimed Lake Bottoms
- Treasure Salvage
- Insect Control Structures/Swales
- Miscellaneous projects which do not fall within the activity codes listed above

**South Florida Water Management District's Attachments to Form 0971
JOINT APPLICATION FOR
ENVIRONMENTAL RESOURCE PERMIT
AUTHORIZATION TO USE STATE-OWNED SUBMERGED LANDS
FEDERAL DREDGE AND FILL PERMIT**

<u>Attachment No.</u>	<u>Title</u>
1	DEP and WMD Permitting Responsibilities
2	Summary of Activities Typically Authorized by Each Permit Type
3	Permit Application Processing Fees
4	Maps Showing the Locations, Addresses and Permitting Boundaries of the DEP and WMD Offices
5	Proprietary v. Regulatory Authorization

Attachment 1 to Instructions for Joint Application Summary of DEP and WMD Permitting Responsibilities

The Department of Environmental Protection ("Department" or "DEP") is responsible for issuing (or denying) permits for some types of activities. The Water Management Districts ("WMDs") issue (or deny) the remaining types. You must submit your permit application to the agency which is responsible for permitting your proposed activities. This summary covers typical cases; applicants with non-typical situations or who need further clarification should contact the nearest DEP or WMD office.

THE DEPARTMENT is responsible for reviewing and taking agency action on the following activities (including compliance and enforcement):

- * Systems designed to accommodate only one single-family dwelling unit, duplex, triplex, or quadraplex on a contiguous ownership of property of five acres or less, provided the single-family dwelling unit, duplex, triplex, or quadraplex is not part of a larger common plan of development or sale proposed by the applicant. The term "system" means a stormwater management system, dam, impoundment, reservoir, appurtenant work or works, or any combination thereof, including dredged or filled areas. This term includes the construction of docks, seawalls, structures, and all other types of dredging or filling in surface waters and wetlands.
- * Projects that also need a waste treatment or management permit from DEP:
 - Solid waste (except certain activities that qualify for general permits)
 - Hazardous waste (except where the storage of hazardous waste is an incidental part of the facility)
 - Domestic wastewater (except for certain applications)
 - Industrial wastewater (except certain activities that qualify for general permits)
- * All mining projects (excluding borrow pits).
- * Power plants and electrical distribution and transmission lines, including associated facilities
- * Communication cables and lines.
- * Natural gas or petroleum exploration activities and facilities, and product pipelines.
- * Docking facilities involving the creation of 10 or more new boat slips, including adjacent docking-related development and associated navigational dredging, except where the docking facility and associated navigational dredging is part of a larger plan of other commercial or residential development that has received or requires a permit under Part IV of Chapter 373, F.S. The term "adjacent docking-related development" includes parking areas for the docking facility, dry storage facilities, boat sales and supply facilities, maintenance and repair facilities, associated seafood loading and processing facilities, restaurants, and harbor master and marina administration facilities.
- * Activities proposed in whole or in part seaward of the coastal construction control line.
- * Navigational dredging conducted by governmental entities.

- * Seaports and adjacent seaport-related development where the applicant or property owner is a port authority.
- * The following activities in wetlands and other surface waters when such activities are not part of a larger plan of development: boat ramps, ski jumps, ski slalom courses, aids to navigation, mooring buoys and fields, piling supported structures which are not physically connected to uplands, estuarine and marine aquaculture facilities, fish attractors, artificial reefs, treasure salvage, and archaeological research or exploration.
- * Temporary systems for commercial film productions.
- * High speed rail facilities.
- * Magnetic levitation demonstration projects.
- * Mitigation banks primarily for: mining or power production; governmental solid waste facilities; governmental domestic wastewater facilities; industrial waste facilities; communication cables and lines; natural gas or petroleum exploration activities and facilities; and product pipelines; navigational dredging projects conducted by governmental entities; seaports; and modifications of permits previously issued by the Department.
- * Modification of permits issued by the Department. If the permit has been modified, the agency that issued the last modification to the permit shall process the modification. Modifications to Management and Storage of Surface Waters (MSSW) Permits shall be processed by the appropriate Water Management District, except that the Department shall process modifications of MSSW permits for solid waste facilities and mining projects.
- * All applications for wetland resource permits within the territory of the Northwest Florida Water Management District.

THE SOUTH FLORIDA, SOUTHWEST FLORIDA, ST. JOHNS RIVER, AND SUWANNEE RIVER WATER MANAGEMENT DISTRICTS are responsible for reviewing and taking agency action (including compliance and enforcement) on all other Environmental Resource Permit Applications. THE NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT is responsible for reviewing and taking agency action (including compliance and enforcement) for agriculture and silviculture activities.

Attachment 2 to Instructions for Joint Application Summary of Activities Typically Authorized by Each Permit Type

These summary lists will assist an applicant in determining what type of permit their project will normally require. These lists are only a brief summary of the various exemptions or permit types and do not contain all of the requirements for each exemption or permit. Applicants unfamiliar with the details of all the requirements which apply to the various exemptions or permit types, or uncertain of how the conditions would apply to a specific situation, should discuss their project with staff of the appropriate reviewing agency before submitting an application.

Exemptions

You do not normally need to apply for a permit for these activities. If you are uncertain if your specific project meets the conditions for an **Exemption**, contact the agency with jurisdiction in the location where the activity is proposed.

- * The repair or replacement of existing functional pipes or culverts, the purpose of which is the discharge or conveyance of stormwater
- * The installation and maintenance of intake and discharge pipes associated with marine bivalve facilities that have a valid industrial wastewater general permit
- * The performance of maintenance dredging of existing manmade canals, channels, basins, berths, and intake and discharge structures
- * The maintenance of functioning insect control structures, and the maintenance of functioning dikes and functioning irrigation and drainage ditches, including roadway drainage ditches
- * The maintenance of previously-permitted minor silviculture surface water management systems
- * The restoration of less than 100 feet in length of existing insect control impoundment dikes and the connection of such impoundments to tidally-influenced waters
- * The installation, replacement or repair of mooring pilings and dolphins associated with private docking facilities
- * The installation of private docks of 1000 square feet or less of surface area over wetlands or other surface waters or 500 square feet or less of surface area over wetlands or other surface waters for docks which are located in Outstanding Florida Waters
- * Construction of private docks in artificially-created waterways where construction will not violate water quality standards, impede navigation, or adversely affect flood control
- * The replacement or repair of existing docks and mooring piles
- * The installation and maintenance to design specifications of boat ramps on artificial bodies of water, or the installation and maintenance to design specifications of boat ramps open to the public in any wetlands or other surface waters
- * Construction of seawalls or riprap in artificially-created waterways
- * The restoration of a seawall or riprap at its previous location or within one foot waterward of its previous location
- * The construction of vertical seawalls in wetlands or other surfacewaters and the construction of riprap revetments, where such construction adjoins at both ends existing seawalls or riprap, follows a continuous and uniform construction line with the existing seawalls or riprap, is no more than 150 feet in length
- * The installation of subaqueous transmission and distribution lines laid on, or embedded in, the bottoms of wetlands or other surface waters

- * The replacement or repair of subaqueous transmission and distribution lines laid on, or embedded in, the bottoms of wetlands or other surface waters
- * Activities necessary to preserve, restore, repair, remove, or replace an existing communication or power pole or line
- * Installation, removal, and replacement of utility poles that support telephone or communication cable lines, or electric distribution lines of 35 kV or less
- * The replacement or repair of existing open-trestle foot bridges and vehicular bridges that are 100 feet or less in length and two lanes or less in width
- * Construction or maintenance of culverted driveways or roadway crossings and bridges of artificial waterways
- * The installation of aids to navigation
- * The use of rotenone, by Florida Game and Fresh Water Fish Commission
- * Construction of fresh water fish attractions by Florida Game and Fresh Water Fish Commission, U.S. Forest Service, and county and municipal governments
- * Installation of piling support structures associated with water quality testing or monitoring equipment by the Department or the Water Management Districts

NO-NOTICE GENERAL ENVIRONMENTAL RESOURCE PERMIT (Applicable only in South Florida Water Management District)

In only the South Florida Water Management District (SFWMD), proposed projects which do not qualify for an Exemption but which meet these criteria qualify for a **No-Notice General Permit**. If you are uncertain if your specific project meets the conditions for a No-Notice General Permit, please contact the staff of SFWMD.

- * Construction or alteration all in uplands, and
 - * Project area is less than ten acres, and
 - * Project area impervious surface is less than two acres, and
 - * Activities will not impact wetlands or other surface waters, and
 - * No activities are conducted in, on, or over wetlands or other surface waters, and
 - * Drainage pipes not larger than 24 inches in diameter, or hydraulic equivalent, and
 - * No drainage pumps.
- or
- * For road grading and pavement resurfacing of existing roads, the project must be entirely in uplands and not result in the impoundment or interruption of surface water into wetlands.

NOTICED GENERAL ENVIRONMENTAL RESOURCE PERMIT

Listed below are activities which may qualify for a **Noticed General Permit**. Applicants who believe their projects might qualify should discuss the proposed project with the agency with jurisdiction in the location where the activity is proposed; obtain a copy of the applicable rule section(s) where the detailed terms, conditions, limitations and restrictions are listed; and then file an application.

- * General Permit for installation, alteration or maintenance of boat ramps and associated accessory docks
- * General Permit for certain piers and associated structures
- * General Permit for installation of riprap
- * General Permit for installation of fences

- * General Permit for the construction or maintenance of culverted driveway or roadway crossings and bridges of artificial waterways
- * General Permit to the Florida Department of Transportation, counties and municipalities, for minor bridge alteration, replacement, maintenance and operation
- * General Permit to the Florida Department of Transportation, counties and municipalities for minor activities within existing rights-of-way or easements
- * General Permit for installation, maintenance, repair, and removal of underground cable, conduit, or pipeline
- * General Permit for the construction of aerial pipeline, cable, and conduit crossings of certain waters
- * General Permit for subaqueous utility crossings of artificial waterways
- * General Permit for the construction and operation of culverts and associated water control structures in mosquito control impoundments by governmental mosquito control agencies
- * General Permit for breaching mosquito control impoundments by governmental mosquito control agencies
- * General Permit for minor activities
- * General Permit for the U.S. Forest Service for minor works within National Forests
- * General Permit for the construction of artificial reefs
- * General Permit for clam and oyster culture on state-owned submerged lands
- * General Permit to perform prospecting activities for phosphate minerals
- * General Permit for temporary dragline crossings of waters
- * General Permit for low water crossings
- * General Permit for the construction and maintenance of electric powerlines by electric utilities
- * General Permit for relocation of aerial electric and communication lines associated with road improvement projects
- * General Permit for construction, operation, maintenance, alteration, removal or abandonment of minor silvicultural surface water management systems.

STANDARD GENERAL ENVIRONMENTAL RESOURCE PERMIT

Activities which do not qualify for an exemption, a no-notice general permit, or a noticed general permit may qualify for a **Standard General Permit**, if those activities meet all (except as noted) the criteria listed below. Applicants who are uncertain - especially with regard to "incidental site activities" - should contact the appropriate reviewing agency.

Applicants must file a permit application for any project which meets the criteria for a Standard General Permit.

- * System must not be capable of impounding a volume of water more than 120 acre-feet, and
 - * Construction or alteration involving less than one acre of wetlands, and
 - * Project size is less than 100 acres, and
 - * The number of boat slips is less than ten.
- or
- * Is limited to incidental site activities (not applicable in St. Johns River WMD and Southwest Florida WMD).

INDIVIDUAL, AND CONCEPTUAL, ENVIRONMENTAL RESOURCE PERMIT

Any project or activity involving the construction, alteration, operation, maintenance, repair, or abandonment of any surface water or stormwater management system, dam, impoundment, reservoir, appurtenant work or works - including dredging and filling, and establishment and maintenance of a mitigation bank - must receive an **Individual, or a Conceptual, Environmental Resource Permit**, unless the project qualifies for an exemption or some type of general permit.

U.S. ARMY CORPS OF ENGINEERS GENERAL PERMITS

Maintenance dredging in Upland Residential Canals (maximum depth 5 feet mean low water, maximum 4,000 cubic yards of dredging with upland disposal)

- * Maintenance Dredging in Upland Residential Canals (maximum depth 5 feet mean low water, maximum 4,000 cubic yards of dredging with upland disposal)
- * Private Single-Family Piers - Palm Beach County
- * Boat Ramps and Associated Structures (fill limited to 100 cubic yards)
- * Aerial Transmission Lines
- * Loosely Laid and Embedded Subaqueous Utility and Transmission Lines (except State Class IA or II waters and Aquatic Preserves, requires 6-foot burial below Federal Channels and warning signs)
- * Minor Structures (includes mooring piling, davits, boat hoists)
- * Boat Slips and Related Structures (requires upland disposal of dredged material, dredging limited, maximum dimension 50 feet)
- * Private Single-Family Piers - State of Florida
- * Private Piers - Puerto Rico and Virgin Islands
- * Boat Ramps - Puerto Rico and Virgin Islands
- * Boat Slips - Puerto Rico and Virgin Islands
- * Minor Structures - Puerto Rico and Virgin Islands
- * Subaqueous Transmission Lines - Puerto Rico and Virgin Islands
- * Private Multi-Family Piers - Florida
- * Commercial Piers - Florida
- * Bulkheads and Backfill - South Pine Island
- * Private Single-Family Piers - Dade County
- * Bulkhead and Backfill in Residential Canals - Florida
- * Fill Activities North of Alligator Alley - Golden Gate Estates - Collier County
- * Artificial Reefs and Fish Attractors
- * Residential Fill in Wetlands East of 144th Avenue in Bird Drive - Everglades Basin - Dade County
- * Mooring Buoys - Puerto Rico
- * Minor Activities - Lake Okeechobee
- * Regulatory Markers for Manatee Protection and Safety - Florida
- * Bulkheads and Backfill - Cudjoe Gardens - Cudjoe Key - Monroe County

ALL GENERAL PERMITS ARE SUBJECT TO THE ATTACHED GENERAL CONDITIONS

All general permits for single-family piers that have been revoked are now replaced by SAJ-20 effective 1 March 1994.

U. S. ARMY CORPS OF ENGINEERS NATIONWIDE PERMITS

- * Aids to Navigation
- * Structures in Artificial Canals
- * Repair, Rehabilitation, or Replacement of a Serviceable Structure of Fill
- * Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities
- * Scientific Measuring Devices
- * Survey Activities
- * Outfall Structures**
- * Oil and Gas Structures
- * Structures in Fleeting and Anchorage Areas
- * Mooring Buoys
- * Temporary Recreational Structures
- * Utility Line Backfill and Bedding
- * Bank Stabilization**
- * Road Crossing**
- * U.S. Coast Guard Approved Bridges
- * Return Water From Upland Contained Disposal Areas
- * Hydropower Projects**
- * Minor Discharges**
- * Oil Spill Cleanup
- * Surface Coal Mining Activities
- * Removal of Vessels
- * Approved Categorical Exclusions
- * State Administered Section 404 Program
- * Structural Discharge
- * Headwaters and Isolated Waters Discharges**
- * Wetland and Riparian Restoration and Creation Activities
- * Modifications to Existing Marinas
- * Completed Enforcement Actions
- * Temporary Construction, Access and Dewatering**
- * Cranberry Production Activities**
- * Maintenance Dredging of Existing Basins
- * Boat Ramps
- * Emergency Watershed Protection and Rehabilitation**
- * Cleanup of Hazardous and Toxic Waste**
- * Farm Buildings

**These types of activities require pre-discharge notification.

Further explanations of listed activities can be found at 33 CFR Part 330 Appendix B.

Attachment 3

PERMIT APPLICATION FEE SCHEDULE

Environmental Resource Permits (includes grandfathered SWM Permits)

New Individual Agriculture	
Project area < 100 acres.....	\$ 3,050
Project area 100 acres to < 640 acres.....	\$ 4,000
Project area >= 640 acres.....	\$ 5,000
New Individual all others, except Agriculture	
Project area < 100 acres.....	\$ 5,000
Project area 100 acres to < 640 acres.....	\$ 7,500
Project area >= 640 acres.....	\$10,000
New Individual Operation Permit.....	\$ 3,500
Individual Modification Agriculture	
Project area < 100 acres.....	\$ 2,050
Project area 100 acres to < 640 acres.....	\$ 2,500
Project area >= 640 acres.....	\$ 3,500
Individual Modification all others, except Agriculture	
Project area < 100 acres.....	\$ 3,500
Project area 100 acres to < 640 acres.....	\$ 5,000
Project area >= 640 acres.....	\$ 7,500
New Standard General Permit (excluding incidental site activities)	
Agriculture	\$ 650
All others, except Agriculture	\$ 2,000
Standard General Permit Modification (excluding incidental site activities)	
Agriculture	\$ 500
All others, except Agriculture	\$ 1,000
Standard General Permit for Incidental Site Activities (Early Work)	\$ 500
Noticed General Permit (including Aquaculture).....	\$ 100
Single Family Residential Homesite (<= 10 acres total land area)	\$ 100
Transfer of Permit (ownership).....	\$ 450
Letter Modification Requests.....	\$ 100
New Individual Mitigation Bank	
Project area < 100 acres.....	\$ 5,000
Project area 100 acres to < 640 acres.....	\$ 7,500
Project area >= 640 acres.....	\$10,000
Individual Modification Mitigation Bank	
Project area < 100 acres.....	\$ 3,500
Project area 100 acres to < 640 acres.....	\$ 5,000
Project area >= 640 acres.....	\$ 7,500
Transfer of Permit (ownership)	\$ 450

Variance (associated w/ERP application)	
From Rule 40E-4.301(1)(e), F.A.C.	\$ 100
From other permitting standards or conditions	\$ 500
Formal Determination of Wetlands and Other Surface Waters	
Property <= 1 acre	\$ 250
Property > 1 acre but <= 10 acres	\$ 550
Property > 10 acres but <= 40 acres	\$ 750
Property > 40 acres but <= 120 acres	\$1,500
Property > 120 acres.....	**
(**Fee is \$1,500 plus \$200 for each additional 100 acres or portion thereof)	
Formal Wetland Determination Renewal	\$ 250
Proprietary Authorization (SLERP)(under Chapters 253 and 258, F.S.)	
Consent of Use.....	\$ -0-
Lease.....	\$ 200
Easement (public and private)	\$ 200

Water Use Permits

Individual Public Water Supply	
Max day allocation <= 1 MGD	\$2,700
Max day allocation > 1 MGD <= 10 MGD.....	\$5,500
Max day allocation > 10 MGD.....	\$7,000
Individual Irrigation	
Max day allocation <= 1 MGD	\$1,000
Max day allocation > 1 MGD <= 10 MGD.....	\$2,500
Max day allocation > 10 MGD.....	\$3,500
Individual Agricultural Irrigation Renewal (< 20 years)	\$1,000
Individual Mining (Dewatering)	
Max day allocation <= 1 MGD	\$1,800
Max day allocation > 1 MGD <= 10 MGD.....	\$3,250
Max day allocation > 10 MGD.....	\$4,000
Individual Industrial	
Max day allocation <= 1 MGD	\$1,400
Max day allocation > 1 MGD <= 10 MGD.....	\$2,750
Max day allocation > 10 MGD.....	\$3,500
General Permit	\$ 350
Short-term Dewatering	\$ 500
Well Construction	\$ 100
Permit Transfer (ownership).....	\$ 450
Letter Modification Request (Individual Permit)	\$ -0-
Letter Modification Request (General Permit)	\$ -0-

Wetland Resource (Dredge and Fill) Projects Qualifying for Grandfathering Pursuant to Section 373.414, F.S.

Standard Form (up through 5 years w/10 or more jurisdictional acres)	\$4,000
Short Form (up through 5 years w/less than 10 jurisdictional acres)	\$ 500
Short Form Construction Involving New Docking or Boardwalk Facilities	
3-9 New Boat Slips.....	\$ 500
0-2 New Boat Slips.....	\$ 300
Short Form (from and including 6 years through and including 10 years)	\$3,000
Standard Form (for 6 years).....	***
(***fee is \$6000 plus \$1000 for each year beyond 6 years, up through and including 25 years and a corresponding fee of \$25,000)	
Variance (associated w/Dredge and Fill application)	
from Prohibition of Section 62-312.080(7), F.A.C.	\$ 100
from other standards or conditions	\$ 500
General Permit	\$ 100
Transfer of permits or time extensions.....	\$ 50
Minor technical changes	
Existing permit fee less than \$300.....	\$ 50
Existing permit fee more than \$300.....	\$ 250

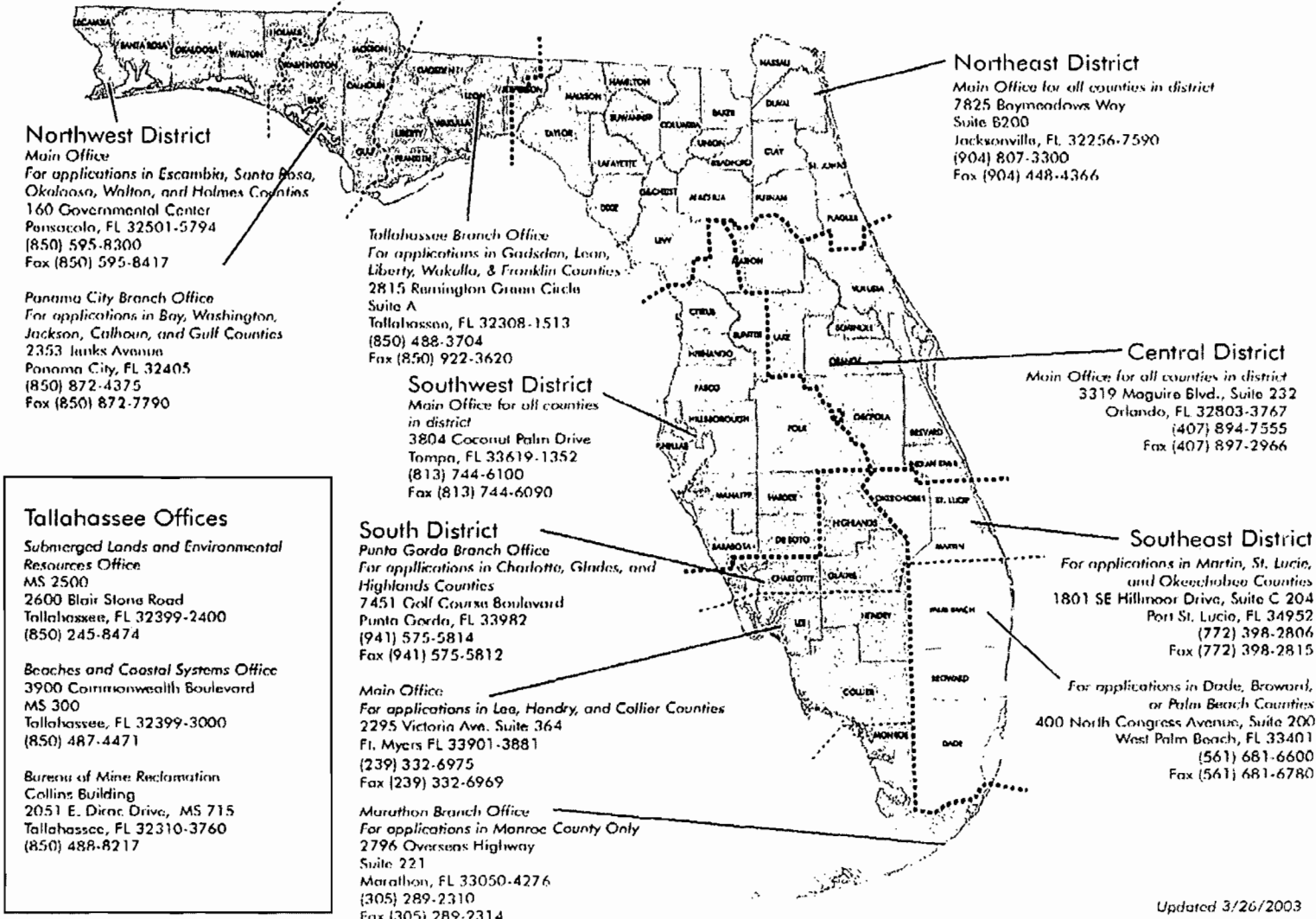
NOT APPLICABLE

NOTE: Agriculture means the science and art of production of plants and animals useful to humans, including to a variable extent the preparation of these products for human use and their disposal by marketing or otherwise, and includes aquaculture, horticulture, floriculture, viticulture, forestry, dairy, livestock, poultry, bees, and any and all forms of farm products and farm production. For the purposes of marketing and promotional activities, seafood shall also be included in this definition.

Attachment 4: Mailing Instructions for DEP Permit Applications

Applications for projects that will be reviewed by DEP (see Attachment 1) will be received by either the Beaches and Coastal Systems Office, the Bureau of Mine Reclamation (both in Tallahassee), or the district offices of the Submerged Lands and Environmental Resources Program (SLER) located throughout the state, corresponding to the project type and location as explained in Attachment 6.

Please mail your permit applications to the appropriate address indicated below.



Northwest District
 Main Office
 For applications in Escambia, Santa Rosa, Okaloosa, Walton, and Holmes Counties
 160 Governmental Center
 Panama City, FL 32501-5794
 (850) 595-8300
 Fax (850) 595-8417

Panama City Branch Office
 For applications in Bay, Washington, Jackson, Calhoun, and Gulf Counties
 2353 Janks Avenue
 Panama City, FL 32405
 (850) 872-4375
 Fax (850) 872-7790

Tallahassee Branch Office
 For applications in Gadsden, Leon, Liberty, Wakulla, & Franklin Counties
 2815 Rannington Green Circle
 Suite A
 Tallahassee, FL 32308-1513
 (850) 488-3704
 Fax (850) 922-3620

Southwest District
 Main Office for all counties in district
 3804 Coconut Palm Drive
 Tampa, FL 33619-1352
 (813) 744-6100
 Fax (813) 744-6090

South District
 Punta Gorda Branch Office
 For applications in Charlotte, Glades, and Highlands Counties
 7451 Golf Course Boulevard
 Punta Gorda, FL 33982
 (941) 575-5814
 Fax (941) 575-5812

Main Office:
 For applications in Lee, Hendry, and Collier Counties
 2295 Victoria Ave. Suite 364
 Ft. Myers FL 33901-3881
 (239) 332-6975
 Fax (239) 332-6969

Marathon Branch Office
 For applications in Monroe County Only
 2796 Overseas Highway
 Suite 221
 Marathon, FL 33050-4276
 (305) 289-2310
 Fax (305) 289-2314

Northeast District
 Main Office for all counties in district
 7825 Baymeadows Way
 Suite B200
 Jacksonville, FL 32256-7590
 (904) 807-3300
 Fax (904) 448-4366

Central District
 Main Office for all counties in district
 3319 Maguire Blvd., Suite 232
 Orlando, FL 32803-3767
 (407) 894-7555
 Fax (407) 897-2966

Southeast District
 For applications in Martin, St. Lucie, and Okeechobee Counties
 1801 SE Hillmoor Drive, Suite C 204
 Port St. Lucie, FL 34952
 (772) 398-2806
 Fax (772) 398-2815

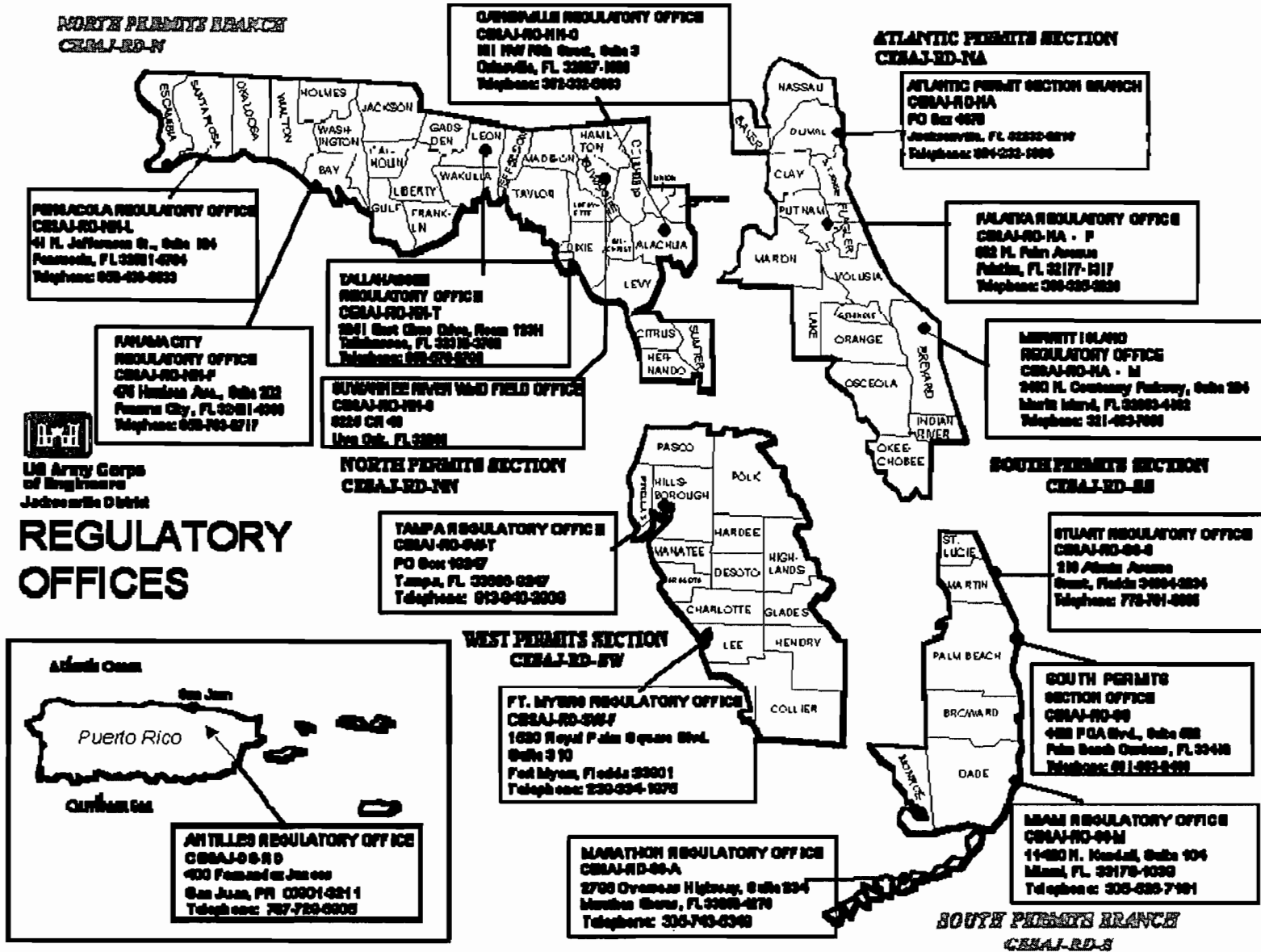
For applications in Dade, Broward, or Palm Beach Counties
 400 North Congress Avenue, Suite 200
 West Palm Beach, FL 33401
 (561) 681-6600
 Fax (561) 681-6780

Tallahassee Offices
 Submerged Lands and Environmental Resources Office
 MS 2500
 2600 Blair Stone Road
 Tallahassee, FL 32399-2400
 (850) 245-8474

Beaches and Coastal Systems Office
 3900 Commonwealth Boulevard
 MS 300
 Tallahassee, FL 32399-3000
 (850) 487-4471

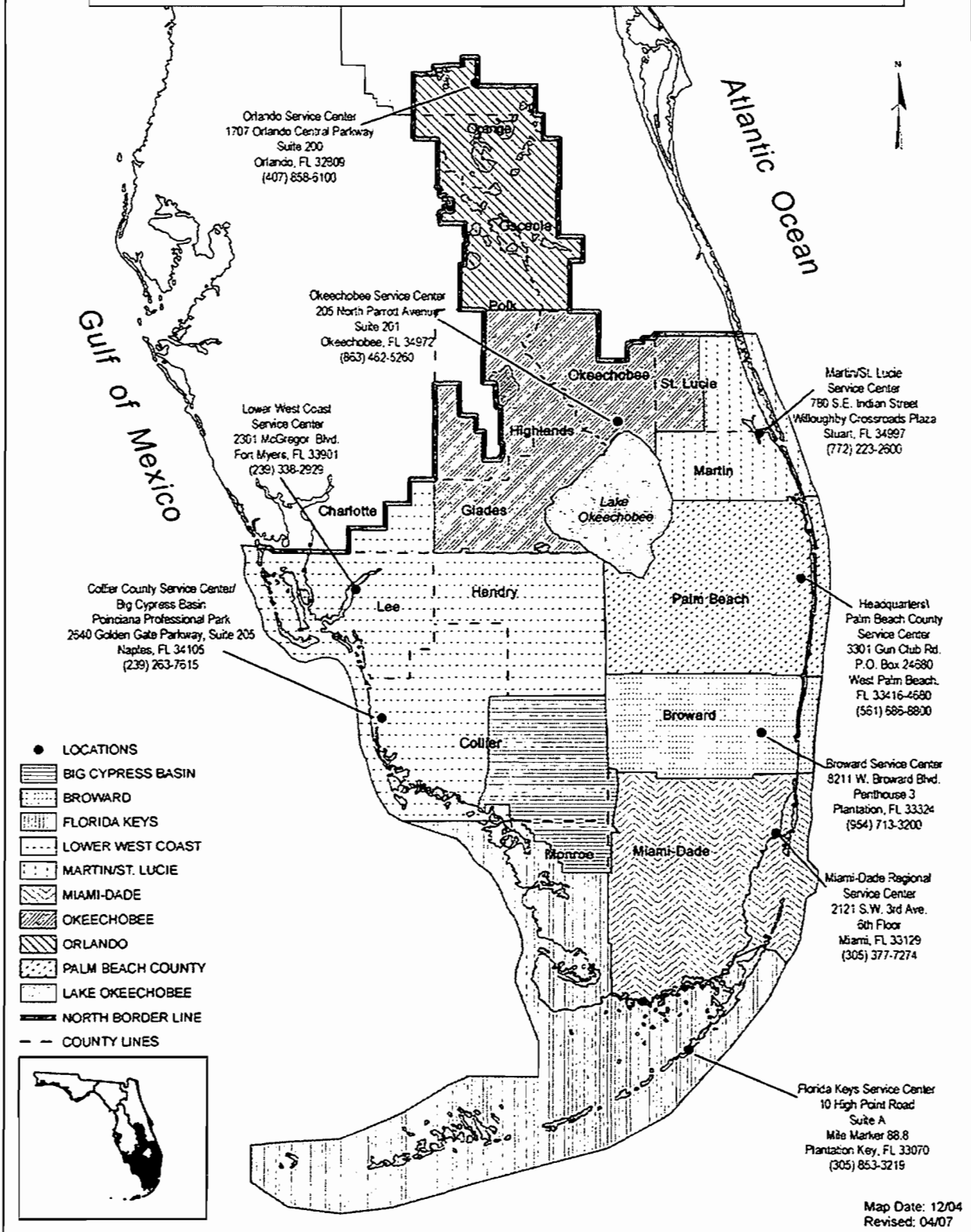
Bureau of Mine Reclamation
 Collins Building
 2051 E. Dixie Drive, MS 715
 Tallahassee, FL 32310-3760
 (850) 488-8217

Updated 3/26/2003



PLEASE SUBMIT YOUR ORIGINAL APPLICATION TO THE DEPARTMENT OR THE APPROPRIATE WATER MANAGEMENT DISTRICT: NOT TO ONE OF THE ADDRESSES SHOWN ABOVE. (September 2003)

South Florida Water Management District Area Service Centers



Attachment 5 to Instructions for Joint Application Proprietary versus Regulatory

As you read through this application, you will notice that some questions contained in this application have the words regulatory and proprietary associated with them.

The word regulatory refers to a type of governmental power which allows an entity of the government, such as the Department of Environmental Protection, to regulate your property as well as all publicly owned lands to some specific degree for the greater public good. The regulatory powers that the department has over private and public lands are granted to the Department by the Legislature of the State of Florida and the scope of these powers are defined in the Florida Statutes. The Department of Environmental Protection, in its regulatory capacity, is required by acts of the Florida Legislature to protect the natural resources of the state such as the air, the water and the land so as to insure that these resources will be healthy and in abundance for present and future generations.

The word proprietary essentially means ownership and all the lands in the state that are in public ownership fall into this category. Generally all the submerged lands in the State of Florida that existed when Florida became a state in 1845 are considered Sovereign, and in accordance with the Constitution of the State of Florida, these lands are held in trust by the state for all the people. This means that all the people of the state of Florida are part land owners in all the sovereign submerged lands. The concept of public ownership of sovereign submerged lands was developed and instituted by the Roman empire in the fifth century A.D. and this concept has come to be known as the public trust doctrine. Essentially the doctrine states that the sovereign submerged lands of the state including all its aquatic resources belong to all the people and should be managed for the greater benefit of the people.

The Governor and the Cabinet, as the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida, have been designated by the state's legislature as the trustees of these sovereign submerged lands and associated aquatic resources. As the trustees, the Governor and the Cabinet are responsible for the protection, preservation and management of these lands. They are responsible for insuring that these lands and the associated aquatic resources remain healthy and in abundance for present and future generations. The Governor and the Cabinet only have proprietary (ownership) authority on Sovereign submerged lands and the influenced water bodies and the ordinary high water line for fresh water bodies. The Department of Environmental Protection also acts as the staff to the trustees so that the department can review both regulatory and proprietary requirements as they may apply to a proposed activity.

If you are proposing to conduct an activity which is not located on sovereign submerged lands and is strictly being conducted on your property then you will only be required to meet regulatory standards. If your proposed activity is located on sovereign submerged lands, you will be required to meet both regulatory standards and any proprietary requirements stipulated by the trustees.

CONSERVATION AREA
388.5 ACRES

FEDERAL WETLAND BOUNDARY

WETLAND BUFFER ZONE

WETLAND BUFFER ZONE

FEDERAL WETLAND BOUNDARY

GOPHER
TORTOISE
HABITAT

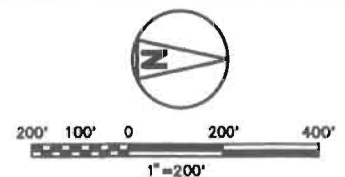
CONSERVATION AREA
471.5 ACRES

APPROXIMATE FDEP
WETLAND BOUNDARY

FDEP JURISDICTIONAL
WETLAND BOUNDARY

FEDERAL WETLAND BOUNDARY

FDEP JURISDICTIONAL
WETLAND BOUNDARY



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PURPOSE ONLY
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CONSTRUCTION

PLANS/000001/01 (LMS Tech)
 ACAD 14-400
 03/28/08 08:38:34

NO	DATE	ISSUED FOR CONSTRUCTION	REVISIONS AND RECORD OF ISSUE
0	04/01/2008	ISSUED FOR CONSTRUCTION	

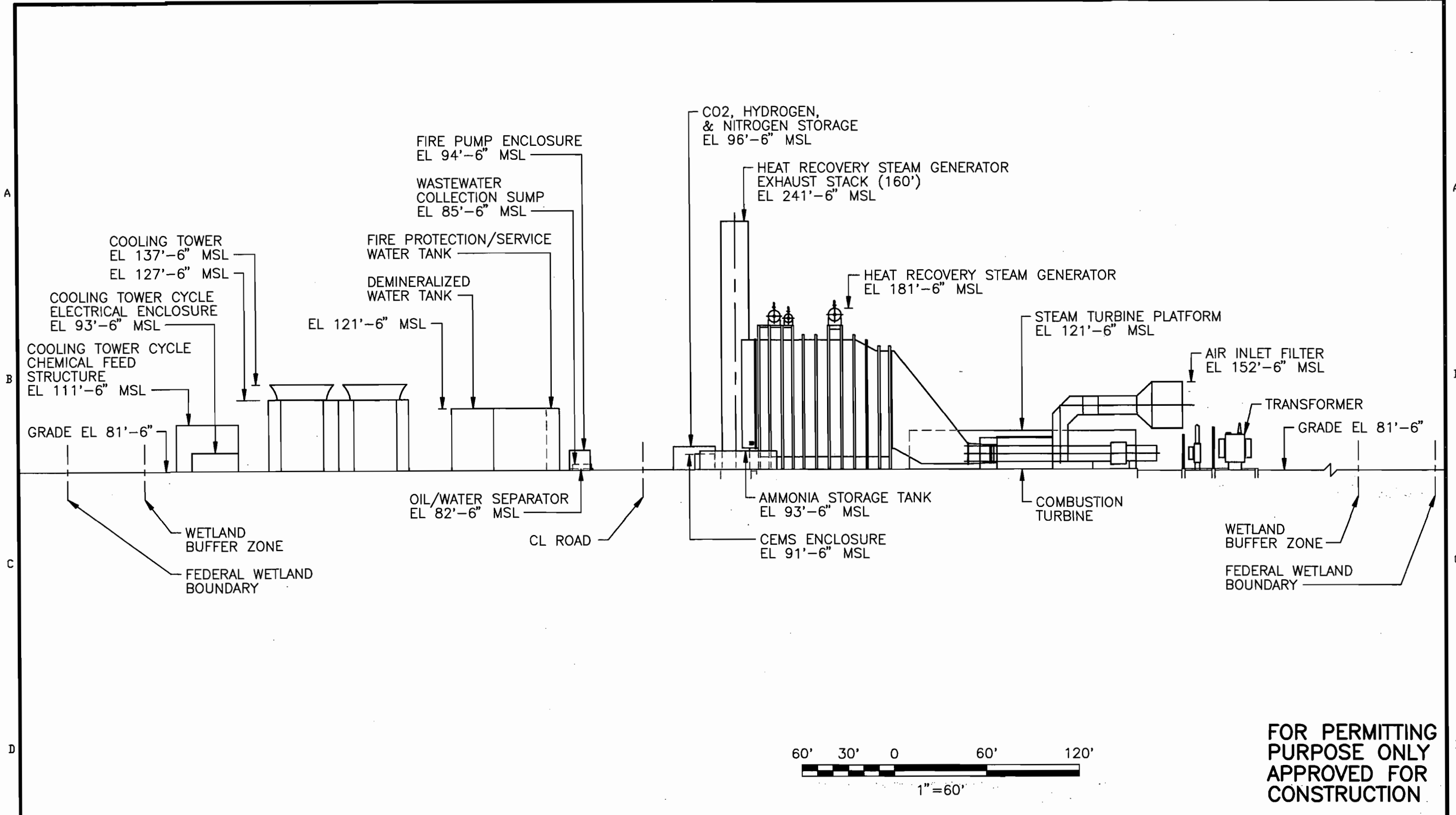
I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DAILY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF FLORIDA.
 SIGNED _____ DATE _____
 REG. NO. _____

BLACK & VEATCH
 CORPORATION
 ENGINEER JMS DRAWN MFR
 CHECKED JMS DATE 04/01/2008

FLORIDA MUNICIPAL POWER AGENCY
 CANE ISLAND POWER PARK UNIT 4
 PROJECT AERIAL

PROJECT	DRAWING NUMBER	REV
147651-DS-0112		0

1 2 3 4 5 6 7

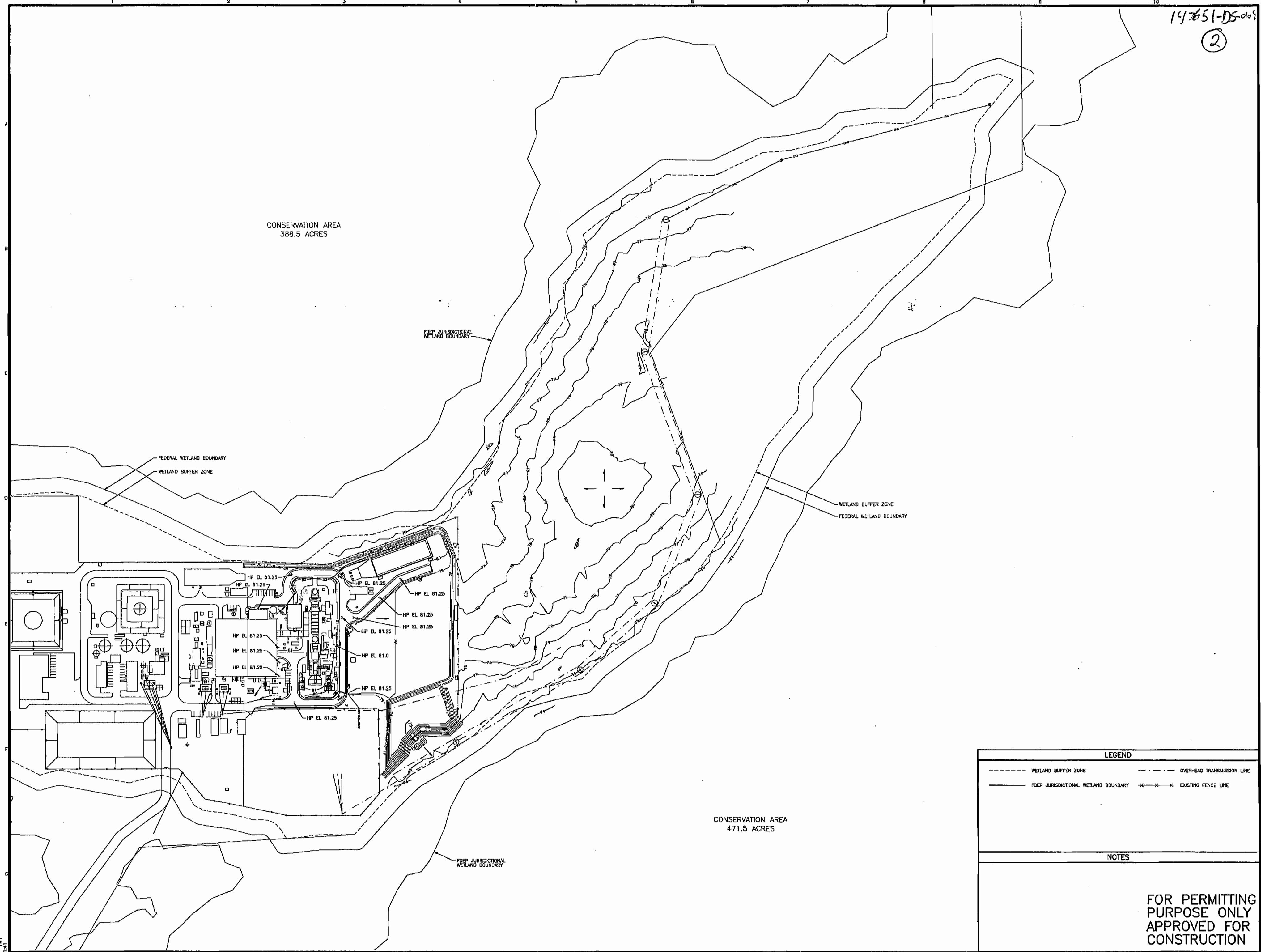


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APPROVED FOR CONSTRUCTION

RUM02B25
A1ASL012
03/27/08 07:14:39
ACAD 16.1s (LMS Tech)
B1 1=1

										BLACK & VEATCH CORPORATION		FLORIDA MUNICIPAL POWER AGENCY CANE ISLAND POWER PARK UNIT 4		PROJECT 147651-4STA-S1005	DRAWING NUMBER 147651-4STA-S1005	REV 0	
										ENGINEER JMS	DRAWN MRR		PROFILE		CODE	FIGURE 3.2-1	
										CHECKED MJS	DATE 04/01/2008		AREA				
0	04/01/2008	ISSUED FOR CONSTRUCTION	MRR	JMS	MJS	MJS	CAA										
NO	DATE	REVISIONS AND RECORD OF ISSUE	DRN	DES	CHK	PDE	APP										

147651-DS-0109
 (2)



LEGEND	
--- WETLAND BUFFER ZONE	--- OVERHEAD TRANSMISSION LINE
— FDEP JURISDICTIONAL WETLAND BOUNDARY	-x-x-x- EXISTING FENCE LINE

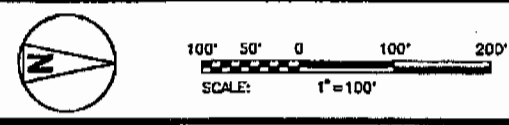
NOTES

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ACAD 16.1a (NAS Tech)
 04/20/08 11:51 AM

NO.	DATE	ISSUED FOR CONSTRUCTION	REVISIONS AND RECORD OF ISSUE
0	04/01/2008	ISSUED FOR CONSTRUCTION	

BLACK & VEATCH CORPORATION
 147651-DS-0109
 DATE 04/01/2008



FLORIDA MUNICIPAL POWER AGENCY
 CANE ISLAND POWER PARK UNIT 4
 PRE-DEVELOPMENT
 SITE DRAINAGE PATTERN

PROJECT	DRAWING NUMBER	REV
FLORIDA MUNICIPAL POWER AGENCY CANE ISLAND POWER PARK UNIT 4	147651-DS-0109	0
DATE	SCALE	AREA
04/01/2008	1"=100'	

DEWATERING SCHEDULE

DEWATERING AREA	DEWATERING AREA DESCRIPTION	APPROXIMATE DURATION DEWATERING WILL BE IN PLACE	REQUIRED DEWATER DEPTH (FEET BELOW GROUND SURFACE)
A	COOLING TOWER AND CIRCULATING WATER PUMP PIT	WEEKS 1 THRU 10	14
B	UNDERGROUND CIRCULATING WATER PIPE	WEEKS 1 THRU 6	14
C	OIL/WATER SEPARATOR AND WASTEWATER SUMP	WEEKS 7 THRU 10	15
D	MISCELLANEOUS SERVICE BUILDING VAULT	WEEKS 7 THRU 10	8
E	BLOWDOWN TANK SUMP AND BLOWDOWN SUMP	WEEKS 11 THRU 18	10
F	WASHWATER TANK	WEEKS 11 THRU 13	8
G	ACCESSORY MODULE TRENCH AND SUMP	WEEKS 14 THRU 18	8
H	ELECTRICAL EQUIPMENT BUILDING	WEEKS 17 THRU 21	8

LEGEND

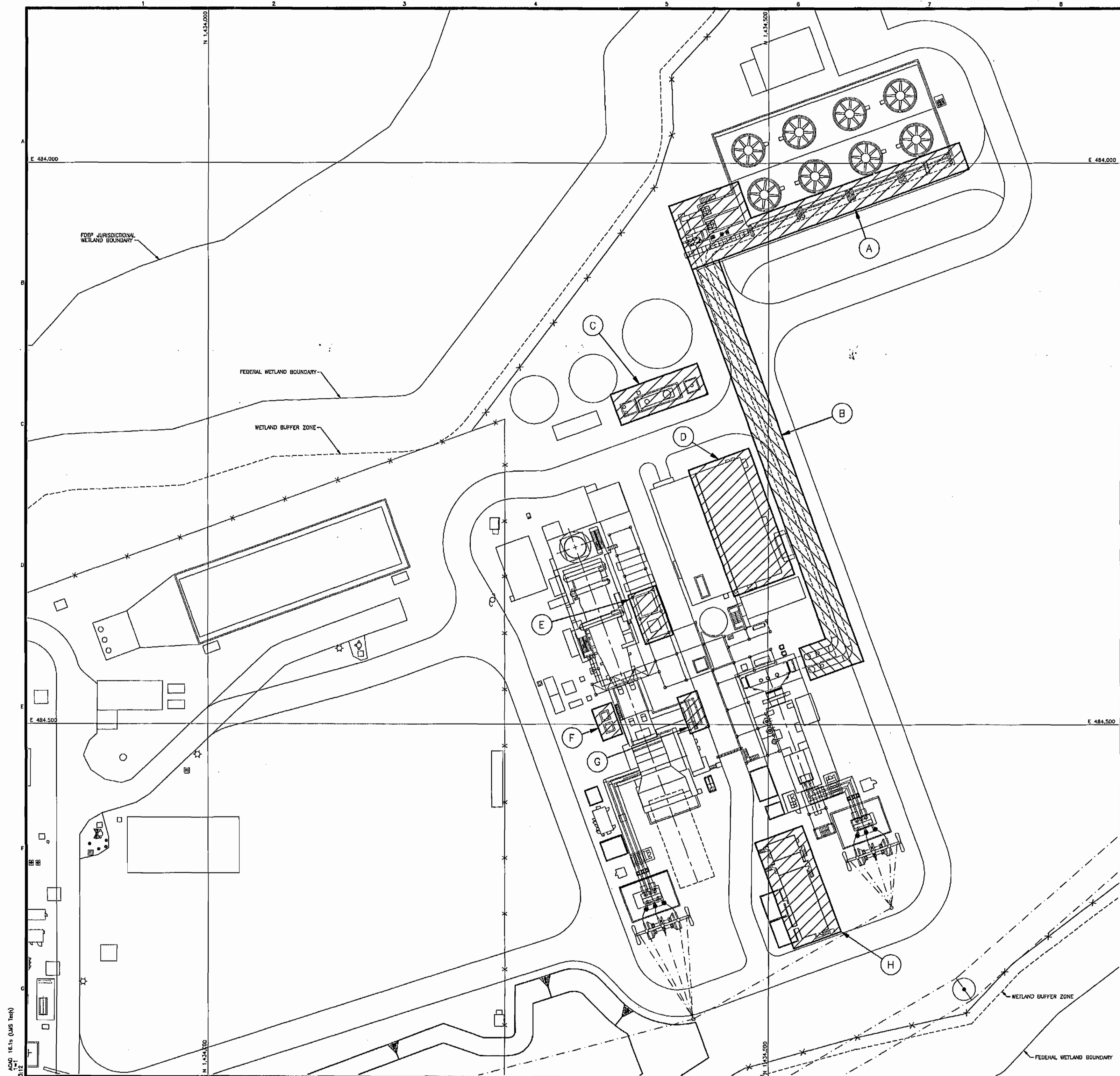
--- WETLAND BUFFER ZONE	--- OVERHEAD TRANSMISSION LINE
--- FDEP JURISDICTIONAL WETLAND BOUNDARY	--- FENCE LINE
[Hatched Box] GOPHER TORTOISE HABITAT	
① DEWATERING AREA	

NOTES

- SEE DRAWING 147651-45A-S1001 FOR SITE ARRANGEMENT.
- DEWATERING SHALL BE COMPLETED WITH A SERIES OF WELLPOINTS INSTALLED AROUND THE PERIMETER OF EXCAVATION. DISCHARGE FROM DEWATERING ACTIVITIES SHALL BE DIRECTED TO UNIT 3 AND 4 STORM WATER POND.

FOR PERMITTING PURPOSE ONLY APPROVED FOR CONSTRUCTION

FLORIDA MUNICIPAL POWER AGENCY CANE ISLAND POWER PARK UNIT 4		PROJECT 147651-DS-0110	REV 0
DEWATERING PLAN		DATE 04/01/2008	

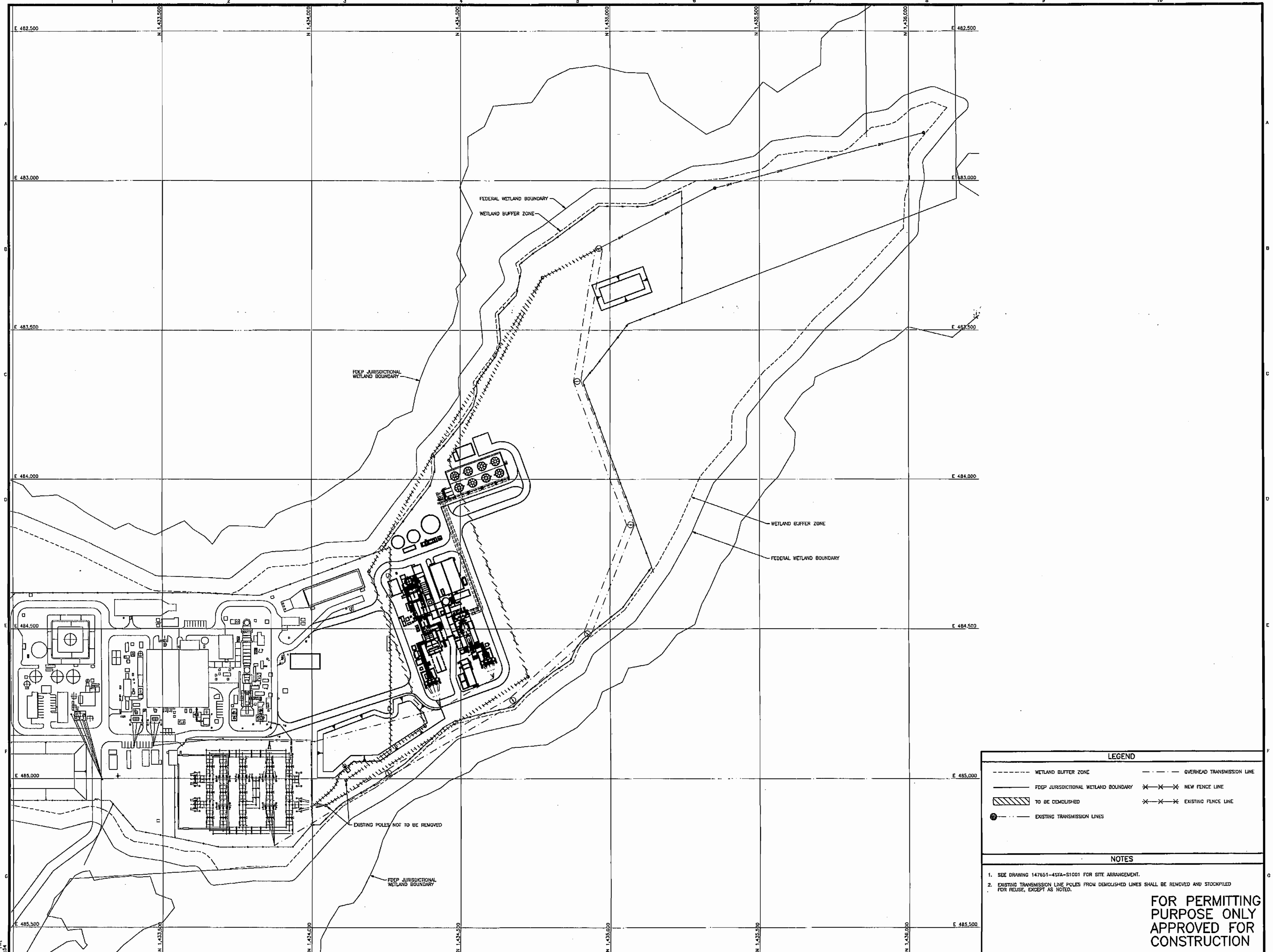


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 02/28/08 08:13:17

NO	DATE	ISSUED FOR CONSTRUCTION	REVISIONS AND RECORD OF ISSUE
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 DATE: _____ REV. NO.: _____
BLACK & VEATCH CORPORATION
 ENGINEER: [Signature] DRAWN: [Signature] CHECKED: [Signature] DATE: 04/01/2008





LEGEND	
--- WETLAND BUFFER ZONE	--- OVERHEAD TRANSMISSION LINE
... FDEP JURISDICTIONAL WETLAND BOUNDARY	--- NEW FENCE LINE
▨ TO BE DEMOLISHED	--- EXISTING FENCE LINE
● EXISTING TRANSMISSION LINES	

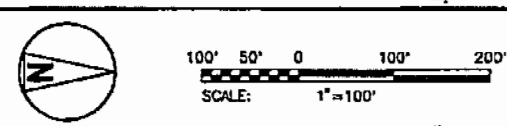
- NOTES**
- SEE DRAWING 147651-45TA-S1001 FOR SITE ARRANGEMENT.
 - EXISTING TRANSMISSION LINE POLES FROM DEMOLISHED LINES SHALL BE REMOVED AND STOCKPILED FOR REUSE, EXCEPT AS NOTED.

**FOR PERMITTING PURPOSE ONLY
APPROVED FOR CONSTRUCTION**

BLACK & VEATCH CORPORATION DRAWN: [Signature] CHECKED: [Signature] DATE: 04/01/2008 PROJECT: FLORIDA MUNICIPAL POWER AGENCY CANE ISLAND POWER PARK UNIT 4 DRAWING NUMBER: 147651-DS-0111 DEMOLITION PLAN		REV: 0 CODE: [] AREA: []
---	--	---

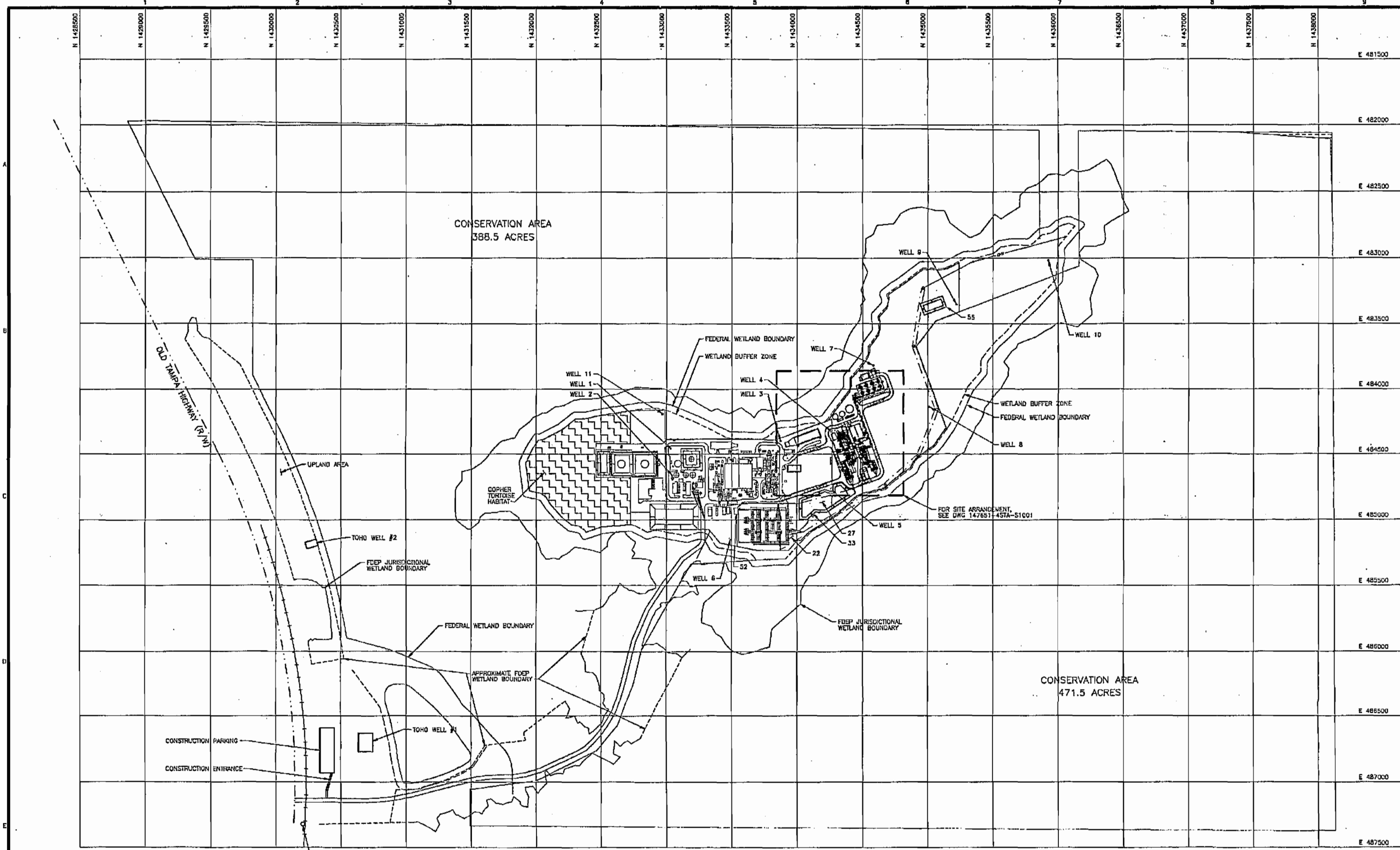
147651-DS-0111
 04/01/2008
 04/01/2008

NO.	DATE	ISSUED FOR CONSTRUCTION	REVISIONS AND RECORD OF ISSUE
0	04/01/2008	ISSUED FOR CONSTRUCTION	



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 SIGNED: [Signature] REG. NO.: []
 DATE: []

147651-4STA-S1000
 (5)



EAST 1/4 CORNER
 SECTION 32-25-28
 1/4" OF ROUND
 CONCRETE
 MONUMENT

FACILITIES LEGEND	
ID	FACILITY
22	SUBSTATION
27	RETENTION POND
33	RETENTION POND DISCHARGE
52	SWITCHYARD CONTROL BUILDING (EXISTING)
55	PERC POND

LEGEND	
---	WETLAND BUFFER ZONE
---	FDEP JURISDICTIONAL WETLAND BOUNDARY
---	OVERHEAD TRANSMISSION LINE
---	FENCE LINE
---	GOPHER TORTOISE HABITAT

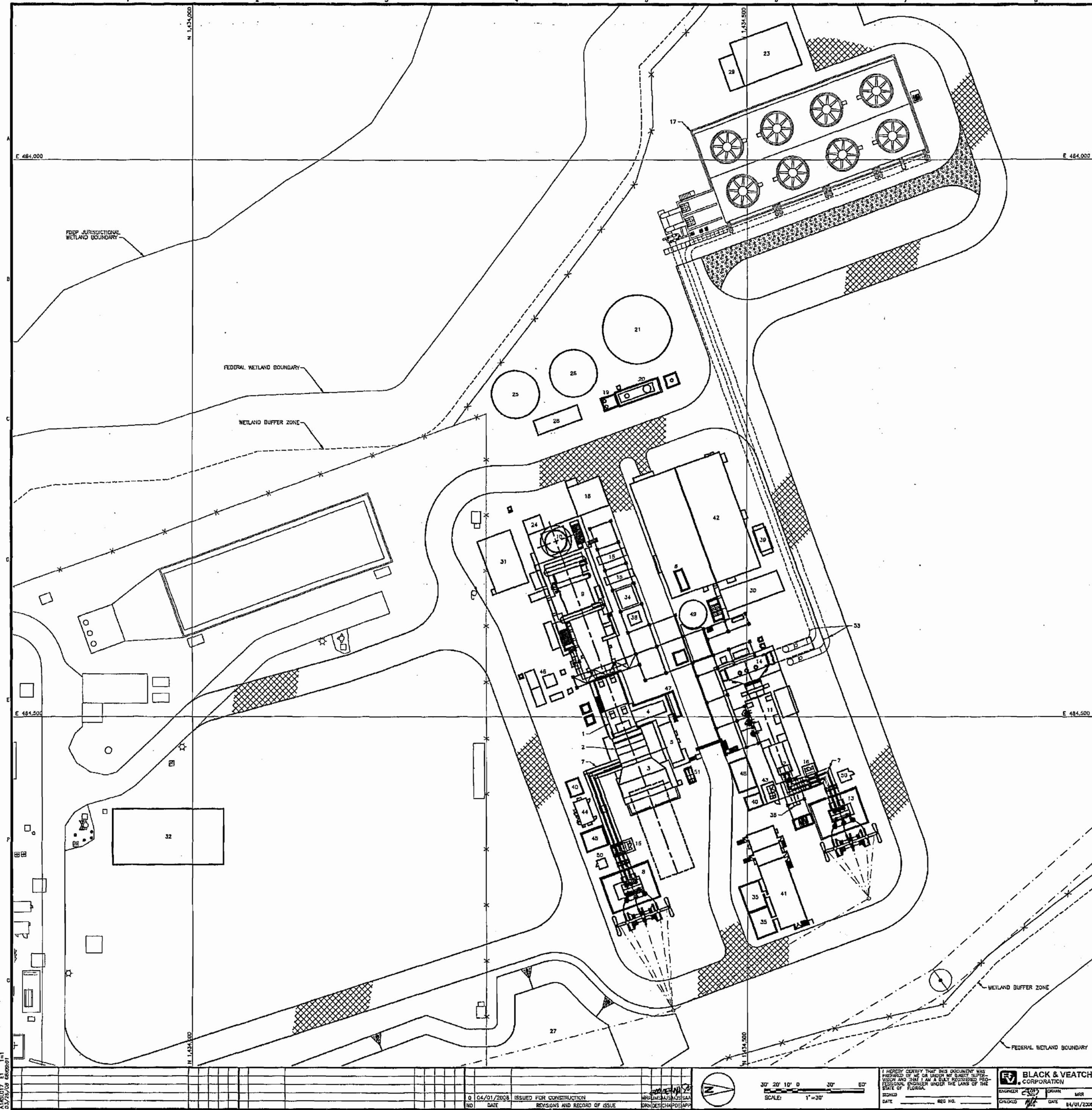
NOTES

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SCALE: 1"=300'

NO.	DATE	ISSUED FOR CONSTRUCTION	REVISIONS AND RECORD OF ISSUE
0	04/01/2008	ISSUED FOR CONSTRUCTION	

BLACK & VEATCH
 FLORIDA MUNICIPAL POWER AGENCY
 CAVE ISLAND POWER PARK UNIT 4
 PROJECT: 147651-4STA-S1000
 DRAWING: SITE PLAN
 DATE: 04/01/2008
 FIG 2.1-3



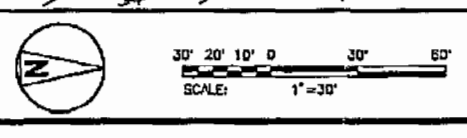
LEGEND	
---*	WETLAND BUFFER ZONE
---	FDEP JURISDICTIONAL WETLAND BOUNDARY
---	FEDERAL WETLAND BOUNDARY
---	OVERHEAD TRANSMISSION LINE
---	FENCE LINE
---	COPHER TORTOISE HABITAT

NOTES

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APPROVED FOR
CONSTRUCTION

REVISIONS
BY
DATE

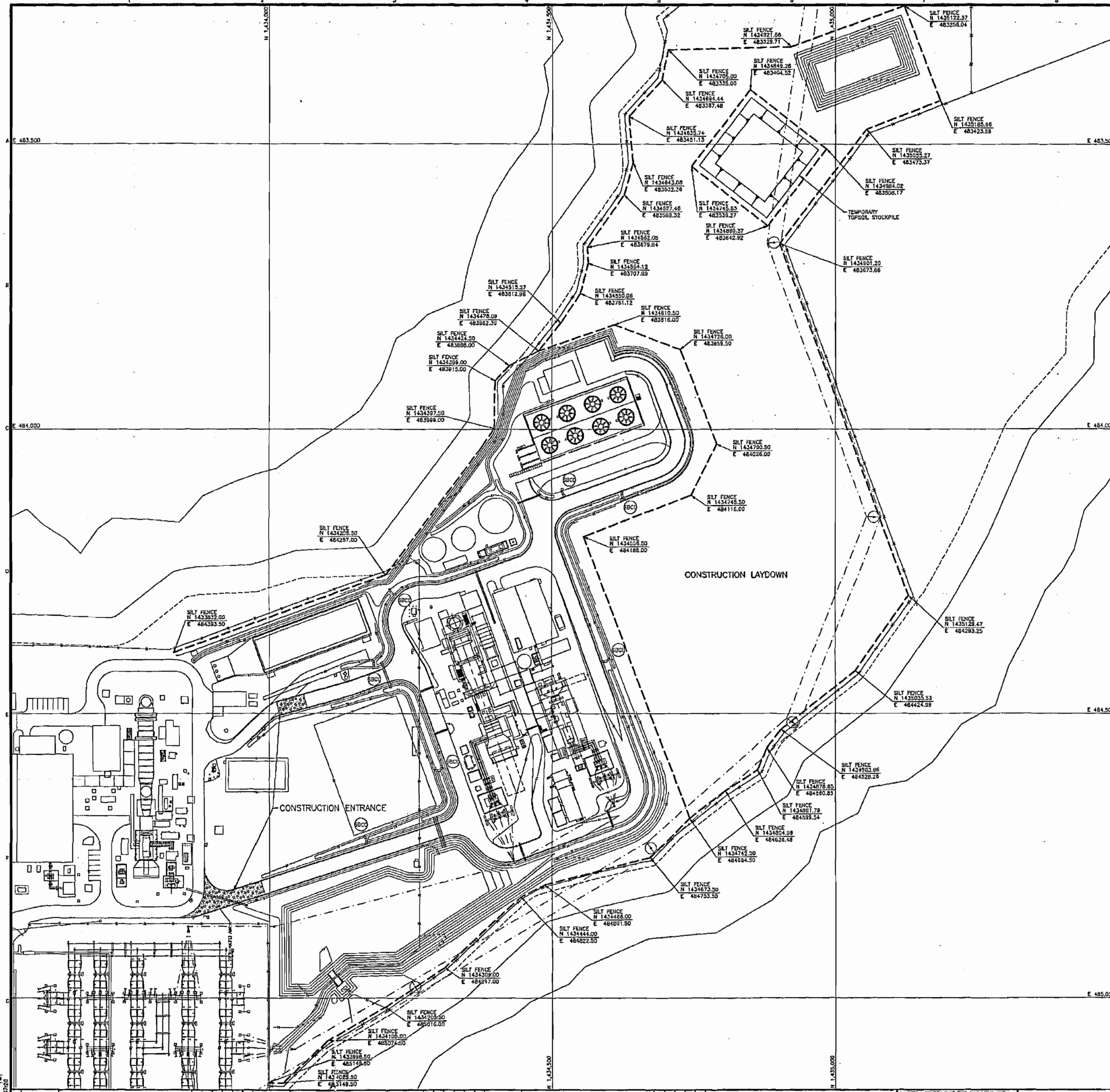
NO.	DATE	REVISIONS AND RECORD OF ISSUE
0	04/31/2008	ISSUED FOR CONSTRUCTION



I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A duly registered PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF FLORIDA.

BLACK & VEATCH CORPORATION
ENGINEER: [Signature] DRAWN: [Signature] MGR: [Signature]
DATE: [Signature] DATE: 04/01/2008

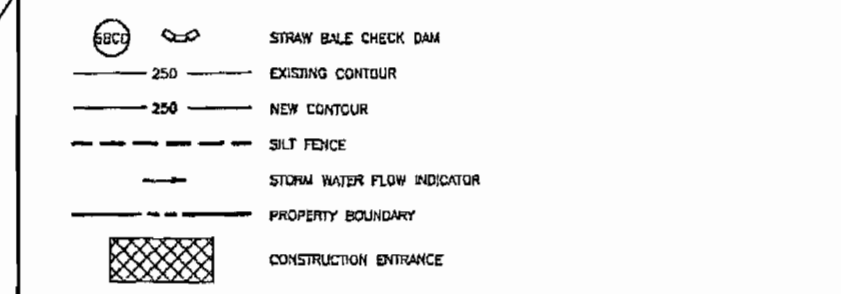
FLORIDA MUNICIPAL POWER AGENCY
CAVE ISLAND POWER PARK UNIT 4
PROJECT: UNIT 4 SITE ARRANGEMENT
DRAWING NUMBER: 147651-4STA-S1001
REV: 0
FIGURE 3.1-1



GENERAL NOTES APPLICABLE TO ALL S3100 DRAWINGS

1. FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS SEE DWG 83000.
2. ALL EROSION CONTROL WORK SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION SITE EROSION CONTROL PLAN.
3. SILT FENCE SHALL BE LOCATED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONSTRUCTION SITE EROSION CONTROL PLAN.
4. SEE DWG 53100 FOR EROSION CONTROL SECTIONS AND DETAILS.
5. STRAW BALE CHECK DAMS SHALL BE USED IN ALL DITCHES PER DETAIL ON DWG 53150.
6. SILT FENCE INLET PROTECTION SHALL BE USED AT ALL CULVERT AND TRENCH DRAIN INLETS.

LEGEND APPLICABLE TO ALL S3100 DRAWINGS



FOR PERMITTING PURPOSE ONLY APPROVED FOR CONSTRUCTION

DATE: 04/01/2008
DRAWN BY: [Name]
CHECKED BY: [Name]

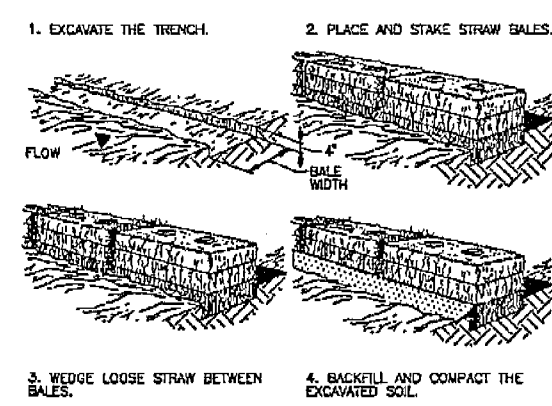
NO.	DATE	REVISIONS AND RECORD OF ISSUE
1	04/01/2008	ISSUED FOR CONSTRUCTION

BLACK & VEATCH CORPORATION
 PROJECT: FLORIDA MUNICIPAL POWER AGENCY
 CANE ISLAND POWER PARK UNIT 4
 DRAWING NUMBER: 147651-4STE-53100
 SHEET: 0

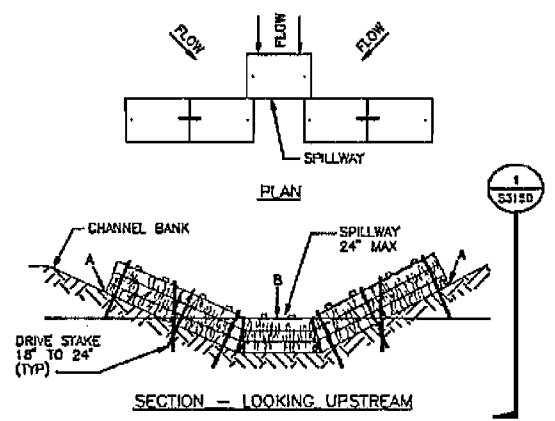
EROSION CONTROL PLAN SHEET
 SCALE: 1"=50'
 DATE: 04/01/2008

FIGURE 3.8-6

147651-4STE-S3150 (8)



STRAW BALE BARRIER CONSTRUCTION DETAIL
NO SCALE

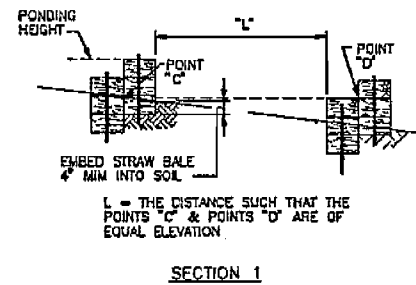


SECTION - LOOKING UPSTREAM

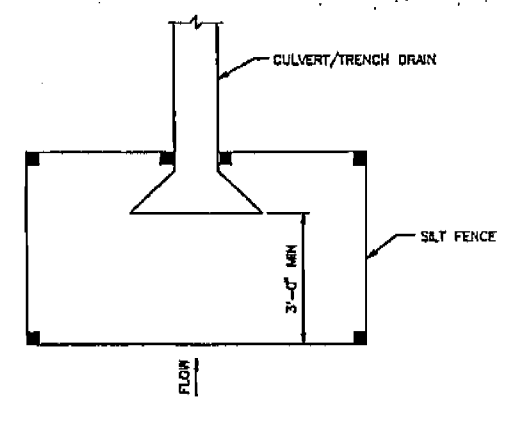
NOTES:

1. EMBED BALES 4" INTO SOIL AND "KEY" BALES INTO CHANNEL BANKS.
2. POINT "A" MUST BE HIGHER THAN POINT "B" (SPILLWAY HEIGHT).
3. PLACE BALES PERPENDICULAR TO THE FLOW WITH ENDS TIGHTLY ADJUTING.
4. SPILLWAY HEIGHT SHALL NOT EXCEED 24".
5. INSPECT AFTER EACH SIGNIFICANT STORM, MAINTAIN AND REPAIR PROMPTLY.

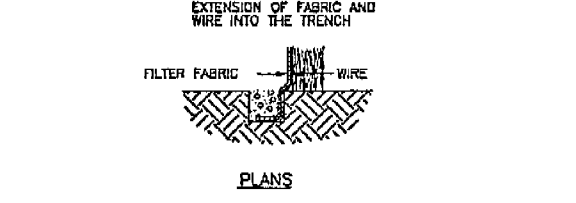
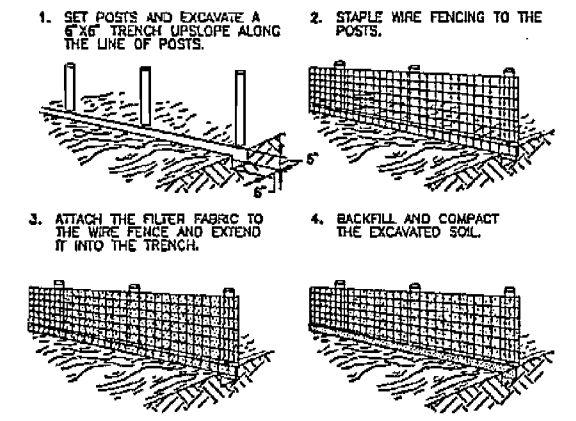
STRAW BALE CHECK DAM IN DRAINAGE WAY
NO SCALE



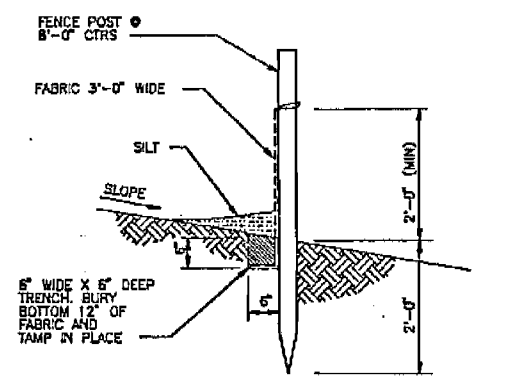
SECTION 1
SPACING BETWEEN CHECK DAMS
NO SCALE



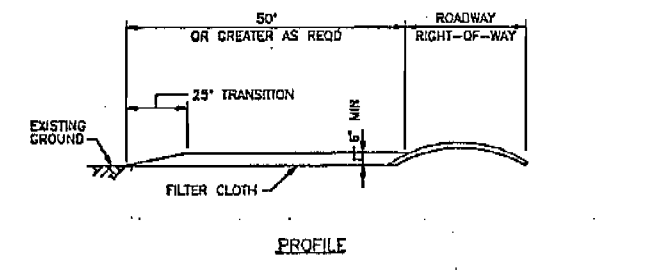
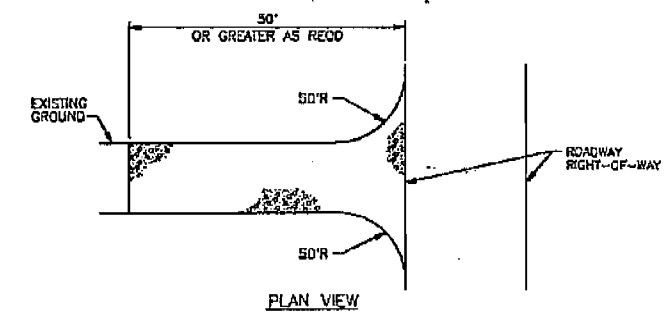
SILT FENCE
CULVERT/TRENCH DRAIN
INLET PROTECTION
NO SCALE



SILT FENCE DETAIL
NO SCALE



ELEVATION



TYPICAL STABILIZED CONSTRUCTION ENTRANCE
NO SCALE
SEE NOTES 2 & 3

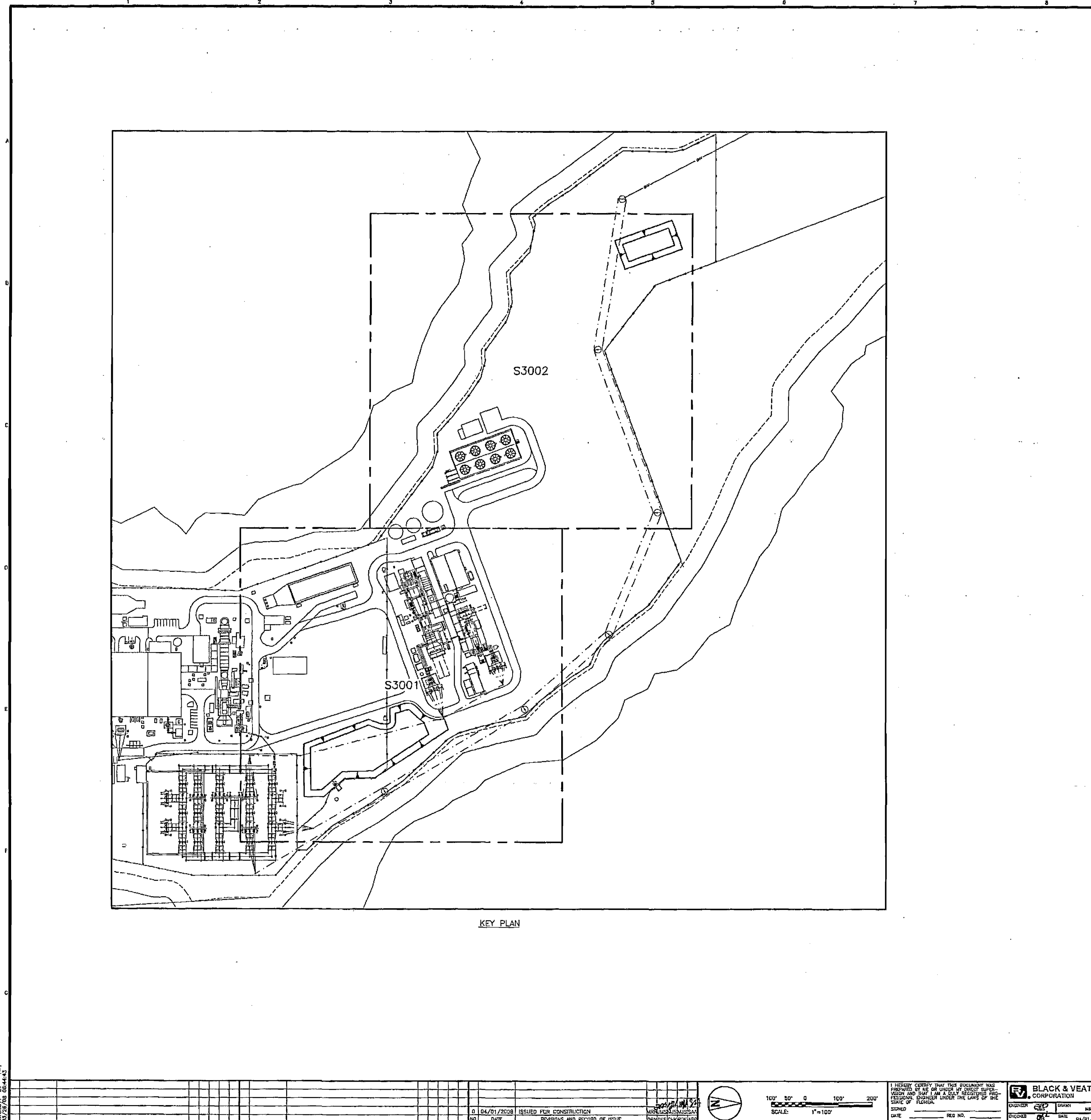
- NOTES
1. SEE DWG S3000 FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS.
 2. PROVIDE APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND PUBLIC R.O.W.
 3. DESIGN CRITERIA FOR STABILIZED CONSTRUCTION ENTRANCE.
 - A. STONE SIZE - USE ASTM C-33, SIZE NO 2 OR 3, USE CRUSHED STONE.
 - B. THICKNESS - NOT LESS THAN 8 INCHES.
 - C. WIDTH - NOT LESS THAN FULL WIDTH OF POINTS OF INGRESS OR EGRESS.
 - D. LENGTH - 50 FEET MINIMUM WHERE THE SOILS ARE SANDS OR GRAVEL OR 100 FEET MINIMUM WHERE THE SOILS ARE CLAYS OR SILTS, EXCEPT WHERE THE TRAVELED LENGTH IS LESS THAN 50 OR 100 FEET RESPECTIVELY, THESE LENGTHS MAY BE INCREASED WHERE FIELD CONDITIONS DICTATE.
 - E. FILTER CLOTH - WILL BE PLACED OVER ENTIRE AREA PRIOR TO PLACING OF STONE.
 - F. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ON TO PUBLIC RIGHT-OF-WAY THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.

FOR PERMITTING
PURPOSE ONLY
APPROVED FOR
CONSTRUCTION

REVISIONS: 01/20/06 (LMS Tech) 02/20/06 (G. J. GEORGE, IV)

I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF FLORIDA.		BLACK & VEATCH CORPORATION ENGINEER: [Signature] DRAWN: [Signature] CHECKED: [Signature] DATE: 04/01/2009	FLORIDA MUNICIPAL POWER AGENCY CANE ISLAND POWER PARK UNIT 4 EROSION CONTROL SECTIONS AND DETAILS	PROJECT: 147651-4STE-S3150 DRAWING NUMBER: 0 FIGURE 3.8-7
--	--	--	---	---

147651-4STF-53000 (9)



KEY PLAN

GENERAL NOTES

- GENERAL NOTES APPLICABLE TO ALL S3000 SERIES DRAWINGS.
- THE PLANT GRID SYSTEM USED FOR HORIZONTAL CONTROL IS STATE PLANE COORDINATE SYSTEM, FLORIDA EAST ZONE 801, NAD83.
- INTERSECTIONS OF PAVED ROADS SHALL HAVE A 40 FOOT TURNING RADIUS MEASURED FROM THE EDGE OF PAVEMENT UNLESS NOTED OTHERWISE. A SMOOTH VERTICAL TRANSITION SHALL BE PROVIDED AT ROAD INTERSECTIONS.
- THE LOCATIONS OF THE EXISTING FACILITIES AND UNDERGROUND UTILITIES SHOWN ON THIS SERIES OF DRAWINGS REPRESENT THE BEST KNOWLEDGE OF THE ENGINEER. BEFORE ANY WORK IS STARTED IN THE AREA OF THE EXISTING FACILITIES AND UNDERGROUND UTILITIES, THE SUBCONTRACTOR SHALL CONFIRM THEIR LOCATION AND NOTIFY THE OWNER THAT WORK IS PLANNED IN THIS AREA.
- CONSTRUCTION SEQUENCE SHALL BE SCHEDULED TO MINIMIZE UNCONTROLLED RUNOFF AND OFFSITE SEDIMENTATION DURING GRADING OPERATIONS. SEDIMENTATION BARRIERS SHALL BE INSTALLED IN EACH AREA BEFORE GRADING OPERATIONS BEGIN. GRADED AREAS SHALL BE SEEDED IMMEDIATELY FOLLOWING COMPLETION OF FINAL GRADING IN EACH AREA.
- SPOT ELEVATION AND CONTOURS ON THESE DRAWINGS ARE TOP OF FINISHED GRADE. SUBTRACT FINISHED SURFACING MATERIAL THICKNESS TO OBTAIN TOP OF SUBGRADE.
- GRADE SHALL SLOPE UNIFORMLY BETWEEN SPOT ELEVATIONS AND CONTOURS SHOWN ON THE PLANS. SLOPE GRADE TO DRAIN IN THE DIRECTION OF FLOW ARROWS.
- THE FINISHED GRADE SHALL BE SET 8 INCHES BELOW TOP OF CONCRETE UNLESS NOTED OTHERWISE. FINISHED GRADE SHOULD SLOPE AWAY FROM THE STRUCTURE AT A MINIMUM SLOPE OF 1% FOR THE FIRST 10 FEET.
- ALL CUT AND FILL SLOPES SHALL BE 3 HORIZONTAL TO 1 VERTICAL OR FLATTER, UNLESS NOTED OTHERWISE.
- BUMPER POSTS ARE TO BE FIELD LOCATED.
- SEE DWG 147651-4STF-53000 FOR GRADING AND DRAINAGE SECTIONS AND DETAILS.
- SEE 147651-4STF-53100 SERIES DRAWINGS FOR THE EROSION CONTROL PLAN AND DETAILS.
- SEE DWGS 147651-45TA-51000 AND S1001 FOR SITE ARRANGEMENT.

LEGEND APPLICABLE TO ALL S3000 DRAWINGS

---	PROPERTY LINE	[Hatched]	ASPHALT SURFACING
---	LIMIT OF RIGHT-OF-WAY	[Dotted]	AGGREGATE SURFACING
---	NEW SECURITY FENCE	[Stippled]	CONCRETE
---	NEW CONTOUR	[Cross-hatched]	EARTH
---	AREA INLET	[Diagonal lines]	RIPRAP
---	NEW STORM WATER SYSTEM	[Stippled]	SAND/BEDDING MATL
---	NEW CULVERT	[Stippled]	GRASS
---	GRADE SURFACE FLOW INDICATOR	[Wavy lines]	WETLANDS
---	NEW SPOT ELEVATION	[Circle with cross]	
---	SURVEY CONTROL MONUMENT	[Circle with dot]	
---	NEW TRENCH DRAIN	[Circle with cross]	
---	EXISTING FENCE	[Circle with dot]	
---	EXISTING CONTOUR	[Circle with dot]	
---	WETLAND BUFFER ZONE	[Circle with dot]	
---	OVERHEAD TRANSMISSION LINE	[Circle with dot]	
---	DEEP JURISDICTIONAL WETLAND BOUNDARY	[Circle with dot]	

ABBREVIATIONS APPLICABLE TO ALL S3000 DRAWINGS

A	ARC LENGTH	LS	LEFT STATION
AGG	AGGREGATE	LTR	LATER
APPROX	APPROXIMATE	M	MANHOLE
ASPH	ASPHALT	MEI	MEAN SEA LEVEL
ASPH	ASPHALT	MEW	MENTORING WELL
BLDG	BUILDING	NO	NORTH
B/WH	BOTTOM OF MANHOLE ELEVATION	NO	NORTH
B/BK	BOTTOM OF ELECTRICAL DUCT BANK	NO	NORTH
BO	BOTTOM OF PIPE	NS	NOT TO SCALE
BU	BELL UP	OS	OUTSIDE DIMETER
CHOP	CORRUGATED HIGH DENSITY POLYETHYLENE PIPE	OS	OIL/WATER SEPARATOR
CL	CONSTRUCTION JOINT	OS	POINT OF CURVATURE
CL	CENTERLINE	PE	PLAIN END
CM	CORRUGATED METAL PIPE	PI	POINT OF INTERSECTION
CO	CLEAN OILT	PL	PLACES
CO	DEGREE OF CURVE	PLS	PLACES
DA	DELTA ANGLE OF HORIZONTAL CURVE	PRC	POINT OF REVERSE CURVE
DI	DIAPHRAGM	PT	POINT OF TANGENT
DIA	DIAMETER	PVC	POINT OF VERTICAL CURVE
DIM	DIMENSION	PVI	POINT OF VERTICAL INTERSECTION
DWG	DRAWING	PVT	POINT OF VERTICAL TANGENT
EA	EACH	RCP	REINFORCED CONCRETE PIPE
EAF	EACH FACE	RCR	REOF CROWN
EGP	EDGE OF PAVEMENT	RED	REDCUP
EGS	EDGE OF SHOULDER	RESD	REVISION
EMH	ELECTRICAL MANHOLE	REV	REVISION
EL	ELEVATION	R/W	RIGHT-OF-WAY
EX	EXPANSION JOINT	S	SOUTH
EX	EXPANSION JOINT	SP	SUPERELEVATION
EXP	EXPANSION JOINT	SM	SIMILAR
FD	FLOOR FINISH	SP	SOUTH
FLN	FOUNDATION	SP	SOUTH
FLN	FOUNDATION	SP	SOUTH
FG	FINISHED FLOOR	SP	SOUTH
FG	FINISHED GRADE	SP	SOUTH
FRP	FIBER REINFORCED PIPE	SP	SOUTH
HC	HANDICAPPED	SP	SOUTH
HPC	HIGH DENSITY POLYETHYLENE	SP	SOUTH
HVCN	HORIZ & VERT CONTROL MONUMENT	SP	SOUTH
HP	HIGH POINT	SP	SOUTH
ID	INSIDE DIAMETER	SP	SOUTH
IN	INCH	SP	SOUTH
INV	INVERT	SP	SOUTH
LG	LENGTH	SP	SOUTH
LG	LENGTH OF VERTICAL CURVE	SP	SOUTH

PROJECT SURVEY CONTROL

CONTROL MONUMENT LOCATIONS

MONUMENT NO.	STATE PLANE COORDINATES EASTING	NORTHING	ELEVATION
1	484,953.765	1,432,348.949	78.05
12	482,882.648	1,435,905.858	73.59
23	485,217.602	1,433,848.406	74.15
49	487,224.814	1,430,143.646	71.39

NOTE:
MONUMENTS ARE 9" x 12" CONCRETE MONUMENTS WITH BRASS DISC IN THE TOP. HORIZONTAL CONTROL IS BASED ON THE FLORIDA STATE PLANE COORDINATE - EAST ZONE (1983/90 N.A.D.) SYSTEM. THE ELEVATIONS ARE BASED ON THE NAVD 1988 DATUM FROM BENCHMARKS SET BY THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT AND INFORMATION THAT WAS FURNISHED BY THE ORSOLA COUNTY ENGINEERING DEPARTMENT.

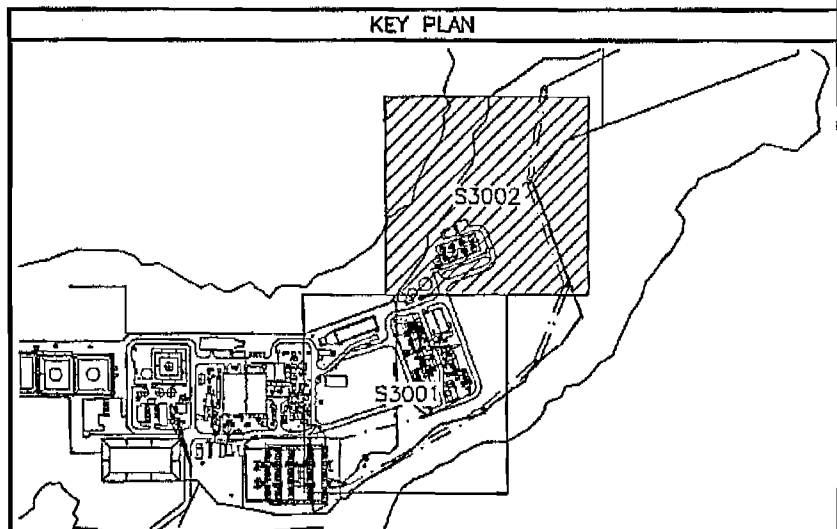
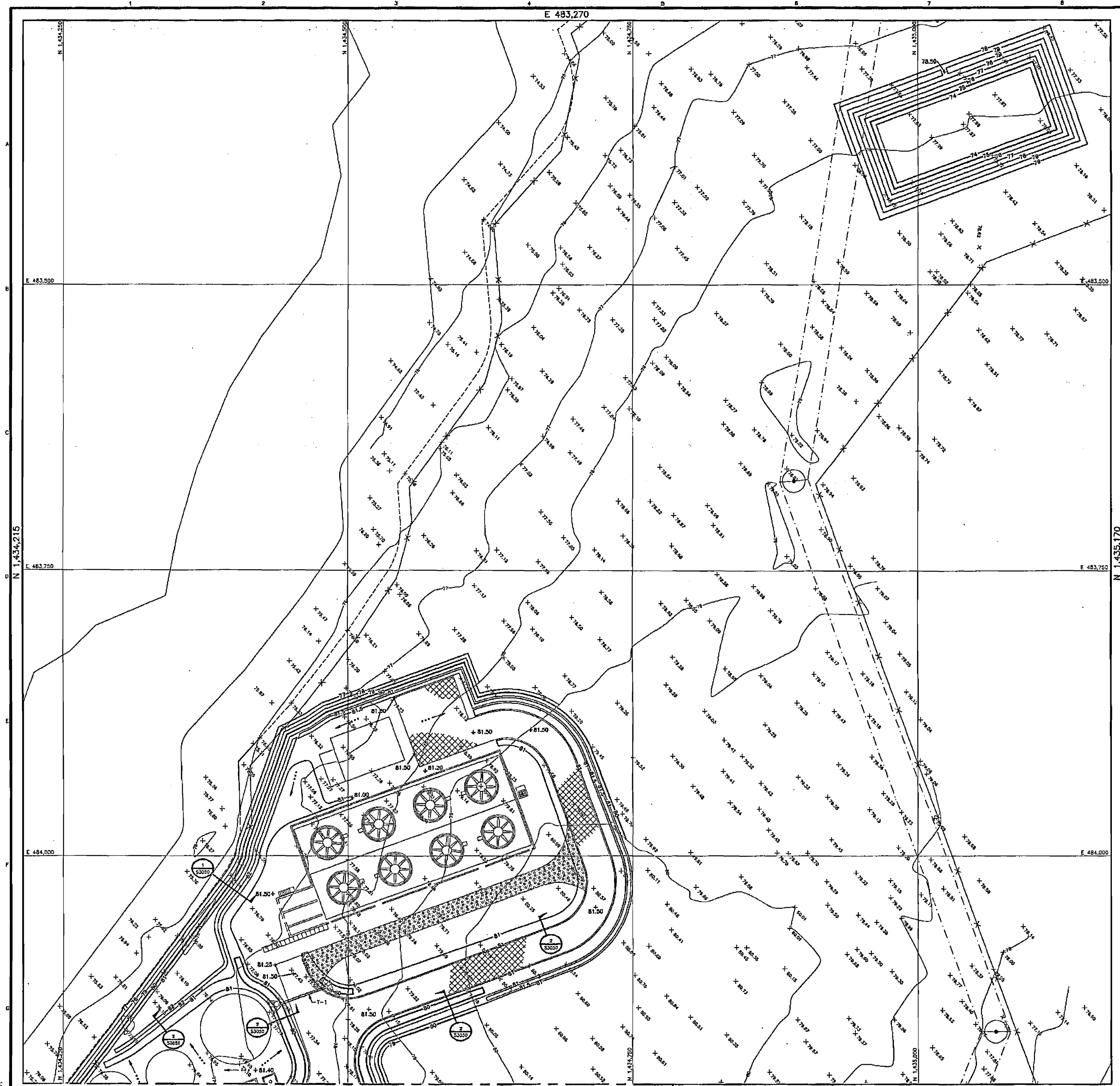
FOR PERMITTING PURPOSE ONLY APPROVED FOR CONSTRUCTION

BLACK & VEATCH CORPORATION

FLORIDA MUNICIPAL POWER AGENCY
CANE ISLAND POWER PARK UNIT 4

PROJECT: 147651-4STF-S3000
DRAWING NUMBER: 0
DATE: 04/01/2008
SCALE: 1"=100'

147651-4STF-S3002
 11



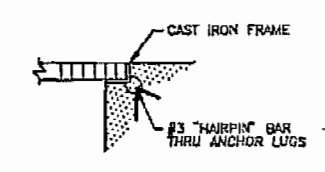
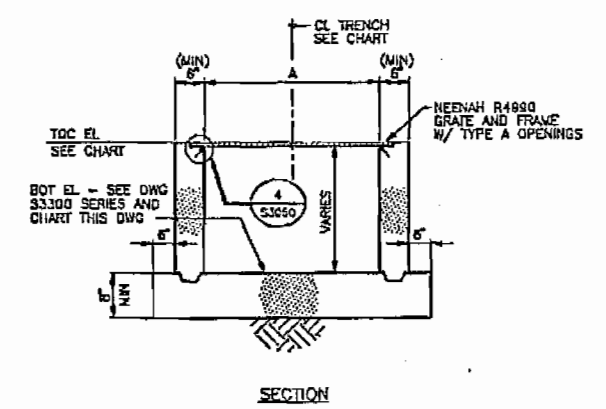
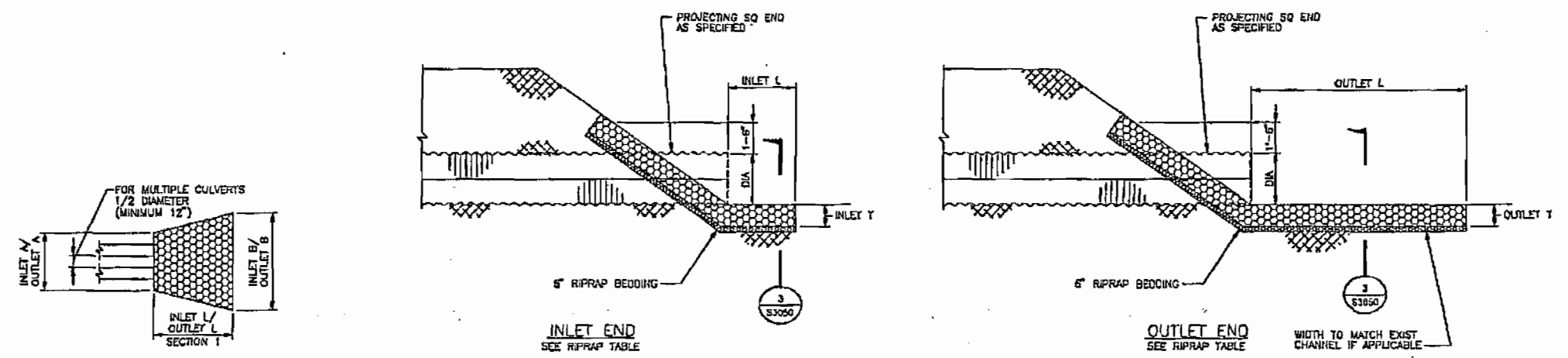
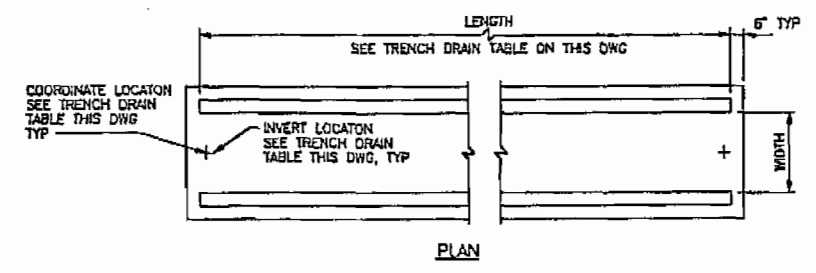
NOTES
 1. SEE DWG S3000 FOR GENERAL NOTES, LEGEND, ABBREVIATIONS AND KEY PLAN.

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 APPROVED FOR
 CONSTRUCTION

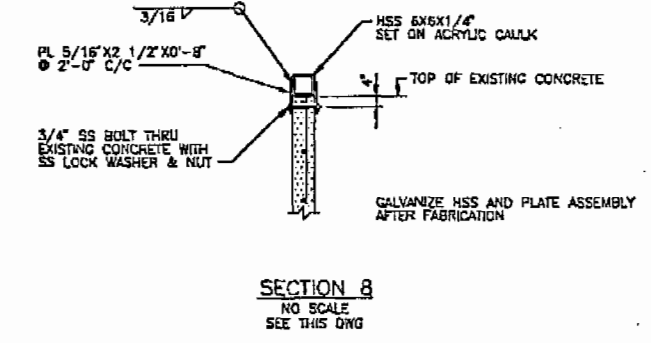
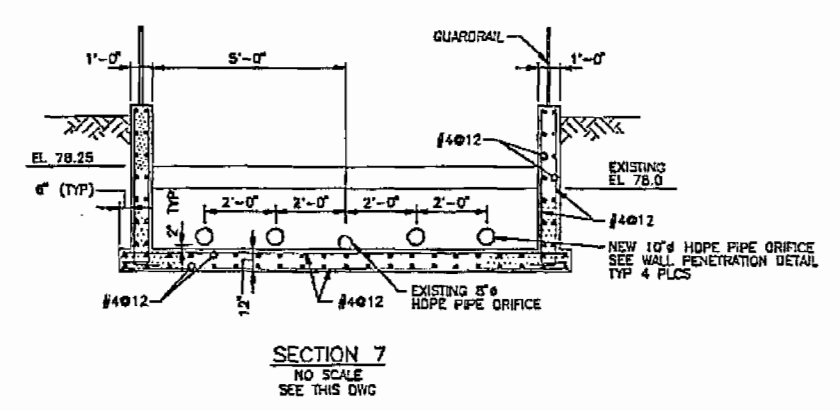
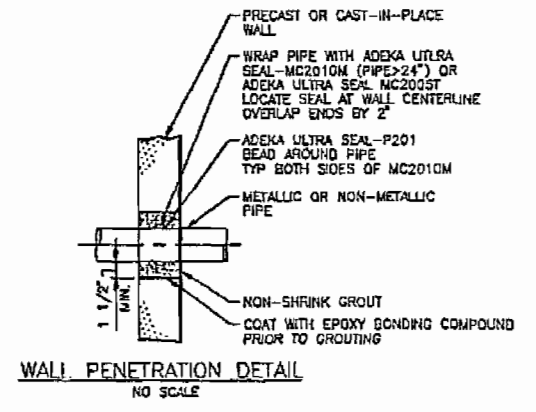
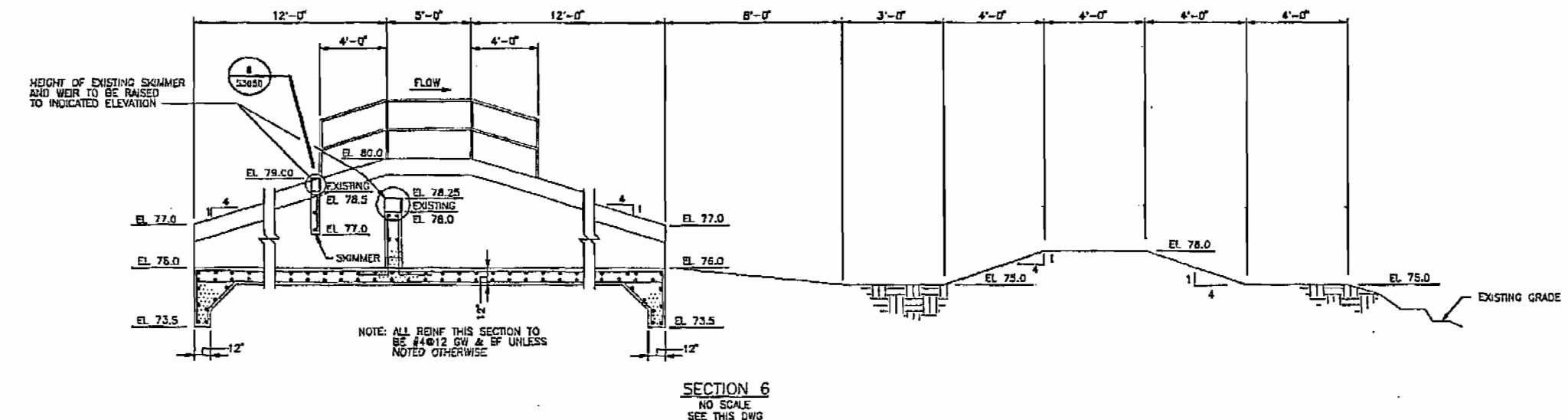
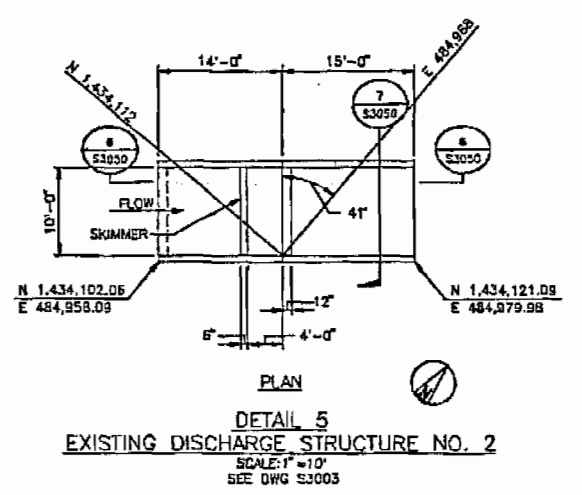
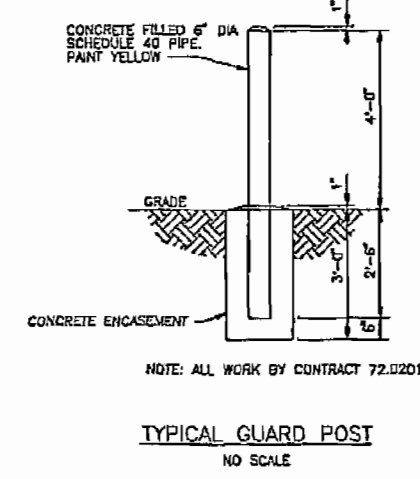
0 04/01/2008 ISSUED FOR CONSTRUCTION NO. DATE REVISIONS AND RECORD OF ISSUE		30' 20' 10' 0' 30' 60' SCALE: 1"=30'		BLACK & VEATCH CORPORATION ENGINEER: [Signature] DRAWN: MBR CHECKED: [Signature] DATE: 04/01/2008		FLORIDA MUNICIPAL POWER AGENCY CANE ISLAND POWER PARK UNIT 4 GRADING AND DRAINAGE - SITE SHEET 2		PROJECT: 147651-4STF-S3002 DRAWING NUMBER: 147651-4STF-S3002 FIGURE 3.8-4	
--	--	---	--	---	--	---	--	---	--

CULVERT NO.	CENTERLINE COORDINATES				LENGTH	INLET INV. ELEVATION	OUTLET INV. ELEVATION	END TYPE	PIPE DIAMETER	NUMBER OF BARRELS	PIPE MATERIAL
	INLET END		OUTLET END								
	NORTH	EAST	NORTH	EAST							
C-1A	1434199.93	484469.35	1434216.50	484454.82	48.4'	77.75	77.50	PROJECTING	24"	1	CHDPE
C-1B	1434197.13	484416.39	1434213.66	484453.93	48.4'	77.75	77.50	PROJECTING	24"	1	CHDPE
C-2A	1434284.38	484680.29	1434311.98	484733.58	56.0'	76.75	76.33	PROJECTING	24"	1	CHDPE
C-2B	1434281.32	484681.21	1434308.72	484734.50	56.0'	76.75	76.33	PROJECTING	24"	1	CHDPE
C-2C	1434288.67	484682.13	1434305.87	484735.42	56.0'	76.75	76.33	PROJECTING	24"	1	CHDPE

TRENCH DRAIN NO.	DRAWING NO.	CENTERLINE COORDINATES				LENGTH	INLET TRENCH INV. ELEVATION	OUTLET TRENCH INV. ELEVATION	TOP OF CONCRETE ELEVATION	REMARKS	
		INLET END		OUTLET END							
		NORTH	EAST	NORTH	EAST						
T-1	S3002	1434490.42	484114.98	1434439.91	484128.71	43.12	1'-0"	79.68	79.68	81.00	
T-2	S3001	1434597.44	484671.60	1434608.86	484702.38	33.40	2'-0"	79.60	79.42	81.00	
T-3	S3001	1434399.02	484242.22	1434264.49	484247.33	100.95	2'-0"	80.50	80.00	81.50	
T-4	S3001	1434291.84	484452.77	1434282.24	484463.44	31.19	2'-0"	80.27	80.10	81.50	
T-5	S3001	1434318.56	484537.31	1434309.09	484538.53	27.10	2'-0"	80.85	80.70	81.50	
T-6	S3001	1434441.36	484727.53	1434452.43	484729.23	32.38	2'-0"	80.03	79.85	81.50	
EXIST. T-3	S3001	-	-	1433956.44	484837.42	70.08	1'-0"	78.52	78.55	MATCH EXISTING	EXISTING TRENCH DRAIN TO BE EXTENDED



CULVERT NO.	INLET L	OUTLET L	INLET		OUTLET		INLET DSD	OUTLET DSD	REMARKS
			A	B	A	B			
C-1	5	12.67	8	10	8	20	8"	6"	SEE DWG 147651-4STF-S3001 FOR PLAN
C-2	5	37	11	11	11	24.25	8"	6"	SEE DWG 147651-4STF-S3001 FOR PLAN
T-1	5	9.5	4.5	10	5	10	8"	6"	SEE DWG 147651-4STF-S3002 FOR PLAN
T-2	-	10	-	-	5	20	8"	6"	SEE DWG 147651-4STF-S3001 FOR PLAN
T-3	-	6.38	-	-	5	12.75	8"	6"	SEE DWG 147651-4STF-S3001 FOR PLAN
T-4	-	9	-	-	5	18	8"	6"	SEE DWG 147651-4STF-S3001 FOR PLAN
T-5	-	10	-	-	5	20	8"	6"	SEE DWG 147651-4STF-S3001 FOR PLAN
T-6	-	11	-	-	5	22	8"	6"	SEE DWG 147651-4STF-S3001 FOR PLAN
T-7	-	10	-	-	5	20	8"	6"	SEE DWG 147651-4STF-S3001 FOR PLAN
T-8	-	11.5	-	-	5	23	8"	6"	SEE DWG 147651-4STF-S3001 FOR PLAN



NOTES

- SEE DWG S3000 FOR GENERAL NOTES, LEGEND, ABBREVIATIONS AND KEY PLAN.

FOR PERMITTING PURPOSE ONLY APPROVED FOR CONSTRUCTION

FLORIDA MUNICIPAL POWER AGENCY
CANE ISLAND POWER PARK UNIT 4

PROJECT: 147651-4STF-S3050

DATE: 04/21/2008

FIGURE 3.8-5

APPROVED BY: [Signature]
 DATE: 04/21/2008

I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA.

ENGINEER: [Signature] DATE: 04/21/2008
 CHECKED: [Signature] DATE: 04/21/2008

NO.	DATE	ISSUED FOR CONSTRUCTION	REVISIONS AND RECORD OF ISSUE
1	04/21/2008	ISSUED FOR CONSTRUCTION	REVISIONS AND RECORD OF ISSUE

**Appendix A
Geologic Hazard Investigation**

Appendix A Geologic Hazard Investigation

A geologic hazard investigation was conducted in October 2007. The soil borings from that investigation and the location map are included herein.

TRANSMITTAL

BLACK & VEATCH
 FMPA Cane Island
 Project No. 147651.0035

Date: 14 NOV 07

To: Barry Beck
 P.E. LaMoreaux & Associates, Inc. (PELA)
 106 Administration Road, Suite 4
 Oak Ridge, TN 37830

Attention: Barry Beck

We are sending you the attached documents for your review.

- | | | |
|---|---|---|
| <input type="checkbox"/> Shop Drawings | <input type="checkbox"/> Prints | <input type="checkbox"/> Plans |
| <input type="checkbox"/> Copy of Letter | <input type="checkbox"/> Change Order | <input type="checkbox"/> Samples |
| <input type="checkbox"/> Catalog Cuts | <input type="checkbox"/> Specifications | <input checked="" type="checkbox"/> Other |

Copies	Date	Rev. No.	Description
1	14 NOV 07	-	Phase 2 Geologic Hazard Investigation Boring Logs – performed in PELA-designated locations as directed by PELA; Logs B4-1a, B4-4a, B4-5, B4-6, B4-7, B4-8, B4-9
1	14 NOV 07	-	Geologic Hazard Investigation Location Plan
1	14 NOV 07	-	Geologic hazard Investigation Summary with Water Levels

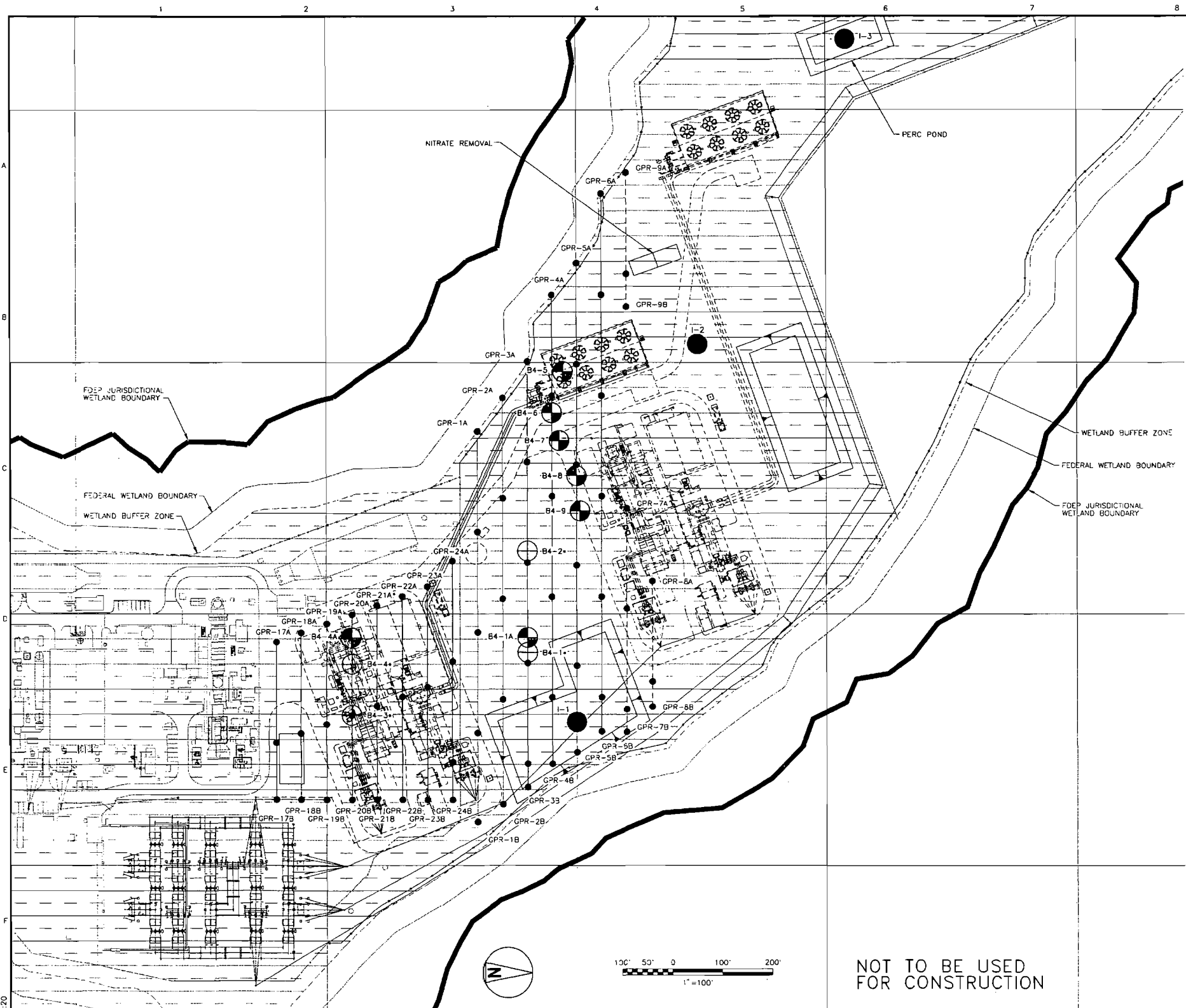
These are transmitted as checked below:

- | | | |
|--|--|--|
| <input type="checkbox"/> For Approval | <input type="checkbox"/> Exceptions Noted | <input type="checkbox"/> For Review and Comment |
| <input type="checkbox"/> For Your Use | <input type="checkbox"/> No Exceptions Noted | <input type="checkbox"/> Returned for Correction |
| <input checked="" type="checkbox"/> As Requested | <input type="checkbox"/> _____ | |

Remarks:

If you have any questions, please call me at: wisecm@bv.com

Signed:
Craig Wise



BORING LOCATIONS					
BORING NO.	NORTHING	EASTING	GROUND SURFACE ELEV.	OFFSET OF STANDPIPE	STICKUP OF STANDPIPE
B4-1*	1434400	484577	79.25		
B4-1A	1434400	484547	78.82	2.5 FT. WEST	2.3
B4-2*	1434400	484375	77.28		
B4-3*	1434050	484702	79.25		
B4-4*	1434050	484600	79.00		
B4-4A	1434048	484548	79.20	3 FT NORTH	1.8
B4-5	1434472	484018	77.41	5 FT WEST	1.0
B4-6	1434450	484100	77.43	4 FT NORTH	2.4
B4-7	1434465	484155	77.54	6 FT NORTH	2.3
B4-8	1434500	484225	77.76	5 FT NORTH	1.9
B4-9	1434507	484295	78.06	4 FT EAST	1.8

INFILTRMETER LOCATIONS				
INFILTRMETER NO.	NORTHING	EASTING	ELEVATION	REMARKS
I-1	1434500.11	484714.89	77.85	
I-2	1434740.63	483963.34	79.70	
I-3	1435040.29	483360.27	77.97	

NOTES

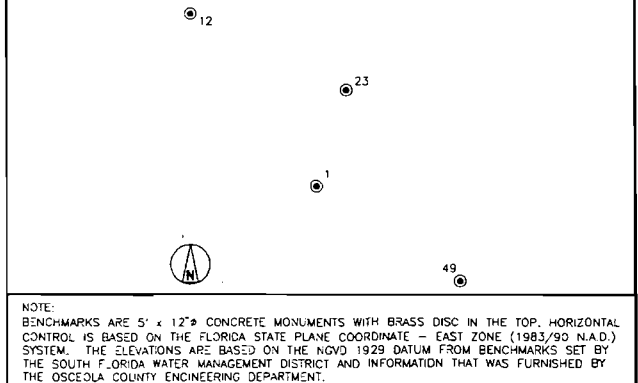
- GPR LINES #7, 8, AND 9 WERE FIELD LOCATED AND THE LOCATIONS WERE ESTIMATED BY P.E. LAMOREAUX & ASSOCIATES, INC. (PELA) BASED ON FIELD NOTES AND BY OVERLAYING THE AERIAL PHOTO OF THE SITE.
- BORINGS WITH AN "*" WERE PERFORMED BY P.E. LAMOREAUX & ASSOCIATES, INC. (PELA) AS PHASE 1 OF THE GEOLOGIC HAZARD INVESTIGATION. THESE BORINGS DID NOT HAVE OFFSET STANDPIPES FOR WATER LEVEL READINGS. ALL OTHER BORINGS WERE DIRECTED BY PELO, LOGGED BY B&V, AND PERFORMED BY ARDAMAN & ASSOCIATES, INC. AS PHASE 2 OF THE INVESTIGATION.

LEGEND

- B4-1A B&V BORING
- B4-1* PELA BORING
- I-1 INFILTRMETER
- GPR-1A SURVEYED LINE OF GPR
- GPR-7A ESTIMATED LINE OF GPR

PROJECT CONTROL

MONUMENT NO.	STATE PLANE COORDINATES		ELEVATION
	EASTING	NORTHING	
1	484,953.765	1,432,348.949	78.05
12	482,882.646	1,435,905.858	73.59
23	485,217.602	1,433,848.406	74.15
49	487,224.814	1,430,143.646	71.39



NOTE: BENCHMARKS ARE 5' x 12" CONCRETE MONUMENTS WITH BRASS DISC IN THE TOP. HORIZONTAL CONTROL IS BASED ON THE FLORIDA STATE PLANE COORDINATE - EAST ZONE (1983/90 N.A.D.) SYSTEM. THE ELEVATIONS ARE BASED ON THE NOVD 1929 DATUM FROM BENCHMARKS SET BY THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT AND INFORMATION THAT WAS FURNISHED BY THE OSCEOLA COUNTY ENGINEERING DEPARTMENT.

11/26/07 07:09:20
 11/26/07 07:09:20
 11/26/07 07:09:20

NO.	DATE	REVISIONS AND RECORD OF ISSUE	DESIGNED	CHECKED	DATE	REG. NO.
C	11/26/2007	ISSUED FOR PHASE 2 INVESTIGATION TRANSMITTAL TO PELA	MRR	JMS		
B	11/19/2007	ISSUED FOR PHASE 2 INVESTIGATION TRANSMITTAL TO PELA	MRR	JMS		
A	11/14/2007	ISSUED FOR PHASE 2 INVESTIGATION TRANSMITTAL TO PELA	MRR	JMS		

I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF FLORIDA.

SIGNED: _____
 DATE: _____ REG. NO.: _____

BLACK & VEATCH CORPORATION

ENGINEER: JMS DRAWN: MRR CHECKED: _____

FMPA - ALL REQUIREMENTS PROJECT
 CANE ISLAND POWER PARK, UNIT 4 PARK

PROJECT: 147651-DS-0105 DRAWING NUMBER: _____

AREA: _____

GEOLOGIC HAZARD INVESTIGATION LOCATION PLAN

NOT TO BE USED FOR CONSTRUCTION

FMPA Cane Island
Geologic Hazard Investigation
Investigation Location Summary and Water Levels

Location	N	E	Ground Surf Elev	offset of Standpipe	Stickup of Standpipe	elev 2nov07 water	depth 7nov07 water	elev 7nov07 water	depth 9nov07 water	elev 9nov07 water
B4-1	1,434,400	484,577	79.25							
B4-1a	1,434,400	484,547	78.82	2.5 ft west	2.3	71.6	8	73.12	7.7	73.4
B4-2	1,434,400	484,375	77.28							
B4-3	1,434,050	484,702	79.25							
B4-4	1,434,050	484,600	79							
B4-4a	1,434,048	484,548	79.2	3 ft North	1.8	73			7.3	73.7
B4-5	1,434,472	484,018	77.41	5 ft west	1	71.9	5.9	72.51	5.86	72.6
B4-6	1,434,450	484,100	77.43	4 ft north	2.4				7.56	72.3
B4-7	1,434,465	484,155	77.54	6 ft North	2.3	69.3			10.05	69.8
B4-8	1,434,500	484,225	77.76	5 ft North	1.9	71.7			6.74	72.9
B4-9	1,434,507	484,295	78.06	4 ft east	1.75		6	73.81	6.06	73.8
I-1	1,434,500	484,715	77.85							
I-2	1,434,741	483,963	79.7							
I-3	1,435,040	483,360	77.85							



BLACK & VEATCH

BORING LOG

BORING NO. B4-1a

SHEET 1 OF 3

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434400.0'	GROUND ELEVATION (DATUM) E 484547.0' 78.8 ft (NGVD 1929)	TOTAL DEPTH 69.3 (feet)
SURFACE CONDITIONS Grassy, level		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 10/30/07	DATE FINISHED 10/30/07

SOIL SAMPLING		LOGGED BY W. Zheng <i>WZ</i>	CHECKED BY C. Wise <i>CW</i>	APPROVED BY B. Christensen <i>BC</i>
---------------	--	---------------------------------	---------------------------------	---

SOIL SAMPLING								DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY							
SPT	1	WOH	1	2	3	0.5	0		78		SAND; light gray; very loose; moist; fine grained; poorly graded; w/some roots	Boring advanced to 5.0' by SPT. SPT performed w/safety hammer and cathead w/1-3/4 wraps. Boring continued w/2-7/8" dia tricone bit using bentonite mud as drilling fluid.	
SPT	2		3	4	4	1.2	4		74		grading dark brown; loose; w/trace roots		
SPT	3		1	2	2	0.8	10		70		Silty SAND; brown; loose; moist; fine grained; poorly graded; w/trace roots		
SPT	4		7	10	6	1.2	14		64		grading medium dense; roots grade out		
SPT	5		4	7	9	1.2	20		60		grading light gray; w/trace clay		
SPT	6		3	4	4	1.0	24		54		grading loose		
SPT	7		4	2	2	1.0	30		50				SPT performed w/automatic hammer @ 13.5'



BLACK & VEATCH

BORING LOG

BORING NO. B4-1a
SHEET 2 OF 3

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434400.0'	GROUND ELEVATION (DATUM) E 484547.0'	TOTAL DEPTH 69.3 (feet)
SURFACE CONDITIONS Grassy, level		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 10/30/07	DATE FINISHED 10/30/07

SOIL SAMPLING		LOGGED BY W. Zheng <i>WZ</i>	CHECKED BY C. Wise <i>CW</i>	APPROVED BY B. Christensen <i>BC</i>
---------------	--	---------------------------------	---------------------------------	---

SOIL SAMPLING							DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY						
ROCK CORING							DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD						
SPT	8	2	1	1	2	1.5	34					
SPT	9	WOH	WOH	WOH	WOH	1.5	40				Sandy CLAY; light gray; very soft; wet; low plasticity; w/ some silt	
SPT	10	WOH	WOH	WOH	WOH	1.5	44					
SPT	11	WOH	WOH	2	2	1.5	50					
SPT	12	WOH	WOH	WOH	WOH	1.3	54				grading w/some sand	
SPT	13	WOH	WOH	WOH	WOH	1.1	58				grading light gray	

11/14/2007 12:07 PM FMPA and KUA - Cane Island Unit 4



BLACK & VEATCH

BORING LOG

BORING NO. B4-1a
SHEET 3 OF 3

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434400.0'	GROUND ELEVATION (DATUM) E 484547.0' 78.8 ft (NGVD 1929)	TOTAL DEPTH 69.3 (feet)
SURFACE CONDITIONS Grassy, level		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 10/30/07	DATE FINISHED 10/30/07

SOIL SAMPLING		LOGGED BY W. Zheng <i>WZ</i>	CHECKED BY C. Wise <i>CW</i>	APPROVED BY B. Christensen <i>BC</i>
---------------	--	---------------------------------	---------------------------------	---

SOIL SAMPLING								DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	RQD						
ROCK CORING								DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	RQD						
SPT	14	WOH	WOH	WOH	WOH		1.5	60		18			
								62		16		Silty SAND; light gray; very loose; wet; fine grained; poorly graded; w/trace clay	
								64		14			
								66		12			
								68		10		LIMESTONE; white; highly weathered; medium grained; strong	Lost circulation @ 67.0'
SPT	15	45	50/3"	-	>50		0.8	68		10			
								70		8			
								72		6			
								74		4			
								76		2			
								78		0			
								80		-2			
								82		-4			
								84		-6			
								86		-8			
								88		-10			
								90					



BLACK & VEATCH

BORING LOG

BORING NO. B4-4a
SHEET 1 OF 4

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434048.0'	GROUND ELEVATION (DATUM) E 484548.0' 79.2 ft (NGVD 1929)	TOTAL DEPTH 78.9 (feet)
SURFACE CONDITIONS Grassy, level		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 10/30/07	DATE FINISHED 10/30/07

SOIL SAMPLING		LOGGED BY W. Zheng <i>WZ</i>	CHECKED BY C. Wise <i>CW</i>	APPROVED BY B. Christensen <i>BC</i>
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SAMPLE TYPE		SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD						
SPT	1	1	4	6	10	1.0	0		78		SAND; light brown; moist; loose; fine grained; poorly graded; w/trace roots	Boring advanced to 5.0' by SPT. SPT performed w/safety hammer and cathead w/1-3/4 wraps.
SPT	2	14	15	11	26	1.4	4		74		grading light gray; medium dense; roots grade out	
SPT	3	4	7	7	14	1.0	8		70		grading wet	Boring continued w/2-7/8" dia tricone bit using bentonite mud as drilling fluid.
SPT	4	6	10	11	21	1.0	14		64		grading dark brown; w/some silt	SPT continued w/ automatic hammer @ 13.5'.
SPT	5	10	11	10	21	1.3	20		60			
SPT	6	6	8	7	15	1.4	24		54		Clayey SAND; light gray; medium dense; wet; fine grained; poorly graded	
SPT	7	4	6	7	13	1.0	28		50		SAND; light gray; medium dense; wet; fine grained; poorly graded	

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BORING LOG

BORING NO. B4-4a

SHEET 2 OF 4

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434048.0'	GROUND ELEVATION (DATUM) E 484548.0' 79.2 ft (NGVD 1929)	TOTAL DEPTH 78.9 (feet)
SURFACE CONDITIONS Grassy, level		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 10/30/07	DATE FINISHED 10/30/07

SOIL SAMPLING		LOGGED BY W. Zheng <i>WZ</i>	CHECKED BY C. Wise <i>CW</i>	APPROVED BY B. Christensen <i>BC</i>
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ROCK CORING								DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD							
SPT	8	6	4	2	6	1.3	34		46		Silty SAND; light gray; loose; wet; fine grained; poorly graded		
SPT	9	2	2	2	4	1.5	40		40		Clayey SAND; light gray; loose; wet; fine grained; poorly graded; w/trace silt		
SPT	10	WOHWOH		1	1	1.5	44		34		grading gray; very loose		
SPT	11	WOH	1	2	3	1.5	50		30		Silty CLAY; dark green; soft; wet; low plasticity; w/some sand		
SPT	12	1	3	2	5	1.5	54		24		grading gray; firm		
SPT	13	3	4	3	7	1.4	58		20		Silty SAND; light gray; loose; wet; fine grained; poorly graded; w/some clay		

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BORING LOG

BORING NO. B4-4a

SHEET 3 OF 4

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434048.0'	GROUND ELEVATION (DATUM) E 484548.0' 79.2 ft (NGVD 1929)	TOTAL DEPTH 78.9 (feet)
SURFACE CONDITIONS Grassy, level		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 10/30/07	DATE FINISHED 10/30/07

SOIL SAMPLING		LOGGED BY W. Zheng	CHECKED BY C. Wise CW	APPROVED BY B. Christensen BC
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SOIL SAMPLING							DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY						
ROCK CORING							DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD						
SPT	14	3	4	3	7	1.2	60-64		62.0		SAND; light gray; loose; wet; fine grained; poorly graded; w/trace silt	
SPT	15	WOH	WOH	WOH	WOH	1.5	64-70		67.0		Silty CLAY; light green; very soft; wet; low plasticity; trace sand	Drilling hard @ 67.0'.
SPT	16	WOH	WOH	WOH	WOH	1.5	70-74		72.0		Silty SAND; light green; very loose; wet; fine grained; poorly graded; w/some clay	
SPT	17	50/5"	-	-	>50	0.5	74-78		78.5		LIMESTONE; yellow; highly weathered; strong	Lost circulation @ 77.0'. Auger refusal @ 78.5'.
							78-80					Bottom of boring @ 78.9'. A 12' open-end 2" PVC pipe was installed at completion. Boring redrilled to 69.3' and backfilled with cement-bentonite grout by tremie on 11/2/07. On 11/2/07, a 10.2' deep offset boring was drilled 3.0' to the north with 5" HSA; 12'



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BORING LOG

BORING NO. B4-4a
SHEET 4 OF 4

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434048.0'	GROUND ELEVATION (DATUM) E 484548.0'	TOTAL DEPTH 78.9 (feet)
SURFACE CONDITIONS Grassy, level		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 10/30/07	DATE FINISHED 10/30/07

SOIL SAMPLING		LOGGED BY W. Zheng <i>WZ</i>	CHECKED BY C. Wise <i>CW</i>	APPROVED BY B. Christensen <i>BC</i>
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SOIL SAMPLING								DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY							
ROCK CORING								DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD							
								90					pipe installed with 1.8' stickup. Water level recorded @ 6.2' BGS on 11/2/07. Offset boring backfilled with cuttings.
								92					
								94					
								96					
								98					
								100					
								102					
								104					
								106					
								108					
								110					
								112					
								114					
								116					
								118					
								120					



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BORING LOG

BORING NO. B4-5
SHEET 1 OF 3

CLIENT										PROJECT										PROJECT NO.				
FMPA										Cane Island Karst Investigation										147651				
PROJECT LOCATION					COORDINATES					GROUND ELEVATION (DATUM)					TOTAL DEPTH									
Intercession City, FL					N 1434472.0'					E 484018.0'					77.4 ft (NGVD 1929)					70.0 (feet)				
SURFACE CONDITIONS										COORDINATE SYSTEM					DATE START					DATE FINISHED				
Grass and sand, level; offset 25' southeast										FL St. Plane ENAD83/90					10/31/07					10/31/07				
SOIL SAMPLING										LOGGED BY					CHECKED BY					APPROVED BY				
										W. Zheng <i>WZ</i>					C. Wise <i>CW</i>					B. Christensen <i>BC</i>				
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS										REMARKS			
ROCK CORING							DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG											REMARKS			
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD																		
SPT	1	1	1	3	4	0.8	0		76		SAND; dark gray; loose; dry; fine grained; poorly graded; w/trace roots	Boring advanced to 5.0' by SPT. SPT performed w/safety hammer and cathead w/1-3/4 wraps.												
SPT	2	5	5	4	9	1.2	4		74		grading light gray	Boring continued w/2-7/8" dia tricone bit using bentonite mud as drilling fluid.												
SPT	3	1	2	2	4	1.0	8		70		grading brown; wet; roots grade out													
SPT	4	3	4	4	8	1.1	14		64		Clayey SAND; light gray; loose; wet; fine grained; poorly graded; w/some silt	SPT continued w/ automatic hammer @ 13.5'.												
SPT	5	4	5	4	9	1.2	20		58		Silty SAND; light gray; loose; wet; fine grained; poorly graded													
SPT	6	4	6	5	11	1.0	24		54		grading medium dense													
SPT	7	4	3	3	6	1.2	28		50		grading loose													

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BORING LOG

BORING NO. B4-5

SHEET 2 OF 3

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434472.0'	GROUND ELEVATION (DATUM) E 484018.0'	TOTAL DEPTH 77.4 ft (NGVD 1929)
SURFACE CONDITIONS Grass and sand, level; offset 25' southeast		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 10/31/07	DATE FINISHED 10/31/07

SOIL SAMPLING		LOGGED BY W. Zheng	CHECKED BY C. Wise CW	APPROVED BY B. Christensen BJC
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ROCK CORING							DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD						
SPT	8	1	2	2	4	1.5	34					
SPT	9	WOH	WOH	WOH	WOH	1.5	40				Silty CLAY; yellow; very soft; wet; low plasticity; w/some sand	
SPT	10	WOH	WOH	WOH	WOH	1.5	44					
SPT	11	2	2	2	4	1.4	50				grading dark green; soft	
SPT	12	WOH	WOH	2	2	1.5	54				grading very soft	
SPT	13	2	2	3	5	1.5	60				grading firm	

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BORING LOG

BORING NO. B4-5
SHEET 3 OF 3

CLIENT										PROJECT			PROJECT NO.	
FMPA										Cane Island Karst Investigation			147651	
PROJECT LOCATION					COORDINATES		GROUND ELEVATION (DATUM)		TOTAL DEPTH					
Intercession City, FL					N 1434472.0'		E 484018.0'		77.4 ft (NGVD 1929)		70.0 (feet)			
SURFACE CONDITIONS						COORDINATE SYSTEM		DATE START		DATE FINISHED				
Grass and sand, level; offset 25' southeast						FL St. Plane ENAD83/90		10/31/07		10/31/07				
SOIL SAMPLING						LOGGED BY			CHECKED BY		APPROVED BY			
						W. Zheng <i>wt</i>			C. Wise <i>cw</i>		B. Christensen <i>bc</i>			
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS		
ROCK CORING							DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS		
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS		
SPT	14	1	1	2	3	1.5	60		16		Sandy SILT; light green; soft; wet; low plasticity; w/trace clay			
SPT	15	25	30	24	54	1.4	68		8		LIMESTONE; white; medium grained; highly weathered	Lost circulation @ 68.5'.		
							70					Bottom of boring @ 70.0'. A 12' open-end 2" PVC pipe was installed at completion. Boring redrilled to 70.0' and backfilled with cement-bentonite grout by tremie on 11/2/07. On 11/2/07, an 11.0' deep offset boring was drilled 5.0' to the west with 5" HSA; 12' pipe installed with 1.0' stickup. Water level recorded at 4.9' BGS on 11/7/07. Offset boring backfilled with cuttings.		



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BORING LOG

BORING NO. B4-6

SHEET 1 OF 3

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434450.0'	GROUND ELEVATION (DATUM) E 484100.0'	TOTAL DEPTH 65.0 (feet)
SURFACE CONDITIONS Grass and sand, level		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 11/02/07	DATE FINISHED 11/02/07
SOIL SAMPLING		LOGGED BY W. Zheng	CHECKED BY C. Wise CW	APPROVED BY B. Christensen BC

ROCK CORING							DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD						
SPT	1	1	1	1	2	0.7	0					Boring advanced to 5.0' by SPT. SPT performed w/safety hammer and cathead w/1-3/4 wraps.
SPT	2	5	4	5	9	1.2	4					Boring continued w/2-7/8" dia tricone bit using bentonite mud as drilling fluid.
SPT	3	6	7	7	14	1.0	10					
SPT	4	2	3	4	7	1.1	14					SPT continued w/ automatic hammer @ 13.5'.
SPT	5	4	3	3	6	1.0	20					
SPT	6	2	3	3	6	1.3	24					
SPT	7	1	1	1	2	1.2	28					

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BORING LOG

BORING NO. B4-6

SHEET 2 OF 3

CLIENT FMPA	PROJECT Cane Island Karst Investigation	PROJECT NO. 147651
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PROJECT LOCATION Intercession City, FL	COORDINATES N 1434450.0'	GROUND ELEVATION (DATUM) E 484100.0'	TOTAL DEPTH 65.0 (feet)
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SURFACE CONDITIONS Grass and sand, level	COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 11/02/07	DATE FINISHED 11/02/07
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SOIL SAMPLING	LOGGED BY W. Zheng	CHECKED BY C. Wise CW	APPROVED BY B. Christensen BC
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SOIL SAMPLING								DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY							
SPT	8	WOH	WOH	2	2	1.2	34						
SPT	9	WOH	1	1	2	1.4	40						
SPT	10	2	3	4	7	1.5	44						
SPT	11	2	2	2	4	1.5	50						
SPT	12	2	2	3	5	1.0	54						
SPT	13	WOH	1	2	3	1.5	58						

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BORING LOG

BORING NO. B4-6

SHEET 3 OF 3

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434450.0'	GROUND ELEVATION (DATUM) E 484100.0'	TOTAL DEPTH 65.0 (feet)
SURFACE CONDITIONS Grass and sand, level		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 11/02/07	DATE FINISHED 11/02/07

SOIL SAMPLING		LOGGED BY W. Zheng ^{WZ}	CHECKED BY C. Wise ^{CW}	APPROVED BY B. Christensen ^{BC}
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SOIL SAMPLING							DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY						
ROCK CORING							DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD						
SPT	14	42	17	5	22	0.9	60-64				LIMESTONE; white; medium grained; highly weathered; some silt	63.0 Drilling hard at 63.0'. Lost circulation during SPT.
							64-65.0					Bottom of boring @ 65.0'. Boring backfilled with cement-bentonite grout by tremie. On 11/2/07, a 9.6' deep offset boring was drilled 4.0' to the north with 5" HSA; 12' pipe installed with 2.4' stickup. Water level recorded @ 5.2' BGS on 11/9/07. Offset boring backfilled with cuttings.



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BORING LOG

BORING NO. B4-7

SHEET 1 OF 3

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434465.0'	GROUND ELEVATION (DATUM) E 484155.0'	TOTAL DEPTH 73.8 (feet)
SURFACE CONDITIONS Grass and sand, level		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 10/31/07	DATE FINISHED 10/31/07

SOIL SAMPLING		LOGGED BY W. Zheng <i>WZ</i>	CHECKED BY C. Wise <i>CW</i>	APPROVED BY B. Christensen <i>BC</i>
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ROCK CORING								DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD							
SPT	1	1	3	3	6	0.9	0						Boring advanced to 5.0' by SPT. SPT performed w/safety hammer and cathead w/1-3/4 wraps. Boring continued w/2-7/8" dia tricone bit using bentonite mud as drilling fluid. SPT continued w/ automatic hammer @ 13.5'.
SPT	2	5	4	3	7	1.4	2						
SPT	3	3	3	6	9	0.8	4						
SPT	4	9	9	8	17	0.9	6						
SPT	5	4	5	5	10	1.4	8						
SPT	6	3	3	3	6	1.1	10						
SPT	7	3	4	3	7	1.1	12						
							14						
							16						
							18						
							20						
							22						
							24						
							26						
							28						
							30						

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BORING LOG

BORING NO. B4-7

SHEET 2 OF 3

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434465.0'	GROUND ELEVATION (DATUM) 77.5 ft (NGVD 1929)	TOTAL DEPTH 73.8 (feet)
SURFACE CONDITIONS Grass and sand, level		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 10/31/07	DATE FINISHED 10/31/07

SOIL SAMPLING		LOGGED BY W. Zheng <i>WZ</i>	CHECKED BY C. Wise <i>BCW</i>	APPROVED BY B. Christensen <i>BC</i>
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SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	ROD RECOVERY	PERCENT RECOVERY	ROD						
SPT	8	1	2	2	4	1.4	34				grading very loose	
SPT	9	1	1	1	2	1.5	40				grading yellow	
SPT	10	WOHWOH	1	1	1	1.5	44				Sandy <u>SILT</u> ; yellow; very soft; wet; low plasticity	42.0
SPT	11	WOH	1	2	3	1.5	50				grading soft; w/some clay	
SPT	12	WOHWOHWOHWOH	1.5				54				Silty <u>CLAY</u> ; dark green; very soft; wet; high plasticity; w/trace sand	52.0
SPT	13	1	1	2	3	1.5	58				Silty <u>SAND</u> ; light brown; very loose; wet; fine grained; poorly graded	57.0

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BORING LOG

BORING NO. B4-7
SHEET 3 OF 3

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434465.0'	GROUND ELEVATION (DATUM) E 484155.0'	TOTAL DEPTH 73.8 (feet)
SURFACE CONDITIONS Grass and sand, level		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 10/31/07	DATE FINISHED 10/31/07

SOIL SAMPLING		LOGGED BY W. Zheng <i>WZ</i>	CHECKED BY C. Wise <i>CW</i>	APPROVED BY B. Christensen <i>BC</i>
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ROCK CORING								DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD	PERCENT RECOVERY	RQD							
SPT	14	2	1	2	3	1.5	64						
SPT	15	WOH	WOH	WOH	WOH	1.5	70						
SPT	16	50/4"	-	-	>50	0.3	74				LIMESTONE; white; medium grained; highly weathered	Drill hard at 73.0'	

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Bottom of boring @ 73.8'. A 12' open-end 2" PVC pipe was installed at completion. Boring redrilled to 73.8' and backfilled with cement-bentonite grout by tremie on 11/2/07. On 11/2/07, a 9.7' deep offset boring was drilled 6.0' to the north with 5" HSA; 12' pipe installed with 2.3' stickup. Water level recorded @ 8.2' BGS on 11/2/07. Offset boring backfilled with cuttings.



BLACK & VEATCH

BORING LOG

BORING NO. B4-8
SHEET 1 OF 3

CLIENT										PROJECT				PROJECT NO.	
FMPA										Cane Island Karst Investigation				147651	
PROJECT LOCATION					COORDINATES			GROUND ELEVATION (DATUM)		TOTAL DEPTH					
Intercession City, FL					N 1434500.0'			E 484225.0'		77.8 ft (NGVD 1929)		62.3 (feet)			
SURFACE CONDITIONS						COORDINATE SYSTEM			DATE START		DATE FINISHED				
Grass and sand, level						FL St. Plane ENAD83/90			10/31/07		10/31/07				
SOIL SAMPLING						LOGGED BY				CHECKED BY		APPROVED BY			
						W. Zheng <i>WZ</i>				C. Wise <i>CW</i>		B. Christensen <i>BC</i>			
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS			
ROCK CORING															
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD									
SPT	1	1	1	4	5	0.8	0		76		SAND; light gray; loose; dry; fine grained; poorly graded; w/trace grass	Boring advanced by SPT to 5.0'. SPT performed w/safety hammer and cathead w/1-3/4 wraps.			
SPT	2	5	5	6	11	1.2	4		74		grading medium dense; grass grades out	Boring continued w/2-7/8" dia tricone bit using bentonite mud as drilling fluid.			
SPT	3	2	7	11	18	1.3	10		70		Silty SAND; brown; medium dense; moist; fine grained; poorly graded				
SPT	4	2	4	5	9	1.1	14		68		grading light gray; loose; wet	SPT continued w/automatic hammer @ 13.5'.			
SPT	5	3	3	4	7	1.3	20		64		grading very loose				
SPT	6	1	1	2	3	1.2	24		62						
SPT	7	1	1	1	2	1.5	28		60		Sandy SILT; light gray; very soft; wet; low plasticity				

11/14/2007 12:06 PM FMPA and KUA - Cane Island Unit 4



BLACK & VEATCH

BORING LOG

BORING NO. B4-8

SHEET 3 OF 3

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434500.0'	GROUND ELEVATION (DATUM) E 484225.0'	TOTAL DEPTH 62.3 (feet)
SURFACE CONDITIONS Grass and sand, level		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 10/31/07	DATE FINISHED 10/31/07

SOIL SAMPLING		LOGGED BY W. Zheng <i>WZ</i>	CHECKED BY C. Wise <i>CW</i>	APPROVED BY B. Christensen <i>BC</i>
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ROCK CORING								DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD							
SPT	14	50/1"	-	-	>50	0.1	60						
							62					LIMESTONE; white; medium grained; highly weathered; strong	Auger refusal @ 62'2". Bottom of boring @ 62.3'. A 12' open-end 2" PVC pipe was installed at completion. Boring redrilled to 62.3' and backfilled with cement-bentonite grout by tremie on 11/2/07. On 11/2/07, a 10.1' deep offset boring was drilled 5.0' to the north with 5" HSA; 12' pipe installed with 1.9' stickup. Water level recorded @ 6.1' BGS on 11/2/07. Offset boring backfilled with cuttings.
							64						
							66						
							68						
							70						
							72						
							74						
							76						
							78						
							80						
							82						
							84						
							86						
							88						
							90						

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434507.0'	GROUND ELEVATION (DATUM) E 484295.0'	TOTAL DEPTH 68.8 (feet)
SURFACE CONDITIONS Grass, level		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 10/30/07	DATE FINISHED 10/30/07

SOIL SAMPLING		LOGGED BY Wei Zheng <i>WZ</i>	CHECKED BY C. Wise <i>CW</i>	APPROVED BY B. Christensen <i>BC</i>
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ROCK CORING							DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD						
SPT	1	1	1	2	3	0.8	0		78		SAND; light gray; loose; moist; fine grained; poorly graded; w/trace grass	Boring advanced to 5.0' by SPT. SPT performed w/safety hammer and cathead w/1-3/4 wraps. Boring continued w/2-7/8" dia tricone bit using bentonite mud as drilling fluid.
SPT	2	4	4	5	9	1.2	4		74		grass grades out	
SPT	3	4	5	6	11	0.7	8		70		grading medium dense; wet	
SPT	4	4	7	8	15	0.9	10		68		Silty SAND; brown, medium dense; wet; fine grained	
SPT	5	2	2	3	5	1.5	14		64		Clayey SAND; light gray; loose; wet; fine grained; poorly graded; w/some silt	
SPT	6	5	6	7	13	1.2	20		58		SAND; light gray; medium dense; wet; fine grained; poorly graded; w/trace silt	
SPT	7	7	8	9	17	1.1	24		54			
							26		52			
							28		50			
							30		48			

11/14/2007 11:37 AM FMPA and KUA - Cane Island Unit 4



BLACK & VEATCH

BORING LOG

BORING NO. B4-9
SHEET 2 OF 3

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434507.0'	GROUND ELEVATION (DATUM) E 484295.0' 78.1 ft (NGVD 1929)	TOTAL DEPTH 68.8 (feet)
SURFACE CONDITIONS Grass, level		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 10/30/07	DATE FINISHED 10/30/07

SOIL SAMPLING		LOGGED BY Wei Zheng <i>WZ</i>	CHECKED BY C. Wise <i>CW</i>	APPROVED BY B. Christensen <i>BC</i>
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ROCK CORING							DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD						
SPT	8	2	2	2	4	1.5	34			grading loose; w/some clay		
SPT	9	3	1	2	3	1.5	40			Clayey SAND; light gray; loose; wet; fine grained; poorly graded		
SPT	10	1	1	1	2	1.5	44			grading brown		
SPT	11	1	3	3	6	1.5	50			Sandy CLAY; light green; firm; wet; low plasticity; w/some silt		
SPT	12	WOHWOH	1	1	1	1.5	54			CLAY; dark green; very soft; wet; high plasticity; w/trace sand & silt		
SPT	13	WOH	1	2	3	1.5	58			Sandy CLAY; light green; soft; wet; low plasticity; w/some silt		
							60				Lost circulation @ 55.0'	



BLACK & VEATCH

BORING LOG

BORING NO. B4-9
SHEET 3 OF 3

CLIENT FMPA		PROJECT Cane Island Karst Investigation		PROJECT NO. 147651
PROJECT LOCATION Intercession City, FL		COORDINATES N 1434507.0'	GROUND ELEVATION (DATUM) E 484295.0' 78.1 ft (NGVD 1929)	TOTAL DEPTH 68.8 (feet)
SURFACE CONDITIONS Grass, level		COORDINATE SYSTEM FL St. Plane ENAD83/90	DATE START 10/30/07	DATE FINISHED 10/30/07

SOIL SAMPLING		LOGGED BY Wei Zheng <i>wz</i>	CHECKED BY C. Wise <i>CW</i>	APPROVED BY B. Christensen <i>BC</i>
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SOIL SAMPLING								DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY							
ROCK CORING								DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD							
SPT	14	WOR	WOR	WOR	WOH	1.5		60		18			
								62		16			
								64		14		grading very soft	Lost circulation @ 64.0'.
								66		12			
								68		10		LIMESTONE; yellow; medium grained; highly weathered; strong	
SPT	15	50/3"			>50	0.2		68		10			
								70		8			
								72		6			
								74		4			
								76		2			
								78		0			
								80		-2			
								82		-4			
								84		-6			
								86		-8			
								88		-10			
								90					

**Appendix B
Infiltration Report**

Appendix B Infiltration Report

The double-ring infiltration test results dated November 2007 are included herein.



Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

November 13, 2007

File No. 07-6585

Revised November 27, 2007

Black & Veatch Corporation,
1101 Lamar Avenue
Overland Park, Kansas 66211

Attention: Mr. Stanley Armbruster

Subject: Double Ring Infiltration Test Results
6075 Old Tampa Highway
Cane Island Power Park
Davenport, Polk County, Florida

Dear Mr. Armbruster:

As requested, Ardaman & Associates, Inc., has conducted three double ring infiltration (DRI) tests at locations designated by Black & Veatch as I-1, I-2 and I-3. All of these locations were previously excavated with a backhoe by others at the site as directed by Black & Veatch. The tests were performed in the respective excavations.

The double-ring infiltration tests were conducted in general accordance with ASTM D-3385 procedure, "Infiltration Rate of Soils in Field Using Double-Ring Infiltrometer".

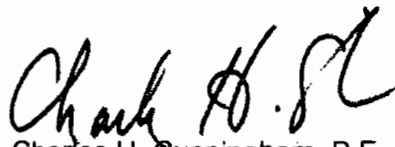
The double-ring infiltration tests consisted of driving two open cylinders, one inside the other, into the ground at the test locations approximately 4 to 6 inches below the excavated ground surface. The rings were partially filled with water until a constant water level was achieved. A measurement of time versus water volumes added to the rings to maintain a constant water level was then recorded. The tests were monitored for 120 minutes. The test results are attached.

We note that a 3-inch diameter hand auger boring was performed from original ground surface adjacent to each DRI excavation. Depths referred to on the attached results are depths from original ground surface. The soil description is based on visual observation only.

We are pleased to be of assistance to you on this phase of the project. When we may be of further service to you or should you have any question, please contact us.

Very truly yours,
ARDAMAN & ASSOCIATES, INC.


Gregory S. Stevens, E.I.
Assistant Project Engineer

 11-27-07
Charles H. Cunningham, P.E.
Division Manager
Florida Registration No. 38189

GSS/CHC/ksb/nfm
07-6585 DRI rev ltr.wpd (2007 Geo)



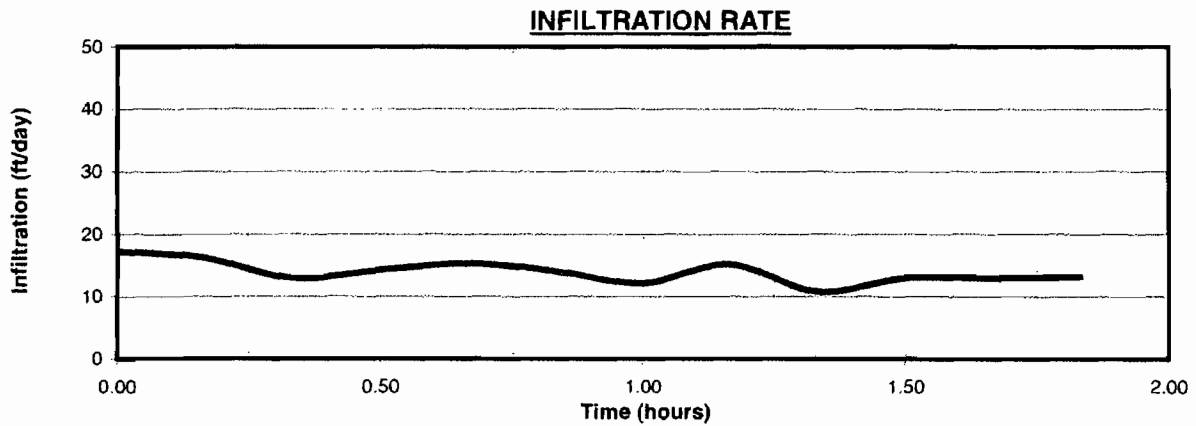
ARDAMAN & ASSOCIATES, INC.
Geotechnical, Environmental and
Materials Consultants

**DOUBLE-RING INFILTRATION
TEST RESULTS**
(ASTM STANDARD D-3385)

Project Name: Black & Veatch Corporation
Project Location: Cane Island Power Park
Project Number: 07-6585
Outer Ring Diameter: 24-inches
Inner Ring Diameter: 12-inches

Test Date: 11/16/2007
Test Location: I-1
Test Depth: At excavated ground surface
Test Duration: 120 minutes
Test Head: 4-inches

INFILTRATION RATE: 13 feet per day



SUBSURFACE SOIL DATA

Depth (ft.)		BORING DATA
From	To	
0.0	1.0	Brown fine sand (SP)
1.0	5.0	Light Gray fine sand (SP)

Groundwater level was encountered at a depth of 4.5 feet from the adjacent original grade at the time the test was conducted.

TEST PROCEDURES:

The double-ring infiltration test was performed in general accordance with procedures outlined in the ASTM Standard D-3385. Two 18-inch high concentric rings were placed on a prepared test surface and driven into the ground 4 to 6-inches. The inner ring used in the test had an inside diameter of approximately 12-inches, while the outer ring had an inside diameter of approximately 24-inches. The test was performed by filling both rings with water to a height of 12 inches. A head of 3 to 6-inches is then maintained in both rings, and the amount of water required to maintain the head in the inner ring was recorded.



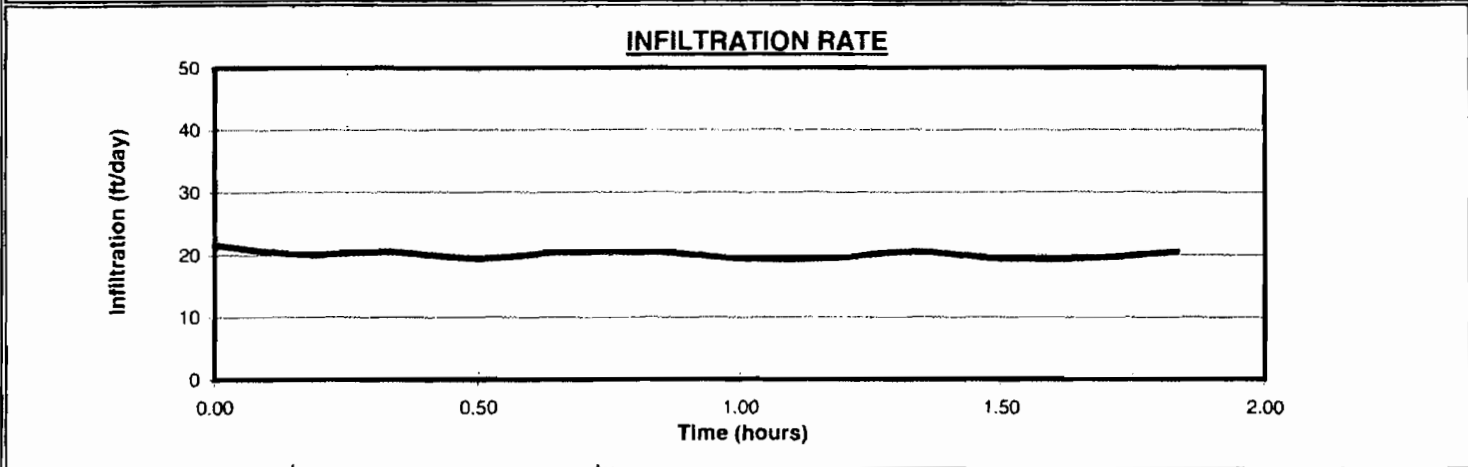
ARDAMAN & ASSOCIATES, INC.
Geotechnical, Environmental and
Materials Consultants

DOUBLE-RING INFILTRATION TEST RESULTS

(ASTM STANDARD D-3385)

Project Name: <u>Black & Veatch Corporation</u>	Test Date: <u>11/9/2007</u>
Project Location: <u>Cane Island Power Park</u>	Test Location: <u>I-2</u>
Project Number: <u>07-6585</u>	Test Depth: <u>At excavated ground surface</u>
Outer Ring Diameter: <u>24-inches</u>	Test Duration: <u>120 minutes</u>
Inner Ring Diameter: <u>12-inches</u>	Test Head: <u>4-inches</u>

INFILTRATION RATE: 20 feet per day



SUBSURFACE SOIL DATA

Depth (ft.)	BORING DATA
From - To	
0.0 - 5.0	Light Gray fine sand (SP)

Groundwater level was not encountered within the upper 5 feet at the time of the test was conducted.

TEST PROCEDURES:

The double-ring infiltration test was performed in general accordance with procedures outlined in the ASTM Standard D-3385. Two 18-inch high concentric rings were placed on a prepared test surface and driven into the ground 4 to 6-inches. The inner ring used in the test had an inside diameter of approximately 12-inches, while the outer ring had an inside diameter of approximately 24-inches. The test was performed by filling both rings with water to a height of 12 inches. A head of 3 to 6-inches is then maintained in both rings, and the amount of water required to maintain the head in the inner ring was recorded.



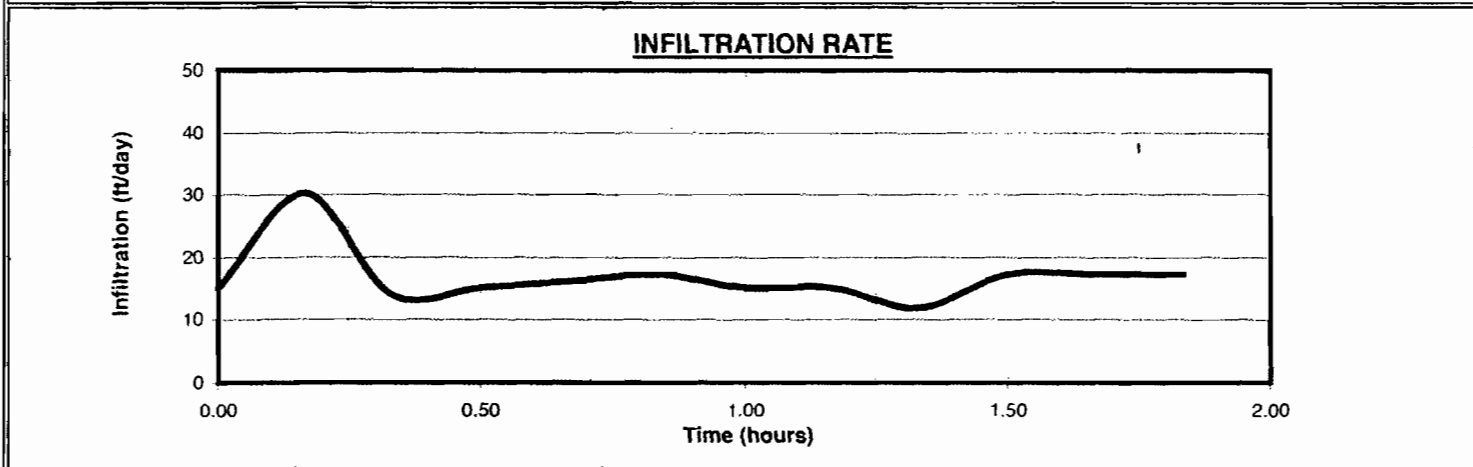
ARDAMAN & ASSOCIATES, INC.
Geotechnical, Environmental and
Materials Consultants

DOUBLE-RING INFILTRATION TEST RESULTS

(ASTM STANDARD D-3385)

Project Name: <u>Black & Veatch Corporation</u>	Test Date: <u>11/9/2007</u>
Project Location: <u>Cane Island Power Park</u>	Test Location: <u>I-3</u>
Project Number: <u>07-6585</u>	Test Depth: <u>At excavated ground surface</u>
Outer Ring Diameter: <u>24-inches</u>	Test Duration: <u>120 minutes</u>
Inner Ring Diameter: <u>12-inches</u>	Test Head: <u>4-inches</u>

INFILTRATION RATE: 17 feet per day



SUBSURFACE SOIL DATA

Depth (ft.)	BORING DATA
From - To	
0.0 - 5.0	<u>Light Gray fine sand (SP)</u>
- -	
- -	
- -	
- -	

Groundwater level was not encountered within the upper 5 feet at the time of the test was conducted.

TEST PROCEDURES:

The double-ring infiltration test was performed in general accordance with procedures outlined in the ASTM Standard D-3385. Two 18-inch high concentric rings were placed on a prepared test surface and driven into the ground 4 to 6-inches. The inner ring used in the test had an inside diameter of approximately 12-inches, while the outer ring had an inside diameter of approximately 24-inches. The test was performed by filling both rings with water to a height of 12 inches. A head of 3 to 6-inches is then maintained in both rings, and the amount of water required to maintain the head in the inner ring was recorded.

**Appendix C1
Cane Island Wildlife List**

Appendix C1 Cane Island Wildlife List

Table C-1 is a list of the animal species observed at the CIPP and related offsite facility areas. The observations were made during the original site investigations (1991) and subsequent mitigation monitoring efforts (1993-2007).

Table C-1
Wildlife Observed at CIPP, 1993-2007

Species	SPS/OS	PF/F	MHS/CP/CS	OF/G	PMO/HH	Wetland Creation Site
Birds						
Ahnhinga (<i>Anhinga anhinga</i>)	X					
White ibis (<i>Eudocimus albus</i>)			X	X		X
Turkey vulture (<i>Cathartes aura</i>)	X	X	X	X	X	
Black vulture (<i>Coragyps atratus</i>)	X	X	X	X	X	
Swallow-tailed kite (<i>Elanoides forficatus</i>)			X			
Osprey (<i>Pandion haliaetus</i>)		X				
Cooper's hawk (<i>Accipiter cooperii</i>)	X	X			X	
Red-shouldered hawk (<i>Buteo lineatus</i>)	X	X	X	X	X	
Bobwhite quail (<i>Colinus virginianus</i>)	X			X		
Wild turkey (<i>Meleagris gallopavo</i>)	X	X	X	X	X	
Killdeer (<i>Charadrius vociferous</i>)	X			X		X
Green heron (<i>Butorides striatus</i>)						X
Cattle egret (<i>Bubulcus ibis</i>)						
Mourning dove (<i>Zenaida macroura</i>)	X	X	X	X	X	
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	X	X	X		X	
Barred owl (<i>Strix varia</i>)		X	X		X	
Common nighthawk (<i>Chordeiles minor</i>)	X		X		X	
Belted kingfisher (<i>Ceryle alcyon</i>)	X					X
Yellow-shafted flicker (<i>Colaptes auratus</i>)	X		X			
Red-headed woodpecker (<i>Melanerpes erythrocephalus</i>)	X			X		
Hairy woodpecker (<i>Picoides villosus</i>)	X	X			X	
Downy woodpecker (<i>Picoides pubescens</i>)	X	X	X	X	X	
Pileated woodpecker (<i>Dryocopus pileatus</i>)			X			

Table C-1 (Continued)
Wildlife Observed at CIPP, 1993-2007

Species	SPS/OS	PF/F	MHS/CP/CS	OF/G	PMO/HH	Wetland Creation Site
Red-bellied woodpecker (<i>Melanerpes carolinus</i>)	X	X	X	X	X	
Great crested flycatcher (<i>Myiarchus crinitus</i>)	X	X	X	X	X	
Eastern phoebe (<i>Sayornis phoebe</i>)		X		X		
Blue jay (<i>Cyanocitta cristata</i>)	X	X				X
Common crow (<i>Corvus brachyrhynchos</i>)						
Fish crow (<i>Corvus ossifragus</i>)	X	X	X	X	X	
Tufted titmouse (<i>Parus bicolor</i>)	X	X	X	X	X	
Carolina wren (<i>Thryothorus ludovicianus</i>)	X	X	X	X	X	
Northern mockingbird (<i>Mimus polyglottos</i>)	X	X		X	X	
Gray catbird (<i>Dumetella carolinensis</i>)	X				X	
Brown thrasher (<i>Toxostoma rufum</i>)	X			X	X	
Blue-gray gnatcatcher (<i>Polioptila caerulea</i>)	X	X	X	X	X	
Ruby-crowned kinglet (<i>Regulus calendula</i>)	X					
Hermit thrush (<i>Catharus guttatus</i>)					X	
Veery (<i>Catharus fuscescens</i>)					X	
Loggerhead shrike (<i>Lanius ludovicianus</i>)		X		X		
Yellow-throated vireo (<i>Vireo flavifrons</i>)	X	X	X	X	X	
White-eyed vireo (<i>Vireo griseus</i>)	X				X	
Red-eyed vireo (<i>Vireo olivaceus</i>)			X		X	
Prairie warbler (<i>Dendroica discolor</i>)	X	X		X		
Pine warbler (<i>Dendroica pinus</i>)	X	X			X	
Black-and-white warbler (<i>Mniotilta varia</i>)	X				X	
Yellow-throated warbler (<i>Dendroica dominica</i>)				X	X	

Table C-1 (Continued)
Wildlife Observed at CIPP, 1993-2007

Species	SPS/OS	PF/F	MHS/CP/CS	OF/G	PMO/HH	Wetland Creation Site
Northern parula (<i>Parula Americana</i>)	X	X	X	X	X	
Common grackle (<i>Quiscalus niger</i>)	X		X	X	X	
Northern cardinal (<i>Cardinalis cardinalis</i>)	X	X	X	X	X	
American goldfinch (<i>Carduelis tristis</i>)			X			
Eastern towhee (<i>Pipilo erythrophthalmus</i>)	X			X	X	
Mammals						
White-tailed deer (<i>Odocoileus virginianus</i>)	X	X	X	X	X	X
Opossum (<i>Didelphis virginiana</i>)	X	X				
Nine-banded armadillo (<i>Dasyus novemcinctus</i>)	X	X	X	X	X	X
Eastern mole (<i>Scalopus aquaticus</i>)				X		
Raccoon (<i>Procyon lotor</i>)	X	X	X	X	X	
Gray squirrel (<i>Sciurus carolinensis</i>)	X	X	X	X	X	
Florida mouse (<i>Podomys floridanus</i>)	X	X				
Cotton rat (<i>Sigmodon hispidus</i>)	X	X				
Cotton mouse (<i>Peromyscus gossypinus</i>)	X	X				
Gray fox (<i>Urocyon cinereus</i>)		X			X	
Eastern cottontail rabbit (<i>Sylvilagus floridanus</i>)		X				
Bobcat (<i>Felis rufus</i>)				X		
Reptiles						
Green anole (<i>Anolis carolinensis</i>)		X	X	X	X	
Brown anole (<i>Anolis sagrei</i>)		X		X	X	
Yellow rat snake (<i>Elaphe obsoleta</i>)	X					
Southern fence lizard (<i>Sceloporus u. undulatus</i>)				X		

Table C-1 (Continued)
Wildlife Observed at CIPP, 1993-2007

Species	SPS/OS	PF/F	MHS/CP/CS	OF/G	PMO/HH	Wetland Creation Site
Florida Box turtle (<i>Terrapene carolina bauri</i>)	X				X	
Gopher tortoise (<i>Gopherus polyphemus</i>)	X	X		X		
Sand Skink (<i>Neoseps reynoldsi</i>)			X			
Ground skink (<i>Leiolopisma laterale</i>)	X	X	X		X	
Six-lined racerunner (<i>Cnemidophorus sexlineatus</i>)	X			X		
Black rat snake (<i>Elaphe obsoleta obsoleta</i>)	X					
Yellow rat snake (<i>Elaphe obsoleta quadrivittata</i>)	X					
Crowned snake (<i>Tantilla</i> sp.)				X		
Peninsula ribbon snake (<i>Thamnophis sauritus sackenii</i>)					X	
Bluestripe garter snake (<i>Thamnophis sirtalis similes</i>)					X	
Florida cottonmouth (<i>Agkistrodon piscivorous conanti</i>)			X			
Amphibians						
Pine woods treefrog (<i>Hyla femoralis</i>)	X	X				
Squirrel treefrog (<i>Hyla squirella</i>)			X		X	
Southern leopard frog (<i>Rana sphenoccephala</i>)			X			
Green tree frog (<i>Hyla cinerea</i>)			X	X	X	
Eastern spadefoot toad (<i>Scaphiopus h. holbrooki</i>)			X			
Southern toad (<i>Bufo terrestris</i>)	X				X	

Table C-1 (Continued)
Wildlife Observed at CIPP, 1993-2007

Species	SPS/OS	PF/F	MHS/CP/CS	OF/G	PMO/HH	Wetland Creation Site
Oak toad (<i>Bufo quercicus</i>)	X	X		X	X	
Eastern narrowmouth toad (<i>Gastrophryne carolinensis</i>)	X			X		
Bullfrog (<i>Rana catesbeiana</i>)					X	
Barking tree frog (<i>Hyla gratiosa</i>)		X	X			

Legend

SPS/OS: Sand Pine Scrub/Oak Scrub; PF/F: Pine Flatwoods/Flatwoods; MHS/CP/CS: Mixed Hardwood Swamp/Cypress Pond/Cypress Strand; OF: Old Field and improved grassland; PMO/HH: Pine-Mesic Oak/Hydric Hammock.

**Appendix C2
Cane Island Vascular Plant List**

Appendix C2 Cane Island Vascular Plant List

Table C-2 is a list of vascular plant species observed at the CIPP and related offsite facility areas. The observations were made during the original site investigations (1991) and subsequent mitigation monitoring efforts (1993-2007).

The following list includes all vascular plants taxa observed within the KUA Cane Island site in Osceola County, Florida, during various botanical surveys from 1991 to 2007. For ease of reference, an alphabetical arrangement has been followed for families within classes, as well as for genera within families, and species within genera. Nomenclature used in this list follows Kartesz (1994). Family nomenclature is that of Thorne (1992) for the flowering plants and *Flora of North America* (1993) for ferns. Non-native taxa are indicated by an asterisk (*) before the name. Plants considered sensitive by the Florida Department of Environmental Protection and the United States Fish and Wildlife Service are indicated by a dagger (†).

**Table C-2
Catalog of Vascular Plants**

Scientific Name ¹	Common Name ²	USFWS Wetland Indicator Status ³	Florida Wetland Indicator Status ⁴
<u>PTERIDOPHYTA</u>			
BLECHNACEAE			
<i>Blechnum serrulatum</i> L. C. Rich.	toothed midsorus fern	FACW+	FACW
<i>Woodwardia areolata</i> (L.) T. Moore	netted chainfern	OBL	OBL
<i>Woodwardia virginica</i> (L.) Sm.	Virginia chainfern	OBL	FACW
DENNSTAEDTIACEAE			
<i>Pteridium aquilinum</i> (L.) Kuhn var.	western brackenfern	NA	NA
DRYOPTERIDACEAE			
<i>Dryopteris ludoviciana</i> (Kunze) Small	southern woodfern	FACW	FACW
OPHIOGLOSSACEAE			
<i>Botrychium biternatum</i> (Sav.) Underwood	sparselobe grapefern	FAC	NA
OSMUNDACEAE			
† <i>Osmunda cinnamomea</i> L.	cinnamon fern	FACW+	FACW
† <i>Osmunda regalis</i> L.	royal fern	OBL	OBL
POLYPODIACEAE			
<i>Phlebodium aureum</i> (L.) J. Sm.	golden polypody	NA	NA
<i>Pleopeltis polypodioides</i> (L.) Andrews & Windham ssp. <i>michauxiana</i> (Weatherby) Andrews & Windham	resurrection fern	NA	NA
PSILOTACEAE			
<i>Psilotum nudum</i> (L.) Beauv.	whisk fern	FACU-	NA
SALVINIACEAE			
<i>Salvinia minima</i> Baker	water spangles	OBL	NA
SELAGINELLACEAE			
<i>Selaginella arenicola</i> Underwood	sand spikemoss	NA	NA
THELYPTERIDACEAE			
<i>Thelypteris kunthii</i> (Desv.) Morton	Kunth's maiden fern	FACW	FACW
<i>Thelypteris palustris</i> Schott	eastern marsh fern	NA	FACW
VITTARIACEAE			
<i>Vittaria lineata</i> (L.) Sm.	shoestring fern	FAC	NA

Table C-2 (Continued)
Catalog of Vascular Plants

Scientific Name ¹	Common Name ²	USFWS Wetland Indicator Status ³	Florida Wetland Indicator Status ⁴
<u>GYMNOSPERMAE</u>			
PINACEAE			
<i>Pinus clausa</i> (Chapman ex Engelm.) Vasey ex Sarg.	sand pine	NA	NA
<i>Pinus elliottii</i> Engelm.	slash pine	FACW	NA
<i>Pinus serotina</i> Michx.	pond pine	FACW+	FACW
TAXODIACEAE			
<i>Taxodium ascendens</i> Brongniart	pondcypress	NA	OBL
<i>Taxodium distichum</i> (Linnaeus) Richard	baldcypress	OBL	OBL
<u>ANGIOSPERMAE-DICOTYLEDONEAE</u>			
ACANTHACEAE			
<i>Ruellia caroliniensis</i> (J.F. Gmel.) Steud.	Carolina wild petunia	NA	FAC
ACERACEAE			
<i>Acer rubrum</i> Linnaeus	red maple	FAC	FACW
ADOXACEAE			
<i>Sambucus nigra</i> L. ssp. <i>canadensis</i> (L.) R. Bolli	common elderberry	FACW-	FAC
<i>Viburnum obovatum</i> Walt.	small-leaf arrowwood	FACW+	FACW
1.0 AMARANTHACEAE			
<i>Froelichia floridana</i> (Nutt.) Moq. var. <i>floridana</i>	plains snakecotton	NA	NA
* <i>Gomphrena serrata</i> L.	arrasa con todo	NA	NA
ANACARDIACEAE			
<i>Rhus copallina</i> L.	flameleaf sumac	NA	NA
<i>Toxicodendron radicans</i> (L.) Kuntze ssp. <i>radicans</i>	eastern poison ivy	FAC	NA
ANNONACEAE			
<i>Asimina pygmaea</i> (Bartr.) Dunal	dwarf pawpaw	FACU	NA
<i>Asimina triloba</i> (L.) Dunal	pawpaw	FAC	NA
APIACEAE			
* <i>Centella asiatica</i> (Linnaeus) Urban	spadeleaf	FACW	FACW
<i>Eryngium baldwinii</i> Spreng.	Baldwin's eryngo	FACW+	FAC
<i>Eryngium yuccifolium</i> Michx.	button eryngo	FAC	FAC
<i>Hydrocotyle umbellata</i> Linnaeus	manyflower	OBL	FACW
<i>Ptilimnium capillaceum</i> (Michaux) Rafinesque	marshpennywort	OBL	FACW
<i>Ptilimnium capillaceum</i> (Michaux) Rafinesque	herbwilliam	OBL	FACW

Table C-2 (Continued)
Catalog of Vascular Plants

Scientific Name ¹	Common Name ²	USFWS Wetland Indicator Status ³	Florida Wetland Indicator Status ⁴
APOCYNACEAE			
<i>Asclepias pedicellata</i> Walt.	savannah milkweed	FACW+	FACW
† <i>Matelea</i> cf. <i>gonocarpos</i> (Walt.) Shinnery	angularfruit milkvine	FACW	NA
AQUIFOLIACEAE			
<i>Ilex cassine</i> L.	dahoon	FACW	OBL
<i>Ilex glabra</i> (L.) Gray	inkberry	FACW	NA
ASTERACEAE			
<i>Ambrosia artemisiifolia</i> Linnaeus	annual ragweed	FACU	NA
<i>Aster dumosus</i> Linnaeus	rice button aster	FAC	FAC
<i>Baccharis glomeruliflora</i> Pers.	silverling	FACW	FAC
<i>Baccharis halimifolia</i> L.	eastern baccharis	FAC	FAC
<i>Balduina angustifolia</i> (Pursh) B.L. Robins.	coastalplain honeycombhead	NA	NA
<i>Chaptalia tomentosa</i> Vent.	woolly sunbonnets	FACW	FACW
<i>Conyza canadensis</i> (Linnaeus) Cronquist	Canadian horseweed	FACU	NA
<i>Eclipta prostrata</i> (Linnaeus) Linnaeus	false daisy	FACW-	FACW
<i>Elephantopus elatus</i> Bertol.	tall elephantsfoot	NA	NA
<i>Erechtites hieraciifolia</i> (L.) Raf. Ex DC.	American burnweed	FAC-	FAC
<i>Eupatorium capillifolium</i> (Lamarck) Small	small dogfennel	FACU	FAC
<i>Eupatorium mohrii</i> Greene	Mohr's thoroughwort	FACW-	FAC
<i>Eupatorium pilosum</i> Walt.	rough boneset	FACW	FAC
<i>Eupatorium rotundifolium</i> L.	roundleaf thoroughwort	FAC	FAC
<i>Eupatorium serotinum</i> Michx.	late-flowering thoroughwort	FAC	FAC
<i>Euthamia minor</i>	goldenrod		
<i>Euthamia tenuifolia</i> (Pursh) Nutt. var. <i>tenuifolia</i>	slender goldentop	FAC	FAC
† <i>Garberia heterophylla</i> (Bartr.) Merr. & F. Harper	garberia	NA	NA
<i>Helianthus angustifolius</i> L.	swamp sunflower	FAC+	FACW
<i>Hieracium gronovii</i> L.	queendevil	UPL	NA
<i>Liatris chapmanii</i> Torr. & Gray	Chapman's blazing star	NA	NA
<i>Liatris tenuifolia</i>	short-leaf blazing star		
<i>Lygodesmia aphylla</i> (Nutt.) DC.	rose rush	NA	NA
<i>Mikania scandens</i> (Linnaeus) Willdenow	climbing hempvine	FACW+	NA
<i>Pectis prostrata</i> Cav.	spreading cinchweed	NA	NA
<i>Pityopsis graminifolia</i> (Michx.) Nutt.	narrowleaf silkgrass	NA	NA
<i>Pluchea foetida</i> (L.) DC.	stinking camphorweed	OBL	FACW
<i>Pluchea odorata</i> (Linnaeus) Cassini	sweetscent	FACW	FACW
<i>Pluchea rosea</i> Godfrey	rosy camphorweed	FACW	FACW
<i>Pterocaulon virgatum</i> (L.) DC.	wand blackroot	FAC-	NA
<i>Solidago fistulosa</i> P. Mill.	pinebarren goldenrod	FAC+	FACW
<i>Solidago odora</i> Ait. var. <i>chapmanii</i> (Gray) Cronq.	Chapman's goldenrod	NA	NA
<i>Solidago tortifolia</i> Elliott	twistleaf goldenrod	NA	NA

**Table C-2 (Continued)
Catalog of Vascular Plants**

Scientific Name ¹	Common Name ²	USFWS Wetland Indicator Status ³	Florida Wetland Indicator Status ⁴
BRASSICACEAE <i>Lepidium virginicum</i> L.	Virginia pepperweed	FACU	NA
BUDDLEJACEAE <i>Polypremum procumbens</i> Linnaeus	juniper leaf	FACU-	FAC
CACTACEAE <i>Opuntia humifusa</i> (Raf.) Raf.	devil's-tongue	NA	NA
CAMPANULACEAE <i>Campanula floridana</i> S. Wats. ex Gray	Florida bellflower	OBL	OBL
CARYOPHYLLACEAE <i>Stipulicida setacea</i> Michx.	pineland scalypink	NA	NA
CELASTRACEAE <i>Euonymus americana</i> L.	strawberry bush	FAC-	NA
CISTACEAE † <i>Lechea cernua</i> Small <i>Lechea sessiliflora</i> Raf.	nodding pinweed pineland pinweed	NA FACU	NA NA
CLUSIACEAE <i>Hypericum mutilum</i> Linnaeus <i>Hypericum hypericoides</i> (L.) Crantz <i>Hypericum reductum</i> (Svens.) P. Adams <i>Hypericum tetrapetalum</i> Lamarck <i>Triadenum virginicum</i> (L.) Raf.	dwarf St. Johnswort St. Andrew's cross Atlantic St. Johnswort fourpetal St. Johnswort Virginia marsh St. Johnswort	FACW FAC FACU FACW OBL	FACW FAC U FAC OBL
CONVOLVULACEAE <i>Dichondra carolinensis</i> Michx.	Carolina ponysfoot	FACW-	FAC
CORNACEAE <i>Nyssa biflora</i> Walter	swamp tupelo	OBL	OBL
EBENACEAE <i>Diospyros virginiana</i> L.	common persimmon	FAC	FAC
EMPETRACEAE <i>Ceratiola ericoides</i> Michx.	sand heath	NA	NA
ERICACEAE <i>Befaria racemosa</i> Vent. <i>Gaylussacia dumosa</i> (Andr.) Torr. & Gray <i>Gaylussacia tomentosa</i> (Gray) Pursh ex Small <i>Leucothoe racemosa</i> (L.) Gray <i>Lyonia fruticosa</i> (Michx.) G.S. Torr.	tarflower dwarf huckleberry hairytwig huckleberry swamp doghobble coastalplain staggerbush	FAC- FAC FAC FACW FAC	NA FAC FAC FACW NA

Table C-2 (Continued)
Catalog of Vascular Plants

Scientific Name ¹	Common Name ²	USFWS Wetland Indicator Status ³	Florida Wetland Indicator Status ⁴
<i>Lyonia ligustrina</i> (L.) DC. var. <i>foliosiflora</i> (Michx.) Fern.	maleberry	FACW	FAC
<i>Lyonia lucida</i> (Lam.) K. Koch	fetterbush lyonia	FACW	FACW
<i>Rhododendron viscosum</i> (L.) Torr.	swamp azalea	FACW+	FACW
<i>Vaccinium arboreum</i> Marsh.	farkleberry	FACU	NA
<i>Vaccinium</i> cf. <i>corymbosum</i> L.	highbush blueberry	FACW	FACW
<i>Vaccinium myrsinites</i> Lam.	shiny blueberry	FACU	NA
EUPHORBIACEAE			
<i>Acalypha gracilens</i> Gray	slender threeseed mercury	NA	NA
<i>Chamaesyce maculata</i> (L.) Small	spotted sandmat	FACU	NA
<i>Croton linearis</i> Jacquin	grannybush	NA	NA
<i>Euphorbia polyphylla</i> Engelm. Ex Chapman	lesser Florida spurge	NA	FACW
<i>Euphorbia serpens</i>	crawling spurge		
FABACEAE			
<i>Apios americana</i> Medik.	groundnut	FACW	NA
<i>Chamaecrista fasciculata</i> (Michx.) Greene	sleepingplant	NA	NA
<i>Chamaecrista nictitans</i> (Linnaeus) Moench	partridge pea	FACU	NA
<i>Chapmannia floridana</i> Torr. & Gray	Florida alicia	NA	NA
<i>Clitoria mariana</i> L.	Atlantic pigeonwings	NA	NA
* <i>Crotalaria pallida</i> Ait. var. <i>obovata</i> (G. Don) Polhill	smooth rattlebox	NA	NA
* <i>Crotalaria spectabilis</i> Roth	showy rattlebox	NA	NA
<i>Dalea pinnata</i> (J.F. Gmel.) Barneby	summer farewell	NA	NA
<i>Galactia elliotii</i> Nutt.	Elliott's milkpea	FACU	NA
<i>Galactia volubilis</i> (L.) Britt.	downy milkpea	FACU	NA
<i>Indigofera</i> cf. <i>caroliniana</i> P. Mill.	Carolina indigo	NA	NA
* <i>Indigofera hirsuta</i> L.	roughhairy indigo	NA	NA
* <i>Medicago lupulina</i> L.	black medick	FACU	NA
* <i>Sesbania punicea</i> (Cav.) Benth.	rattlebox	FAC+	FAC
<i>Stylosanthes biflora</i> (L.) B.S.P.	sidebeak pencilflower	NA	NA
FAGACEAE			
<i>Quercus chapmanii</i> Sarg.	Chapman oak	NA	NA
<i>Quercus geminata</i> Small	sand live oak	NA	NA
<i>Quercus inopina</i> Ashe	sandhill oak	NA	NA
<i>Quercus laurifolia</i> Michx.	laurel oak	FACW	FACW
<i>Quercus myrtifolia</i> Willd.	myrtle oak	NA	NA
<i>Quercus nigra</i> L.	water oak	FAC	FACW
<i>Quercus pumila</i> Walt.	running oak	NA	NA
<i>Quercus virginiana</i> P. Mill.	live oak	FACU+	NA
GENTIANACEAE			
<i>Nymphoides aquatica</i> (J. F. Gmelin) Kuntze	big floatingheart	OBL	OBL

Table C-2 (Continued)
Catalog of Vascular Plants

Scientific Name ¹	Common Name ²	USFWS Wetland Indicator Status ³	Florida Wetland Indicator Status ⁴
HAMAMELIDACEAE <i>Liquidambar styraciflua</i> L.	sweetgum	FAC+	FACW
JUGLANDACEAE <i>Carya floridana</i> Sarg. <i>Carya glabra</i> (P. Mill.) Sweet	scrub hickory pignut hickory	NA FACU	NA NA
LAMIACEAE <i>Hyptis alata</i> (Raf.) Shinnery <i>Lycopus rubellus</i> Moench <i>Piloblephis rigida</i> (Bartr. ex Benth.) Raf. <i>Trichostema dichotomum</i> L.	clustered bushmint taperleaf water horehound wild pennyroyal forked bluecurls	OBL OBL NA NA	FACW OBL NA NA
LAURACEAE <i>Persea borbonia</i> (L.) Spreng.	redbay	FACW	NA
<u>LENTIBULARIACEAE</u> <i>Utricularia subulata</i> L.	zigzag bladderwort	2.0 OBL	OBL
LINACEAE <i>Linum floridanum</i> (Planchon) Trelease	Florida yellow flax	FAC	FAC
LOGANIACEAE <i>Gelsemium sempervirens</i> (L.) St. Hil. <i>Mitreola sessilifolia</i> (J. F. Gmelin) G. Don	evening trumpetflower swamp hornpod	FAC FACW+	NA FACW
LYTHRACEAE <i>Lythrum alatum</i> Pursh var. <i>lanceolatum</i> (Ell.) Torr. & Gray ex Rothrock	winged lythrum	FACW+	OBL
MAGNOLIACEAE <i>Magnolia grandiflora</i> L. <i>Magnolia virginiana</i> L.	southern magnolia sweetbay	FAC+ FACW+	NA OBL
MALVACEAE <i>Kosteletzkya virginica</i> (L.) K. Presl ex Gray <i>Sida rhombifolia</i> L. * <i>Urena lobata</i> L.	Virginia saltmarsh mallow cuban jute Caesarweed	OBL FACU FACU	OBL NA NA
MELASTOMATACEAE <i>Rhexia cubensis</i> Grisebach <i>Rhexia mariana</i> Linnaeus	West Indian meadowbeauty Maryland meadowbeauty	FACW+ FACW+	FACW FACW
MORACEAE <i>Morus rubra</i> L.	red mulberry	FAC	FAC

**Table C-2 (Continued)
Catalog of Vascular Plants**

Scientific Name ¹	Common Name ²	USFWS Wetland Indicator Status ³	Florida Wetland Indicator Status ⁴
MYRICACEAE <i>Myrica cerifera</i> L.	wax myrtle	FAC+	FAC
NYMPHAEACEAE <i>Nymphaea odorata</i> Aiton	American white waterlily	OBL	OBL
OLEACEAE <i>Fraxinus caroliniana</i> P. Mill. <i>Fraxinus pennsylvanica</i> Marsh. <i>Osmanthus americanus</i> (L.) Benth. & Hook. F. ex Gray	Carolina ash green ash devilwood	OBL FACW FAC	OBL OBL NA
ONAGRACEAE <i>Gaura angustifolia</i> Michx. <i>Ludwigia arcuata</i> Walter <i>Ludwigia leptocarpa</i> (Nuttall) H. Hara <i>Ludwigia maritima</i> R. M. Harper <i>Ludwigia octovalvis</i> (Jacquin) Raven	southern beeblossom piedmont primrosewillow anglestem primrosewillow seaside primrosewillow Mexican primrosewillow	OBL OBL FACW OBL	OBL OBL FACW OBL
POLYGALACEAE <i>Polygala nana</i> (Michx.) DC. <i>Polygala rugelii</i> Shuttlw. Ex Chapman <i>Polygala setacea</i> Michx.	candyroot yellow milkwort coastalplain milkwort	FAC+ FACW FAC+	FACW FACW FACW
POLYGONACEAE <i>Polygonella polygama</i> (Vent.) Engelm. & Gray <i>Polygonum hydropiperoides</i> Michx. <i>Polygonum punctatum</i> Elliott	October flower swamp smartweed dotted smartweed	NA OBL FACW+	NA OBL OBL
ROSACEAE <i>Photinia pyrifolia</i> (Lam.) Robertson & Phipps <i>Prunus serotina</i> Ehrh. <i>Rubus cuneifolius</i> Pursh	red chokeberry black cherry sand blackberry	FAC FACU FACU	FACW NA FAC
RUBIACEAE <i>Diodia virginiana</i> Linnaeus <i>Galium hispidulum</i> Michx. <i>Houstonia procumbens</i> (Walt. ex J.F. Gmel.) Standl. <i>Mitchella repens</i> L. <i>Oldenlandia uniflora</i> Linnaeus	Virginia buttonweed coastal bedstraw roundleaf bluet partridgeberry clustered mille grains	FACW NA NA FACU+ FACW-	FACW NA NA NA FACW
RUTACEAE * <i>Citrus aurantium</i> L.	sour orange	FACU	NA
SALICACEAE <i>Salix caroliniana</i> Michx.	coastal plain willow	OBL	OBL

Table C-2 (Continued)
Catalog of Vascular Plants

Scientific Name ¹	Common Name ²	USFWS Wetland Indicator Status ³	Florida Wetland Indicator Status ⁴
SAPOTACEAE <i>Sideroxylon tenax</i> L.	tough bully	NA	NA
SAURURACEAE <i>Saururus cernuus</i> L.	lizard's tail	OBL	OBL
SCROPHULARIACEAE <i>Bacopa caroliniana</i> (Walter) B. L. Robinson <i>Buchnera americana</i> L. <i>Lindernia grandiflora</i> Nuttall <i>Nuttallanthus floridanus</i> (Chapman) D.A. Sutton <i>Scoparia dulcis</i> Linnaeus	blue waterhyssop American bluehearts savannah false pimpernel Apalachicola toadflax licorice weed	OBL FAC OBL NA FAC	OBL NA FACW NA FAC
SOLANACEAE <i>Solanum carolinense</i> L. var. <i>floridanum</i> (Shuttlw. Ex Dunal) Chapman	Florida horsenettle	FACU	NA
THEACEAE <i>Gordonia lasianthus</i> (L.) Ellis	loblolly bay	FACW	FACW
ULMACEAE <i>Ulmus americana</i> L.	American elm	FACW	FACW
VERBENACEAE <i>Callicarpa americana</i> L. <i>Phyla nodiflora</i> (Linnaeus) Greene	American beautyberry turkey tangle fogfruit	FACU- FACW	NA FAC
VIOLACEAE <i>Viola affinis</i> Le Conte	sand violet	FACW	FACW
VITACEAE <i>Parthenocissus quinquefolia</i> (L.) Planch. <i>Vitis aestivalis</i> Michx. <i>Vitis rotundifolia</i> Michx. var. <i>munsoniana</i> (Simpson ex Munson) M.O. Moore	Virginia creeper summer grape Munson's grape	FAC FAC- FAC	NA NA NA
<u>ANGIOSPERMAE-</u> <u>MONOCOTYLEDONEAE</u>			
AGAVACEAE <i>Yucca filamentosa</i> L.	Adam's needle	NA	NA
ALISMACEAE <i>Sagittaria lancifolia</i> Linnaeus <i>Sagittaria subulata</i> (Linnaeus) Buchenau	bulltongue arrowhead awleaf arrowhead	OBL OBL	OBL OBL

Table C-2 (Continued)
Catalog of Vascular Plants

Scientific Name ¹	Common Name ²	USFWS Wetland Indicator Status ³	Florida Wetland Indicator Status ⁴
ARECACEAE			
<i>Sabal palmetto</i> (Walt.) Lodd. Ex J.A. & J.H. Schultes	cabbage palmetto	FAC	FAC
<i>Serenoa repens</i> (Bartr.) Small	saw palmetto	FAU	NA
BROMELIACEAE			
<i>Tillandsia cf. recurvata</i> (L.) L.	small ballmoss	NA	NA
<i>Tillandsia setacea</i> Sw.	southern needleleaf	NA	NA
<i>Tillandsia usneoides</i> (L.) L.	Spanish moss	NA	NA
CANNACEAE			
<i>Canna flaccida</i> Salisb.	bandanna of the Everglades	OBL	OBL
COMMELINACEAE			
<i>Commelina erecta</i> L.	whitemouth dayflower	NA	U
<i>Tradescantia roseolens</i> Small	longleaf spiderwort	NA	NA
CYPERACEAE			
<i>Carex longii</i> Mackenzie	Long's sedge	OBL	FACW
<i>Cyperus articulatus</i> L.	jointed flatsedge	OBL	OBL
<i>Cyperus croceus</i> Vahl	Baldwin's flatsedge	FAC	FAC
<i>Cyperus esculentus</i>	yellow nutgrass		
<i>Cyperus ligularis</i> L.	Alabama swamp flatsedge	FACW	FACW
<i>Cyperus odoratus</i> Linnaeus	fragrant flatsedge	FACW	FACW
<i>Cyperus ovularis</i>	sedge		
<i>Cyperus polystachyos</i> Rottboell	manyspike flatsedge	FACW	FACW
<i>Cyperus retrorsus</i> Chapman	pine barren flatsedge	FACU+	FAC
<i>Cyperus rivularis</i>	sedge		
<i>Cyperus cf. tetragonus</i> Ell.	four-angle flatsedge	FAC+	U
<i>Dichromena colorata</i> (L.) Hitchc.	starbrush white-top-sedge	FACW	FACW
<i>Eleocharis baldwinii</i> (Torrey) Chapman	Baldwin's spikerush	FACW+	OBL
<i>Fimbristylis autumnalis</i> (Linnaeus) Roemer & Schultes	slender fimbry	OBL	OBL
<i>Fuirena scirpoidea</i> Michaux	southern umbrellasedge	OBL	OBL
<i>Oxycaryum cf. cubense</i> (Poepp. & Kunth) Lye	Cuban bulrush	OBL	OBL
<i>Rhynchospora cephalantha</i> Gray	bunched beaksedge	OBL	OBL
<i>Rhynchospora corniculata</i> (Lam.) Gray	shortbristle horned beaksedge	OBL	OBL
<i>Rhynchospora fascicularis</i> (Michx.) Vahl	fascicled beaksedge	FACW+	FACW
<i>Rhynchospora globularis</i> (Chapman) Small	globe beaksedge	FACW	FACW
<i>Rhynchospora megalocarpa</i> Gray	sandyfield beaksedge	NA	NA
<i>Rhynchospora microcarpa</i> Baldw. Ex Gray	southern beaksedge	FACW+	OBL
<i>Rhynchospora miliacea</i> (Lam.) Gray	millet beaksedge	OBL	OBL
<i>Rhynchospora nitens</i> (Vahl) A. Gray	shortbeak beaksedge	OBL	OBL
<i>Rhynchospora plumosa</i> Ell.	plumed beaksedge	FACW	FACW
<i>Rhynchospora wrightiana</i> Boeckl.	Wright's beaksedge	OBL	FACW
<i>Scleria ciliata</i> Michx.	fringed nutrush	FAC	FACW
<i>Scleria triglomerata</i> Michx.	whip nutrush	FACU+	FACW

Table C-2 (Continued)
Catalog of Vascular Plants

Scientific Name ¹	Common Name ²	USFWS Wetland Indicator Status ³	Florida Wetland Indicator Status ⁴
ERIOCAULACEAE <i>Lachnocaulon anceps</i> (Walter) Morong <i>Syngonanthus flavidulus</i> (Michx.) Ruhl.	whitehead bogbutton yellow hatpins	OBL 3.0 FACW+	FACW FACW
HAEMODORACEAE <i>Lachnanthes caroliana</i> (Lam.) Dandy	Carolina redroot	OBL	FAC
HYPOXIDACEAE <i>Hypoxis curtissii</i> Rose	Curtis' star-grass	FACW	FACW
IRIDACEAE † <i>Nemastylis floridana</i> Small	fall-flowering pleatleaf	OBL	FACW
JUNCACEAE <i>Juncus dichotomus</i> Ell. <i>Juncus effusus</i> Linnaeus var. <i>solutus</i> Fernald & Wiegand <i>Juncus elliotii</i> Chapman <i>Juncus marginatus</i> <i>Juncus scirpoides</i> Lam.	forked rush lamp rush Elliott's rush needlepod rush	FACW FACW+ OBL FACW+	FACW OBL OBL FACW
LEMNACEAE <i>Lemna aequinoctialis</i> Welw. <i>Lemna minor</i> Linnaeus	lesser duckweed common duckweed	OBL OBL	NA NA
ORCHIDACEAE † <i>Encyclia tampensis</i> (Lindl.) Small † <i>Epidendrum conopseum</i> Ait. F. <i>Habenaria odontopetala</i> Reichenb. F. <i>Habenaria repens</i> Nuttall <i>Ponthieva racemosa</i> (Walt.) C. Mohr	Tampa butterfly orchid green fly orchid toothpetal bog orchid waterspider false reinorchid hairy shadow witch	NA NA FACW OBL FACW+	NA NA FACW FACW FACW
POACEAE <i>Andropogon brachystachyus</i> Chapman <i>Andropogon glomeratus</i> (Walter) Britton et al <i>Andropogon virginicus</i> L. <i>Andropogon ternarius</i> Michx. <i>Aristida spiciformis</i> Ell. <i>Aristida stricta</i> Michx. <i>Arundinaria gigantea</i> (Walt.) Muhl. <i>Axonopus cf. furcatus</i> (Flueggé) A.S. Hitchc. <i>Cenchrus echinatus</i> L. <i>Chasmanthium sessiliflorum</i> (Poir.) Yates * <i>Cynodon dactylon</i> (L.) Pers. * <i>Dactyloctenium aegyptium</i> (L.) Willd.	shortspike bluestem bushy bluestem broomsedge bluestem splitbeard bluestem bottlebrush threeawn pineland threeawn giant cane big carpetgrass southern sandbur longleaf woodoats Bermudagrass Egyptian grass	FACW FACW+ FAC- FACU FAC FAC- FACW FACW OBL NA FAC+ FACU NA	FAC FACW FAC NA FAC FAC FACW FAC NA NA FAC NA NA

Table C-2 (Continued)
Catalog of Vascular Plants

Scientific Name ¹	Common Name ²	USFWS Wetland Indicator Status ³	Florida Wetland Indicator Status ⁴
<i>Dichanthelium aciculare</i> (Desv. Ex Poir.) Gould & C.A. Clark	needleleaf rosette grass	FACU	NA
<i>Dichanthelium dichotomum</i> (L.) Gould	cypress panicgrass	FAC	NA
<i>Dichanthelium sabulorum</i> (Lam.) Gould & C.A. Clark	hemlock rosette grass	FACU	NA
<i>Digitaria acuminata</i>			
<i>Digitaria ciliaris</i> (Retz.) Koel.	southern crabgrass	NA	NA
<i>Echinochloa walteri</i> (Pursh) A. Heller	coast cockspur	OBL	FACW
<i>Eragrostis elliotii</i> S. Wats.	field lovegrass	FACW	FAC
<i>Eragrostis cf. refracta</i> (Muhl.) Scribn.	coastal lovegrass	FACW	FAC
<i>Eustachys glauca</i> Chapman	saltmarsh fingergrass	FACW	FACW
<i>Eustachys petraea</i> (Swartz) Desvoux	pinewoods fingergrass	FACU-	FAC
* <i>Melinis repens</i> (Willd.) Zizka	rose Natal grass	NA	NA
<i>Panicum dichotomiflorum</i> Michaux	fall panicgrass	FACW	FACW
* <i>Panicum repens</i> Linnaeus	torpedo grass	FACW-	FACW
<i>Panicum rigidulum</i> Bosc ex Nees	redtop panicgrass	FACW	FACW
* <i>Paspalum notatum</i> Flueggé	bahiagrass	FACU+	NA
<i>Paspalum setaceum</i> Michx.	thin paspalum	FAC	FAC
<i>Sacciolepis striata</i> (Linnaeus) Nash	American cupscale	OBL	OBL
<i>Setaria parviflora</i> (Poir.) Kerguelén	marsh bristlegrass	FAC	FAC
<i>Sorghastrum avenaceum</i>			
<i>Sorghastrum secundum</i> (Ell.) Nash	lopsided Indiangrass	FACU-	NA
* <i>Sporobolus cf. indicus</i> (L.) R. Br.	Smut grass	FACU+	NA
PONTEDERIACEAE			
<i>Eichhornia crassipes</i> (Mart.) Solms	common water hyacinth	OBL	NA
<i>Pontederia cordata</i> Linnaeus	pickerelweed	OBL	OBL
SMILACACEAE			
<i>Smilax bona-nox</i> L.	saw greenbrier	FAC	NA
<i>Smilax laurifolia</i> L.	laurel greenbrier	FACW+	NA
TYPHACEAE			
<i>Typha domingensis</i> Pers.	southern cattail	OBL	OBL
<i>Typha latifolia</i> Linnaeus	broadleaf cattail	OBL	OBL
XYRIDACEAE			
<i>Xyris ambigua</i> Beyrich ex Kunth	coastalplain yelloweyed grass	OBL	OBL
<i>Xyris brevifolia</i> Michx.	shortleaf yelloweyed grass	OBL	OBL
<i>Xyris caroliniana</i> Walt.	Carolina yelloweyed grass	FACW+	FACW

**Table C-2 (Continued)
 Catalog of Vascular Plants**

Scientific Name ¹	Common Name ²	USFWS Wetland Indicator Status ³	Florida Wetland Indicator Status ⁴
<i>Xyris jupicai</i> Richard	Richard's yelloweyed grass	OBL	FACW

¹ Scientific nomenclature follows *A Synonymized Checklist of the Vascular Flora of the United States, Canada, and Greenland* (Kartesz, 1994).

² Common names are taken from The PLANTS Database, Version 3.5 (USDA, NRCS, 2002).

³ Categories are taken from *National List of Plant Species that Occur in Wetlands: National Summary* (Reed, 1988). Acronyms are the following OBL = obligate wetland plant; FACW = facultative wetland plant; FAC = facultative plant; FACU = facultative upland plant; UPL = obligate upland plant. A NI (no indicator) was recorded for those species for which insufficient information was available to determine an indicator status or that were not considered by the Regional Panel. An asterisk (*) following a regional indicator identifies tentative assignments based on limited information or conflicting review. A positive sign (+) indicates a frequency toward the higher end of the category (more frequently found in wetlands). A negative sign (-) indicates a frequency toward the lower end of the category (less frequently found in wetlands).

⁴ Categories are taken from *The Florida Wetlands Delineation Manual* (Gilbert et al., 1999). Acronyms are the following OBL = obligate wetland plant; FACW = facultative wetland plant; FAC = facultative plant; U = obligate upland plant.

**Appendix D
Gopher Tortoise Permit**

FLORIDA GAME AND FRESH WATER FISH COMMISSION

QUINTON L. HEDGEPEETH, DDS
Miami

MRS. GILBERT W. HUMPHREY
Miccosukee

JOE MARLIN HILLIARD
Clewiston

J. BEN ROWE
Gainesville

JULIE K. MORRIS
Sarasota

ROBERT M. BRANTLY, Executive Director
ALLAN L. EGBERT, Ph.D., Assistant Executive Director



FARRIS BRYANT BUILDING
620 South Meridian Street
Tallahassee, Florida 32399-1600
(904) 488-1960

March 12, 1993

Mr. Ben Sharma
Kissimmee Utility Authority
1701 Carroll Street
Kissimmee, FL 34741

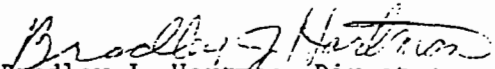
RE: Gopher Tortoise Incidental Take
Permit OSC-6, Osceola County

Dear Mr. Sharma:

Enclosed is permit OSC-6 for the incidental taking of gopher tortoises, their eggs and their burrows within the development boundaries specified. The application for this permit was complete as of March 9, 1993.

Please contact Mr. Steve Lau at 407-778-5094 if you have any questions regarding this permit.

Sincerely,


Bradley J. Hartman, Director
Office of Environmental Services

BJH/tgw
ENV 3-2/1
Enclosure
osc-6.ltr

cc: Osceola County Planning Department
Mr. David M. Lefebvre
Ms. Julie Hovis, Central Region, GFC
Major Starling, Central Region, GFC
Mr. Steve Lau, Office of Environmental Services, GFC
Mr. Don Wood, Division of Wildlife, GFC

PERMIT FOR TAKING OF GOPHER TORTOISES AND
THEIR BURROWS

Chapter 39-27.002(4) FAC

STATE OF FLORIDA GAME AND FRESH WATER FISH COMMISSION

Issuance Date: March 12, 1993

Permittee: Kissimmee Utility Authority
Attention: Mr. Ben Sharma

Permittee Address: 1701 Carroll Street
Kissimmee, Florida 34741

Authorized Agent: David M. Lefebvre
Black and Veatch
P. O. Box 8405
Kansas City, Missouri 64114

Permit Number: OSC-6

Location of Affected Site: Kissimmee Utility Authority's Cane Island Project consisting of approximately 1,003 acres located in Section 29 and the north 1/2 of Section 32, T25S, R28E, Osceola County, see Location Map (Figure 1). The project would impact approximately 49.4 acres of gopher tortoise habitat for construction of the power generating complex, access road/utility corridor and transmission line corridor and approximately 6 acres of tortoise habitat for wetland creation; see Site Plan Map (Figure 4-2).

Permitted Action: The permittee or its agents are authorized to take gopher tortoises, their eggs and their burrows within its development boundaries where such taking is incidental to development activities. The criteria of Rule 39-27.002(4), F.A.C., have been satisfied and the taking, as conditioned below, will not be detrimental to the survival potential of the species.

Provisions/Conditions:

1. The applicant shall protect 129.7 acres of gopher tortoise habitat consisting of four sites [Gopher Tortoise Site 1 (22.7), Site 2 (65.7 acres), Site 3 (21.8 acres) and Site 4 (19.5 acres)] shown on the Gopher Tortoise Management Area Map (Figure 5-1), and grant a perpetual conservation easement over these lands to the Florida Game and Fresh Water Fish Commission (GFC). The installation and maintenance of the proposed Bonnet Creek Canal Transmission Line (location shown in Figure 2) shall be allowed across Gopher Tortoise Site 2. The applicant shall submit a draft copy of the conservation easement to the GFC for review and approval prior to recording. A copy of the recorded conservation easement shall be

provided to the GFC at the Office of Environmental Services, 620 South Meridian street, Tallahassee, Florida 32399-1600.

2. The permit will not go into effect until latter effective date of either:
 - a) 21 days from date of the receipt of this notice, or if a petition for Administrative Hearing is timely filed, until the petition is resolved; or
 - b) the date that the applicant has obtained a letter of acknowledgement from the GFC that it has received a copy of the recorded, previously approved conservation easement for the areas described in condition #1 above.
3. The applicant shall have the obligation to manage and maintain the protected 129.7 acres for gopher tortoises in accordance with the proposed "Upland Habitat Management Plan" (Section 5.1 of the Kissimmee Utility Authority, Florida Municipal Power Agency, Cane Island Project Mitigation Plan) prepared by Black and Veatch, January 1993.
4. The permittee shall keep written records of the habitat management activities conducted and provide a copy of said activities upon request of the GFC.
5. This permit does not relieve the applicant from any other "taking" requirements by the U.S. Fish and Wildlife Service or GFC as to other listed species.
6. The permittee, or authorized agents of the permittee, are authorized to move tortoises, at their discretion, within the property boundaries to minimize taking. This permit does not authorize the permittee or its agents to possess or move tortoises off the contiguous ownership of the permittee or to move tortoises into areas previously authorized as a relocation site by GFC permit. A separate relocation permit from GFC shall be required for those activities.
7. This permit does not authorize any taking of gopher tortoises beyond that which is a direct result of development activities or the on-site movement of animals addressed in Condition #6. Any other form of taking or relocation will require a separate permit from the Executive Director.
8. This permit must be available for inspection at all times while engaged in the permitted activities.

Kissimmee Utility Authority
Gopher Tortoise Take Permit OSC-6
March 12, 1993
Page 3

9. This permit is transferrable to subsequent owners of the property.

Notice of Rights Statement: In accordance with Rules 28-5.111 and 28.6.008, Florida Administrative Code, and Section 120.60, Florida Statutes, any party may request a hearing on this matter pursuant to Section 120.57, Florida Statutes by filing a completed Election of Rights form (copy attached) by certified mail, return receipt requested, with the undersigned within twenty-one (21) days of receipt of this permit and notice. If timely requested and a hearing is granted, the hearing will be conducted under the procedures established by Section 120.57, Florida Statutes. A party will be given the opportunity to be represented by counsel or other qualified representative, to take testimony, to call and cross-examine witnesses, and to have subpoenas issued on your behalf.

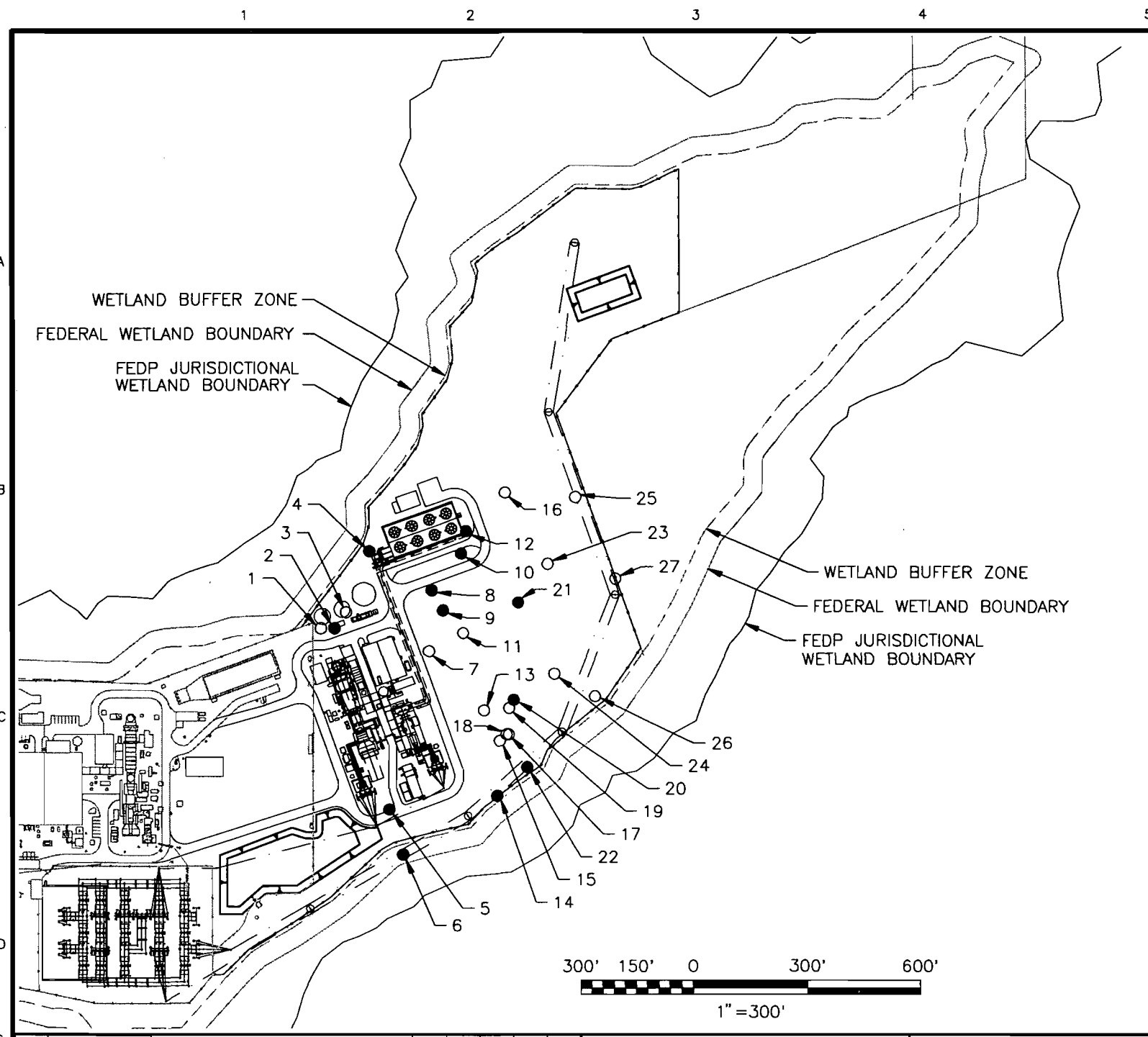
Colonel Robert M. Brantly
Executive Director

By: Bradley J. Hartner

ENV 3-2/1

Attachments:

1. Election of Rights
 2. Location Map (Figure 1)
 3. Project Impact Areas (Figure 4-2)
 4. Location of Gopher Tortoise Management Areas (Figure 5-1)
- utility.gt



GOPHER TORTOISE LOCATIONS			
POINT	NORTH	EAST	DESCRIPTION
1	1434287.13	484241.81	INACTIVE GOPHER TORTOISE
2	1434323.49	484241.97	ACTIVE GOPHER TORTOISE
3	1434353.98	484199.19	INACTIVE GOPHER TORTOISE
4	1434415.29	484038.53	ACTIVE GOPHER TORTOISE
5	1434466.82	484720.05	ACTIVE GOPHER TORTOISE
6	1434502.66	484838.22	ACTIVE GOPHER TORTOISE
7	1434571.68	484302.08	INACTIVE GOPHER TORTOISE
8	1434578.45	484141.18	ACTIVE GOPHER TORTOISE
9	1434608.51	484194.95	ACTIVE GOPHER TORTOISE
10	1434657.65	484044.97	ACTIVE GOPHER TORTOISE
11	1434662.79	484254.20	INACTIVE GOPHER TORTOISE
12	1434670.03	483986.01	ACTIVE GOPHER TORTOISE
13	1434716.42	484458.29	INACTIVE GOPHER TORTOISE
14	1434751.79	484683.75	ACTIVE GOPHER TORTOISE
15	1434758.49	484538.94	INACTIVE GOPHER TORTOISE
16	1434773.50	483884.55	INACTIVE GOPHER TORTOISE
17	1434776.74	484522.93	INACTIVE GOPHER TORTOISE
18	1434782.80	484522.95	INACTIVE GOPHER TORTOISE
19	1434783.10	484453.22	INACTIVE GOPHER TORTOISE
20	1434795.32	484431.81	ACTIVE GOPHER TORTOISE
21	1434808.57	484174.38	ACTIVE GOPHER TORTOISE
22	1434830.90	484609.00	ACTIVE GOPHER TORTOISE
23	1434887.80	484072.80	INACTIVE GOPHER TORTOISE
24	1434904.70	484362.56	INACTIVE GOPHER TORTOISE
25	1434961.30	483896.10	INACTIVE GOPHER TORTOISE
26	1435013.52	484422.04	INACTIVE GOPHER TORTOISE
27	1435069.43	484111.16	INACTIVE GOPHER TORTOISE

LEGEND		
●	ACTIVE LOCATION	
○	INACTIVE LOCATION	

RUM02825 ACAD 16.1s (LMS Tech)
 A1ASL012 B1 1=1
 03/26/08 09:17:47

NO	DATE	REVISIONS AND RECORD OF ISSUE	DRN	DES	CHK	PDE	APP
0	04/01/2008	ISSUED FOR CONSTRUCTION	MRR	JMS	MJS	MJS	SAA

BLACK & VEATCH CORPORATION
 ENGINEER: JMS DRAWN: MRR
 CHECKED: MJS DATE: 04/01/2008

FLORIDA MUNICIPAL POWER AGENCY
 CANE ISLAND POWER PARK UNIT 4
 PLOT PLAN
 GOPHER TORTOISE LOCATIONS

PROJECT	DRAWING NUMBER	REV
	147651-DS-0113	0
CODE		
AREA		

**Appendix E
USDA, NRCS Custom Soil Resource Report
for Osceola County, Florida - Cane Island**



United States
Department of
Agriculture



NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Osceola County, Florida

Cane Island



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

Custom Soil Resource Report

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

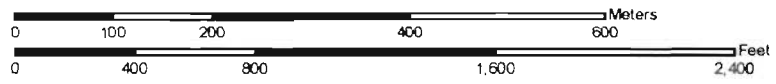
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


Custom Soil Resource Report
Soil Map




Custom Soil Resource Report Legend

MAP LEGEND














Area of Interest (AOI)


 Area of Interest (AOI)


Soils

 Soil Map Units

Special Point Features




-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot
-  Spoil Area
-  Stony Spot

 Very Stony Spot

 Wet Spot



 Other

Special Line Features



-  Gully
-  Short Steep Slope
-  Other

Political Features

Municipalities

-  Cities
-  Urban Areas

Water Features

-  Oceans
-  Streams and Canals

Transportation

 Rails

Roads

-  Interstate Highways
-  US Routes
-  State Highways
-  Local Roads
-  Other Roads

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 17N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Osceola County, Florida
Survey Area Data: Version 2, Dec 5, 2006

Date(s) aerial images were photographed: 1/6/1999

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Osceola County, Florida (FL097)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7	Candler sand, 0 to 5 percent slopes	24.2	26.9%
16	Immokalee fine sand	10.4	11.5%
24	Narcoossee fine sand	11.2	12.5%
37	Pompano fine sand, depressional	2.0	2.2%
41	Satellite sand	42.1	46.9%
Totals for Area of Interest (AOI)		89.9	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

Custom Soil Resource Report

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

**Osceola County, Florida Version date:12/5/2006 12:42:03
PM**

7—Candler sand, 0 to 5 percent slopes

Map Unit Setting

Elevation: 20 to 150 feet

Mean annual precipitation: 44 to 52 inches

Mean annual air temperature: 70 to 77 degrees F

Frost-free period: 342 to 365 days

Map Unit Composition

Candler and similar soils: 90 percent

Minor components: 10 percent

Description of Candler

Setting

Landform: Ridges on marine terraces, knolls on marine terraces

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Eolian or sandy marine deposits

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 4.0

Available water capacity: Very low (about 2.4 inches)

Interpretive groups

Land capability (nonirrigated): 4s

Typical profile

0 to 3 inches: Sand

3 to 62 inches: Sand

62 to 80 inches: Sand

Minor Components

Candler, 5 to 12% slopes

Percent of map unit: 3 percent

Landform: Knolls on marine terraces, ridges on marine terraces

Landform position (three-dimensional): Side slope, interfluve

Down-slope shape: Convex

Across-slope shape: Convex

Cassia

Percent of map unit: 3 percent

Custom Soil Resource Report

Landform: Rises on marine terraces
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Linear

Tavares

Percent of map unit: 2 percent
Landform: Ridges on marine terraces, flats on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear

Pomello

Percent of map unit: 2 percent
Landform: Ridges on marine terraces, knolls on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear

16—Immokalee fine sand

Map Unit Setting

Mean annual precipitation: 44 to 52 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 342 to 365 days

Map Unit Composition

Immokalee and similar soils: 90 percent
Minor components: 10 percent

Description of Immokalee

Setting

Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy marine deposits

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water capacity: Low (about 3.6 inches)

Interpretive groups

Land capability (nonirrigated): 4w

Typical profile

0 to 7 inches: Fine sand

Custom Soil Resource Report

7 to 37 inches: Fine sand
37 to 47 inches: Fine sand
47 to 80 inches: Fine sand

Minor Components

Basinger

Percent of map unit: 2 percent
Landform: Drainageways on marine terraces, flats on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave

Ankona

Percent of map unit: 2 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear

Myakka

Percent of map unit: 2 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear

Smyrna

Percent of map unit: 2 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear

Pomello

Percent of map unit: 2 percent
Landform: Ridges on marine terraces, knolls on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear

24—Narcoossee fine sand

Map Unit Setting

Elevation: 10 to 120 feet
Mean annual precipitation: 44 to 52 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 342 to 365 days

Map Unit Composition

Narcoossee and similar soils: 90 percent
Minor components: 10 percent

Description of Narcoossee

Setting

Landform: Rises on marine terraces, knolls on marine terraces

Custom Soil Resource Report

Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy marine deposits

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water capacity: Very low (about 2.6 inches)

Interpretive groups

Land capability (nonirrigated): 3w

Typical profile

0 to 5 inches: Fine sand
5 to 22 inches: Fine sand
22 to 26 inches: Fine sand
26 to 80 inches: Fine sand

Minor Components

Adamsville

Percent of map unit: 3 percent
Landform: Rises on marine terraces, flats on marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Convex
Across-slope shape: Linear

Myakka

Percent of map unit: 3 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear

Tavares

Percent of map unit: 2 percent
Landform: Ridges on marine terraces, flats on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear

Smyrna

Percent of map unit: 2 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear

37—Pompano fine sand, depressional

Map Unit Setting

Mean annual precipitation: 44 to 52 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 342 to 365 days

Map Unit Composition

Pompano and similar soils: 92 percent
Minor components: 8 percent

Description of Pompano

Setting

Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy marine deposits

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water capacity: Very low (about 2.4 inches)

Interpretive groups

Land capability (nonirrigated): 7w

Typical profile

0 to 11 inches: Fine sand
11 to 80 inches: Fine sand

Minor Components

Placid

Percent of map unit: 2 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

Basinger, depressional

Percent of map unit: 2 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

Malabar, depressional

Percent of map unit: 2 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

Riviera, depressional

Percent of map unit: 2 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

41—Satellite sand

Map Unit Setting

Elevation: 10 to 100 feet
Mean annual precipitation: 44 to 52 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 342 to 365 days

Map Unit Composition

Satellite and similar soils: 85 percent
Minor components: 15 percent

Description of Satellite

Setting

Landform: Rises on marine terraces, knolls on marine terraces
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy marine deposits

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very high
(19.98 to 39.96 in/hr)
Depth to water table: About 12 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water capacity: Very low (about 2.4 inches)

Interpretive groups

Land capability (nonirrigated): 6s

Typical profile

0 to 8 inches: Sand
8 to 80 inches: Sand

Custom Soil Resource Report

Minor Components

Adamsville

Percent of map unit: 3 percent
Landform: Rises on marine terraces, flats on marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Convex
Across-slope shape: Linear

Cassia

Percent of map unit: 3 percent
Landform: Rises on marine terraces
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Linear

Immokalee

Percent of map unit: 3 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear

Myakka

Percent of map unit: 2 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear

Pomello

Percent of map unit: 2 percent
Landform: Ridges on marine terraces, knolls on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear

St. Lucie

Percent of map unit: 2 percent
Landform: Ridges on marine terraces, knolls on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear

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Custom Soil Resource Report

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**Appendix F
Conservation Easements**

A.K. (BEN) SHARMA, P.E.
DIRECTOR OF POWER SUPPLY



P.O. BOX 423218 KISSIMMEE, FLORIDA 34742-3218
(407) 933-7777 - FAX: (407) 847-0787

RECEIVED

OCT 04 1993

OFFICE OF ENVIRONMENTAL SERVICES

September 29, 1993

Mr. Bradley J. Hartman
Florida Game & Fresh Water Fish Commission
Office of Environmental Services
620 South Meridian Street
Tallahassee, FL 32399-1600

RE: Cane Island Project Conservation Easement

Dear Mr. Hartman:

The Kissimmee Utility Authority has recorded a 25-acre conservation easement with Osceola County in accordance with Condition 1 of Permit OSC-6 for the taking of gopher tortoises and their burrows issued for the Cane Island project (a power plant). Enclosed is a copy of the recorded easement as also required by Condition 1.

Sincerely,

Ak Sharma

A. K. (Ben) Sharma, P.E.
Director of Power Supply

AKS/css

cc: B. Kuersteiner
D. Lefebvre

<input type="checkbox"/> Return to: <input checked="" type="checkbox"/> File under: <u>OSC-6</u>	Original: <i>[Signature]</i>	Copies To: <i>[Signature]</i>	Need <u>1</u> Copies

Post-it™ copy request pad 7670

RECEIVED

JAN 11 1995

DEDICATION OF CONSERVATION EASEMENT

GREENBERG TRAUJG

STATE OF FLORIDA

COUNTY OF OSCEOLA

KNOW ALL PERSONS BY THESE PRESENTS THAT in consideration for the issuance of the Florida Game and Fresh Water Fish Commission Permit for Taking Gopher Tortoises and Their Burrows, Permit No. OSC-6 (hereinafter referred to as "Permit No. OSC-6") to the Kissimmee Utility Authority on March 12, 1993, pursuant to the document entitled "Regulations and Enforcement of 'Taking' of Gopher Tortoise by Development Activities Under the Rules of the Florida Game and Fresh Water Fish Commission" dated June 26, 1992, the Kissimmee Utility Authority, a body politic created and existing under the laws of the State of Florida (hereinafter referred to as "Grantor"), has granted to the Florida Game and Fresh Water Fish Commission, Tallahassee, Florida (hereinafter referred to as "Grantee"), a Conservation Easement in accordance with Section 704.06, Florida Statutes, in and over the real property (hereinafter referred to as "Conservation Area") in Osceola County, Florida, as set forth in the legal description attached hereto as Exhibit "A."

As used herein, the term Grantor shall include any successor or assignee of the Grantor, and the term Grantee shall include any successor or assignee of the Grantee.

Except for such specific activities as authorized pursuant to Grantee Permit No. OSC-6, including but not limited to the maintenance and management of the Conservation Area as specified in "Section 5.1 - Upland Habitat Management Plan" and "Section 5.2 - Upland Habitat Monitoring Plan" set forth in the Cane Island Project Mitigation Plan dated January, 1993 (hereinafter referred to as "Habitat Management/Monitoring Plan") or which may be authorized by future Grantee permits or approvals, the following activities are prohibited on the Conservation Area:

1. Construction or placing of buildings, roads, signs, billboards or other advertising, utilities, or other structures on or above the ground;
2. Dumping or placing of soil or other substances or material as landfill or dumping or placing of trash, waste, or unsightly or offensive materials;

3. Removal or destruction of trees, shrubs, or other vegetation with the exception of maintenance activities specified in the Habitat Management/Monitoring Plan;
4. Excavation, dredging, or removal of loam, peat, gravel, soil, rock or other material substance in such manner as to affect the surface;
5. Surface use except for purposes that permit the land or water area to remain predominantly in its natural condition;
6. Activities detrimental to drainage, flood control, water conservation, erosion control, soil conservation, or fish and gopher tortoise habitat preservation;
7. Acts or uses detrimental to the retention of land or water areas; and
8. Acts or uses detrimental to the preservation of the structural integrity or physical appearance of the property having historical, archaeological or cultural significance.

Provided, however, that the above prohibitions and limitations shall not effect the right of the Grantor or its assigns to use the Conservation Area for passive recreational uses, such as hiking, biking, bird watching or horseback riding or to construct bikeways or wooden walkways through the Conservation Area as nature study trails.

The prohibitions established by the Conservation Easement hereby granted shall not affect the hunting rights on the Conservation Area of Thomas J. Addison, Sr. and Wilma M. Addison granted and available under the Addendum to Contract for Sale and Purchase between the Grantor and Thomas J. Addison, Sr. and Wilma M. Addison, dated August 28, 1991, attached hereto as Exhibit "B".

The Grantee may enforce the provisions of this Conservation Easement as provided for by Section 704.06, Florida Statutes (1991).

The management and maintenance obligations for the Conservation Area imposed in the Habitat Management/Monitoring Plan may be assigned to another entity, governmental body or agency, including the Grantee, upon Grantee's written approval which shall not be unreasonably withheld. Upon assignment of the Habitat Management/Monitoring Plan management and maintenance obligations, the Grantor shall

no longer be required to maintain and manage the Conservation Area under this document, the Habitat Management/Monitoring Plan or Permit No. OSC-6.

The Conservation Easement hereby granted shall run with the land and shall be binding upon the Grantor and its successors and assigns, and shall inure to the benefit of the Grantee and its successors and assigns. The provisions of this Conservation Easement may be amended only after written approval of both the Grantor and Grantee, or their successors and assigns.

IN WITNESS WHEREOF, Grantor has hereunto set Grantor's hand and seal on this 29th day of September, 1993.

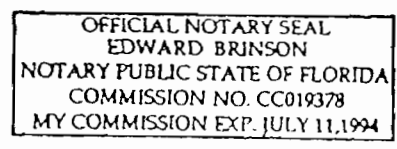
KISSIMMEE UTILITY AUTHORITY
BY: [Signature]
Print Name: Richard L. Hord
Chairman

ATTEST: [Signature]
Print Name: Bob Bobroff
Secretary

STATE OF FLORIDA §
COUNTY OF OSCEOLA §

The foregoing instrument was acknowledged before me this 29th day of September, 1993, by RICHARD L. HORD, as Chairman of KISSIMMEE UTILITY AUTHORITY, a body politic organized and existing under the laws of the state of Florida, on behalf of the Authority. He is personally known to me and did not take an oath.

[Signature]
Print Name: EDWARD BRINSON
NOTARY PUBLIC
Commission Number:



STATE OF FLORIDA §
COUNTY OF OSCEOLA §

The foregoing instrument was acknowledged before me this 29th day of September, 1993, by BOB BOBROFF, as Secretary of KISSIMMEE UTILITY AUTHORITY, a body politic organized and existing under the laws of the state of Florida, on behalf of the Authority. He is personally known to me and did not take an oath.

Edward Brinson

Print Name: EDWARD BRINSON

NOTARY PUBLIC

Commission Number:

This instrument prepared by:

Douglas J. Rillstone
Huey, Guilday, Kuersteiner & Tucker, P.A.
106 East College Avenue, Suite 900
Tallahassee, Florida 32301
(904) 224-7091

NOTARY SEAL
EDWARD BRINSON
PUBLIC STATE OF FLORIDA
COMMISSION NO. CC019378
COMMISSION EXP. JULY 11, 1994

OFFICIAL NOTARY SEAL
EDWARD BRINSON
NOTARY PUBLIC STATE OF FLORIDA
COMMISSION NO. CC019378
MY COMMISSION EXP. JULY 11, 1994

DATE: 09/30/93
TIME: 12:35:25

MEL WILLS, JR., CLERK OF THE CIRCUIT COURT
===== OSCEOLA COUNTY =====
12 SOUTH VERNON AVENUE, DEPARTMENT "R"
KISSIMMEE, FLORIDA 34741-5491

RECEIPT
0145215

FROM: KISSIMMEE UTILITY AUTHORITY
P O BOX 423219

KISSIMMEE FL 34742-3219

LINE	CODE	DESCRIPTION	TYPE	BOOK	PAGE	YR-INSTNO-X	CHECK	TOTAL
001	01	RECORDING	OTHER	1148	0912	93-074998	054902	47.50

PAYABLE TO: MEL WILLS, JR., CLERK

BY: ABC
BY: ABC

TOTAL DUE -> 47.50
=====

CHECKS ->	47.50
CASH ->	
CHARGE ->	
CHANGE ->	.00

* THIS IS AN OFFICIAL RECEIPT *
001

BLACK & VEATCH / CANE ISLAND

LEGAL DESCRIPTION

A PARCEL OF LAND LYING IN SECTION 29, TOWNSHIP 25 SOUTH, RANGE 28 EAST, OSCEOLA COUNTY, FLORIDA AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE INTERSECTION OF THE EAST LINE OF SECTION 32, TOWNSHIP 25 SOUTH, RANGE 28 EAST, AND THE NORTH RIGHT-OF-WAY LINE OF THE ACL RAILROAD; THENCE N28°48'59"W, A DISTANCE OF 5091.73 FEET TO THE POINT OF BEGINNING;

FROM THE P.O.B., CONTINUE THE FOLLOWING COURSES AND DISTANCES; THENCE N90°00'00"W, A DISTANCE OF 182.16 FEET; THENCE N44°59'51"W, A DISTANCE OF 511.39 FEET; THENCE S69°46'31"W, A DISTANCE OF 693.15 FEET; THENCE N52°25'53"W, A DISTANCE OF 246.02 FEET; THENCE N20°53'52"W, A DISTANCE OF 1177.45 FEET; THENCE S89°35'05"W, A DISTANCE OF 690.02 FEET; THENCE N08°07'48"E, A DISTANCE OF 141.42 FEET; THENCE N06°42'35"W, A DISTANCE OF 85.59 FEET; THENCE N45°00'00"E, A DISTANCE OF 155.56 FEET; THENCE N61°55'39"E, A DISTANCE OF 170.00 FEET; THENCE S22°02'43"E, A DISTANCE OF 171.26 FEET; THENCE S60°23'27"E, A DISTANCE OF 95.46 FEET; THENCE S84°31'49"E, A DISTANCE OF 109.48 FEET; THENCE S03°13'02"E, A DISTANCE OF 133.26 FEET; THENCE S63°14'19"E, A DISTANCE OF 55.04 FEET; THENCE N66°12'29"E, A DISTANCE OF 84.07 FEET; THENCE N29°56'16"E, A DISTANCE OF 96.34 FEET; THENCE S80°06'22"E, A DISTANCE OF 121.47 FEET; THENCE S57°26'18"E, A DISTANCE OF 180.88 FEET; THENCE S82°01'45"E, A DISTANCE OF 139.02 FEET; THENCE S25°01'50"E, A DISTANCE OF 165.54 FEET; THENCE S36°44'17"E, A DISTANCE OF 121.22 FEET; THENCE S23°44'58"E, A DISTANCE OF 143.93 FEET; THENCE S42°17'29"E, A DISTANCE OF 134.57 FEET; THENCE S72°12'32"E, A DISTANCE OF 113.08 FEET; THENCE S40°29'46"E, A DISTANCE OF 82.51 FEET; THENCE S54°46'57"E, A DISTANCE OF 104.04 FEET; THENCE S58°23'33"E, A DISTANCE OF 152.64 FEET; THENCE S58°40'17"E, A DISTANCE OF 134.63 FEET; THENCE S43°18'38"E, A DISTANCE OF 83.64 FEET; THENCE S56°34'06"E, A DISTANCE OF 57.02 FEET; THENCE S68°07'23"E, A DISTANCE OF 101.18 FEET; THENCE S45°05'05"E, A DISTANCE OF 59.52 FEET; THENCE S49°23'55"E, A DISTANCE OF 138.29 FEET; THENCE S37°46'32"E, A DISTANCE OF 101.21 FEET; THENCE S46°12'22"E, A DISTANCE OF 134.38 FEET; THENCE S32°04'56"E, A DISTANCE OF 79.08 FEET; THENCE S27°32'54"E, A DISTANCE OF 112.79 FEET TO THE POINT OF BEGINNING.

CONTAINING 25 ACRES MORE OR LESS.

BOOK 1132 PAGE 0916

SURVEY NOTES:

1. LANDS SHOWN HEREON WERE NOT ABSTRACTED BY THE SURVEYOR FOR RIGHTS-OF-WAY AND/OR EASEMENTS OF RECORD OR OWNERSHIP.
2. THE LAND DESCRIPTION AND EASEMENTS SHOWN HEREON ARE IN ACCORD WITH THE DESCRIPTION PROVIDED BY THE CLIENT.
3. BEARINGS REFER TO FLORIDA STATE PLANE COORDINATE SYSTEM NAD 83/90 EAST ZONE.
4. NO UNDERGROUND ENCROACHMENTS AND/OR UTILITIES LOCATED.
5. LEGEND: P.O.C. - POINT OF COMMENCEMENT
P.O.B. - POINT OF BEGINNING
O - SET IRON ROD & CAP, LS #3691
6. CORNERS WERE NOT SET ON ENVIRONMENTAL LINE.

THIS IS NOT A SURVEY

CERTIFICATE:

HEREBY CERTIFY THAT THE SKETCH OF SURVEY HEREON IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AS SURVEYED UNDER MY DIRECTION. I FURTHER CERTIFY THAT THIS SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH IN RULE 21HH-6 ADOPTED BY THE FLORIDA BOARD OF LAND SURVEYORS, PURSUANT TO FLORIDA STATUTE 472.027. THERE ARE NO ABOVE GROUND ENCROACHMENTS OTHER THAN THOSE SHOWN HEREON. SUBJECT TO THE QUALIFICATIONS NOTED HEREON. NOT VALID UNLESS SEALED WITH AN EMBOSSED SURVEYORS SEAL.

CERTIFIED TO:

BLACK AND VEATCH

BY:

Gary A. Burden

DATE:

9-17-92

GARY A. BURDEN

ATLANTIC LAND DESIGN, INC.
PROFESSIONAL LAND SURVEYING

5 WEST MONUMENT AVE.
JESSIMMEL FL 34741
TEL (407) 931-1544
FAX (407) 931-1588

201 S.W. Port. St. Lucie Blvd.
Suite 107
Port St. Lucie, FL 34983
Tel. (407) 335-9444
FAX 335-9445

FLORIDA REGISTRATION NO. 3691

BOUNDARY SURVEY

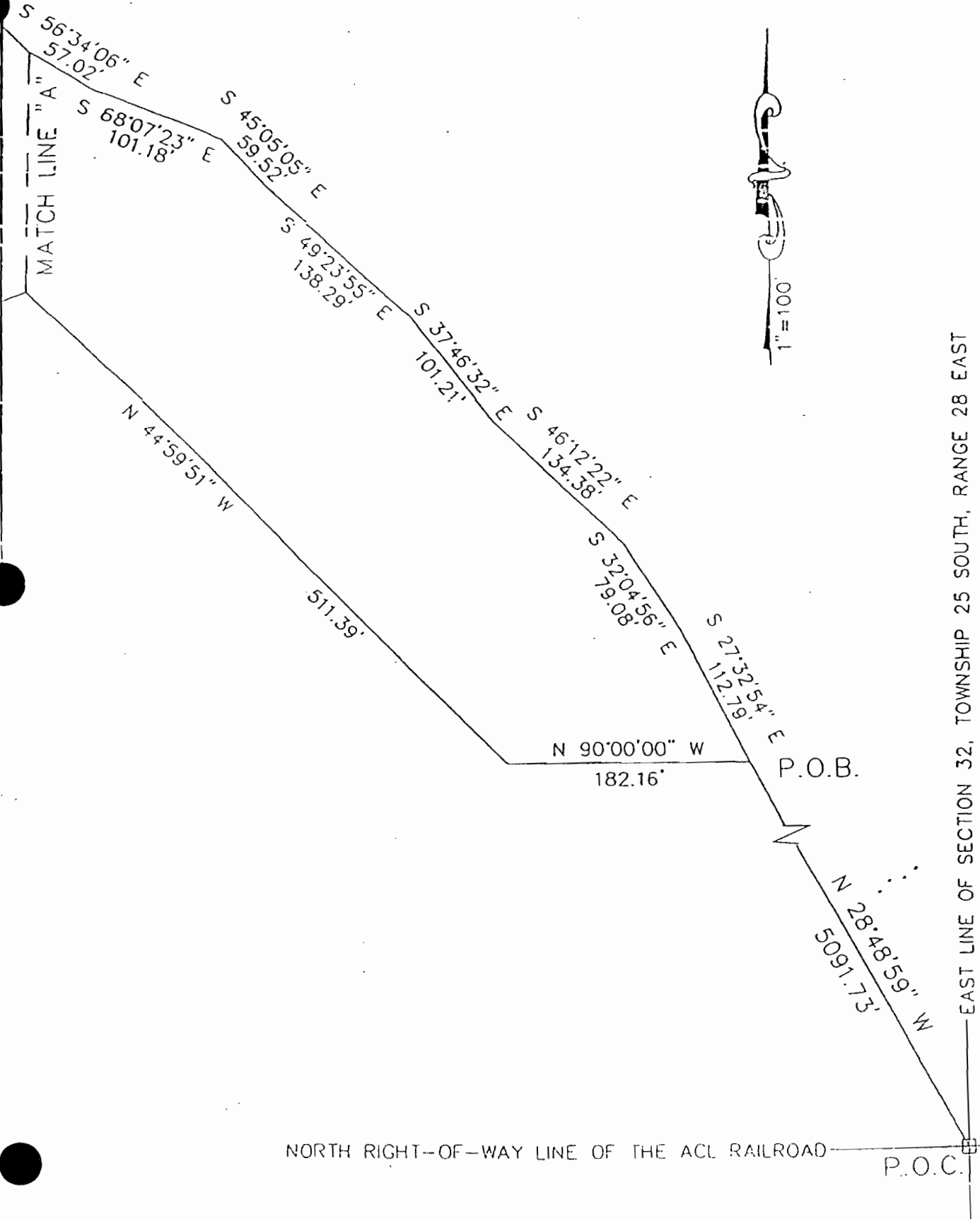
TIE-IN SURVEY

AS-BUILT SURVEY

JOB NUMBER

92036X3

SHT. 1 OF 6



EAST LINE OF SECTION 32, TOWNSHIP 25 SOUTH, RANGE 28 EAST

NORTH RIGHT-OF-WAY LINE OF THE ACL RAILROAD



MATCH LINE "B"

MATCH LINE "A"

S 42°17'28" E
134.57'

S 72°12'32" E
113.08'

S 40°29'46" E
82.51'

S 54°46'57" E
104.04'

S 58°23'33" E
152.64'

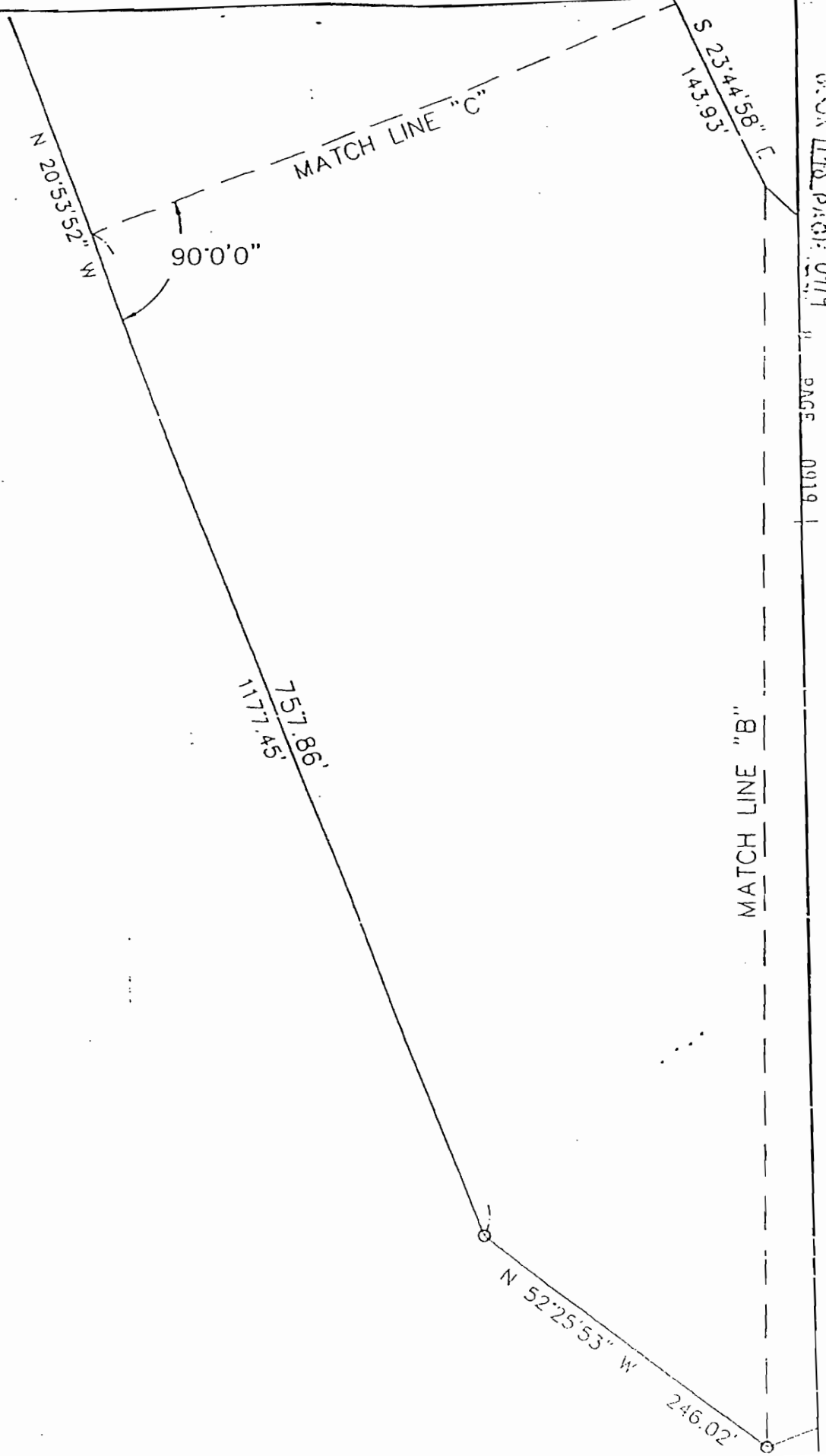
S 58°40'17" E
134.63'

S 43°18'38" E
83.64'

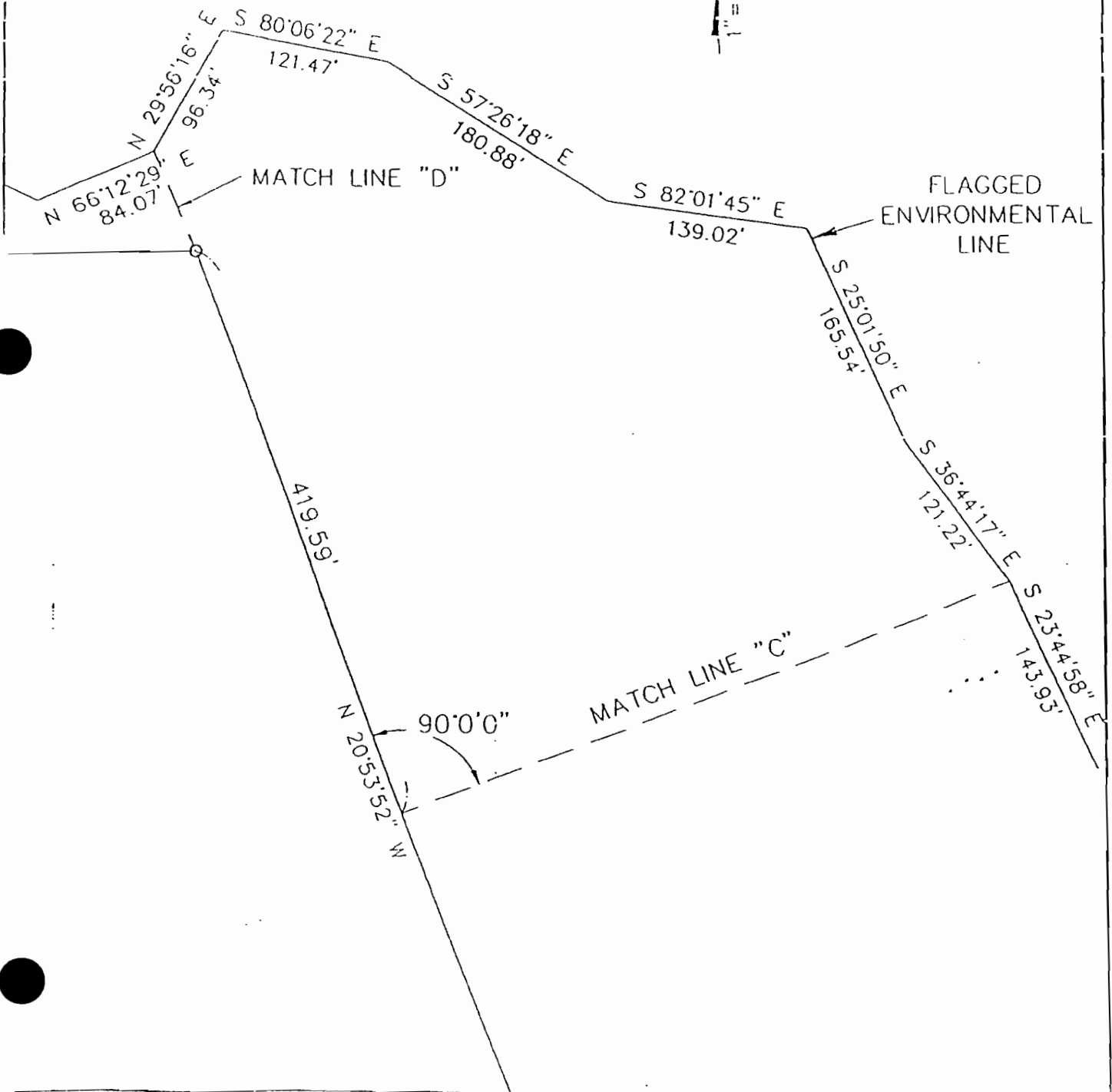
693.15'

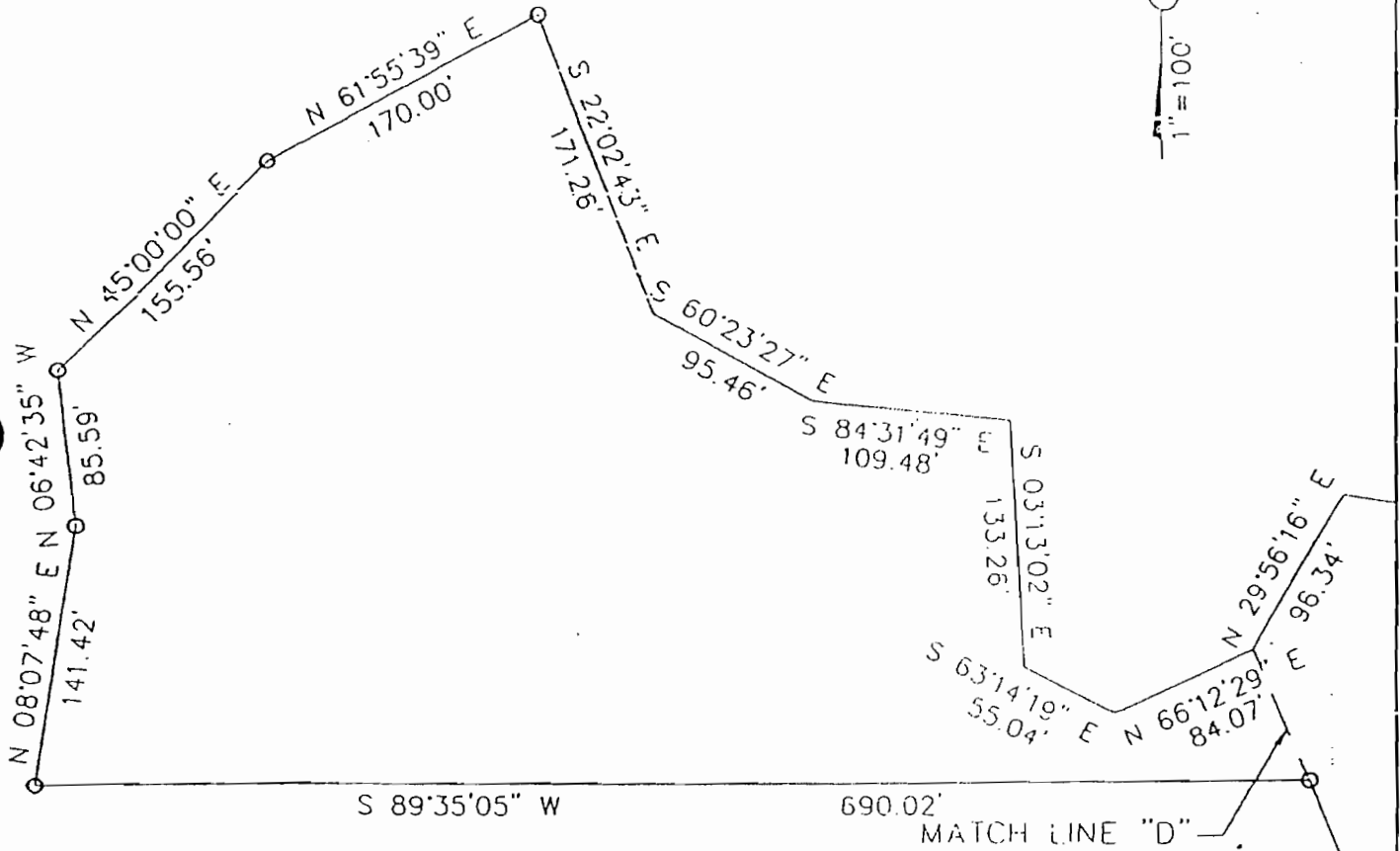
S 69°46'31" W

1" = 100'



W. W. W. LTD. PAGE 0714 PAGE 0919





KUH
P.O. BOX 423
KISSIMMEE, FL 34742

DEDICATION OF CONSERVATION EASEMENT

STATE OF FLORIDA
COUNTY OF OSCEOLA

KNOW ALL PERSONS BY THESE PRESENTS THAT in consideration for the issuance to the Kissimmee Utility Authority of South Florida Water Management District Surface Water Permit No. 49-00672-S (hereinafter referred to as "Permit No. 49-00672-S"), dated April 12, 1993, the Kissimmee Utility Authority, a body politic organized and existing under the laws of the state of Florida (hereinafter referred to as "Grantor"), has granted to the South Florida Water Management District (hereinafter referred to as "Grantee"), a Conservation Easement in accordance with Section 704.06, Florida Statutes, in and over the real property (hereinafter referred to as "Conservation Area" in Osceola County, Florida, as set forth in the legal description attached hereto as Exhibit "A."

As used herein, the term Grantor shall include any successor or assignee of the Grantor, and the term Grantee shall include any successor or assignee of the Grantee.

Except for such specific activities as authorized pursuant to Permit No. 49-00672-S, including but not limited to the maintenance and management of the Conservation Area as specified in Section 5 of the "Kissimmee Utility Authority, Florida Municipal Power Agency, Cane Island Project, Mitigation Plan" dated February 1993 (hereinafter referred to as "Mitigation Plan"), Department of Army Permit No. 199200600 (IP-SL) and such specific activities which may be authorized by future Grantee permits or approvals, the following activities are prohibited in the Conservation Area.

1. Construction or placing of buildings, roads, signs, billboards or other advertising, utilities, or other structures on or above the ground;
2. Dumping or placing of soil or other substances or material as landfill, or dumping or placing of trash, waste, or unsightly or offensive materials;
3. Removal or destruction of trees, shrubs, or other vegetation with the exception of maintenance and management activities specified in the Mitigation Plan;

LARRY WHALEY
CLERK OF CIRCUIT COURT
OSCEOLA COUNTY, FLORIDA

22

CL 98091072 OR 1522/ 33
KGC Rec. Date 08/04/98 Time 14:5

4. Excavation, dredging, or removal of loam, peat, gravel, soil, rock or other material substances in such manner as to affect the surface;
5. Surface use except for purposes that permit the land or water area to remain predominantly in its natural condition;
6. Activities detrimental to drainage, flood control, water conservation, erosion control, soil conservation, or fish and wildlife habitat preservation;
7. Acts or uses detrimental to such retention of land, wetland or water areas; and
8. Acts or uses detrimental to the preservation of the structural integrity or physical appearance of the property having historical, archaeological, or cultural significance.

Provided, however, that the above prohibitions and limitations shall not affect the right to use the Conservation Area for passive recreational uses such as hiking, biking, bird watching, or horseback riding or to construct bikeways or wooden walkways through the Conservation Area as nature study trails. Construction of passive recreational facilities within the Conservation Area must receive prior written approval from Grantee, its successors or assigns, which will not be unreasonably withheld.

The prohibitions established by the Conservation Easement hereby granted shall not affect the hunting rights on the Conservation Area of Thomas J. Addison, Sr. And Wilma M. Addison granted and available under the agreement between the Grantor and Thomas J. Addison, Sr. And Wilma M. Addison, dated August 28, 1991, attached hereto as Exhibit "B."

The Grantor is responsible for the management and maintenance obligations for the Conservation Area imposed in the Mitigation Plan as set forth in Grantee Permit No. 49-00672-S. The management and maintenance obligations for the Conservation Area imposed in the Mitigation Plan may be assigned to another entity, governmental body or agency, including the Grantee, upon Grantee's written approval or acceptance which shall not be unreasonably withheld. Upon assignment of the Mitigation Plan management and maintenance obligations, the Grantor shall no longer be required to maintain and manage the Conservation Area under this document, the Mitigation Plan, or the Permit No. 49-00672-S.

In accordance with the Surface Water Management Permit Application No. 920325-Surface Water Management Staff Review Summary dated March 30, 1993, this Conservation Easement is being granted with the expectation that Grantor will receive from Grantee mitigation credits to offset future wetland impacts within the Kissimmee River Basin. This Conservation Easement or the assignment of the Conservation Area management or maintenance obligations imposed in the Mitigation Plan shall not restrict Grantor's use of the mitigation bank credits established in accordance with the Surface Water Management Permit Application No. 920325-3 Surface Water Management Staff Review Summary dated March 30, 1993, to offset or mitigate any future adverse environmental impacts from other projects of Grantor or entity designated by Grantor.

The Grantee may enter the Conservation Area during normal business hours and with prior notice to Grantor to enforce the rights granted in this Conservation Easement.

As provided in Section 704.06, Florida Statutes (1991), the Grantee may enforce the provisions of this Conservation Easement, either at law or in equity, or to enjoin any activity on or use of the Conservation Area as prohibited above.

Enforcement of the provisions of this Conservation Easement shall be at the Grantee's reasonable discretion, and Grantee's forbearance to exercise the rights provided herein in the event the Grantee undertakes activities within the Conservation Area otherwise prohibited herein shall not be construed as a waiver of Grantee's rights in the event of a the Grantor subsequently undertakes such activity.

If any provision of the Conservation Easement is found to be invalid, all other provisions of the Conservation Easement shall remain in effect unless specifically found to be invalid.

All notices, consents, approvals or other communications required under the provisions of the Conservation Easement, except for the notice required to inspect the Conservation Area as provided for above, shall be in writing and shall be deemed properly given if sent by United States certified mail, return receipt requested, addressed to the Grantor or Grantee, their successor or assigns.

The Conservation Easement hereby granted shall run with the land and shall be binding upon the Grantor and its successors or assigns, and shall inure to the benefit of the Grantee and its successors or assigns. The Grantor shall provide Grantee with notice of the transfer of Grantor's ownership interest in the Conservation Area in accordance with Grantee rules. Any deed or legal instrument which transfers Grantor's ownership interest in the Conservation Area shall include a provision that Grantor's ownership interest in the Conservation Area is transferred subject to this Conservation Easement.

The provisions of this Conservation Easement may be amended only after written approval of both the Grantor and Grantee, or their successors and assigns.

IN WITNESS WHEREOF, Grantor has hereunto set Grantor's hand and seal on this 30th day of October, 1996.

KISSIMMEE UTILITY AUTHORITY
BY: Richard L. Hord
Print Name: Richard L. Hord
Chairman

ATTEST: Kenneth Guthrie
Print Name: KENNETH GUTHRIE
Secretary

STATE OF FLORIDA
COUNTY OF OSCEOLA

The foregoing instrument was acknowledged before me this day of OCTOBER 30, 1996, by RICHARD L. HORD, as Chairman of KISSIMMEE UTILITY AUTHORITY, a body politic organized and existing under the laws of the state of Florida, on behalf of the Authority. He is personally known to me or who has produced _____ as identification and who did not take an oath.

Carolyn S. Scott
Print Name: CAROLYN S. SCOTT
NOTARY PUBLIC
Commission Number:

CAROLYN S. SCOTT
Notary Public - State of Florida
My Commission Expires July 11, 1998
Comm. #CC 391435
Bonded By Lupier-Frazer Ins.



STATE OF FLORIDA
COUNTY OF OSCEOLA

The foregoing instrument was acknowledged before me this day of OCTOBER 30, 1996,
by KENNETH B. GUTHRIE, as Secretary of KISSIMMEE UTILITY AUTHORITY,
a body politic organized and existing under the laws of the state of Florida, on behalf of the
Authority. She is personally known to me or who has produced _____ as
identification and who did not take an oath.

Carolyn S. Scott

Print Name: CAROLYN S. SCOTT

NOTARY PUBLIC

Commission Number:

CAROLYN S. SCOTT
Notary Public - State of Florida
My Commission Expires July 11, 1998
Comm. #CC 331455
Bonded By Lupfer-Frakes Ins.

This instrument prepared by:

Douglas J. Rillstone
Greenberg, Traurig, Hoffman, Lipoff, Rosen & Quentel, P.A.
101 East College Avenue
Tallahassee, Florida 32301
(904) 222-6891

The Conservation Easement hereby granted shall run with the land and shall be binding upon the Grantor and its successors or assigns, and shall inure to the benefit of the Grantee and its successors or assigns. The Grantor shall provide Grantee with notice of the transfer of Grantor's ownership interest in the Conservation Area in accordance with Grantee rules. Any deed or legal instrument which transfers Grantor's ownership interest in the Conservation Area shall include a provision that Grantor's ownership interest in the Conservation Area is transferred subject to this Conservation Easement.

The provisions of this Conservation Easement may be amended only after written approval of both the Grantor and Grantee, or their successors and assigns.

IN WITNESS WHEREOF, Grantor has hereunto set Grantor's hand and seal on this 30th day of October, 1996.

COPY

KISSIMMEE UTILITY AUTHORITY
BY: Richard L. Hord
Print Name: Richard L. Hord
Chairman

ATTEST: Kenneth Guthrie
Print Name: KENNETH GUTHRIE
Secretary

STATE OF FLORIDA
COUNTY OF OSCEOLA

LEGAL FORM APPROVED
SFWMD OFFICE OF COUNSEL
BY [Signature] DATE 10/13/97

The foregoing instrument was acknowledged before me this day of OCTOBER 30, 1996, by RICHARD L. HORD, as Chairman of KISSIMMEE UTILITY AUTHORITY, a body politic organized and existing under the laws of the state of Florida, on behalf of the Authority. He is personally known to me or who has produced _____ as identification and who did not take an oath.

Carolyn S. Scott
Print Name: CAROLYN S. SCOTT
NOTARY PUBLIC
Commission Number:

CAROLYN S. SCOTT
Notary Public - State of Florida
My Commission Expires July 11, 1998
Comm. #CC 391455
Bonded By Lupier-Frazer Ins.

LEGAL DESCRIPTION
PARCEL ONE

A PORTION OF SECTIONS 29 AND 32, TOWNSHIP 25 SOUTH, RANGE 28 EAST, OSCEOLA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHWEST CORNER OF SECTION 29, TOWNSHIP 25 SOUTH, RANGE 28 EAST, OSCEOLA COUNTY, FLORIDA; THENCE N89°41'23"E, ALONG THE NORTH LINE OF THE NORTHWEST 1/4 OF SAID SECTION 29, A DISTANCE OF 660.28 FEET FOR A POINT OF BEGINNING; THENCE CONTINUE N89°41'23"E, ALONG SAID NORTH LINE, A DISTANCE OF 1996.13 FEET TO THE NORTH 1/4 CORNER OF SAID SECTION 29; THENCE N89°41'23"E, ALONG THE NORTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION 29, A DISTANCE OF 2656.41 FEET TO THE NORTHEAST CORNER OF SAID SECTION 29; THENCE S00°20'35"W, ALONG THE EAST LINE OF THE NORTHEAST 1/4 OF SAID SECTION 29, A DISTANCE OF 2649.11 FEET TO THE EAST 1/4 CORNER OF SAID SECTION 29; THENCE S00°19'09"W, ALONG THE EAST LINE OF THE SOUTHEAST 1/4 OF SAID SECTION 29, A DISTANCE OF 2638.14 FEET TO THE NORTHEAST CORNER OF SECTION 32, TOWNSHIP 25 SOUTH, RANGE 28 EAST, OSCEOLA COUNTY, FLORIDA; THENCE S00°28'44"W, ALONG THE EAST LINE OF THE NORTHEAST 1/4 OF SAID SECTION 32, A DISTANCE OF 1351.39 FEET; THENCE, DEPARTING SAID EAST LINE, N90°00'00"W, A DISTANCE OF 280.12 FEET; THENCE N00°00'00"E, A DISTANCE OF 28.00 FEET; THENCE N07°38'00"W, A DISTANCE OF 489.34 FEET; THENCE N26°00'56"W, A DISTANCE OF 512.98 FEET; THENCE N50°11'40"W, A DISTANCE OF 249.93 FEET; THENCE N69°12'59"W, A DISTANCE OF 324.09 FEET; THENCE N76°00'48"W, A DISTANCE OF 293.71 FEET; THENCE N59°44'39"W, A DISTANCE OF 747.74 FEET; THENCE N03°30'14"W, A DISTANCE OF 496.61 FEET; THENCE N03°07'37"W, A DISTANCE OF 229.16 FEET; THENCE N48°03'24"W, A DISTANCE OF 176.67 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE NORTHEASTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 5.36 FEET THROUGH A CENTRAL ANGLE OF 00°05'29" TO THE POINT OF TANGENCY; THENCE N43°57'55"W, A DISTANCE OF 87.25 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE NORTHEASTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 17.99 FEET THROUGH A CENTRAL ANGLE OF 13°44'44" TO THE POINT OF TANGENCY; THENCE N30°13'11"W, A DISTANCE OF 101.59 FEET; THENCE N30°13'07"W, A DISTANCE OF 15.35 FEET; THENCE N34°22'52"W, A DISTANCE OF 126.67 FEET; THENCE N42°54'43"W, A DISTANCE OF 181.40 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE NORTHEASTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 35.90 FEET THROUGH A CENTRAL ANGLE OF 27°25'34" TO THE POINT OF TANGENCY; THENCE N15°29'09"W, A DISTANCE OF 98.09 FEET; THENCE N12°18'33"W, A DISTANCE OF 106.32 FEET; THENCE N47°02'28"W, A DISTANCE OF 63.09 FEET; THENCE N37°12'52"W, A DISTANCE OF 32.59 FEET; THENCE N35°29'42"W, A DISTANCE OF 154.90 FEET; THENCE N60°06'55"W, A DISTANCE OF 81.48 FEET; THENCE N38°06'25"W, A DISTANCE OF 167.69 FEET; THENCE N54°30'27"W, A DISTANCE OF 161.81 FEET; THENCE S69°46'31"W, A DISTANCE OF 672.22 FEET; THENCE N52°25'53"W, A DISTANCE OF 246.02 FEET; THENCE N20°53'52"W, A DISTANCE OF 1177.45 FEET; THENCE S89°35'05"W, A DISTANCE OF 1017.11 FEET TO A POINT ON THE WEST LINE OF THE NORTHWEST 1/4 OF SAID SECTION 29; THENCE N00°33'58"E, ALONG SAID WEST LINE, A DISTANCE OF 1192.44 FEET; THENCE, DEPARTING SAID WEST LINE, N04°05'22"E, A DISTANCE OF 748.16 FEET; THENCE N88°37'09"E, A DISTANCE OF 614.58 FEET TO THE POINT OF BEGINNING.

CONTAINING 472.174 ACRES, MORE OR LESS.

LEGAL DESCRIPTION
CONSERVATION EASEMENT - PARCEL TWO

A PORTION OF SECTIONS 29 AND 32, TOWNSHIP 25 SOUTH, RANGE 28 EAST, OSCEOLA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

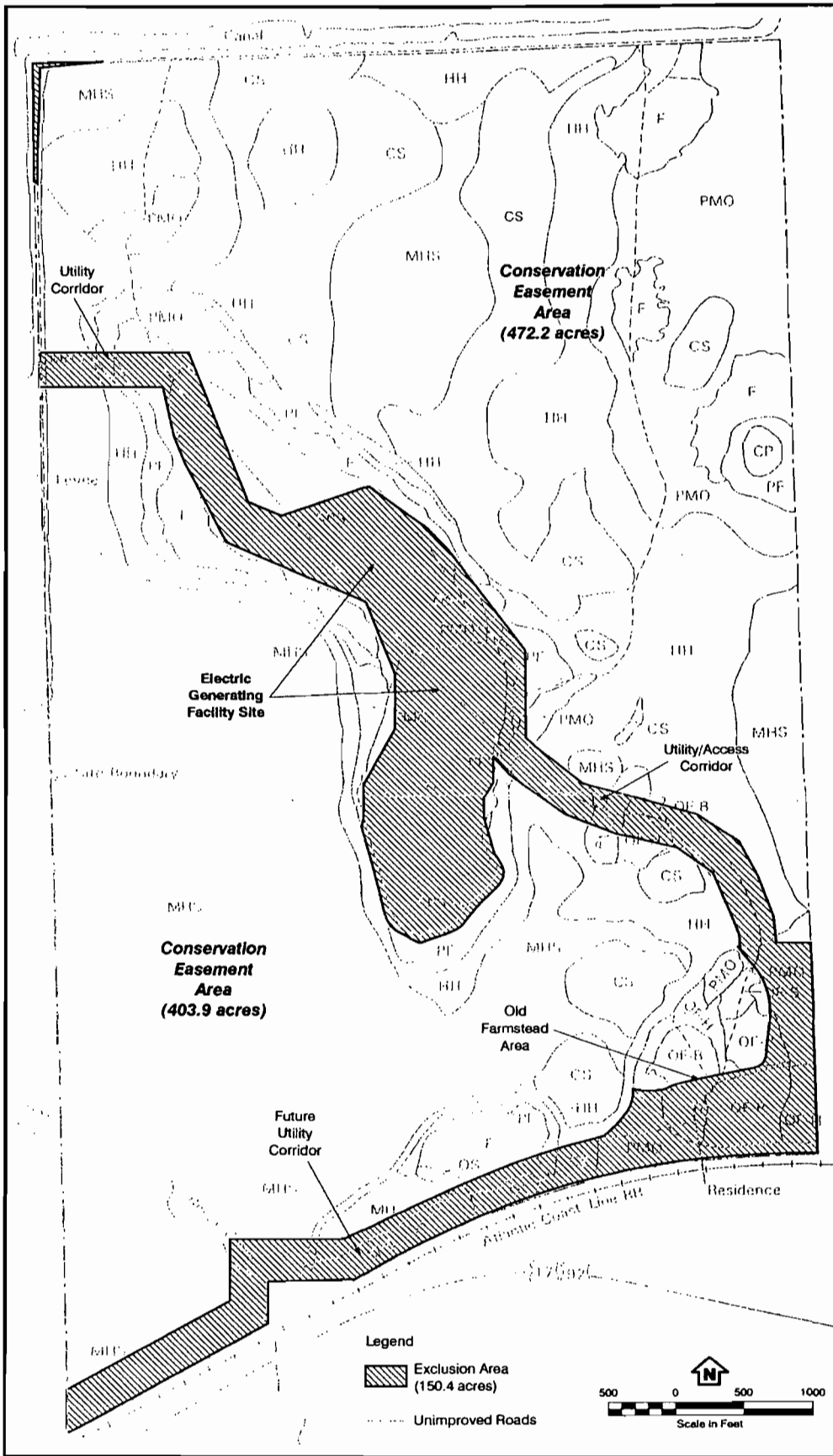
BEGIN AT THE NORTHWEST CORNER OF SECTION 32, TOWNSHIP 25 SOUTH, RANGE 28 EAST, OSCEOLA COUNTY, FLORIDA; THENCE $S00^{\circ}37'00''W$, ALONG THE WEST LINE OF THE NORTHWEST 1/4 OF SAID SECTION 32, A DISTANCE OF 2627.99 FEET TO THE WEST 1/4 CORNER OF SAID SECTION 32; THENCE $S00^{\circ}34'27''W$, ALONG THE WEST LINE OF THE SOUTHWEST 1/4 OF SAID SECTION 32, A DISTANCE OF 1328.09 FEET TO A POINT SITUATED 300.00 FEET NORTHWESTERLY BY PERPENDICULAR MEASUREMENT FROM THE NORTHERLY RIGHT-OF-WAY LINE OF THE C.S.X. RAILROAD; THENCE $N63^{\circ}29'07''E$, PARALLEL WITH THE C.S.X. RAILROAD RIGHT-OF-WAY, A DISTANCE OF 1163.98 FEET TO A POINT SITUATED 300.00 FEET WESTERLY BY PERPENDICULAR MEASUREMENT FROM THE WEST LINE OF THE SOUTH 1/2 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 32; THENCE $N00^{\circ}36'07''E$, PARALLEL WITH SAID WEST LINE, A DISTANCE OF 440.45 FEET TO A POINT SITUATED 300.00 FEET NORTHERLY BY PERPENDICULAR MEASUREMENT FROM THE NORTH LINE OF THE SOUTH 1/2 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 32; THENCE $N89^{\circ}51'29''E$, PARALLEL WITH SAID NORTH LINE, A DISTANCE OF 882.55 FEET TO A POINT SITUATED 300.00 FEET NORTHWESTERLY BY PERPENDICULAR MEASUREMENT FROM THE NORTHERLY RIGHT-OF-WAY LINE OF THE C.S.X. RAILROAD; THENCE $N63^{\circ}29'07''E$, PARALLEL WITH SAID C.S.X. RAILROAD, A DISTANCE OF 401.30 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHEASTERLY, HAVING A RADIUS OF 6129.58 FEET; THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 1984.93 FEET THROUGH A CENTRAL ANGLE OF $18^{\circ}33'14''$; THENCE, DEPARTING SAID CURVE, $N53^{\circ}57'14''E$, A DISTANCE OF 368.24 FEET; THENCE $N74^{\circ}34'34''E$, A DISTANCE OF 95.45 FEET; THENCE $N77^{\circ}43'37''E$, A DISTANCE OF 99.90 FEET TO A POINT ON A NON-TANGENT CURVE, CONCAVE SOUTHEASTERLY, HAVING A RADIUS OF 1157.82 FEET; THENCE, FROM A TANGENT BEARING OF $N74^{\circ}52'22''E$, RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 96.58 FEET THROUGH A CENTRAL ANGLE OF $04^{\circ}46'46''$ TO THE POINT OF COMPOUND CURVATURE OF A CURVE, CONCAVE SOUTHEASTERLY, HAVING A RADIUS OF 2115.41 FEET; THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 97.68 FEET THROUGH A CENTRAL ANGLE OF $02^{\circ}38'44''$ TO THE POINT OF REVERSE CURVATURE OF A CURVE, CONCAVE NORTHWESTERLY, HAVING A RADIUS OF 1130.72 FEET; THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 105.91 FEET THROUGH A CENTRAL ANGLE OF $05^{\circ}21'59''$ TO THE POINT OF COMPOUND CURVATURE OF A CURVE, CONCAVE NORTHWESTERLY, HAVING A

RADIUS OF 10761.58 FEET; THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 81.17 FEET THROUGH A CENTRAL ANGLE OF 00°25'56" TO THE POINT OF COMPOUND CURVATURE OF A CURVE, CONCAVE NORTHWESTERLY, HAVING A RADIUS OF 73.58 FEET; THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 105.74 FEET THROUGH A CENTRAL ANGLE OF 82°20'17"; THENCE, DEPARTING SAID CURVE, RUN N03°41'48"W, A DISTANCE OF 28.86 FEET; THENCE N04°42'57"W, A DISTANCE OF 77.35 FEET; THENCE N23°11'41"W, A DISTANCE OF 48.70 FEET; THENCE N16°18'19"W, A DISTANCE OF 32.33 FEET; THENCE N13°13'46"W, A DISTANCE OF 44.64 FEET; THENCE N18°39'06"W, A DISTANCE OF 102.12 FEET; THENCE N23°01'58"W, A DISTANCE OF 68.05 FEET; THENCE N27°34'35"W, A DISTANCE OF 64.88 FEET; THENCE N29°33'06"W, A DISTANCE OF 65.29 FEET TO A POINT ON A NON-TANGENT CURVE, CONCAVE SOUTHWESTERLY, HAVING A RADIUS OF 107.06 FEET; THENCE, FROM A TANGENT BEARING OF N34°57'31"W, RUN NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 40.48 FEET THROUGH A CENTRAL ANGLE OF 21°39'48" TO THE POINT OF TANGENCY; THENCE N56°37'19"W, A DISTANCE OF 159.34 FEET; THENCE N05°30'19"W, A DISTANCE OF 173.27 FEET; THENCE N07°38'00"W, A DISTANCE OF 128.26 FEET; THENCE N26°00'56"W, A DISTANCE OF 400.18 FEET; THENCE N50°11'40"W, A DISTANCE OF 135.41 FEET; THENCE N69°12'59"W, A DISTANCE OF 256.02 FEET; THENCE N76°00'40"W, A DISTANCE OF 318.78 FEET; THENCE N59°44'39"W, A DISTANCE OF 827.95 FEET; THENCE N45°33'25"W, A DISTANCE OF 85.19 FEET; THENCE S10°31'55"W, A DISTANCE OF 75.43 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE EASTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN SOUTHERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 34.67 FEET THROUGH A CENTRAL ANGLE OF 26°28'56" TO THE POINT OF TANGENCY; THENCE S15°57'01"E, A DISTANCE OF 46.72 FEET; THENCE S26°56'59"W, A DISTANCE OF 111.60 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE EASTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN SOUTHERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 41.87 FEET THROUGH A CENTRAL ANGLE OF 31°59'03" TO THE POINT OF TANGENCY; THENCE S05°02'03"E, A DISTANCE OF 202.46 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE NORTHEASTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 17.30 FEET THROUGH A CENTRAL ANGLE OF 13°13'00" TO THE POINT OF TANGENCY; THENCE S18°15'03"E, A DISTANCE OF 119.06 FEET; THENCE S60°04'58"W, A DISTANCE OF 12.11 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHEASTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 64.77 FEET THROUGH A CENTRAL ANGLE OF 49°28'40" TO THE POINT OF TANGENCY; THENCE S10°36'18"W, A DISTANCE OF 55.69 FEET; THENCE S36°47'41"W, A DISTANCE OF 92.15 FEET; THENCE S48°39'46"W, A DISTANCE OF 126.41 FEET; THENCE S56°52'44"W, A DISTANCE OF 67.75 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHEASTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 58.27 FEET THROUGH A CENTRAL ANGLE OF 44°31'05" TO THE POINT

OF TANGENCY; THENCE S12°21'38"W, A DISTANCE OF 86.43 FEET; THENCE S83°01'14"W, A DISTANCE OF 211.77 FEET; THENCE N63°58'08"W, A DISTANCE OF 132.53 FEET; THENCE N57°10'34"W, A DISTANCE OF 69.05 FEET TO A POINT ON A NON-TANGENT CURVE, CONCAVE WESTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE, FROM A TANGENT BEARING OF N04°14'04"E, RUN NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 41.12 FEET THROUGH A CENTRAL ANGLE OF 31°24'35" TO THE POINT OF TANGENCY; THENCE N27°10'30"W, A DISTANCE OF 160.70 FEET; THENCE N39°03'50"W, A DISTANCE OF 134.92 FEET; THENCE N00°45'35"W, A DISTANCE OF 76.26 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHWESTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 15.80 FEET THROUGH A CENTRAL ANGLE OF 12°04'18" TO THE POINT OF TANGENCY; THENCE N12°49'52"W, A DISTANCE OF 52.34 FEET; THENCE N09°29'20"W, A DISTANCE OF 340.30 FEET; THENCE N03°32'56"W, A DISTANCE OF 144.05 FEET; THENCE N12°02'22"E, A DISTANCE OF 84.67 FEET; THENCE N22°40'13"E, A DISTANCE OF 228.72 FEET; THENCE N26°11'27"E, A DISTANCE OF 260.17 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE NORTHWESTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 31.92 FEET THROUGH A CENTRAL ANGLE OF 24°22'55" TO THE POINT OF TANGENCY; THENCE N01°48'31"E, A DISTANCE OF 64.22 FEET; THENCE N02°14'14"E, A DISTANCE OF 167.62 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHWESTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 52.72 FEET THROUGH A CENTRAL ANGLE OF 40°16'44" TO THE POINT OF TANGENCY; THENCE N38°02'30"W, A DISTANCE OF 113.76 FEET; THENCE N11°13'18"W, A DISTANCE OF 23.20 FEET; THENCE N02°33'37"W, A DISTANCE OF 99.77 FEET; THENCE N17°27'08"W, A DISTANCE OF 84.82 FEET; THENCE N02°15'58"W, A DISTANCE OF 116.62 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHWESTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 66.46 FEET THROUGH A CENTRAL ANGLE OF 50°46'05" TO THE POINT OF TANGENCY; THENCE N53°02'02"W, A DISTANCE OF 213.26 FEET; THENCE N53°44'26"W, A DISTANCE OF 51.96 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHWESTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 50.06 FEET THROUGH A CENTRAL ANGLE OF 38°14'44" TO THE POINT OF TANGENCY; THENCE S88°00'50"W, A DISTANCE OF 51.24 FEET; THENCE N47°10'29"W, A DISTANCE OF 64.34 FEET; THENCE N51°32'59"W, A DISTANCE OF 86.47 FEET; THENCE N56°08'05"W, A DISTANCE OF 58.69 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHWESTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 49.84 FEET THROUGH A CENTRAL ANGLE OF 38°04'20" TO THE POINT OF TANGENCY; THENCE S85°47'35"W, A DISTANCE OF 31.77 FEET; THENCE N54°09'02"W, A DISTANCE OF 114.98 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHWESTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE

OF 53.69 FEET THROUGH A CENTRAL ANGLE OF 41°00'53" TO THE POINT OF TANGENCY; THENCE S84°50'06"W, A DISTANCE OF 86.29 FEET; THENCE N47°19'15"W, A DISTANCE OF 89.51 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN WESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 82.28 FEET THROUGH A CENTRAL ANGLE OF 62°51'28" TO THE POINT OF TANGENCY; THENCE S69°49'17"W, A DISTANCE OF 25.78 FEET; THENCE N38°38'11"W, A DISTANCE OF 73.44 FEET; THENCE N32°31'43"W, A DISTANCE OF 71.40 FEET; THENCE N36°36'17"W, A DISTANCE OF 198.72 FEET; THENCE N00°48'27"E, A DISTANCE OF 149.17 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHWESTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 34.76 FEET THROUGH A CENTRAL ANGLE OF 26°33'28" TO THE POINT OF TANGENCY; THENCE N25°45'01"W, A DISTANCE OF 159.50 FEET; THENCE N04°45'57"W, A DISTANCE OF 92.28 FEET; THENCE N12°58'17"W, A DISTANCE OF 112.32 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHWESTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 37.07 FEET THROUGH A CENTRAL ANGLE OF 28°19'06" TO THE POINT OF TANGENCY; THENCE N41°17'22"W, A DISTANCE OF 55.04 FEET; THENCE N08°04'43"W, A DISTANCE OF 100.82 FEET; THENCE N02°01'51"E, A DISTANCE OF 91.76 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHWESTERLY, HAVING A RADIUS OF 75.00 FEET; THENCE RUN NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 58.20 FEET THROUGH A CENTRAL ANGLE OF 44°27'28" TO THE POINT OF TANGENCY; THENCE N42°25'36"W, A DISTANCE OF 68.72 FEET; THENCE S89°35'05"W, A DISTANCE OF 797.94 FEET TO A POINT ON THE WEST LINE OF THE NORTHWEST 1/4 OF SECTION 29, TOWNSHIP 25 SOUTH, RANGE 28 EAST, OSCEOLA COUNTY, FLORIDA; THENCE S00°33'58"W, ALONG SAID WEST LINE, A DISTANCE OF 393.47 FEET TO THE WEST 1/4 CORNER OF SAID SECTION 29; THENCE S00°33'58"W, ALONG THE WEST LINE OF THE SOUTHWEST 1/4 OF SAID SECTION 29, A DISTANCE OF 2643.48 FEET TO THE POINT OF BEGINNING.

CONTAINING 403.954 ACRES, MORE OR LESS.



**Appendix G
Storm Water Calculations**



Calculation Record

Client Name: Florida Municipal Power Agency Page 1 of 67

Project Name: Cane Island Power Park Unit 4 Project No.: 147651

Calculation Title: Trench Drain and Culvert Design and Time of Concentration

Calculation No./File No.: 52.5406.1101.01

Calculation Is: (check all that apply) Preliminary Final Nuclear Safety-Related

Objective To design trench drains and culverts to safely pass both the 25-year, 72 hour and 100-year, 72 hour storm events. To calculate the time of concentrations and determine the longest time of concentration for use in the pond design.

Unverified Assumptions Requiring Subsequent Verification

No.	Assumption	Verified By	Date

See Page _____ of this calculation for additional assumptions.

This Section Used for Computer Generated Calculations

Program Name/Number: _____ Version: _____

Evidence of or reference to computer program verification, if applicable:

Bases or reference thereto supporting application of the computer program to the physical problem:

Review and Approval

Rev	Prepared By	Date	Verified By	Date	Approved By	Date
0	A.L. Morgan <i>A.L. Morgan</i>	03/07/08	J. M. Stanek <i>J.M. Stanek</i>	3/12/08	<i>[Signature]</i>	3/26/08



BLACK & VEATCH

Owner: Florida Municipal Power Agency

Plant: Cane Island Power Park

Unit: 4

Project No. 147651

File No. 52.5406.1101.01

Title: Trench Drain and Culvert Design and Time
of Concentration

Prepared by: A. L. MORGAN

Date: 03/07/08

Verified by: SMS

Date: 3/12/08

Page No. 2 of 27

Calc Rev: 0

1.0 PURPOSE

The purpose of this calculation is to:

- 1.1) To design the trench drains and culverts to safely pass the 25 year, 72-hour and 100 year, 72-hour storm events.
- 1.2) To calculate the time of concentration for each trench drain and culvert and determine the longest time of concentration for the pond design.

2.0 REFERENCES

- 2.1) Technical Paper No. 40, Rainfall Frequency Atlas of the United States, United States Department of Commerce, May 1961
- 2.2) Technical Release 55 (TR55), Urban Hydrology for Small Watersheds, USDA Soil Conservation Service, Conservation Engineering Division, June 1986.
- 2.3) State of Florida Department of Transportation Drainage Manual, January 2006
- 2.4) Modern Sewer Design, American Iron and Steel Institute, Third Edition, 1995
- 2.5) Black & Veatch Drawings 147651-4STF-S3000 through 147651-4STF-S3002
- 2.6) Black & Veatch Drawing 147651-4STF-S3050, Grading and Drainage Details.

3.0 ASSUMPTIONS

No assumptions.

4.0 DEFINITION OF UNITS AND CONSTANTS

Due to the high number of units and constants, they are defined within Section 7.0 Analysis.

5.0 PROCEDURE/METHODOLOGY OF DESIGN

- 5.1) Determine lengths and slopes of travel from AutoCAD drawings of Reference 2.5 (See Appendix A for sketches).
- 5.2) Calculate times of travel for sheet flow using TR-55, Reference 2.2.
- 5.3) Calculate times of travel for shallow concentrated flow using TR-55, Reference 2.2.
- 5.4) Calculate times of travel for open channel flow using TR-55, Reference 2.2.
- 5.5) Determine rainfall intensity from Reference 2.3 (Zone 7, See Appendix D for IDF Curve).
- 5.6) Calculate weighted runoff coefficient.
- 5.7) Determine sub-basin area from AutoCAD drawings of Reference 2.5 (See Appendix A for sketches of each sub-basin area).
- 5.8) Calculate storm water runoff using Rational Method.
- 5.9) Calculate wetted perimeter and flow area of open channel flow using FlowMaster and CulvertMaster (See Appendix B for Haestad FlowMaster 2005 and Appendix C for CulvertMaster Output.)
- 5.10) Calculate time of travel for open channel flow using TR-55, Reference 2.2.
- 5.11) Calculate sub-basin time of concentration using TR-55, Reference 2.2.

6.0 CONCLUSIONS

- 6.1) See Reference 2.6 for trench drain and culvert sizes.
- 6.2) The longest time of concentration to the pond is 0.127 hour.

7.0 ANALYSIS

- | | |
|-----------------------|-----------------------|
| 7.1) Trench Drain T-1 | 7.5) Trench Drain T-5 |
| 7.2) Trench Drain T-2 | 7.6) Trench Drain T-6 |
| 7.3) Trench Drain T-3 | 7.7) Culvert C-1 |
| 7.4) Trench Drain T-4 | 7.8) Culvert C-2 |

8.0 APPENDICES

- 8.1) Appendix A - TOC Figures
- 8.2) Appendix B - FlowMaster Output
- 8.3) Appendix C - CulvertMaster Output
- 8.4) Appendix D - Reference Figures



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Owner: Florida Municipal Power Agency
Plant: Cane Island Power Park
Unit: 4
Project No. 147651
File No. 52.5406.1101.01
Title: Trench Drain and Culvert Design and Time of Concentration

Prepared by: A. L. MORGAN
Date: 03/07/08
Verified by: JMS
Date: 3/12/08
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7.1 Trench Drain T-1

7.1.1 Time of Concentration (No Other Contributing Areas)

Sheet Flow Inputs: $i := 1..3$
(Total length of all segments must be less than or equal to 300 ft.)

Flow Segment One

$L_{sheet_1} := 12.00$ ft Flow length (Ref. 2.5, Appendix A)
 $n_{sheet_1} := 0.011$ Manning's Roughness Coef. for sheet flow (Ref. 2.2, pg. 3-3, Smooth surfaces)
 $P_{2yr24hr_1} := 4.75$ in 2-yr, 24-hr rainfall depth (Ref. 2.1, Appendix D)
 $s_{sheet_1} := 0.0200$ ft/ft Slope of watershed for sheet flow (Ref. 2.5, Appendix A)

Flow Segment Two

$L_{sheet_2} := 5.25$ ft Flow length (Ref. 2.5, Appendix A)
 $n_{sheet_2} := 0.011$ Manning's Roughness Coef. for sheet flow (Ref. 2.2, pg. 3-3, Smooth surfaces)
 $P_{2yr24hr_2} := 4.75$ in 2-yr, 24-hr rainfall depth (Ref. 2.1, Appendix D)
 $s_{sheet_2} := 0.0110$ ft/ft Slope of watershed for sheet flow (Ref. 2.5, Appendix A)

Flow Segment Three

$L_{sheet_3} := 68.0$ ft Flow length (Ref. 2.5, Appendix A)
 $n_{sheet_3} := 0.011$ Manning's Roughness Coef. for sheet flow (Ref. 2.2, pg. 3-3, Smooth surfaces)
 $P_{2yr24hr_3} := 4.75$ in 2-yr, 24-hr rainfall depth (Ref. 2.1, Appendix D)
 $s_{sheet_3} := .0029$ ft/ft Slope of watershed for sheet flow (Ref. 2.5, Appendix A)

Sheet Flow Calculation: (Ref. 2.2, eq. 3-3)

$$T_1 := \sum_i \left[0.007 \cdot \frac{(n_{sheet_i} \cdot L_{sheet_i})^{0.8}}{(P_{2yr24hr_i})^{0.5} \cdot (s_{sheet_i})^{0.4}} \right]$$

$T_1 = 0.031$ hr
 $T_1 \cdot 60 = 1.883$ min

Shallow Concentrated Flow Inputs:

No inputs.



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Owner: Florida Municipal Power Agency
Plant: Cane Island Power Park
Unit: 4
Project No. 147651
File No. 52.5406.1101.01
Title: Trench Drain and Culvert Design and Time of Concentration

Prepared by: A. L. MORGAN
Date: 03/07/08
Verified by: JMS
Date: 3/12/08
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Open Channel Flow Inputs: i := 1..2

Flow Segment One - T-1 Part A

$L_{ocf_1} := 391.10$ ft Length of open channel flow segment (Ref. 2.5, Appendix A)
 $s_{ocf_1} := 0.005$ ft/ft Slope of watershed for open channel flow segment (Ref. 2.5, Appendix A)
 $n_{ocf_1} := 0.033$ Manning's Roughness Coef. for open channel flow segment (Ref. 2.4, Appendix D)
 $wp_{ocf_1} := 8.10$ ft Wetted perimeter of open channel cross section (Appendix B)
 $fa_{ocf_1} := 3.18$ ft² Flow area of open channel cross section (Appendix B)

Flow Segment Two - T-1 Part B

$L_{ocf_2} := 23.768$ ft Length of open channel flow segment (Ref. 2.5, Appendix A)
 $s_{ocf_2} := 0.0025$ ft/ft Slope of watershed for open channel flow segment (Ref. 2.5, Appendix A)
 $n_{ocf_2} := 0.033$ Manning's Roughness Coef. for open channel flow segment (Ref. 2.4, Appendix D)
 $wp_{ocf_2} := 8.76$ ft Wetted perimeter of open channel cross section (Appendix B)
 $fa_{ocf_2} := 4.03$ ft² Flow area of open channel cross section (Appendix B)

Open Channel Flow Calculation: (Ref. 2.2, eqs. 3-4 & 3-1)

$$V_{ocf_i} := 1.49 \cdot \left(\frac{fa_{ocf_i}}{wp_{ocf_i}} \right)^{\frac{2}{3}} \cdot (s_{ocf_i})^{0.5} \cdot \frac{1}{n_{ocf_i}}$$

$V_{ocf} = \begin{pmatrix} 1.712 \\ 1.345 \end{pmatrix}$ Segment One Segment Two $\frac{ft}{sec}$

$$T_2 := \sum_i \frac{L_{ocf_i}}{3600 \cdot V_{ocf_i}}$$

$T_2 = 0.068$ hr
 $T_2 \cdot 60 = 4.102$ min

Total Time of Concentration: (Ref. 2.2, eq. 3-2)

$T_c := T_1 + T_2$ $T_c = 0.1$ hr
 $T_c \cdot 60 = 5.986$ min



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Owner: Florida Municipal Power Agency

Plant: Cane Island Power Park

Unit: 4

Project No. 147651

File No. 52.5406.1101.01

Title: Trench Drain and Culvert Design and Time of Concentration

Prepared by: A. L. MORGAN

Date: 03/07/08

Verified by: *AMS*

Date: 03/12/08

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7.1.3 Trench Drain T-1

The runoff from the contributory area of Trench Drain T-1 was used to design Trench Drain T-1. The FlowMaster program was used for the design with the following inputs:

- Manning's Roughness Coefficient (Concrete Trench) = 0.013 (Ref. 2.4, Appendix D)
- Trench Slope = 0.005 ft/ft
- Bottom Width of the Trench = 1.5 ft
- Design Discharge Flow in the Trench (Q_{25}) = 4.685 cfs
- Check Discharge Flow in the Trench (Q_{100}) = 5.414 cfs
- Road (Paved) Centerline Elevation = 81.50
- Road (Paved) Edge Elevation = 81.25
- Maximum Allowable Headwater Elevation = 81.25
- Trench Drain Inlet Invert Elevation = 79.88
- Trench Drain Outlet Invert Elevation = 79.66
- Trench Drain Length = 43.12 ft

The FlowMaster design report for Trench Drain T-1 is shown in Appendix B of this calculation. A 1.5 ft wide Trench is sufficient to keep the design headwater and check headwater below the maximum allowable headwater elevation.

Trench Drain T-1 = 1.5' wide concrete trench

7.2 Trench Drain T-2

7.2.1 Time of Concentration (No Other Contributing Areas)

Sheet Flow Inputs: $i := 1..2$

Flow Segment One

- $L_{sheet_1} := 25.77$ ft Flow length (Ref. 2.5, Appendix A)
- $n_{sheet_1} := 0.011$ Manning's Roughness Coef. for sheet flow (Ref. 2.2, pg. 3-3, Smooth surfaces)
- $P_{2yr24hr_1} := 4.75$ in 2-yr, 24-hr rainfall depth (Ref. 2.1, Appendix D)
- $s_{sheet_1} := 0.0100$ ft/ft Slope of watershed for sheet flow (Ref. 2.5, Appendix A)

Flow Segment Two

- $L_{sheet_2} := 102.29$ ft Flow length (Ref. 2.5, Appendix A)
- $n_{sheet_2} := 0.011$ Manning's Roughness Coef. for sheet flow (Ref. 2.2, pg. 3-3, Smooth surfaces)
- $P_{2yr24hr_2} := 4.75$ in 2-yr, 24-hr rainfall depth (Ref. 2.1, Appendix D)
- $s_{sheet_2} := 0.0033$ ft/ft Slope of watershed for sheet flow (Ref. 2.5, Appendix A)



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Plant: Cane Island Power Park
Unit: 4
Project No. 147651
File No. 52.5406.1101.01
Title: Trench Drain and Culvert Design and Time of Concentration

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Sheet Flow Calculation:

(Ref. 2.2, eq. 3-3)

$$T_1 := \sum_i \left[0.007 \cdot \frac{(n_{sheet_i} \cdot L_{sheet_i})^{0.8}}{(P_{2yr24hr_i})^{0.5} \cdot (s_{sheet_i})^{0.4}} \right]$$

T₁ = 0.042 hr
T₁ · 60 = 2.525 min

Shallow Concentrated Flow Inputs:

No inputs.

Open Channel Flow Inputs:

i := 1..2

Flow Segment One - T-2 Part A

- L_{ocf₁} := 372.48 ft Length of open channel flow segment (Ref. 2.5, Appendix A)
- s_{ocf₁} := 0.0033 ft/ft Slope of watershed for open channel flow segment (Ref. 2.5, Appendix A)
- n_{ocf₁} := 0.013 Manning's Roughness Coef. for open channel flow segment (Ref. 2.4, Appendix D)
- wP_{ocf₁} := 6.02 ft Wetted perimeter of open channel cross section (Appendix B)
- fa_{ocf₁} := 2.72 ft² Flow area of open channel cross section (Appendix B)

Flow Segment Two - T-2 Part B

- L_{ocf₂} := 73.90 ft Length of open channel flow segment (Ref. 2.5, Appendix A)
- s_{ocf₂} := 0.0033 ft/ft Slope of watershed for open channel flow segment (Ref. 2.5, Appendix A)
- n_{ocf₂} := 0.013 Manning's Roughness Coef. for open channel flow segment (Ref. 2.4, Appendix D)
- wP_{ocf₂} := 6.53 ft Wetted perimeter of open channel cross section (Appendix B)
- fa_{ocf₂} := 2.81 ft² Flow area of open channel cross section (Appendix B)

Open Channel Flow Calculation:

(Ref. 2.2, eqs. 3-4 & 3-1)

$$V_{ocf_i} := 1.49 \cdot \left(\frac{fa_{ocf_i}}{wP_{ocf_i}} \right)^{\frac{2}{3}} \cdot (s_{ocf_i})^{0.5} \cdot \frac{1}{n_{ocf_i}}$$

V_{ocf} = $\begin{pmatrix} 3.877 \\ 3.753 \end{pmatrix}$ Segment One $\frac{ft}{sec}$
Segment Two

$$T_2 := \sum_i \frac{L_{ocf_i}}{3600 \cdot V_{ocf_i}}$$

T₂ = 0.032 hr
T₂ · 60 = 1.929 min



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Total Time of Concentration:

(Ref. 2.2, eq. 3-2)

$$T_c := T_1 + T_2$$

$$T_c = 0.074 \text{ hr}$$

$$T_c \cdot 60 = 4.455 \text{ min}$$

7.2.2 Storm Water Runoff

(Rational Method)

Composite Runoff Coefficient

Area (A)

c

A*c

Area T2a: Impervious Areas (paved streets & roads, paved parking lots & driveways, roofs, etc.)

$$A_{T2a} := 47429.37 \cdot \text{ft}^2$$

$$c_{\text{area}T2a} := 0.95$$

$$A_{c_{\text{area}T2a}} := A_{T2a} \cdot c_{\text{area}T2a}$$

$$A_{T2a} = 1.701 \times 10^{-3} \text{ mi}^2$$

$$A_{c_{\text{area}T2a}} = 45057.9 \text{ ft}^2$$

Area T2b: Self-Contained Areas

$$A_{T2b} := 1392.00 \cdot \text{ft}^2$$

$$c_{\text{area}T2b} := 0$$

$$A_{c_{\text{area}T2b}} := A_{T2b} \cdot c_{\text{area}T2b}$$

$$A_{T2b} = 4.993 \times 10^{-5} \text{ mi}^2$$

$$A_{c_{\text{area}T2b}} = 0 \text{ ft}^2$$

Total:

$$A_{T2.T} := A_{T2a} - A_{T2b}$$

$$A_{c_{\text{area}T2.T}} := A_{c_{\text{area}T2a}}$$

$$A_{T2.T} = 0.0017 \text{ mi}^2$$

$$A_{c_{\text{area}T2.T}} = 45057.9 \text{ ft}^2$$

Composite c Value:

$$c_{\text{area}T2.T} := \frac{A_{c_{\text{area}T2.T}}}{A_{T2a}}$$

$$c_{\text{area}T2.T} = 0.95$$

Time of Concentration

Time of Concentration, t_c (hr):

$$t_{c.\text{area}T2} := T_c$$

$$t_{c.\text{area}T2} = 0.074 \text{ hr}$$

(This calculation - See above)

Intensity

(An 8 minute intensity will be used since that's the shortest duration shown on the chart)

$$i_{\text{area}T2.25} := 9.0 \cdot \frac{\text{in}}{\text{hr}}$$

$$i_{\text{area}T2.100} := 10.4 \cdot \frac{\text{in}}{\text{hr}}$$

(Ref. 2.3, Appendix D)



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Runoff

$$Q_{\text{areaT2.25}} := C_{\text{areaT2.T}} \cdot i_{\text{areaT2.25}} \cdot A_{\text{T2.T}} \quad Q_{\text{areaT2.25}} = 9.112 \frac{\text{ft}^3}{\text{sec}}$$

$$Q_{\text{areaT2.100}} := C_{\text{areaT2.T}} \cdot i_{\text{areaT2.100}} \cdot A_{\text{T2.T}} \quad Q_{\text{areaT2.100}} = 10.529 \frac{\text{ft}^3}{\text{sec}}$$

7.2.3 Trench Drain T-2

The runoff from the contributory area of Trench Drain T-2 was used to design Trench Drain T-2. The FlowMaster program was used for the design with the following inputs:

- Manning's Roughness Coefficient (Concrete Trench) = 0.013 (Ref. 2.4, Appendix D)
- Trench Slope = 0.00549 ft/ft
- Bottom Width of the Trench = 2 ft
- Design Discharge Flow in the Trench (Q_{25}) = 9.112 cfs
- Check Discharge Flow in the Trench (Q_{100}) = 10.529 cfs
- Road (Paved) Centerline Elevation = 81.05
- Road (Paved) Edge Elevation = 80.80
- Maximum Allowable Headwater Elevation = 80.80
- Trench Drain Inlet Invert Elevation = 79.60
- Trench Drain Outlet Invert Elevation = 79.42
- Trench Drain Length = 33.4 ft

The FlowMaster design report for Trench Drain T-2 is shown in Appendix B of this calculation. A 2 ft wide Trench is sufficient to keep the design headwater and check headwater below the maximum allowable headwater elevation.

Trench Drain T-2 = 2' wide concrete trench

7.3 Trench Drain T-3

7.3.1 Time of Concentration (No Other Contributing Areas)

Sheet Flow Inputs: $i := 1..2$

Flow Segment One

$L_{\text{sheet}_1} := 54.99$ ft Flow length (Ref. 2.5, Appendix A)

$n_{\text{sheet}_1} := 0.011$ Manning's Roughness Coef. for sheet flow (Ref. 2.2, pg. 3-3, Smooth surfaces)

$P_{2\text{yr}24\text{hr}_1} := 4.75$ in 2-yr, 24-hr rainfall depth (Ref. 2.1, Appendix D)

$s_{\text{sheet}_1} := .002$ ft/ft Slope of watershed for sheet flow (Ref. 2.5, Appendix A)



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Flow Segment Two

$L_{sheet_2} := 97.39$ ft Flow length (Ref. 2.5, Appendix A)
 $n_{sheet_2} := 0.011$ Manning's Roughness Coef. for sheet flow (Ref. 2.2, pg. 3-3, Smooth surfaces)
 $P_{2yr24hr_2} := 4.75$ in 2-yr, 24-hr rainfall depth (Ref. 2.1, Appendix D)
 $s_{sheet_2} := 0.0028$ ft/ft Slope of watershed for sheet flow (Ref. 2.5, Appendix A)

Sheet Flow Calculation:

$$T_1 := \sum_i \left[0.007 \cdot \frac{(n_{sheet_i} \cdot L_{sheet_i})^{0.8}}{(P_{2yr24hr_i})^{0.5} \cdot (s_{sheet_i})^{0.4}} \right] \quad T_1 = 0.061 \text{ hr}$$
$$T_1 \cdot 60 = 3.686 \text{ min}$$

Shallow Concentrated Flow Inputs:

No inputs.

Open Channel Flow Inputs:

No inputs.

Total Time of Concentration:

(Ref. 2.2, eq. 3-2)

$$T_C := T_1 \quad T_C = 0.061 \text{ hr} \quad T_C \cdot 60 = 3.686 \text{ min}$$

7.3.2 Storm Water Runoff

(Rational Method)

Composite Runoff Coefficient

<u>Area (A)</u>	<u>c</u>	<u>A*c</u>
Area T3a: Impervious Areas (paved streets & roads, paved parking lots & driveways, roofs, etc.)		

$$A_{T3a} := 20225.53 \cdot \text{ft}^2 \quad c_{areaT3a} := 0.95 \quad A_{careaT3a} := A_{T3a} \cdot c_{areaT3a}$$

$$A_{T3a} = 7.255 \times 10^{-4} \text{ mi}^2 \quad A_{careaT3a} = 19214.3 \text{ ft}^2$$

Total:

$$A_{T3.T} := A_{T3a} \quad A_{careaT3.T} := A_{careaT3a}$$

$$A_{T3.T} = 0.0007 \text{ mi}^2 \quad A_{careaT3.T} = 19214.3 \text{ ft}^2$$



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Composite c Value:

$$C_{areaT3.T} := \frac{A_{c_{areaT3.T}}}{A_{T3.T}} \quad C_{areaT3.T} = 0.95$$

Time of Concentration

Time of Concentration, t_c (hr):

$$t_{c.areaT3} := T_c \quad t_{c.areaT3} = 0.061 \text{ hr} \quad (\text{This calculation - See above})$$

Intensity (An 8 minute intensity will be used since that's the shortest duration shown on the chart)

$$i_{areaT3.25} := 9.0 \frac{\text{in}}{\text{hr}} \quad i_{areaT3.100} := 10.4 \frac{\text{in}}{\text{hr}} \quad (\text{Ref. 2.3, Appendix D})$$

Runoff

$$Q_{areaT3.25} := C_{areaT3.T} \cdot i_{areaT3.25} \cdot A_{T3.T} \quad Q_{areaT3.100} := C_{areaT3.T} \cdot i_{areaT3.100} \cdot A_{T3.T}$$

$$Q_{areaT3.25} = 4.003 \frac{\text{ft}^3}{\text{sec}} \quad Q_{areaT3.100} = 4.626 \frac{\text{ft}^3}{\text{sec}}$$

7.3.3 Trench Drain T-3

The runoff from the contributory area of Trench Drain T-3 was used to design Trench Drain T-3. The FlowMaster program was used for the design with the following inputs:

- Manning's Roughness Coefficient (Concrete Trench) = 0.013 (Ref. 2.4, Appendix D)
- Trench Slope = 0.00495 ft/ft
- Bottom Width of the Trench = 2 ft
- Design Discharge Flow in the Trench (Q_{25}) = 4.003 cfs
- Check Discharge Flow in the Trench (Q_{100}) = 4.626 cfs
- Road (Paved) Centerline Elevation = 81.32
- Road (Paved) Edge Elevation = 81.25
- Maximum Allowable Headwater Elevation = 81.13
- Trench Drain Inlet Invert Elevation = 80.50
- Trench Drain Outlet Invert Elevation = 80.00
- Trench Drain Length = 100.95 ft

The FlowMaster design report for Trench Drain T-3 is shown in Appendix B of this calculation. A 2 ft wide Trench is sufficient to keep the design headwater and check headwater below the maximum allowable headwater elevation.

Trench Drain T-3 = 2' wide concrete trench



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7.4 Trench Drain T-4

7.4.1 Time of Concentration (No Other Contributing Areas)

Sheet Flow Inputs: $i := 1..2$

Flow Segment One

$L_{sheet_1} := 14.34$ ft Flow length (Ref. 2.5, Appendix A)
 $n_{sheet_1} := 0.011$ Manning's Roughness Coef. for sheet flow (Ref. 2.2, pg. 3-3, Smooth surfaces)
 $P_{2yr24hr_1} := 4.75$ in 2-yr, 24-hr rainfall depth (Ref. 2.1, Appendix D)
 $s_{sheet_1} := 0.0070$ ft/ft Slope of watershed for sheet flow (Ref. 2.5, Appendix A)

Flow Segment Two

$L_{sheet_2} := 225.94$ ft Flow length (Ref. 2.5, Appendix A)
 $n_{sheet_2} := 0.011$ Manning's Roughness Coef. for sheet flow (Ref. 2.2, pg. 3-3, Smooth surfaces)
 $P_{2yr24hr_2} := 4.75$ in 2-yr, 24-hr rainfall depth (Ref. 2.1, Appendix D)
 $s_{sheet_2} := 0.0050$ ft/ft Slope of watershed for sheet flow (Ref. 2.5, Appendix A)

Sheet Flow Calculation:

$$T_1 := \sum_i \left[0.007 \cdot \frac{(n_{sheet_i} \cdot L_{sheet_i})^{0.8}}{(P_{2yr24hr_i})^{0.5} \cdot (s_{sheet_i})^{0.4}} \right]$$

$T_1 = 0.061$ hr
 $T_1 \cdot 60 = 3.644$ min

Shallow Concentrated Flow Inputs:

No inputs.

Open Channel Flow Inputs:

No inputs.

Total Time of Concentration:

$T_C := T_1$ (Ref. 2, eq. 3-2)

$T_C = 0.061$ hr $T_C \cdot 60 = 3.686$ min



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7.4.2 Storm Water Runoff

(Rational Method)

Composite Runoff Coefficient

<u>Area (A)</u>	<u>c</u>	<u>A*c</u>
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Area T4a: Impervious Areas (paved streets & roads, paved parking lots & driveways, roofs, etc.)

$A_{T4a} := 18638.70 \cdot \text{ft}^2$	$C_{\text{area}T4a} := 0.95$	$A_{C_{\text{area}T4a}} := A_{T4a} \cdot C_{\text{area}T4a}$
---	------------------------------	--

$A_{T4a} = 6.686 \times 10^{-4} \text{ mi}^2$		$A_{C_{\text{area}T4a}} = 17706.8 \text{ ft}^2$
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Total:

$A_{T4.T} := A_{T4a}$	$A_{C_{\text{area}T4.T}} := A_{C_{\text{area}T4a}}$
-----------------------	---

$A_{T4.T} = 0.0007 \text{ mi}^2$	$A_{C_{\text{area}T4.T}} = 17706.8 \text{ ft}^2$
----------------------------------	--

Composite c Value:

$C_{\text{area}T4.T} := \frac{A_{C_{\text{area}T4.T}}}{A_{T4.T}}$	$C_{\text{area}T4.T} = 0.95$
---	------------------------------

Time of Concentration

Time of Concentration, t_c (hr):

$t_{c,\text{area}T4} := T_c$	$t_{c,\text{area}T4} = 0.061 \text{ hr}$	(This calculation - See above)
------------------------------	--	--------------------------------

Intensity (An 8 minute intensity will be used since that's the shortest duration shown on the chart)

$i_{\text{area}T4.25} := 9.0 \cdot \frac{\text{in}}{\text{hr}}$	$i_{\text{area}T4.100} := 10.4 \cdot \frac{\text{in}}{\text{hr}}$	(Ref. 2.3, Appendix D)
---	---	------------------------

Runoff

$Q_{\text{area}T4.25} := C_{\text{area}T4.T} \cdot i_{\text{area}T4.25} \cdot A_{T4.T}$	$Q_{\text{area}T4.25} = 3.689 \frac{\text{ft}^3}{\text{sec}}$
---	---

$Q_{\text{area}T4.100} := C_{\text{area}T4.T} \cdot i_{\text{area}T4.100} \cdot A_{T4.T}$	$Q_{\text{area}T4.100} = 4.263 \frac{\text{ft}^3}{\text{sec}}$
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7.4.3 Trench Drain T-4

The runoff from the contributory area of Trench Drain T-4 was used to design Trench Drain T-4. The FlowMaster program was used for the design with the following inputs:

- Manning's Roughness Coefficient (Concrete Trench) = 0.013
- Trench Slope = 0.00545 ft/ft
- Bottom Width of the Trench = 2 ft
- Design Discharge Flow in the Trench (Q_{25}) = 3.689 cfs
- Check Discharge Flow in the Trench (Q_{100}) = 4.263 cfs
- Road (Paved) Centerline Elevation = 81.50
- Road (Paved) Edge Elevation = 81.25
- Maximum Allowable Headwater Elevation = 81.25
- Trench Drain Inlet Invert Elevation = 80.27
- Trench Drain Outlet Invert Elevation = 80.10
- Trench Drain Length = 31.19 ft

The FlowMaster design report for Trench Drain T-4 is shown in Appendix B of this calculation. A 2 ft wide Trench is sufficient to keep the design headwater and check headwater below the maximum allowable headwater elevation.

Trench Drain T-4 = 2' wide concrete trench

7.5 Trench Drain T-5

7.5.1 Time of Concentration (No Other Contributing Areas)

Sheet Flow Inputs: $i := 1..3$

Flow Segment One

- $L_{sheet_1} := 4.84$ ft Flow length (Ref. 2.5, Appendix A)
- $n_{sheet_1} := 0.011$ Manning's Roughness Coef. for sheet flow (Ref. 2.2, pg. 3-3, Smooth surfaces)
- $P_{2yr24hr_1} := 4.75$ in 2-yr, 24-hr rainfall depth (Ref. 2.1, Appendix D)
- $s_{sheet_1} := 0.0207$ ft/ft Slope of watershed for sheet flow (Ref. 2.5, Appendix A)

Flow Segment Two

- $L_{sheet_2} := 79.45$ ft Flow length (Ref. 2.5, Appendix A)
- $n_{sheet_2} := 0.011$ Manning's Roughness Coef. for sheet flow (Ref. 2.2, pg. 3-3, Smooth surfaces)
- $P_{2yr24hr_2} := 4.75$ in 2-yr, 24-hr rainfall depth (Ref. 2.1, Appendix D)
- $s_{sheet_2} := 0.005$ ft/ft Slope of watershed for sheet flow (Ref. 2.5, Appendix A)



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Flow Segment Three

Lsheet₃ := 9.83 ft Flow length (Ref. 2.5, Appendix A)

n_{sheet₃} := 0.011 Manning's Roughness Coef. for sheet flow (Ref. 2.2, pg. 3-3, Smooth surfaces)

P_{2yr24hr₃} := 4.75 in 2-yr, 24-hr rainfall depth (Ref. 2.1, Appendix D)

s_{sheet₃} := 0.015 ft/ft Slope of watershed for sheet flow (Ref. 2.5, Appendix A)

Sheet Flow Calculation:

T1 := sum over i of [0.007 * (n_{sheet_i} * L_{sheet_i})^{0.8} / (P_{2yr24hr_i})^{0.5} * (s_{sheet_i})^{0.4}]

T1 = 0.028 hr

T1 * 60 = 1.702 min

Shallow Concentrated Flow Inputs:

No inputs.

Open Channel Flow Inputs:

No inputs.

Total Time of Concentration:

(Ref. 2, eq. 3-2)

Tc := T1

Tc = 0.028 hr

Tc * 60 = 1.702 min

7.5.2 Storm Water Runoff

(Rational Method)

Composite Runoff Coefficient

Area (A)

c

A*c

Area T5a: Impervious Areas (paved streets & roads, paved parking lots & driveways, roofs, etc.)

AT5a := 11746.1618 * ft^2

c_{areaT5a} := 0.95

Ac_{areaT5a} := AT5a * c_{areaT5a}

AT5a = 4.213 * 10^-4 mi^2

Ac_{areaT5a} = 11158.9 ft^2

Area T5b: Self-Contained Areas

AT5b := 150.7500 * ft^2

c_{areaT5b} := 0

Ac_{areaT5b} := AT5b * c_{areaT5b}

AT5b = 5.407 * 10^-6 mi^2

Ac_{areaT5b} = 0 ft^2



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Total:

$$AT_{5.T} := AT_{5a} - AT_{5b}$$

$$A_{CareaT5.T} := A_{CareaT5a}$$

$$AT_{5.T} = 0.0004 \text{ mi}^2$$

$$A_{CareaT5.T} = 11158.9 \text{ ft}^2$$

Composite c Value:

$$c_{areaT5.T} := \frac{A_{CareaT5.T}}{AT_{5a}}$$

$$c_{areaT5.T} = 0.95$$

Time of Concentration

Time of Concentration, t_c (hr):

$$t_{c.areaT5} := T_c$$

$$t_{c.areaT5} = 0.028 \text{ hr} \quad (\text{This calculation - See above})$$

Intensity (An 8 minute intensity will be used since that's the shortest duration shown on the chart)

$$i_{areaT5.25} := 9.0 \frac{\text{in}}{\text{hr}}$$

$$i_{areaT5.100} := 10.4 \frac{\text{in}}{\text{hr}}$$

(Ref. 2.3, Appendix D)

Runoff

$$Q_{areaT5.25} := c_{areaT5.T} \cdot i_{areaT5.25} \cdot AT_{5.T} \quad Q_{areaT5.25} = 2.295 \frac{\text{ft}^3}{\text{sec}}$$

$$Q_{areaT5.100} := c_{areaT5.T} \cdot i_{areaT5.100} \cdot AT_{5.T} \quad Q_{areaT5.100} = 2.652 \frac{\text{ft}^3}{\text{sec}}$$

7.5.3 Trench Drain T-5

The runoff from the contributory area of Trench Drain T-5 was used to design Trench Drain T-5. The FlowMaster program was used for the design with the following inputs:

Manning's Roughness Coefficient (Concrete Trench) = 0.013 (Ref. 2.4, Appendix D)

Trench Slope = 0.00554 ft/ft

Bottom Width of the Trench = 2 ft

Design Discharge Flow in the Trench (Q_{25}) = 2.295 cfs

Check Discharge Flow in the Trench (Q_{100}) = 2.652 cfs

Road (Paved) Centerline Elevation = 81.50

Road (Paved) Edge Elevation = 81.25

Maximum Allowable Headwater Elevation = 81.25

Trench Drain Inlet Invert Elevation = 80.85

Trench Drain Outlet Invert Elevation = 80.70

Trench Drain Length = 27.10 ft

The FlowMaster design report for Trench Drain T-5 is shown in Appendix B of this calculation. A 2 ft wide Trench is sufficient to keep the design headwater and check headwater below the maximum allowable headwater elevation.

Trench Drain T-5 = 2' wide concrete trench



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7.6 Trench Drain T-6

7.6.1 Time of Concentration (No Other Contributing Areas)

Sheet Flow Inputs: $i := 1..3$

Flow Segment One

$L_{sheet_1} := 50.75$ ft Flow length (Ref. 2.5, Appendix A)
 $n_{sheet_1} := 0.011$ Manning's Roughness Coef. for sheet flow (Ref. 2.2, pg. 3-3, Smooth surfaces)
 $P_{2yr24hr_1} := 4.75$ in 2-yr, 24-hr rainfall depth (Ref. 2.1, Appendix D)
 $s_{sheet_1} := .0020$ ft/ft Slope of watershed for sheet flow (Ref. 2.5, Appendix A)

Flow Segment Two

$L_{sheet_2} := 80.13$ ft Flow length (Ref. 2.5, Appendix A)
 $n_{sheet_2} := 0.011$ Manning's Roughness Coef. for sheet flow (Ref. 2.2, pg. 3-3, Smooth surfaces)
 $P_{2yr24hr_2} := 4.75$ in 2-yr, 24-hr rainfall depth (Ref. 2.1, Appendix D)
 $s_{sheet_2} := .0050$ ft/ft Slope of watershed for sheet flow (Ref. 2.5, Appendix A)

Flow Segment Three

$L_{sheet_3} := 169.12$ ft Flow length (Ref. 2.5, Appendix A)
 $n_{sheet_3} := 0.011$ Manning's Roughness Coef. for sheet flow (Ref. 2.2, pg. 3-3, Smooth surfaces)
 $P_{2yr24hr_3} := 4.75$ in 2-yr, 24-hr rainfall depth (Ref. 2.1, Appendix D)
 $s_{sheet_3} := 0.0050$ ft/ft Slope of watershed for sheet flow (Ref. 2.5, Appendix A)

Sheet Flow Calculation:

$$T_1 := \sum_i \left[0.007 \cdot \frac{(n_{sheet_i} \cdot L_{sheet_i})^{0.8}}{(P_{2yr24hr_i})^{0.5} \cdot (s_{sheet_i})^{0.4}} \right]$$

$$T_1 = 0.092 \text{ hr}$$

$$T_1 \cdot 60 = 5.539 \text{ min}$$



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Total:

$$AT_{6.T} := AT_{6a} - AT_{6b}$$

$$A_{CareaT6.T} := A_{CareaT6a}$$

$$AT_{6.T} = 0.0014 \text{ mi}^2$$

$$A_{CareaT6.T} = 40206.2 \text{ ft}^2$$

Composite c Value:

$$C_{areaT6.T} := \frac{A_{CareaT6.T}}{AT_{6a}}$$

$$C_{areaT6.T} = 0.95$$

Time of Concentration

Time of Concentration, t_c (hr):

$$t_{c.areaT6} := T_c$$

$$t_{c.areaT6} = 0.097 \text{ hr} \quad (\text{This calculation - See above})$$

Intensity (An 8 minute intensity will be used since that's the shortest duration shown on the chart)

$$i_{areaT6.25} := 9.0 \frac{\text{in}}{\text{hr}}$$

$$i_{areaT6.100} := 10.4 \frac{\text{in}}{\text{hr}}$$

(Ref. 2.3, Appendix D)

Runoff

$$Q_{areaT6.25} := C_{areaT6.T} \cdot i_{areaT6.25} \cdot AT_{6.T}$$

$$Q_{areaT6.100} := C_{areaT6.T} \cdot i_{areaT6.100} \cdot AT_{6.T}$$

$$Q_{areaT6.25} = 7.812 \frac{\text{ft}^3}{\text{sec}}$$

$$Q_{areaT6.100} = 9.028 \frac{\text{ft}^3}{\text{sec}}$$

7.6.3 Trench Drain T-6

The runoff from the contributory area of Trench Drain T-6 was used to design Trench Drain T-6. The FlowMaster program was used for the design with the following inputs:

Manning's Roughness Coefficient (Concrete Trench) = 0.013

(Ref. 2.4, Appendix D)

Trench Slope = 0.00556 ft/ft

Bottom Width of the Trench = 2 ft

Design Discharge Flow in the Trench (Q_{25}) = 7.812 cfs

Check Discharge Flow in the Trench (Q_{100}) = 9.028 cfs

Road (Paved) Centerline Elevation = 81.50

Road (Paved) Edge Elevation = 81.25

Maximum Allowable Headwater Elevation = 81.25

Trench Drain Inlet Invert Elevation = 80.03

Trench Drain Outlet Invert Elevation = 79.85

Trench Drain Length = 32.36 ft

The FlowMaster design report for Trench Drain T-6 is shown in Appendix B of this calculation. A 2 ft wide Trench is sufficient to keep the design headwater and check headwater below the maximum allowable headwater elevation.

Trench Drain T-6 = 2' wide concrete trench



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7.7 Culvert C-1

7.7.1 Time of Concentration (Culvert C-1 Contributory Area New Trench Drains T-1, T-3 and Existing Unit 3 Trench Drains T-2, T-5, T-4)

The runoff from the contributory area Existing T-2, T-5, and T-4 govern the TOC for C-1. Runoff from both Unit 4 T-1 and T-3 and Unit 3 T-2, T-5, and T-4 were used to size C-1.

Sheet Flow Inputs: $i := 1..1$

Flow Segment One

$L_{sheet_1} := 49.95$ ft Flow length (Ref. 2.5, Appendix A)
 $n_{sheet_1} := 0.011$ Manning's Roughness Coef. for sheet flow (Ref. 2.2, pg. 3-3, Smooth surfaces)
 $P_{2yr24hr_1} := 4.75$ in 2-yr, 24-hr rainfall depth (Ref. 2.1, Appendix D)
 $s_{sheet_1} := .0070$ ft/ft Slope of watershed for sheet flow (Ref. 2.5, Appendix A)

Sheet Flow Calculation:

$$T_1 := \sum_i \left[\frac{0.007 \cdot (n_{sheet_i} \cdot L_{sheet_i})^{0.8}}{(P_{2yr24hr_i})^{0.5} \cdot (s_{sheet_i})^{0.4}} \right] \quad T_1 = 0.014 \quad \text{hr}$$

$T_1 \cdot 60 = 0.869 \quad \text{min}$

Shallow Concentrated Flow Inputs: $i := 1..1$

$L_{scf_1} := 92.11$ ft Length of shallow concentrated flow segment (Ref. 2.5, Appendix A)
 $s_{scf_1} := 0.0065$ ft/ft Slope of watershed for shallow concentrated flow segment (Ref. 2.5, Appendix A)
 $Surface_1 := 1$ Surface designation for segment (paved=1, unpaved=0)

Shallow Concentrated Flow Calculation:

(Ref. 2.2, eq. 3-1)

$$V_{scf_i} := \text{if} \left[\text{Surface}_i = 0, 16.1345 \cdot (s_{scf_i})^{0.5}, 20.3282 \cdot (s_{scf_i})^{0.5} \right]$$

$$V_{scf} = (1.639) \frac{\text{ft}}{\text{sec}}$$

$$T_2 := \sum_i \frac{L_{scf_i}}{3600 \cdot V_{scf_i}} \quad T_2 = 0.016 \quad \text{hr} \quad T_2 \cdot 60 = 0.937 \quad \text{min}$$



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Open Channel Flow Inputs: i := 1..9

Flow Segment One - Unit 3 Trench Drain T-1

$L_{ocf_1} := 30.00$ ft Length of open channel flow segment (Ref. 2.5, Appendix A)

$S_{ocf_1} := 0.0130$ ft/ft Slope of watershed for open channel flow segment (Ref. 2.5, Appendix A)

$n_{ocf_1} := 0.011$ Manning's Roughness Coef. for open channel flow segment (Ref. 2.4, Appendix D)

$wp_{ocf_1} := 1.70$ ft Wetted perimeter of open channel cross section

$fa_{ocf_1} := .35$ ft² Flow area of open channel cross section

Flow Segment Two - Unit 3 Trench Drain T-2

$L_{ocf_2} := 60$ ft Length of open channel flow segment (Ref. 2.5, Appendix A)

$S_{ocf_2} := 0.0033$ ft/ft Slope of watershed for open channel flow segment (Ref. 2.5, Appendix A)

$n_{ocf_2} := 0.011$ Manning's Roughness Coef. for open channel flow segment (Ref. 2.4, Appendix D)

$wp_{ocf_2} := 2.5$ ft Wetted perimeter of open channel cross section

$fa_{ocf_2} := .75$ ft² Flow area of open channel cross section

Flow Segment Three - Existing Ditch From Unit 3 Trench Drain T-2 to Unit 3 Trench Drain T-5

$L_{ocf_3} := 100.3455$ ft Length of open channel flow segment (Ref. 2.5, Appendix A)

$S_{ocf_3} := .0020$ ft/ft Slope of watershed for open channel flow segment (Ref. 2.5, Appendix A)

$n_{ocf_3} := 0.011$ Manning's Roughness Coef. for open channel flow segment (Ref. 2.4, Appendix D)

$wp_{ocf_3} := 11.32$ ft Wetted perimeter of open channel cross section

$fa_{ocf_3} := 8$ ft² Flow area of open channel cross section

Flow Segment Four - Unit 3 Trench Drain T-5

$L_{ocf_4} := 30.00$ ft Length of open channel flow segment (Ref. 2.5, Appendix A)

$S_{ocf_4} := .0067$ ft/ft Slope of watershed for open channel flow segment (Ref. 2.5, Appendix A)

$n_{ocf_4} := 0.011$ Manning's Roughness Coef. for open channel flow segment (Ref. 2.4, Appendix D)

$wp_{ocf_4} := 4.5$ ft Wetted perimeter of open channel cross section

$fa_{ocf_4} := 1.75$ ft² Flow area of open channel cross section



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Flow Segment Five - Existing Ditch From Unit 3 Trench Drain T-5 to Unit 3 Trench Drain T-4

$L_{ocf_5} := 40.9183$ ft Length of open channel flow segment (Ref. 2.5, Appendix A)
 $s_{ocf_5} := .0049$ ft/ft Slope of watershed for open channel flow segment (Ref. 2.5, Appendix A)
 $n_{ocf_5} := 0.011$ Manning's Roughness Coef. for open channel flow segment (Ref. 2.4, Appendix D)
 $wp_{ocf_5} := 9.74$ ft Wetted perimeter of open channel cross section
 $fa_{ocf_5} := 6.42$ ft² Flow area of open channel cross section

Flow Segment Six - Unit 3 Trench Drain T-4

$L_{ocf_6} := 42.00$ ft Length of open channel flow segment (Ref. 2.5, Appendix A)
 $s_{ocf_6} := .0071$ ft/ft Slope of watershed for open channel flow segment (Ref. 2.5, Appendix A)
 $n_{ocf_6} := 0.011$ Manning's Roughness Coef. for open channel flow segment (Ref. 2.4, Appendix D)
 $wp_{ocf_6} := 5.3$ ft Wetted perimeter of open channel cross section
 $fa_{ocf_6} := 2.15$ ft² Flow area of open channel cross section

Flow Segment Seven - New Ditch From Unit 3 Trench Drain T-4 to Unit 4 Culvert C-1, Part A

$L_{ocf_7} := 274.6903$ ft Length of open channel flow segment (Ref. 2.5, Appendix A)
 $s_{ocf_7} := .0020$ ft/ft Slope of watershed for open channel flow segment (Ref. 2.5, Appendix A)
 $n_{ocf_7} := 0.033$ Manning's Roughness Coef. for open channel flow segment (Ref. 2.4, Appendix D)
 $wp_{ocf_7} := 15.58$ ft Wetted perimeter of open channel cross section (Appendix B)
 $fa_{ocf_7} := 17.83$ ft² Flow area of open channel cross section (Appendix B)

Flow Segment Eight - New Ditch From Unit 3 Trench Drain T-4 to Unit 4 Culvert C-1, Part B

$L_{ocf_8} := 102.4070$ ft Length of open channel flow segment (Ref. 2.5, Appendix A)
 $s_{ocf_8} := .0024$ ft/ft Slope of watershed for open channel flow segment (Ref. 2.5, Appendix A)
 $n_{ocf_8} := 0.033$ Manning's Roughness Coef. for open channel flow segment (Ref. 2.4, Appendix D)
 $wp_{ocf_8} := 15.03$ ft Wetted perimeter of open channel cross section (Appendix B)
 $fa_{ocf_8} := 16.55$ ft² Flow area of open channel cross section (Appendix B)



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Flow Segment Nine - New Ditch From Unit 3 Trench Drain T-4 to Unit 4 Culvert C-1, Part C

- $L_{ocf_9} := 80.3584$ ft Length of open channel flow segment (Ref. 2.5, Appendix A)
- $s_{ocf_9} := .0030$ ft/ft Slope of watershed for open channel flow segment (Ref. 2.5, Appendix A)
- $n_{ocf_9} := 0.033$ Manning's Roughness Coef. for open channel flow segment (Ref. 2.4, Appendix D)
- $wp_{ocf_9} := 15.84$ ft Wetted perimeter of open channel cross section (Appendix B)
- $fa_{ocf_9} := 15.89$ ft² Flow area of open channel cross section (Appendix B)

Open Channel Flow Calculation:

$$V_{ocf_i} := 1.49 \cdot \left(\frac{fa_{ocf_i}}{wp_{ocf_i}} \right)^{\frac{2}{3}} \cdot (s_{ocf_i})^{0.5} \cdot \frac{1}{n_{ocf_i}} \quad V_{ocf} = \begin{matrix} 5.385 \\ 3.487 \\ 4.806 \\ 5.907 \\ 7.181 \\ 6.255 \\ 2.209 \\ 2.359 \\ 2.478 \end{matrix} \begin{matrix} \text{Segment One} \\ \text{Segment Two} \\ \text{Segment Three} \\ \text{Segment Four} \\ \text{Segment Five} \\ \text{Segment Six} \\ \text{Segment Seven} \\ \text{Segment Eight} \\ \text{Segment Nine} \end{matrix} \quad \frac{\text{ft}}{\text{sec}}$$

$$T_3 := \sum_i \frac{L_{ocf_i}}{3600 \cdot V_{ocf_i}} \quad T_3 = 0.073 \text{ hr}$$

$$T_3 \cdot 60 = 4.355 \text{ min}$$

Total Time of Concentration: $i := 1..3$ (Ref. 2.2, eq. 3-2)

$$T_c := \sum_i T_i \quad T_c = 0.103 \text{ hr} \quad T_c \cdot 60 = 6.161 \text{ min}$$

7.7.2 Storm Water Runoff

(Rational Method)

Composite Runoff Coefficient

<u>Area (A)</u>	<u>c</u>	<u>A*c</u>
Area C1a: Unit 3 Impervious Areas Draining to Unit 3 T-1, T-2, T-4, and T-5		
$AC_{1a} := 74260 \cdot \text{ft}^2$	$c_{areaC1a} := 0.95$	$AC_{areaC1a} := AC_{1a} \cdot c_{areaC1a}$
$AC_{1a} = 2.664 \times 10^{-3} \text{ mi}^2$		$AC_{areaC1a} = 70547 \text{ ft}^2$



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Area C1b: Impervious Areas Directly Draining to Culvert C-1

$$AC_{1b} := 23520 \cdot \text{ft}^2 \quad C_{\text{area}C1b} := 0.95 \quad AC_{\text{area}C1b} := AC_{1b} \cdot C_{\text{area}C1b}$$
$$AC_{1b} = 8.437 \times 10^{-4} \text{mi}^2 \quad AC_{\text{area}C1b} = 22344 \text{ft}^2$$

Area C1c: Self-contained areas (Unit 3 and Unit 4 Cooling Tower)

$$AC_{1c} := 36268 \cdot \text{ft}^2 \quad C_{\text{area}C1c} := 0 \quad AC_{\text{area}C1c} := AC_{1c} \cdot C_{\text{area}C1c}$$
$$AC_{1c} = 1.301 \times 10^{-3} \text{mi}^2 \quad AC_{\text{area}C1c} = 0 \text{ft}^2$$

Area C1d: Aggregate areas

$$AC_{1d} := 38082 \cdot \text{ft}^2 \quad C_{\text{area}C1d} := .75 \quad AC_{\text{area}C1d} := AC_{1d} \cdot C_{\text{area}C1d}$$
$$AC_{1d} = 1.366 \times 10^{-3} \text{mi}^2 \quad AC_{\text{area}C1d} = 28561.5 \text{ft}^2$$

Total:

$$AC_{1.T} := AT_{1.T} + AT_{3.T} + AC_{1a} + AC_{1b} + AC_{1c} + AC_{1d}$$

$$AC_{\text{area}C1.T} := AC_{\text{area}C1a} + AC_{\text{area}C1b} + AC_{\text{area}C1c} + AC_{\text{area}C1d}$$

$$AC_{1.T} = 0.0079 \text{mi}^2 \quad AC_{\text{area}C1.T} = 163156.8 \text{ft}^2$$

Composite c Value:

$$C_{\text{area}C1.T} := \frac{AC_{\text{area}C1.T}}{AC_{1.T}} \quad C_{\text{area}C1.T} = 0.74$$

Time of Concentration

Time of Concentration, t_c (hr):

$$t_{c,\text{area}C1} := T_c \quad t_{c,\text{area}C1} = 0.103 \text{ hr} \quad (\text{This calculation - See above})$$

Intensity (An 8 minute intensity will be used since that's the shortest duration shown on the chart)

$$i_{\text{area}C1.25} := 9.0 \frac{\text{in}}{\text{hr}} \quad i_{\text{area}C1.100} := 10.4 \frac{\text{in}}{\text{hr}} \quad (\text{Ref. 2.3, Appendix D})$$

Runoff

$$Q_{\text{area}C1.25} := C_{\text{area}C1.T} \cdot i_{\text{area}C1.25} \cdot AC_{1.T} \quad Q_{\text{area}C1.100} := C_{\text{area}C1.T} \cdot i_{\text{area}C1.100} \cdot AC_{1.T}$$

$$Q_{\text{area}C1.25} = 33.991 \frac{\text{ft}^3}{\text{sec}} \quad Q_{\text{area}C1.100} = 39.278 \frac{\text{ft}^3}{\text{sec}}$$



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7.7.3 Culvert C-1

The runoff from the contributory area of Culvert C-1, T-1, T-3, Unit 3 T-1, Unit 3 T-2, Unit 3 T-4, and Unit 3 T-5 were used to design Culvert C-1. The CulvertMaster program was used for the design with the following inputs:

- Manning's Roughness Coeff. of Outlet Ditch (aggregate-lined ditch) = 0.033 (Ref. 2.4, Appendix D)
- Outlet Ditch Slope = 0.005 ft/ft
- Outlet Ditch Side Slopes = 3H:1V
- Outlet Ditch Bottom Width = 3 ft
- Design Discharge Flow in the Culvert (Q_{25}) = 33.991 cfs
- Check Discharge Flow in the Culvert (Q_{100}) = 39.278 cfs
- Road (Paved) Centerline Elevation = 81.50
- Road (Paved) Edge Elevation = 81.25
- Maximum Allowable Headwater Elevation = 81.25
- Culvert Inlet Invert Elevation = 77.75
- Culvert Outlet Invert Elevation = 77.50
- Culvert Length = 48.50 ft

The CulvertMaster design report for Culvert C-1 is shown in Appendix C of this calculation. A double barrel 24" diameter CHDPE culvert (smooth interior) is sufficient to keep the design headwater and check headwater below the maximum allowable headwater elevation.

Culvert C-1 = 2 - 24" CHDPE Culverts (smooth interior)

7.8 Culvert C-2

7.8.1 Time of Concentration (Culvert C-2 Contributory Area New Trench Drains T-4 and T-5)

The runoff from the contributory area for Culvert C-1 govern the TOC for C-2. Runoff from C-1, T-4, and T-5 were used to size C-1.

Sheet Flow Inputs:

No Inputs.

Shallow Concentrated Flow Inputs:

No Inputs.

Open Channel Flow Inputs:

Flow Segment One - New ditch from Culvert C-1 to Culvert C-2 Part A

- $L_{ocf.C2_1}$:= 183.85 ft Length of open channel flow segment (Ref. 2.5, Appendix A)
- $s_{ocf.C2_1}$:= 0.0027 ft/ft Slope of watershed for open channel flow segment (Ref. 2.5, Appendix A)
- $n_{ocf.C2_1}$:= 0.033 Manning's Roughness Coef. for open channel flow segment (Ref. 2.4, Appendix D)
- $wp_{ocf.C2_1}$:= 19.99 ft Wetted perimeter of open channel cross section (Appendix C)
- $fa_{ocf.C2_1}$:= 25.64 ft² Flow area of open channel cross section (Appendix C)



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Flow Segment Two - New ditch from Culvert C-1 to Culvert C-2 Part B

- $L_{ocf.C2_2} := 96.45$ ft Length of open channel flow segment (Ref. 2.5, Appendix A)
- $s_{ocf.C2_2} := 0.0078$ ft/ft Slope of watershed for open channel flow segment (Ref. 2.5, Appendix A)
- $n_{ocf.C2_2} := 0.033$ Manning's Roughness Coef. for open channel flow segment (Ref. 2.4, Appendix D)
- $wp_{ocf.C2_2} := 15.64$ ft Wetted perimeter of open channel cross section (Appendix C)
- $fa_{ocf.C2_2} := 16.91$ ft² Flow area of open channel cross section (Appendix C)

Open Channel Flow Calculation: $i := 1..2$

$$V_{ocf.C2_i} := 1.49 \cdot \left(\frac{fa_{ocf.C2_i}}{wp_{ocf.C2_i}} \right)^{\frac{2}{3}} \cdot (s_{ocf.C2_i})^{0.5} \cdot \frac{1}{n_{ocf.C2_i}}$$

$$V_{ocf.C2} = \begin{pmatrix} 2.77 \\ 4.201 \end{pmatrix} \begin{matrix} \text{Segment One} & \text{ft} \\ \text{Segment Two} & \text{sec} \end{matrix}$$

$$T_1 := \sum_i \frac{L_{ocf.C2_i}}{3600 \cdot V_{ocf.C2_i}}$$

$$T_1 = 0.025 \text{ hr}$$

$$T_1 \cdot 60 = 1.489 \text{ min}$$

Total Time of Concentration: (Ref. 2, eq. 3-2)

$$T_c := T_1 \quad T_c = 0.025 \text{ hr} \quad T_c \cdot 60 = 1.489 \text{ min}$$

7.8.2 Storm Water Runoff (Rational Method)

Composite Runoff Coefficient

Area (A)	c	A*c
Area C2a: Impervious Areas Draining to Culvert C-2		
$AC_{2a} := 29078 \cdot \text{ft}^2$	$c_{areaC2a} := 0.95$	$AC_{areaC2a} := AC_{2a} \cdot c_{areaC2a}$
$AC_{2a} = 1.043 \times 10^{-3} \text{ mi}^2$		$AC_{areaC2a} = 27624.1 \text{ ft}^2$
Area C2b: Aggregate Areas Draining to Culvert C-2		
$AC_{2b} := 107034 \cdot \text{ft}^2$	$c_{areaC2b} := 0.75$	$AC_{areaC2b} := AC_{2b} \cdot c_{areaC2b}$
$AC_{2b} = 3.839 \times 10^{-3} \text{ mi}^2$		$AC_{areaC2b} = 80275.5 \text{ ft}^2$



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Total:

$$AC_{2.T} := AT_{4.T} + AT_{5.T} + AC_{1.T} + AC_{2a} + AC_{2b}$$

$$A_{careaC2.T} := A_{careaT4.T} + A_{careaT5.T} + A_{careaC1.T} + A_{careaC2a} + A_{careaC2b}$$

$$AC_{2.T} = 0.0139 \text{ mi}^2$$

$$A_{careaC2.T} = 299922 \text{ ft}^2$$

Composite c Value:

$$c_{areaC2.T} := \frac{A_{careaC2.T}}{AC_{2.T}}$$

$$c_{areaC2.T} = 0.775$$

Time of Concentration

Time of Concentration, t_c (hr):

(This calculation - See above)

$$t_{c.areaC2} := T_c + t_{c.areaC1}$$

$$t_{c.areaC2} = 0.127 \text{ hr}$$

(Conclusion 6.2)

Intensity

$$i_{areaC2.25} := 8.8 \frac{\text{in}}{\text{hr}}$$

$$i_{areaC2.100} := 10.2 \frac{\text{in}}{\text{hr}}$$

(Ref. 2.3, Appendix D)

Runoff

$$Q_{areaC2.25} := c_{areaC2.T} \cdot i_{areaC2.25} \cdot AC_{2.T}$$

$$Q_{areaC2.100} := c_{areaC2.T} \cdot i_{areaC2.100} \cdot AC_{2.T}$$

$$Q_{areaC2.25} = 61.095 \frac{\text{ft}^3}{\text{sec}}$$

$$Q_{areaC2.100} = 70.815 \frac{\text{ft}^3}{\text{sec}}$$

7.8.3 Culvert C-2

The runoff from the contributory area of Culvert C-1 and C-2 and Trench Drains T-4 and T-5 were used to design Culvert C-2. The CulvertMaster program was used for the design with the following inputs:

Design Discharge Flow in the Culvert (Q_{25}) = 61.095 cfs

Check Discharge Flow in the Culvert (Q_{100}) = 70.815 cfs

Road (Paved) Centerline Elevation = 81.50

Road (Paved) Edge Elevation = 81.25

Maximum Allowable Headwater Elevation = 81.25

Culvert Inlet Invert Elevation = 76.75

Culvert Outlet Invert Elevation = 76.33

Culvert Length = 56.00 ft

The CulvertMaster design report for Culvert C-2 is shown in Appendix C of this calculation. A triple barrel 24" diameter CHDPE culvert (smooth interior) is sufficient to keep the design headwater and check headwater below the maximum allowable headwater elevation.

Culvert C-2 = 3 - 24" CHDPE Culverts (smooth interior)

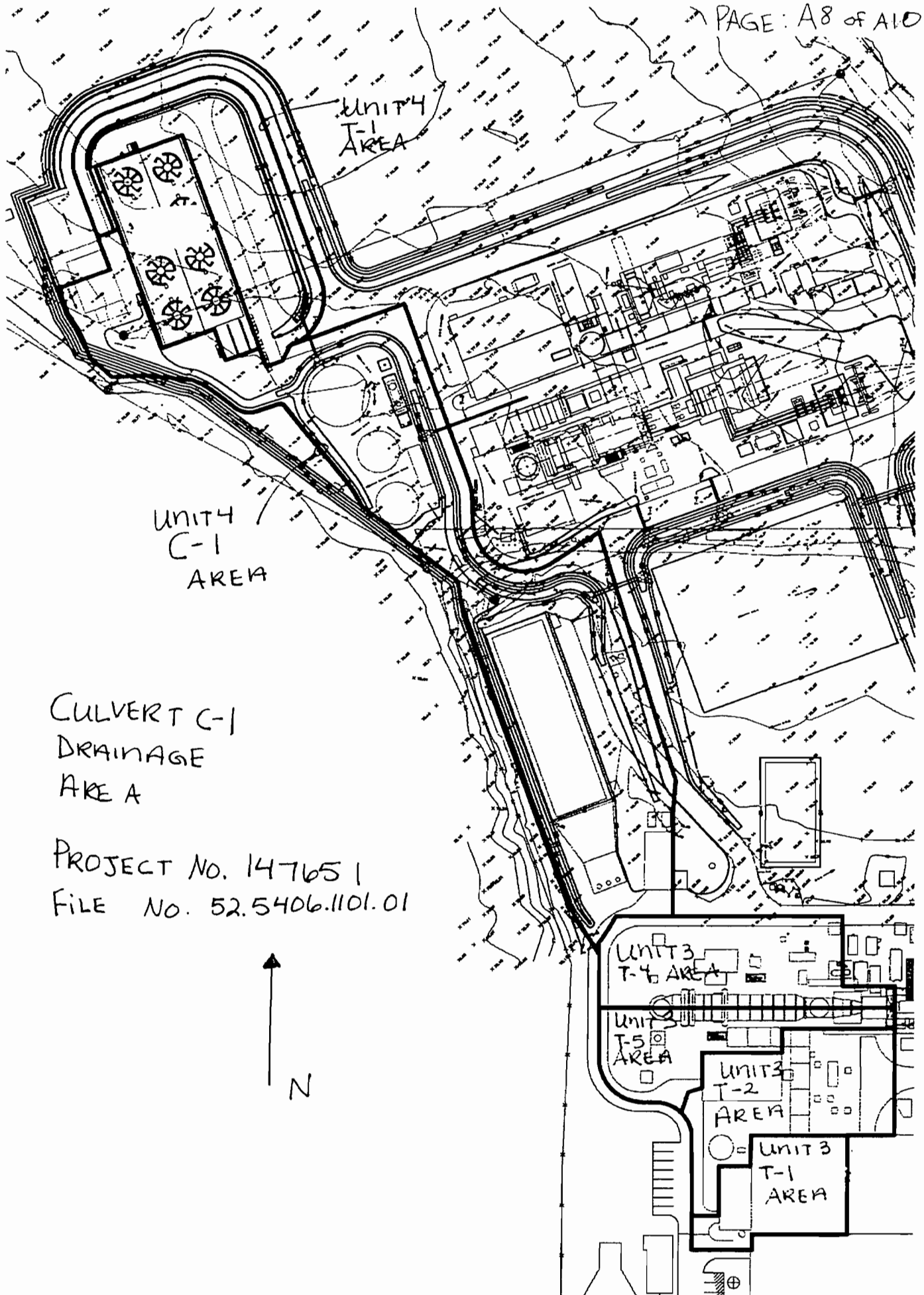


BLACK & VEATCH

Owner: Florida Municipal Power Agency
Plant: Cane Island Power Park Unit 4
Project No. 147651
File No. 52.5406.1101.01
Title: Trench Drain and Culvert Design and
Time of Concentration

Prepared by: A. L. Morgan
Date: 03/07/08
Verified by: J.M. Stanek
Date: 03/12/08
Page No. A1 of A10
Calc Rev: 0

APPENDIX A
Time of Concentration
Figures



CULVERT C-1
DRAINAGE
AREA

PROJECT NO. 147651
FILE NO. 52.5406.1101.01

C-1 DITCH PART B
L_{ocf8} = 102.41 ft
@ 0.24%

C-1 DITCH PART A
L_{ocf7} = 274.69 ft
@ 0.20%

C-1 DITCH PART C
L_{ocf9} = 80.36 ft
@ 0.30%

DITCH
L_{ocf5} = 40.92 ft
@ 0.49%

UNIT 3 T-4
L_{ocf6} = 42.00 ft
@ 0.71%

UNIT 3 T-5
L_{ocf4} = 30.00 ft
@ 0.67%

DITCH
L_{ocf3} = 100.3455 ft
@ .20%

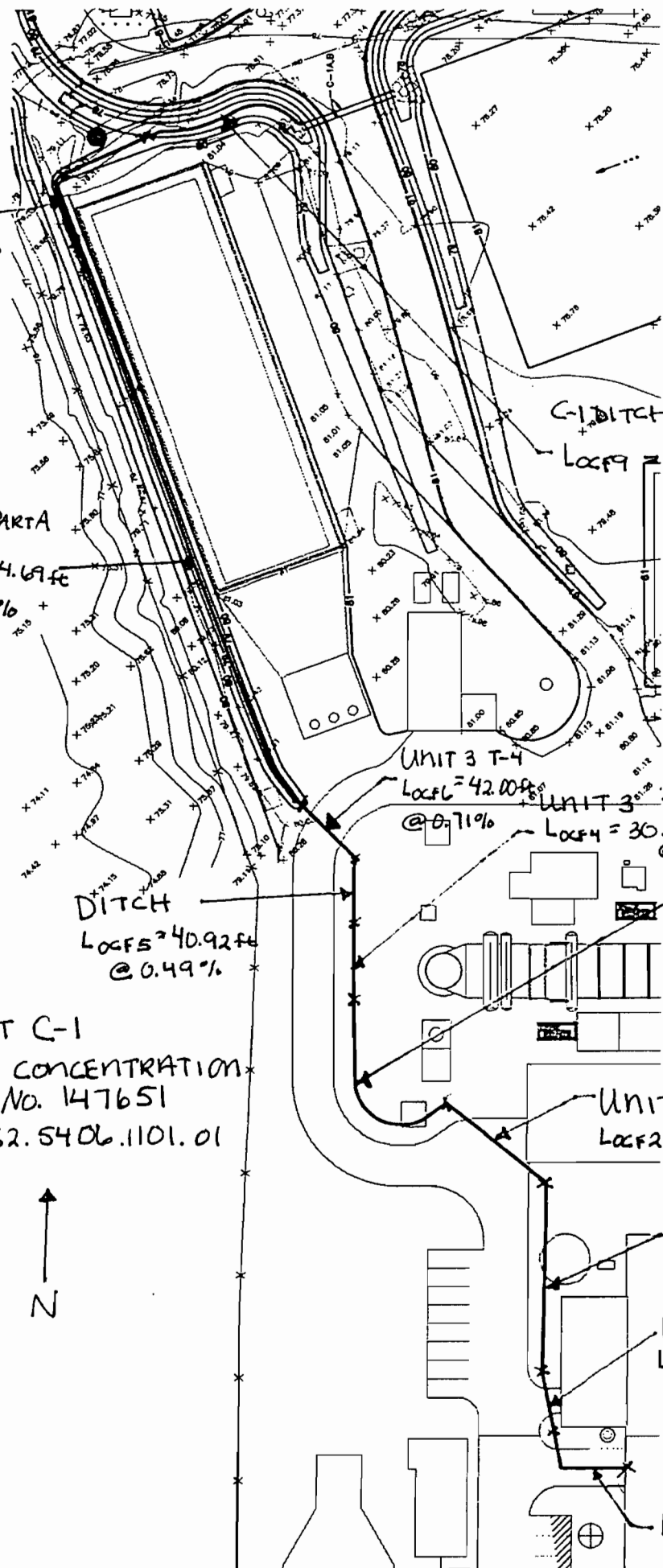
UNIT 3 T-2
L_{ocf2} = 60.00 ft
@ .33%

L_{scf1} = 92.11 ft
@ 6.5%

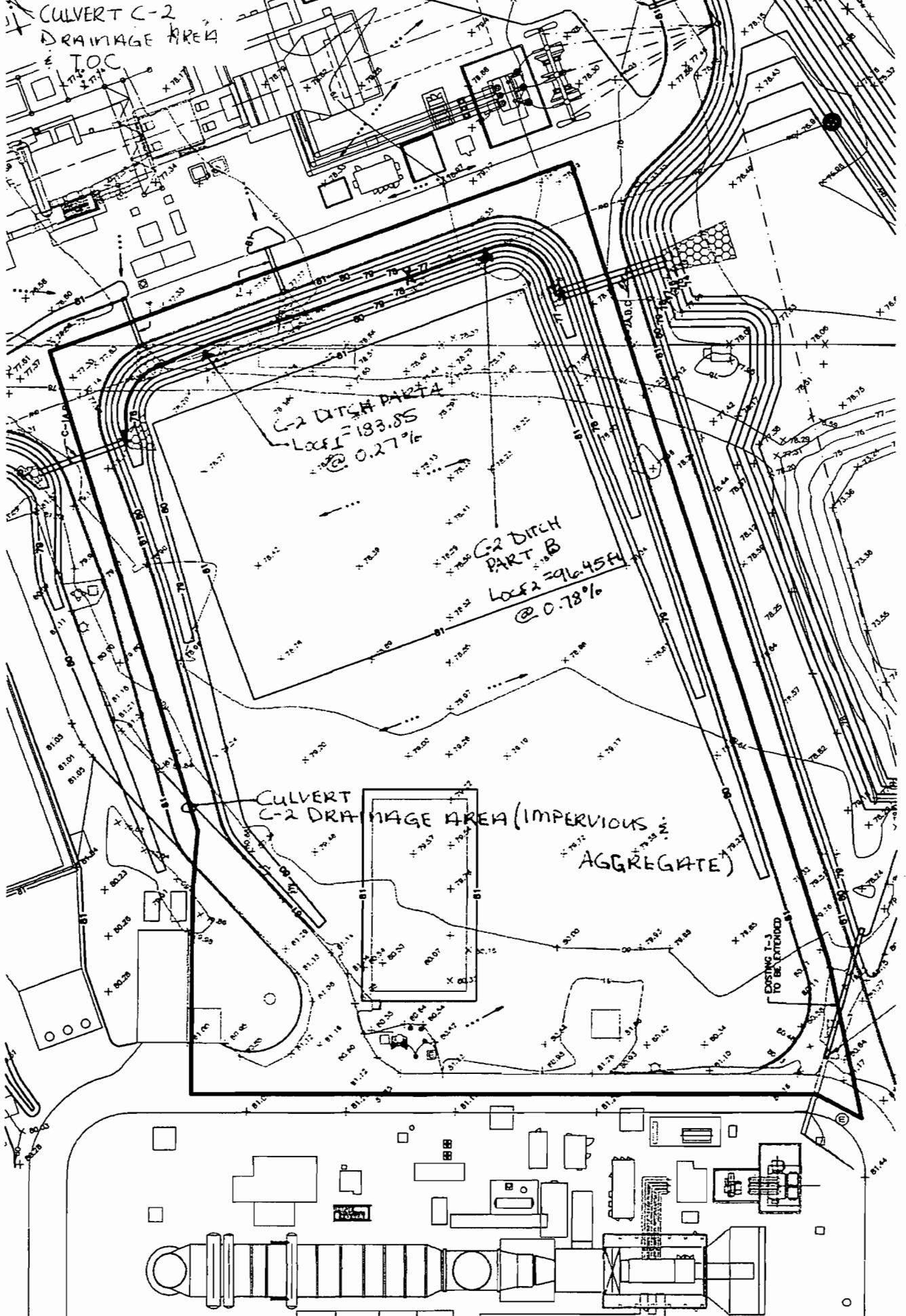
UNIT 3 T-1
L_{ocf1} = 30.00 ft
@ 1.3%

L_{sl} = 49.95 ft
@ .7%

CULVERT C-1
TIME OF CONCENTRATION
PROJECT NO. 147651
FILE NO. 52.5406.1101.01



CULVERT C-2
DRAINAGE AREA
TOC





BLACK & VEATCH

Owner: Florida Municipal Power Agency
Plant: Cane Island Power Park Unit 4
Project No. 147651
File No. 52.5406.1101.01
Title: Trench Drain and Culvert Design and
Time of Concentration

Prepared by: A. L. Morgan
Date: 03/07/08
Verified by: J.M. Stanek
Date: 03/12/08
Page No. B1 of B22
Calc Rev: 0

APPENDIX B

FlowMaster Output

Worksheet for T-1 Ditch Part A

Project Description

Friction Method Manning Formula
 Solve For Normal Depth

Input Data

Roughness Coefficient	0.033
Channel Slope	0.00500 ft/ft
Left Side Slope	3.00 ft/ft (H:V)
Right Side Slope	3.00 ft/ft (H:V)
Bottom Width	5.00 ft
Discharge	5.41 ft ³ /s

Results

Normal Depth	0.49 ft
Flow Area	3.18 ft ²
Wetted Perimeter	8.10 ft
Top Width	7.94 ft
Critical Depth	0.31 ft
Critical Slope	0.02508 ft/ft
Velocity	1.70 ft/s
Velocity Head	0.05 ft
Specific Energy	0.54 ft
Froude Number	0.48
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 ft
Length	0.00 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 ft
Profile Description	
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	0.49 ft
Critical Depth	0.31 ft
Channel Slope	0.00500 ft/ft
Critical Slope	0.02508 ft/ft

BLACK & VEATCH

Owner: Florida Municipal Power Agency
 Plant: Cane Island Power Park Unit: 4
 Project No. 147651
 File No. 52.5406.1101.01
 Title: Trench Drain and Culvert Design and Time of Concentration

Prepared by: A. L. MORGAN
 Date: 03/07/08
 Verified by: JMS
 Date: 03/12/08
 Page No. B3 of B22
 Calc Rev: 0

Worksheet for T-1 Ditch Part B

Project Description

Friction Method Manning Formula
 Solve For Normal Depth

Input Data

Roughness Coefficient	0.033
Channel Slope	0.00250 ft/ft
Left Side Slope	3.00 ft/ft (H:V)
Right Side Slope	3.00 ft/ft (H:V)
Bottom Width	5.00 ft
Discharge	5.41 ft ³ /s

Results

Normal Depth	0.59 ft
Flow Area	4.03 ft ²
Wetted Perimeter	8.76 ft
Top Width	8.57 ft
Critical Depth	0.31 ft
Critical Slope	0.02508 ft/ft
Velocity	1.34 ft/s
Velocity Head	0.03 ft
Specific Energy	0.62 ft
Froude Number	0.35
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 ft
Length	0.00 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 ft
Profile Description	
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	0.59 ft
Critical Depth	0.31 ft
Channel Slope	0.00250 ft/ft
Critical Slope	0.02508 ft/ft

BLACK & VEATCH

Owner: Florida Municipal Power Agency
Plant: Cane Island Power Park Unit: 4
Project No. 147651
File No. 52.5406.1101.01
Title: Trench Drain and Culvert Design and Time of Concentration

Prepared by: A. L. MORGAN
Date: 03/07/08
Verified by: JMS
Date: 03/12/08
Page No. 34 of 822
Calc Rev: 0

Worksheet for T-1 25 yr

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Roughness Coefficient 0.013
Channel Slope 0.00500 ft/ft
Bottom Width 1.50 ft
Discharge 4.69 ft³/s

Results

Normal Depth 0.74 ft
Flow Area 1.12 ft²
Wetted Perimeter 2.99 ft
Top Width 1.50 ft
Critical Depth 0.67 ft
Critical Slope 0.00660 ft/ft
Velocity 4.19 ft/s
Velocity Head 0.27 ft
Specific Energy 1.02 ft
Froude Number 0.86
Flow Type Subcritical

GVF Input Data

Downstream Depth 0.00 ft
Length 0.00 ft
Number Of Steps 0

GVF Output Data

Upstream Depth 0.00 ft
Profile Description
Profile Headloss 0.00 ft
Downstream Velocity Infinity ft/s
Upstream Velocity Infinity ft/s
Normal Depth 0.74 ft
Critical Depth 0.67 ft
Channel Slope 0.00500 ft/ft
Critical Slope 0.00660 ft/ft

BLACK & VEATCH

Owner: Florida Municipal Power Agency
Plant: Cane Island Power Park Unit: 4
Project No. 147651
File No. 52.5406.1101.01
Title: Trench Drain and Culvert Design and Time of Concentration

Prepared by: A. L. MORGAN
Date: 03/07/08
Verified by: SM
Date: 03/11/08
Page No. B5 of B22
Calc Rev: 0

Worksheet for T-1 100 yr

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Roughness Coefficient 0.013
Channel Slope 0.00500 ft/ft
Bottom Width 1.50 ft
Discharge 5.41 ft³/s

Results

Normal Depth 0.83 ft
Flow Area 1.25 ft²
Wetted Perimeter 3.16 ft
Top Width 1.50 ft
Critical Depth 0.74 ft
Critical Slope 0.00680 ft/ft
Velocity 4.35 ft/s
Velocity Head 0.29 ft
Specific Energy 1.12 ft
Froude Number 0.84
Flow Type Subcritical

GVF Input Data

Downstream Depth 0.00 ft
Length 0.00 ft
Number Of Steps 0

GVF Output Data

Upstream Depth 0.00 ft
Profile Description
Profile Headloss 0.00 ft
Downstream Velocity Infinity ft/s
Upstream Velocity Infinity ft/s
Normal Depth 0.83 ft
Critical Depth 0.74 ft
Channel Slope 0.00500 ft/ft
Critical Slope 0.00680 ft/ft

Worksheet for T-2 25 yr

Project Description

Flow Element: Rectangular Channel
Friction Method: Manning Formula
Solve For: Normal Depth

Input Data

Roughness Coefficient: 0.013
Channel Slope: 0.00549 ft/ft
Bottom Width: 2.00 ft
Discharge: 9.112 ft³/s

Results

Normal Depth: 0.89 ft
Flow Area: 1.78 ft²
Wetted Perimeter: 3.78 ft
Top Width: 2.00 ft
Critical Depth: 0.86 ft
Critical Slope: 0.00593 ft/ft
Velocity: 5.12 ft/s
Velocity Head: 0.41 ft
Specific Energy: 1.30 ft
Froude Number: 0.96
Flow Type: Subcritical

GVF Input Data

Downstream Depth: 0.00 ft
Length: 0.00 ft
Number Of Steps: 0

GVF Output Data

Upstream Depth: 0.00 ft
Profile Description:
Profile Headloss: 0.00 ft
Downstream Velocity: Infinity ft/s
Upstream Velocity: Infinity ft/s
Normal Depth: 0.89 ft
Critical Depth: 0.86 ft
Channel Slope: 0.00549 ft/ft
Critical Slope: 0.00593 ft/ft

Worksheet for T-2 100 yr

Project Description

Flow Element: Rectangular Channel
Friction Method: Manning Formula
Solve For: Normal Depth

Input Data

Roughness Coefficient: 0.013
Channel Slope: 0.00549 ft/ft
Bottom Width: 2.00 ft
Discharge: 10.529 ft³/s

Results

Normal Depth: 0.99 ft
Flow Area: 1.98 ft²
Wetted Perimeter: 3.98 ft
Top Width: 2.00 ft
Critical Depth: 0.95 ft
Critical Slope: 0.00611 ft/ft
Velocity: 5.32 ft/s
Velocity Head: 0.44 ft
Specific Energy: 1.43 ft
Froude Number: 0.94
Flow Type: Subcritical

GVF Input Data

Downstream Depth: 0.00 ft
Length: 0.00 ft
Number Of Steps: 0

GVF Output Data

Upstream Depth: 0.00 ft
Profile Description:
Profile Headloss: 0.00 ft
Downstream Velocity: Infinity ft/s
Upstream Velocity: Infinity ft/s
Normal Depth: 0.99 ft
Critical Depth: 0.95 ft
Channel Slope: 0.00549 ft/ft
Critical Slope: 0.00611 ft/ft

Worksheet for T-2 Ditch1

Project Description

Flow Element: Triangular Channel
 Friction Method: Manning Formula
 Solve For: Normal Depth

Input Data

Roughness Coefficient: 0.013
 Channel Slope: 0.00330 ft/ft
 Left Side Slope: 3.00 ft/ft (H:V)
 Right Side Slope: 3.00 ft/ft (H:V)
 Discharge: 10.529 ft³/s

Results

Normal Depth: 0.95 ft
 Flow Area: 2.72 ft²
 Wetted Perimeter: 6.02 ft
 Top Width: 5.72 ft
 Critical Depth: 0.95 ft
 Critical Slope: 0.00339 ft/ft
 Velocity: 3.87 ft/s
 Velocity Head: 0.23 ft
 Specific Energy: 1.19 ft
 Froude Number: 0.99
 Flow Type: Subcritical

GVF Input Data

Downstream Depth: 0.00 ft
 Length: 0.00 ft
 Number Of Steps: 0

GVF Output Data

Upstream Depth: 0.00 ft
 Profile Description:
 Profile Headloss: 0.00 ft
 Downstream Velocity: Infinity ft/s
 Upstream Velocity: Infinity ft/s
 Normal Depth: 0.95 ft
 Critical Depth: 0.95 ft
 Channel Slope: 0.00330 ft/ft
 Critical Slope: 0.00339 ft/ft

Worksheet for T-2 Ditch2

Project Description

Flow Element: Trapezoidal Channel
Friction Method: Manning Formula
Solve For: Normal Depth

Input Data

Roughness Coefficient: 0.013
Channel Slope: 0.00330 ft/ft
Left Side Slope: 3.00 ft/ft (H:V)
Right Side Slope: 3.00 ft/ft (H:V)
Bottom Width: 2.50 ft
Discharge: 10.529 ft³/s

Results

Normal Depth: 0.64 ft
Flow Area: 2.81 ft²
Wetted Perimeter: 6.53 ft
Top Width: 6.32 ft
Critical Depth: 0.63 ft
Critical Slope: 0.00337 ft/ft
Velocity: 3.74 ft/s
Velocity Head: 0.22 ft
Specific Energy: 0.86 ft
Froude Number: 0.99
Flow Type: Subcritical

GVF Input Data

Downstream Depth: 0.00 ft
Length: 0.00 ft
Number Of Steps: 0

GVF Output Data

Upstream Depth: 0.00 ft
Profile Description:
Headloss: 0.00 ft
Downstream Velocity: Infinity ft/s
Upstream Velocity: Infinity ft/s
Normal Depth: 0.64 ft
Critical Depth: 0.63 ft
Channel Slope: 0.00330 ft/ft

Worksheet for T-3 100 yr

Project Description

Flow Element: Rectangular Channel
Friction Method: Manning Formula
Solve For: Normal Depth

Input Data

Roughness Coefficient: 0.013
Channel Slope: 0.00495 ft/ft
Bottom Width: 2.00 ft
Discharge: 4.626 ft³/s

Results

Normal Depth: 0.57 ft
Flow Area: 1.13 ft²
Wetted Perimeter: 3.13 ft
Top Width: 2.00 ft
Critical Depth: 0.55 ft
Critical Slope: 0.00539 ft/ft
Velocity: 4.08 ft/s
Velocity Head: 0.26 ft
Specific Energy: 0.83 ft
Froude Number: 0.96
Flow Type: Subcritical

GVF Input Data

Downstream Depth: 0.00 ft
Length: 0.00 ft
Number Of Steps: 0

GVF Output Data

Upstream Depth: 0.00 ft
Profile Description:
Profile Headloss: 0.00 ft
Downstream Velocity: Infinity ft/s
Upstream Velocity: Infinity ft/s
Normal Depth: 0.57 ft
Critical Depth: 0.55 ft
Channel Slope: 0.00495 ft/ft
Critical Slope: 0.00539 ft/ft

Worksheet for T-4 25 yr

Project Description

Flow Element: Rectangular Channel
Friction Method: Manning Formula
Solve For: Normal Depth

Input Data

Roughness Coefficient: 0.013
Channel Slope: 0.00545 ft/ft
Bottom Width: 2.00 ft
Discharge: 3.689 ft³/s

Results

Normal Depth: 0.47 ft
Flow Area: 0.94 ft²
Wetted Perimeter: 2.94 ft
Top Width: 2.00 ft
Critical Depth: 0.47 ft
Critical Slope: 0.00530 ft/ft
Velocity: 3.94 ft/s
Velocity Head: 0.24 ft
Specific Energy: 0.71 ft
Froude Number: 1.02
Flow Type: Supercritical

GVF Input Data

Downstream Depth: 0.00 ft
Length: 0.00 ft
Number Of Steps: 0

GVF Output Data

Upstream Depth: 0.00 ft
Profile Description:
Profile Headloss: 0.00 ft
Downstream Velocity: Infinity ft/s
Upstream Velocity: Infinity ft/s
Normal Depth: 0.47 ft
Critical Depth: 0.47 ft
Channel Slope: 0.00545 ft/ft
Critical Slope: 0.00530 ft/ft

Worksheet for T-4 100 yr

Project Description

Flow Element: Rectangular Channel
Friction Method: Manning Formula
Solve For: Normal Depth

Input Data

Roughness Coefficient: 0.013
Channel Slope: 0.00545 ft/ft
Bottom Width: 2.00 ft
Discharge: 4.263 ft³/s

Results

Normal Depth: 0.52 ft
Flow Area: 1.03 ft²
Wetted Perimeter: 3.03 ft
Top Width: 2.00 ft
Critical Depth: 0.52 ft
Critical Slope: 0.00535 ft/ft
Velocity: 4.12 ft/s
Velocity Head: 0.26 ft
Specific Energy: 0.78 ft
Froude Number: 1.01
Flow Type: Supercritical

GVF Input Data

Downstream Depth: 0.00 ft
Length: 0.00 ft
Number Of Steps: 0

GVF Output Data

Upstream Depth: 0.00 ft
Profile Description:
Profile Headloss: 0.00 ft
Downstream Velocity: Infinity ft/s
Upstream Velocity: Infinity ft/s
Normal Depth: 0.52 ft
Critical Depth: 0.52 ft
Channel Slope: 0.00545 ft/ft
Critical Slope: 0.00535 ft/ft

Worksheet for T-5 25 yr

Project Description

Flow Element: Rectangular Channel
Friction Method: Manning Formula
Solve For: Normal Depth

Input Data

Roughness Coefficient: 0.013
Channel Slope: 0.00554 ft/ft
Bottom Width: 2.00 ft
Discharge: 2.295 ft³/s

Results

Normal Depth: 0.34 ft
Flow Area: 0.68 ft²
Wetted Perimeter: 2.68 ft
Top Width: 2.00 ft
Critical Depth: 0.34 ft
Critical Slope: 0.00521 ft/ft
Velocity: 3.40 ft/s
Velocity Head: 0.18 ft
Specific Energy: 0.52 ft
Froude Number: 1.03
Flow Type: Supercritical

GVF Input Data

Downstream Depth: 0.00 ft
Length: 0.00 ft
Number Of Steps: 0

GVF Output Data

Upstream Depth: 0.00 ft
Profile Description:
Profile Headloss: 0.00 ft
Downstream Velocity: Infinity ft/s
Upstream Velocity: Infinity ft/s
Normal Depth: 0.34 ft
Critical Depth: 0.34 ft
Channel Slope: 0.00554 ft/ft
Critical Slope: 0.00521 ft/ft

Worksheet for T-5 100 yr

Project Description

Flow Element: Rectangular Channel
Friction Method: Manning Formula
Solve For: Normal Depth

Input Data

Roughness Coefficient: 0.013
Channel Slope: 0.00554 ft/ft
Bottom Width: 2.00 ft
Discharge: 2.652 ft³/s

Results

Normal Depth: 0.37 ft
Flow Area: 0.74 ft²
Wetted Perimeter: 2.74 ft
Top Width: 2.00 ft
Critical Depth: 0.38 ft
Critical Slope: 0.00522 ft/ft
Velocity: 3.56 ft/s
Velocity Head: 0.20 ft
Specific Energy: 0.57 ft
Froude Number: 1.03
Flow Type: Supercritical

GVF Input Data

Downstream Depth: 0.00 ft
Length: 0.00 ft
Number Of Steps: 0

GVF Output Data

Upstream Depth: 0.00 ft
Profile Description:
Profile Headloss: 0.00 ft
Downstream Velocity: Infinity ft/s
Upstream Velocity: Infinity ft/s
Normal Depth: 0.37 ft
Critical Depth: 0.38 ft
Channel Slope: 0.00554 ft/ft
Critical Slope: 0.00522 ft/ft

Worksheet for T-6 25 yr

Project Description		
Flow Element:	Rectangular Channel	
Friction Method:	Manning Formula	
Solve For:	Normal Depth	
Input Data		
Roughness Coefficient:	0.013	
Channel Slope:	0.00556	ft/ft
Bottom Width:	2.00	ft
Discharge:	7.812	ft ³ /s
Results		
Normal Depth:	0.79	ft
Flow Area:	1.58	ft ²
Wetted Perimeter:	3.58	ft
Top Width:	2.00	ft
Critical Depth:	0.78	ft
Critical Slope:	0.00577	ft/ft
Velocity:	4.94	ft/s
Velocity Head:	0.38	ft
Specific Energy:	1.17	ft
Froude Number:	0.98	
Flow Type:	Subcritical	
GVF Input Data		
Downstream Depth:	0.00	ft
Length:	0.00	ft
Number Of Steps:	0	
GVF Output Data		
Upstream Depth:	0.00	ft
Profile Description:		
Profile Headloss:	0.00	ft
Downstream Velocity:	Infinity	ft/s
Upstream Velocity:	Infinity	ft/s
Normal Depth:	0.79	ft
Critical Depth:	0.78	ft
Channel Slope:	0.00556	ft/ft
Critical Slope:	0.00577	ft/ft

Worksheet for T-6 100 yr

Project Description

Flow Element: Rectangular Channel
Friction Method: Manning Formula
Solve For: Normal Depth

Input Data

Roughness Coefficient: 0.013
Channel Slope: 0.00556 ft/ft
Bottom Width: 2.00 ft
Discharge: 9.028 ft³/s

Results

Normal Depth: 0.88 ft
Flow Area: 1.76 ft²
Wetted Perimeter: 3.76 ft
Top Width: 2.00 ft
Critical Depth: 0.86 ft
Critical Slope: 0.00592 ft/ft
Velocity: 5.14 ft/s
Velocity Head: 0.41 ft
Specific Energy: 1.29 ft
Froude Number: 0.97
Flow Type: Subcritical

GVF Input Data

Downstream Depth: 0.00 ft
Length: 0.00 ft
Number Of Steps: 0

GVF Output Data

Upstream Depth: 0.00 ft
Profile Description:
Profile Headloss: 0.00 ft
Downstream Velocity: Infinity ft/s
Upstream Velocity: Infinity ft/s
Normal Depth: 0.88 ft
Critical Depth: 0.86 ft
Channel Slope: 0.00556 ft/ft
Critical Slope: 0.00592 ft/ft

Worksheet for C-1 New Ditch Part A

Project Description

Friction Method Manning Formula
 Solve For Normal Depth

Input Data

Roughness Coefficient	0.033	
Channel Slope	0.00200	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	3.00	ft
Discharge	39.28	ft ³ /s

Results

Normal Depth	1.99	ft
Flow Area	17.83	ft ²
Wetted Perimeter	15.58	ft
Top Width	14.93	ft
Critical Depth	1.20	ft
Critical Slope	0.01817	ft/ft
Velocity	2.20	ft/s
Velocity Head	0.08	ft
Specific Energy	2.06	ft
Froude Number	0.36	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.99	ft
Critical Depth	1.20	ft
Channel Slope	0.00200	ft/ft
Critical Slope	0.01817	ft/ft

Worksheet for C-1 New Ditch Part B

Project Description

Friction Method Manning Formula
 Solve For Normal Depth

Input Data

Roughness Coefficient	0.033
Channel Slope	0.00244 ft/ft
Left Side Slope	3.00 ft/ft (H:V)
Right Side Slope	3.00 ft/ft (H:V)
Bottom Width	3.00 ft
Discharge	39.28 ft ³ /s

Results

Normal Depth	1.90 ft
Flow Area	16.55 ft ²
Wetted Perimeter	15.03 ft
Top Width	14.41 ft
Critical Depth	1.20 ft
Critical Slope	0.01817 ft/ft
Velocity	2.37 ft/s
Velocity Head	0.09 ft
Specific Energy	1.99 ft
Froude Number	0.39
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 ft
Length	0.00 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 ft
Profile Description	
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	1.90 ft
Critical Depth	1.20 ft
Channel Slope	0.00244 ft/ft
Critical Slope	0.01817 ft/ft

Worksheet for C-1 New Ditch Part C

Project Description

Friction Method Manning Formula
 Solve For Normal Depth

Input Data

Roughness Coefficient	0.033
Channel Slope	0.00300 ft/ft
Left Side Slope	3.00 ft/ft (H:V)
Right Side Slope	3.00 ft/ft (H:V)
Bottom Width	6.75 ft
Discharge	39.28 ft ³ /s

Results

Normal Depth	1.44 ft
Flow Area	15.89 ft ²
Wetted Perimeter	15.84 ft
Top Width	15.37 ft
Critical Depth	0.89 ft
Critical Slope	0.01852 ft/ft
Velocity	2.47 ft/s
Velocity Head	0.09 ft
Specific Energy	1.53 ft
Froude Number	0.43
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 ft
Length	0.00 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 ft
Profile Description	
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	1.44 ft
Critical Depth	0.89 ft
Channel Slope	0.00300 ft/ft
Critical Slope	0.01852 ft/ft

Worksheet for C-2 New Ditch Part A

Project Description

Friction Method Manning Formula
 Solve For Normal Depth

Input Data

Roughness Coefficient	0.033
Channel Slope	0.00270 ft/ft
Left Side Slope	3.00 ft/ft (H:V)
Right Side Slope	3.00 ft/ft (H:V)
Bottom Width	8.25 ft
Discharge	70.82 ft ³ /s

Results

Normal Depth	1.86 ft
Flow Area	25.64 ft ²
Wetted Perimeter	19.99 ft
Top Width	19.38 ft
Critical Depth	1.14 ft
Critical Slope	0.01709 ft/ft
Velocity	2.76 ft/s
Velocity Head	0.12 ft
Specific Energy	1.97 ft
Froude Number	0.42
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 ft
Length	0.00 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 ft
Profile Description	
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	1.86 ft
Critical Depth	1.14 ft
Channel Slope	0.00270 ft/ft
Critical Slope	0.01709 ft/ft

Worksheet for C-2 New Ditch Part B

Project Description

Friction Method Manning Formula
 Solve For Normal Depth

Input Data

Roughness Coefficient	0.033
Channel Slope	0.00780 ft/ft
Left Side Slope	3.00 ft/ft (H:V)
Right Side Slope	3.00 ft/ft (H:V)
Bottom Width	5.00 ft
Discharge	70.82 ft ³ /s

Results

Normal Depth	1.68 ft
Flow Area	16.91 ft ²
Wetted Perimeter	15.64 ft
Top Width	15.10 ft
Critical Depth	1.39 ft
Critical Slope	0.01684 ft/ft
Velocity	4.19 ft/s
Velocity Head	0.27 ft
Specific Energy	1.96 ft
Froude Number	0.70
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 ft
Length	0.00 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 ft
Profile Description	
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	1.68 ft
Critical Depth	1.39 ft
Channel Slope	0.00780 ft/ft
Critical Slope	0.01684 ft/ft



BLACK & VEATCH

Owner: Florida Municipal Power Agency
Plant: Cane Island Power Park Unit 4
Project No. 147651
File No. 52.5406.1101.01
Title: Trench Drain and Culvert Design and
Time of Concentration

Prepared by: A. L. Morgan
Date: 03/07/08
Verified by: J.M. Stanek
Date: 3/12/08
Page No. C1 of C3
Calc Rev: 0

APPENDIX C

CulvertMaster Output

BLACK & VEATCH

Owner: Florida Municipal Power Agency
 Plant: Cane Island Power Park Unit: 4
 Project No. 147851
 File No. 52.5406.1101.01
 Title: Trench Drain and Culvert Design and Time of Concentration

Prepared by: A. L. MORGAN
 Date: 03/07/08
 Verified by: AMS
 Date: 3/12/08
 Page No. 62 of 63
 Calc Rev: 0

Solve For: Headwater Elevation

CULVERT C-1

Culvert Summary			
Allowable HW Elevation	81.25 ft	Storm Event	Check
Computed Headwater Elev.	80.36 ft	Discharge	39.28 cfs
Headwater Depth/Height	1.31	Tailwater Elevation	79.12 ft
Inlet Control HW Elev.	80.36 ft	Control Type	Inlet Control
Outlet Control HW Elev.	80.35 ft		

Grades			
Upstream Invert	77.75 ft	Downstream Invert	77.50 ft
Length	48.50 ft	Constructed Slope	0.005155 ft/ft

Hydraulic Profile			
Profile	M2	Depth, Downstream	1.62 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	1.59 ft
Velocity Downstream	7.22 ft/s	Critical Slope	0.006781 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.012
Section Material	HDPE (Smooth Interior)	Span	2.00 ft
Section Size	24 inch	Rise	2.00 ft
Number Sections	2		

Outlet Control Properties			
Outlet Control HW Elev.	80.35 ft	Upstream Velocity Head	0.69 ft
Ke	0.20	Entrance Loss	0.14 ft

Inlet Control Properties			
Inlet Control HW Elev.	80.36 ft	Flow Control	Submerged
Inlet Type	Groove end projecting	Area Full	6.3 ft ²
K	0.00450	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	3
C	0.03170	Equation Form	1
Y	0.69000		

BLACK & VEATCH

Owner: Florida Municipal Power Agency
 Plant: Cane Island Power Park Unit: 4
 Project No. 147651
 File No. 52.5406.1101.01
 Title: Trench Drain and Culvert Design and Time of Concentration

Prepared by: A.L. MORGAN
 Date: 03/07/08
 Verified by: JMS
 Date: 3/12/08
 Page No. C3 of C3
 Calc Rev: 0

Solve For: Headwater Elevation

CULVERT C-2

Culvert Summary			
Allowable HW Elevation	81.25 ft	Storm Event	Check
Computed Headwater Elev.	79.91 ft	Discharge	70.81 cfs
Headwater Depth/Height	1.58	Tailwater Elevation	0.00 ft
Inlet Control HW Elev.	79.91 ft	Control Type	Inlet Control
Outlet Control HW Elev.	79.74 ft		

Grades			
Upstream Invert	76.75 ft	Downstream Invert	76.33 ft
Length	56.00 ft	Constructed Slope	0.007500 ft/ft

Hydraulic Profile			
Profile	M2	Depth, Downstream	1.72 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	1.72 ft
Velocity Downstream	8.20 ft/s	Critical Slope	0.008564 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.012
Section Material	HDPE (Smooth Interior)	Span	2.00 ft
Section Size	24 inch	Rise	2.00 ft
Number Sections	3		

Outlet Control Properties			
Outlet Control HW Elev.	79.74 ft	Upstream Velocity Head	0.92 ft
Ke	0.20	Entrance Loss	0.18 ft

Inlet Control Properties			
Inlet Control HW Elev.	79.91 ft	Flow Control	Submerged
Inlet Type	Groove end projecting	Area Full	9.4 ft ²
K	0.00450	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	3
C	0.03170	Equation Form	1
Y	0.69000		

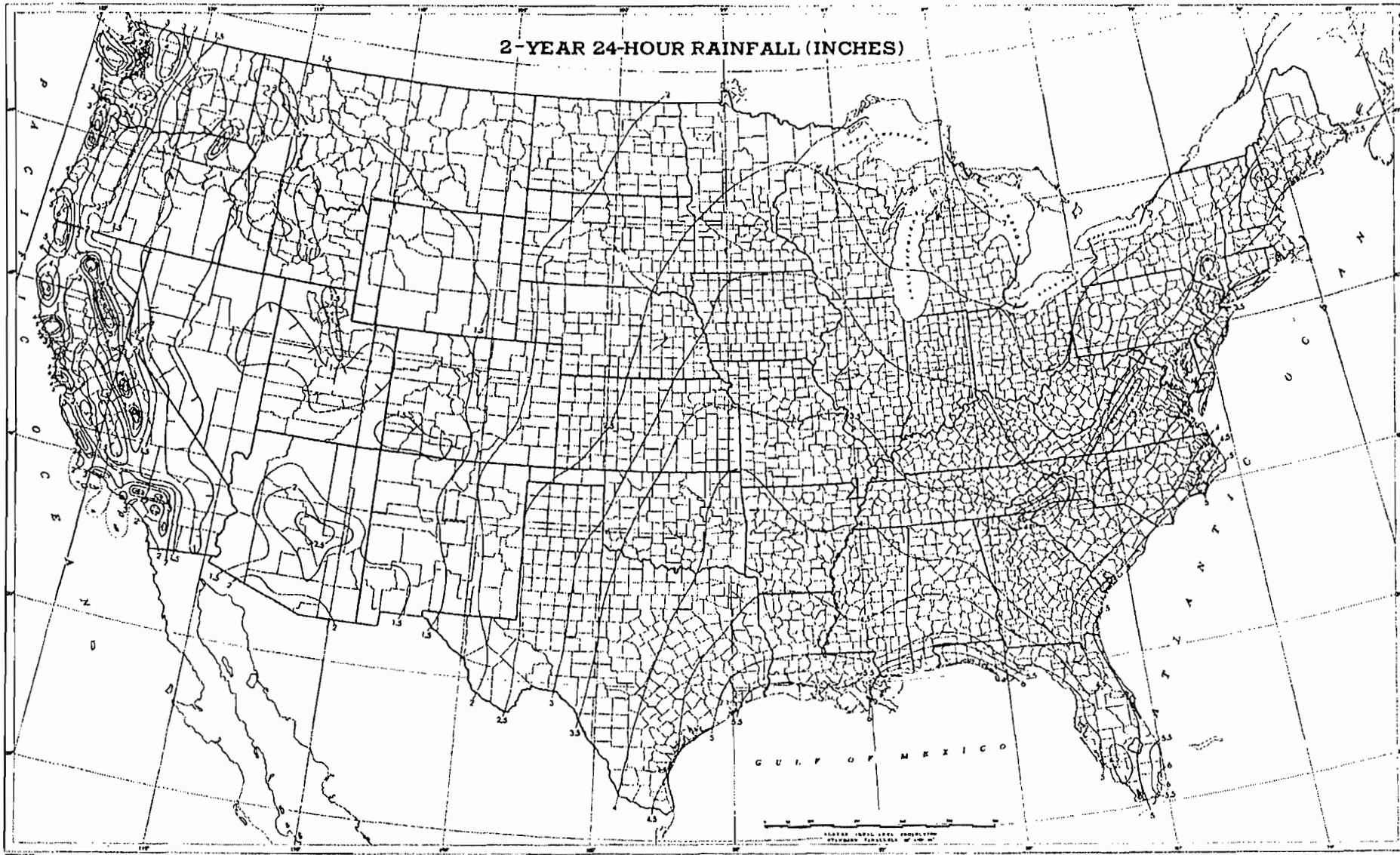


BLACK & VEATCH

Owner: Florida Municipal Power Agency
Plant: Cane Island Power Park Unit 4
Project No. 147651
File No. 52.5406.1101.01
Title: Trench Drain and Culvert Design and
Time of Concentration

Prepared by: A. L. Morgan
Date: 03/07/08
Verified by: J.M. Stanek
Date: 3/12/08
Page No. D1 of DS
Calc Rev: 0

APPENDIX D
Reference
Figures and Tables



PROJECT No: 1471651

File No: S2.5406.119.01

Page D2 of D5

Determination of Width

Values of $\frac{Y}{D}$

$\frac{Y}{D}$	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0	.000	.199	.280	.341	.392	.436	.473	.510	.543	.572
1	.600	.626	.650	.673	.694	.714	.733	.751	.768	.785
2	.800	.815	.828	.842	.854	.866	.877	.888	.898	.908
3	.917	.925	.933	.940	.947	.954	.960	.966	.971	.975
4	.980	.984	.987	.990	.993	.995	.997	.998	.999	1.000
5	1.000	1.000	.999	.998	.997	.995	.993	.990	.987	.984
6	.980	.975	.971	.966	.960	.954	.947	.940	.933	.925
7	.917	.900	.898	.888	.877	.866	.854	.842	.828	.815
8	.800	.785	.768	.751	.733	.714	.694	.673	.650	.626
9	.600	.572	.543	.510	.475	.436	.392	.341	.280	.247
1.0	.000									

i.e. Given $y = 3$ ft., $D = 4$ ft., $\frac{Y}{D} = 0.75$.

From tables: $\frac{A}{D^2} = 0.632$, $\frac{R}{D} = 0.302$, and $\frac{I}{D} = 0.866$

Determination of Hydraulic Radius

Values of $\frac{R}{D}$

$\frac{Y}{D}$	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0	.000	.007	.013	.020	.026	.033	.039	.045	.051	.057
1	.063	.070	.075	.081	.087	.093	.099	.104	.110	.115
2	.121	.126	.131	.136	.142	.147	.152	.157	.161	.166
3	.171	.176	.180	.185	.189	.193	.198	.202	.206	.210
4	.214	.218	.222	.226	.229	.233	.236	.240	.243	.247
5	.250	.253	.256	.259	.262	.265	.268	.270	.273	.275
6	.278	.280	.282	.284	.286	.288	.290	.292	.293	.295
7	.296	.298	.299	.300	.301	.302	.302	.303	.304	.304
8	.304	.304	.304	.304	.304	.303	.303	.302	.301	.299
9	.298	.296	.294	.292	.289	.286	.283	.279	.274	.267
1.0	.250									

FRICITION LOSSES

In North America, the Manning and Kutter equations are commonly used to estimate the friction gradient for turbulent flow in storm sewers. In both equations fully developed rough turbulent flow is assumed so that the head loss per unit length of conduit is approximately proportional to the square of the discharge (or velocity). Both equations use an empirical coefficient 'n' to describe the roughness of the channel boundary. Tables 4.9 and 4.10 give suggested values for 'n' for various corrugation profiles and linings.

Manning Equation

The Manning Equation is one of a number of so-called exponential equations. It is widely used in open channel flow but can also be applied to closed conduit flow. The equation is not dimensionally homogeneous and a correction factor must be applied depending upon the system of units being used.

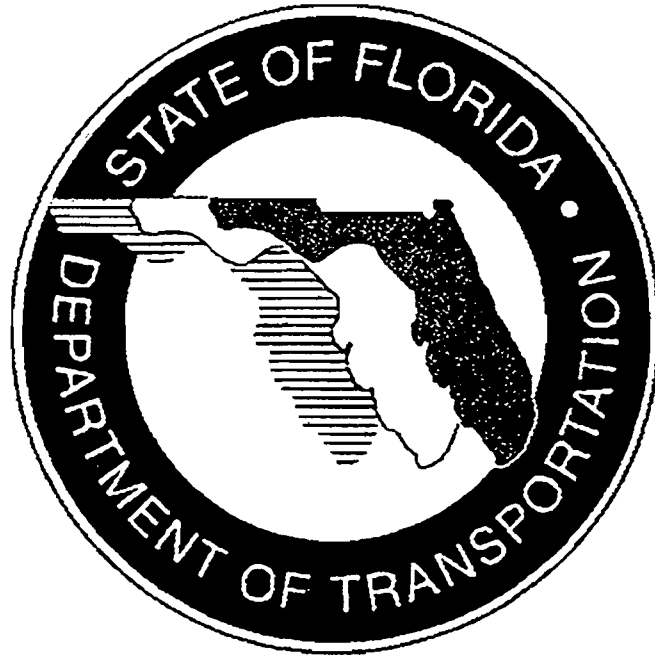
$$V = \frac{M}{n} R^{2/3} S^{1/2}$$

- Where
- M = 1.486
 - V = average velocity (ft/s)
 - Q = discharge (cfs)
 - R = hydraulic radius = A/P (ft)
 - A = cross-sectional area (sq. ft)
 - P = wetted perimeter (ft)
 - S_f = friction gradient or slope of energy line
 - n = Manning's roughness coefficient (see Tables 4.8, 4.9, 4.10)

TABLE 4.8 Effective Absolute Roughness and Friction Formula Coefficients¹

Conduit Material	Manning n
Closed conduits	
Asbestos-cement pipe	0.011-0.015
Brick	0.013-0.017
Cast iron pipe	
Uncoated (new)	—
Asphalt dipped (new)	—
Cement-lined & seal coated	0.011-0.015
Concrete (monolithic)	
Smooth forms	0.012-0.014
Rough forms	0.015-0.017
Concrete pipe	0.011-0.015
Plastic pipe (smooth)	0.011-0.015
Vitrified clay	
Pipes	0.011-0.015
Liner plates	0.013-0.017
Open channels	
Lined channels	
a. Asphalt	0.013-0.017
b. Brick	0.012-0.018
c. Concrete	0.011-0.020
d. Rubble or riprap	0.020-0.035
e. Vegetal	0.030-0.40
Excavated or dredged	
Earth, straight and uniform	0.020-0.030
Earth, winding, fairly uniform	0.025-0.040
Rock	0.030-0.045
Unmaintained	0.050-0.14
Natural Channels (minor streams, top width at flood stage < 100 ft.)	
Fairly regular section	0.03-0.07
Irregular section with pools	0.04-0.10

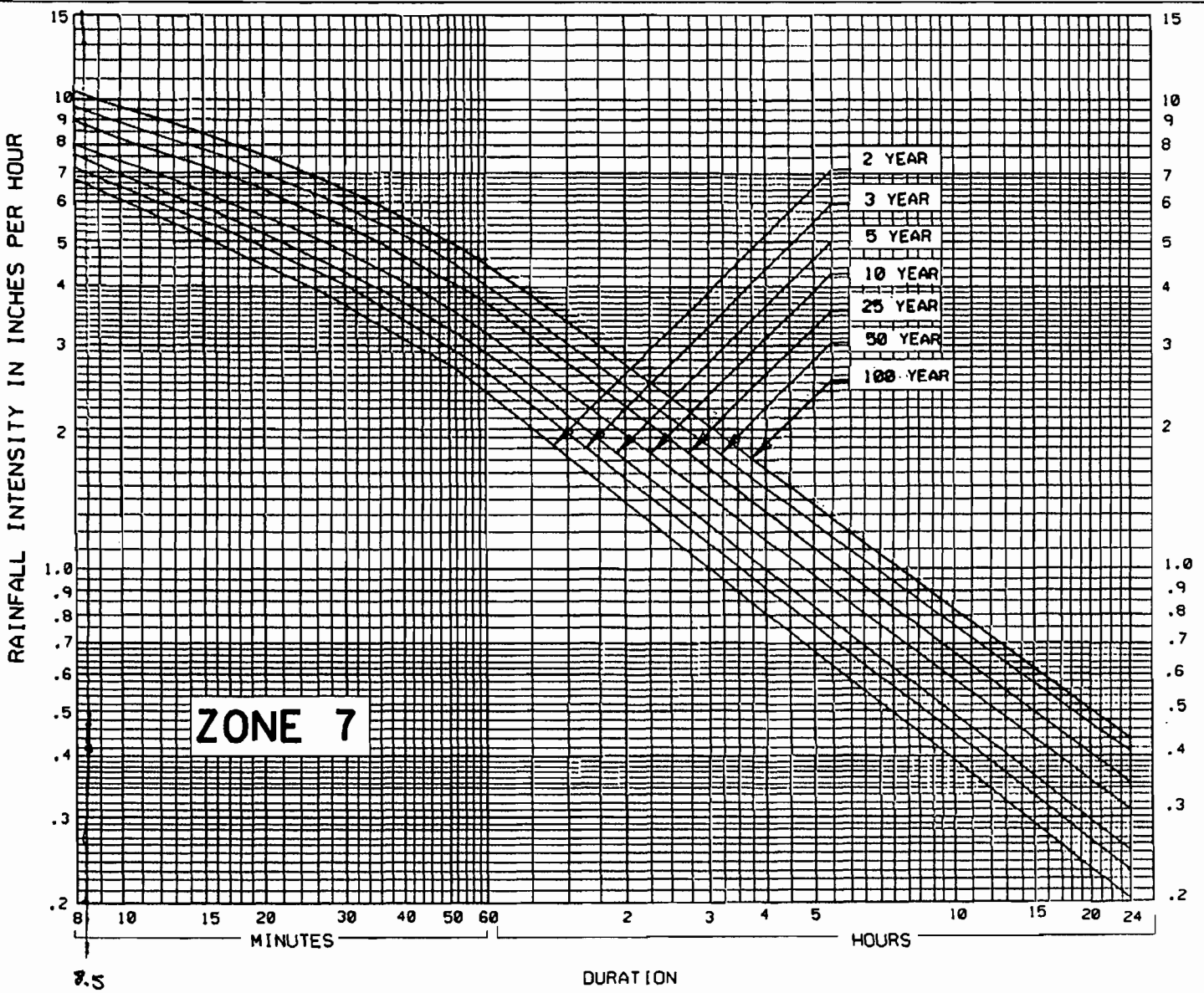
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION



**STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION**

DRAINAGE MANUAL

**OFFICE OF DESIGN, DRAINAGE SECTION January 2006
TALLAHASSEE, FLORIDA**



RAINFALL INTENSITY-DURATION-FREQUENCY CURVES
ZONE 7

B-8



BLACK & VEATCH

Owner: Florida Municipal Power Authority
Plant: Cane Island
Project No. 147651
File No. 52.5406.1101.02
Title: Pre- and Post- Development Curve
Numbers

Prepared by: A. L. Morgan
Date: 03/07/08
Verified by: J. M. Stanek
Date: 03/12/08
Page No. 2 of 3
Calc Rev: 0

1.0 PURPOSE

The purpose of this calculation is to:

- 1.1) Determine the pre-development curve number and post-development curve number and compare the two values.

2.0 REFERENCES

- 2.1) Site Certification Application, Volume 2, Kissimmee Utility Authority and Florida Municipal Power Agency, Cane Island Units 1-3, August 1998 and updated July 2001.
- 2.2) South Florida Water Management District, Management and Storage of Surface Waters: Permit Information Manual, Volume IV,
- 2.3) Technical Release 55 (TR55), Urban Hydrology for Small Watersheds, USDA Soil Conservation Service, Conservation Engineering Division, June 1986.
- 2.4) Black & Veatch Drawing 147651-4STA-S1001, Site Arrangement.

3.0 ASSUMPTIONS

No assumptions.

4.0 DEFINITIONS OF UNITS AND CONSTANTS

$CN_{\text{impervious}} := 98$	(Reference 2.3, Appendix B)
$CN_{\text{aggregate}} := 76$	(Reference 2.3, Appendix B)
$CN_{\text{laydown}} := 49$	(Reference 2.3, Appendix B)
$CN_{\text{undisturbed}} := 43$	(Reference 2.1)
$CN_{\text{pond}} := 98$	(Reference 2.3, Appendix B)

5.0 PROCEDURE/METHODOLOGY OF DESIGN

- 5.1) Determine pre-development surfacing from existing drawings, site visit, and Reference 2.1.
- 5.2) Calculate pre-development composite curve number, Reference 2.3.
- 5.3) Determine post-development surfacing areas from existing drawings, site visit, and Reference 2.4 (Appendix A).
- 5.4) Calculate post-development composite curve number, Reference 2.3.

6.0 CONCLUSIONS

- 6.1) The pre-development CN is 45.0.
- 6.2) The post-development CN is 89.5.

7.0 ANALYSIS

- 7.1) Pre-Development Curve Number.
- 7.2) Post-Development Curve Number.

8.0 APPENDICES

- 8.1) Appendix A - Post-Development Areas.
- 8.2) Appendix B - Curve Numbers from Reference 2.3.



BLACK & VEATCH

Owner: Florida Municipal Power Authority
Plant: Cane Island
Project No. 147651
File No. 52.5406.1101.02
Title: Pre- and Post- Development Curve
Numbers

Prepared by: A. L. Morgan
Date: 03/07/08
Verified by: J. M. Stanek
Date: _____
Page No. 3 of 3
Calc Rev: 0

7.1 Pre-Development Curve Number

$A_{pre.imp} := 0.23 \text{ acre}$ (Reference 2.1 and Site Visit)

$A_{pre.agg} := 0.08 \text{ acre}$ (Reference 2.1 and Site Visit)

$A_{pre.undist} := 12.17 \text{ acre}$ (Reference 2.1 and Site Visit)

$A_{pre.lay} := 2.58 \text{ acre}$ (Reference 2.1 and Site Visit)

$A_{pre.pnd} := 0 \text{ acre}$ (Reference 2.1 and Site Visit)

$A_{pre.contributing} := A_{pre.imp} + A_{pre.agg} + A_{pre.undist} + A_{pre.lay}$ $A_{pre.contributing} = 15.06 \text{ acre}$

Pre-Development Weighted Curve Number

$$CN_{pre} := \frac{(A_{pre.imp} \cdot CN_{impervious} + A_{pre.agg} \cdot CN_{aggregate} + A_{pre.undist} \cdot CN_{undisturbed} + A_{pre.lay} \cdot CN_{laydown})}{A_{pre.contributing}}$$

$CN_{pre} = 45.0$ (Conclusion 6.1)

7.2 Post-Development Curve Number

$A_{post.imp} := 7.89 \text{ acre}$ (Appendix A)

$A_{post.agg} := 5 \text{ acre}$ (Appendix A)

$A_{post.undist} := 0 \text{ acre}$ (Appendix A)

$A_{post.lay} := 0 \text{ acre}$ (Appendix A)

$A_{post.pnd} := 1.41 \text{ acre}$ (Appendix A)

$A_{post.contributing} := A_{post.imp} + A_{post.agg} + A_{post.undist} + A_{post.lay}$ $A_{post.contributing} = 12.89 \text{ acre}$

Pre-Development Weighted Curve Number

$$CN_{post} := \frac{(A_{post.imp} \cdot CN_{impervious} + A_{post.agg} \cdot CN_{aggregate} + A_{post.undist} \cdot CN_{undisturbed} + A_{post.lay} \cdot CN_{laydown})}{A_{post.contributing}}$$

$CN_{post} = 89.5$ (Conclusion 6.2)



BLACK & VEATCH

Owner: Florida Municipal Power Agency
Plant: Cane Island Power Park Unit 4
Project No. 147651
File No. 52.5406.1101.02
Title: Pre- and Post Development Curve
Numbers

Prepared by: A. L. Morgan
Date: 03/07/08
Verified by: J.M. Stanek
Date: 03/12/08
Page No. A1 of A2
Calc Rev: 0

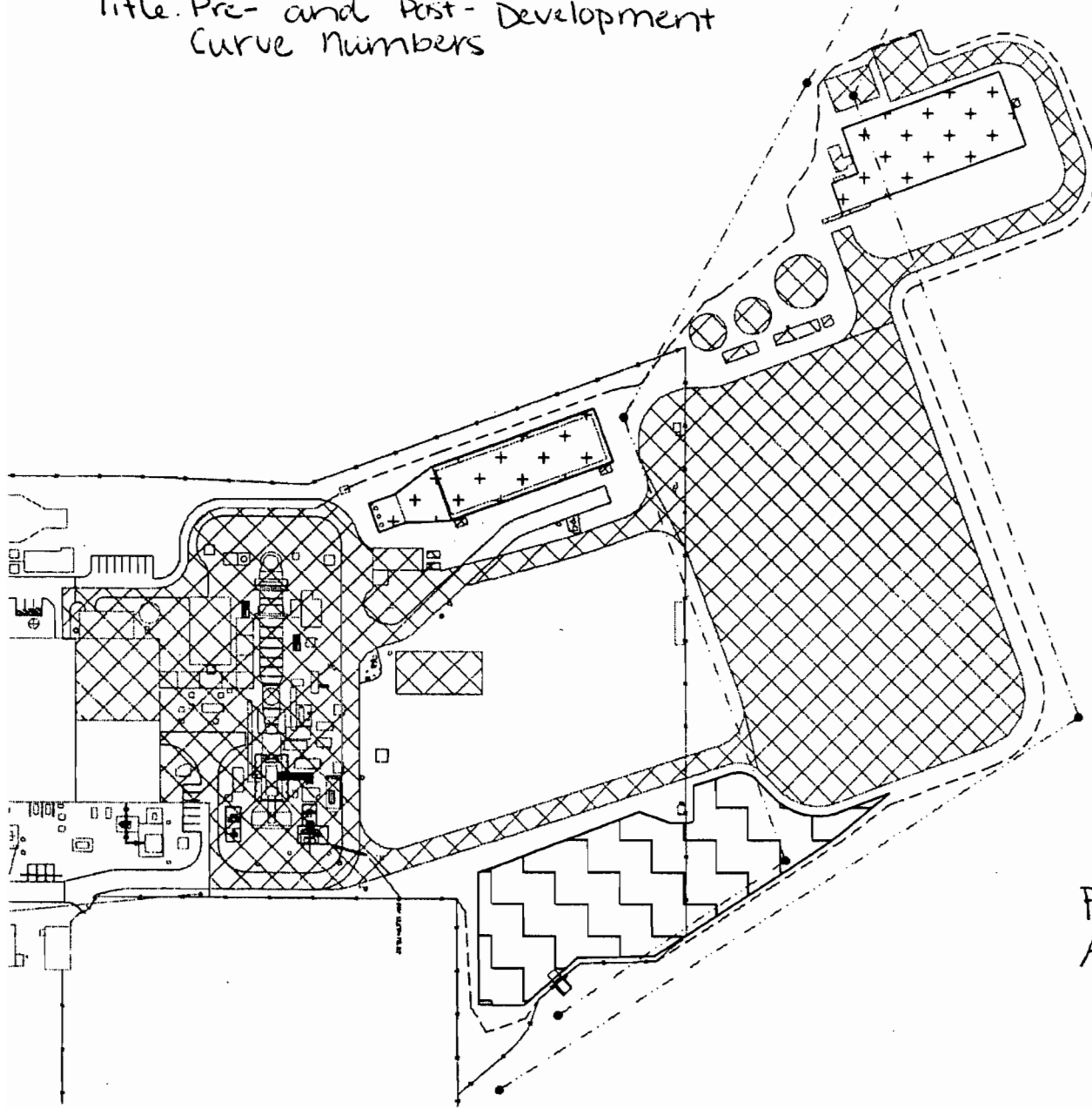
APPENDIX A

Post-Development Areas

Project No: 147651

File No: 52.5406.1101.02

Title: Pre- and Post-Development
Curve Numbers



LEGEND	
-----	TOTAL DRAINAGE AREA (15.13 ACRES)
XXXXXX	IMPERVIOUS AREA (7.89 ACRES)
.....	SELF CONTAINED AREA (0.83 ACRES)
~~~~~	POND AREA (1.41 ACRES)

NOTE: ALL AREA WITHIN TOTAL DRAINAGE AREA BOUNDARY THAT IS NOT HATCHED WAS CONSIDERED AGGREGATE SURFACING (5.0 ACRES).

→ N  
(NOT TO SCALE)

POST DEVELOPMENT  
AREAS



**BLACK & VEATCH**

Owner: Florida Municipal Power Agency  
Plant: Cane Island Power Park Unit 4  
Project No. 147651  
File No. 52.5406.1101.02  
Title: Pre- and Post Development Curve  
Numbers

Prepared by: A. L. Morgan  
Date: 03/07/08  
Verified by: J.M. Stanek  
Date: 03/12/08  
Page No. B1 of B2  
Calc Rev: 0

**APPENDIX B**  
**TR-55 Curve Numbers**



**Table 2-2a** Runoff curve numbers for urban areas ¹

Cover description	Average percent impervious area ²	Curve numbers for hydrologic soil group			
		A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) ³ :					
Poor condition (grass cover < 50%) .....		68	79	86	89
Fair condition (grass cover 50% to 75%) .....		49	69	79	84
Good condition (grass cover > 75%) .....		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way) .....					
		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way) .....					
		98	98	98	98
Paved; open ditches (including right-of-way) .....					
		83	89	92	93
Gravel (including right-of-way) .....					
		76	85	89	91
Dirt (including right-of-way) .....					
		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) ⁴ .....					
		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders) .....					
		96	96	96	96
Urban districts:					
Commercial and business .....	85	89	92	94	95
Industrial .....	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses) .....	65	77	85	90	92
1/4 acre .....	38	61	75	83	87
1/3 acre .....	30	57	72	81	86
1/2 acre .....	25	54	70	80	85
1 acre .....	20	51	68	79	84
2 acres .....	12	46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas (pervious areas only, no vegetation) ⁵ .....					
		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

¹ Average runoff condition, and  $I_a = 0.2S$ .

² The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

³ CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

⁴ Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

⁵ Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.



**Calculation Record**

Client Name: Florida Municipal Power Agency Page 1 of 7

Project Name: Cane Island Power Park Unit 4 Project No.: 147651

Calculation Title: Dry Detention Basin and Discharge Structure Design

Calculation No./File No.: 52.5406.1101.03

Calculation Is: (check all that apply)  Preliminary  Final  Nuclear Safety-Related

**Objective** To determine the treatment and pre-treatment volume. Show that pond is designed for both. To calculate the stage - discharge relationship for the dry detention basin and discharge structure.

Unverified Assumptions Requiring Subsequent Verification			
No.	Assumption	Verified By	Date

See Page ____ of this calculation for additional assumptions.

This Section Used for Computer Generated Calculations	
Program Name/Number: _____	Version: _____
Evidence of or reference to computer program verification, if applicable: _____ _____	
Bases or reference thereto supporting application of the computer program to the physical problem: _____ _____	

Review and Approval						
Rev	Prepared By	Date	Verified By	Date	Approved By	Date
0	A.L. Morgan <i>A.L. Morgan</i>	03/07/08	J. M. Stanek <i>JMS</i>	3/12/08	<i>M. J. Stanek</i>	3/26/08



**BLACK & VEATCH**

Owner: Florida Municipal Power Authority  
Plant: Cane Island  
Project No. 147651  
File No. 52.5406.1101.03  
Title: Dry Detention Basin and Discharge  
Structure Design

Prepared by: A. L. Morgan  
Date: 03/07/08  
Verified by: J. M. Stanek  
Date: 3/12/08  
Page No. 2 of 5  
Calc Rev: 0

## 1.0 PURPOSE

The purpose of this calculation is to:

- 1.1) Determine the required treatment volume and show that detention basin is adequate for treatment volume.
- 1.2) Determine the stage-discharge relationship for detention basin

## 2.0 REFERENCES

- 2.1) South Florida Water Management District, Management and Storage of Surface Waters: Permit Information Manual, Volume IV,
- 2.2) Black & Veatch Drawings 147651-4STF-S3000 through 147651-4STF-S3002, Grading and Drainage.
- 2.3) Black & Veatch Drawing 147651-4STF-S3050, Grading and Drainage Details.
- 2.4) Black & Veatch Calculation, Project No. 147651, File No. 52.5406.1101.02, Title "Pre- and Post- Development Curve Numbers"
- 2.5) "Hydrology & Hydraulic Systems", Ram S. Gupta, 1989.

## 3.0 ASSUMPTIONS

No assumptions.

## 4.0 DEFINITIONS OF UNITS AND CONSTANTS

Due to the high number of units and constants, they are defined within Section 7.0 Analysis.

## 5.0 PROCEDURE/METHODOLOGY OF DESIGN

- 5.1) Calculate the treatment volume, Reference 2.1.
  - 5.1.1) Calculate the first inch of runoff from the entire site.
  - 5.1.2) Calculate the amount of 2.5 inches time the percentage of imperviousness.
  - 5.1.3) Compare the two values and determine which one governs.  
Reduce volume by 75% (Reference 2.1, dry detention).
- 5.2) Calculate stage for pond, Reference 2.2.
- 5.3) Calculate discharge for modified discharge structure, Reference 2.3 and 2.5.

## 6.0 CONCLUSIONS

- 6.1) The required treatment volume is 1.23 acre-ft. The actual treatment volume is 1.97 acre-ft. Therefore the detention basin is adequately sized for the required treatment volume.
- 6.2) The required pretreatment volume is 0.60 acre-ft.
- 6.2) The table of stage-discharge relationship for the pond is shown in Section 7.4.5 of this calculation.

## 7.0 ANALYSIS

- 7.1) Required Treatment Volume.
- 7.2) Required Pretreatment
- 7.3) Actual Treatment Volume.
- 7.4) Stage - Discharge

## 8.0 APPENDICES

- 8.1) Appendix A - Terramodel Output for Pond Volume.



### 7.1 Required Treatment Volume

7.1.1 Option A - Compute the first inch of runoff from the developed project: (Reference 2.1)

$A_{\text{post.contributing}} := 12.89 \text{ acre}$  (Reference 2.4)

$A_{\text{post.pond}} := 1.41 \text{ acre}$  (Reference 2.4)

$A_{\text{post.total}} := A_{\text{post.contributing}} + A_{\text{post.pond}} \quad A_{\text{post.total}} = 14.3 \text{ acre}$

$V_{\text{TreatA}} := A_{\text{post.total}} \cdot 1 \text{ in} \cdot \frac{1 \text{ ft}}{12 \text{ in}} \quad V_{\text{TreatA}} = 1.19 \text{ acre-ft}$

7.1.2 Option B - Compute 2.5 inches time the percentage of imperviousness: (Reference 2.1)

$A_{\text{post.imp}} := 7.89 \text{ acre}$  (Reference 2.4)

$A_{\text{post.agg}} := 5 \text{ acre}$  (Reference 2.4)

$A_{\text{quality.site}} := A_{\text{post.total}} - (A_{\text{post.pond}} + A_{\text{post.imp}})$

$A_{\text{quality.site}} = 5 \text{ acre}$

$A_{\text{pervious}} := 0 \text{ acre}$

$A_{\text{quality.imp}} := A_{\text{quality.site}} - A_{\text{pervious}} \quad A_{\text{quality.imp}} = 5 \text{ acre}$

$P_{\text{imp}} := \frac{A_{\text{quality.imp}}}{A_{\text{quality.site}}} \quad P_{\text{imp}} = 100 \%$

$D_{\text{quality}} := P_{\text{imp}} \cdot 2.5 \text{ in} \quad D_{\text{quality}} = 2.5 \text{ in}$

$V_{\text{TreatB}} := D_{\text{quality}} \cdot A_{\text{post.imp}} \cdot \frac{1 \text{ ft}}{12 \text{ in}} \quad V_{\text{TreatB}} = 1.64 \text{ ft acre}$

7.1.3 Reduce controlling Treatment Volume by 75%

Option B governs because the required treatment volume is greater than Option A.

$V_{\text{Treatment,Required}} := .75 \cdot V_{\text{TreatB}} \quad \text{(Reference 2.1)}$

$V_{\text{Treatment,Required}} = 1.23 \text{ ft acre} \quad \text{(Conclusion 6.1)}$

### 7.2 Required Pretreatment Volume

Determine 0.5 inch of pretreatment,  $D_{\text{pretreat}}$ : (Reference 2.1)

$D_{\text{pretreat}} := A_{\text{post.total}} \cdot 0.5 \text{ in}$

$D_{\text{pretreat}} = 0.60 \text{ ft acre} \quad \text{(Conclusion 6.2)}$

### 7.3 Actual Treatment Volume

Pond surface area and storage were determined using Terramodel Version 10.43. Pond storage output from Terramodel is included in Appendix A. Pond surface area can be verified by Reference 2.2.

Stage	Pond Area (SF)	Total Area (Acres)	Pond Incremental Detention volume (CY)	Accumulative Detention volume (CY)	Accumulative Detention volume (ac-ft)
74	38,490	0.88	0	0	0
75	42,793	0.98	1,504	1,504	0.94
76	47,210	1.08	1,665	3,169	1.97
77	51,778	1.19	1,833	5,002	3.11
78	57,478	1.32	2,003	7,004	4.35
78.25	58,952	1.35	550	7,555	4.69
78.5	61,251	1.41	577	8,131	5.04
78.75	63,682	1.46	604	8,735	5.42
79	72,255	1.66	633	9,368	5.81

The control elevation is at 76.00 feet, Reference 2.3. Therefore the actual treatment volume is 1.97 acre-ft.

$V_{\text{treatment,actual}} := 1.97 \text{ acre-ft}$  (Conclusion 6.1)

### 7.4 Stage vs. Discharge

The existing Unit 3 stormwater pond discharge structure will be modified for new pond. The existing structure has an 8" diameter orifice at elevation 76.00 feet and a broad crested weir with top elevation at 78.00 feet. The structure will be modified to add four - 10" diameter orifices at elevation 76.17 feet and modified weir top elevation at 78.75 feet. These changes can be seen on Detail 5, Reference 2.3.

7.4.1 Example discharge calculation for 8" Orifice with water elevation at 79.00 feet.

$D_{8in} := 8 \text{ in}$  (Reference 2.3)

$A_{8in} := \pi \cdot \frac{D_{8in}^2}{4}$   $A_{8in} = 0.35 \text{ ft}^2$

$c := 0.6$  (Reference 2.5)

$h_{\text{control,8in}} := 76.00 \text{ ft}$   $h := 79.00 \text{ ft}$

$\Delta h_{8in} := h - \left( \frac{D_{8in}}{2} + h_{\text{control,8in}} \right)$   $\Delta h_{8in} = 2.67 \text{ ft}$

$n := 1$  (Reference 2.3, Number of orifices)

$Q_{8in} := n \cdot c \cdot A_{8in} \cdot \sqrt{(2 \cdot g \cdot \Delta h_{8in})}$   $Q_{8in} = 2.74 \frac{\text{ft}^3}{\text{sec}}$  (Reference 2.5)

7.4.2 Example discharge calculation for 10" Orifice with water elevation at 79.00 feet.

$D_{10in} := 10 \cdot in$  (Reference 2.3)

$A_{10in} := \pi \cdot \frac{D_{10in}^2}{4}$   $A_{10in} = 0.55 \text{ ft}^2$

$c := 0.6$  (Reference 2.5)

$h_{control,10in} := 76 \cdot ft + 2 \cdot in$   $h := 79.00 \cdot ft$

$\Delta h_{10in} := h - \left( \frac{D_{10in}}{2} + h_{control,10in} \right)$   $\Delta h_{10in} = 2.42 \text{ ft}$

$n := 4$  (Reference 2.3, Number of orifices)

$Q_{10in} := n \cdot c \cdot A_{10in} \cdot \sqrt{2 \cdot g \cdot \Delta h_{10in}}$   $Q_{10in} = 16.32 \frac{\text{ft}^3}{\text{sec}}$  (Reference 2.5)

7.4.3 Example discharge calculation for sharp crested weir with top elevation at 78.75 ft.

$L_{weir} := 10 \cdot ft$  (Reference 2.3)

$h_{control,weir} := 78.75 \cdot ft$   $h = 79 \text{ ft}$

$\Delta h_{weir} := h - h_{control,weir}$   $\Delta h_{weir} = 0.25 \text{ ft}$

$C_{weir} := .97$   $C_d := C_{weir} \cdot \sqrt{2 \cdot g}$  (Reference 2.5)

$Q_{weir} := 0.385 C_d \cdot L_{weir} \cdot (\Delta h_{weir})^{\left(\frac{3}{2}\right)}$   $Q_{weir} = 3.74 \frac{\text{ft}^3}{\text{sec}}$  (Reference 2.5)

7.4.4 Total discharge calculation for water elevation at 79.00 ft.

$Q_{total} := Q_{8in} + Q_{10in} + Q_{weir}$   $Q_{total} = 22.81 \frac{\text{ft}^3}{\text{sec}}$

7.4.5 Stage vs Discharge Relationship Table (Conclusion 6.3)

Stage (ft)	1- 8" $\Phi$ and 4- 10" $\Phi$ Orifice Discharge (cfs)	Weir Discharge (cfs)	Total Discharge (cfs)
74	0	-	0
75	0	-	0
76	0	-	0
77	8.15	-	8.15
78	14.67	-	14.67
78.25	15.89	-	15.89
78.5	17.02	-	17.02
78.75	18.08	0.00	18.08
79	19.08	3.75	22.83



**BLACK & VEATCH**

Owner: Florida Municipal Power Agency  
Plant: Cane Island Power Park Unit 4  
Project No. 147651  
File No. 52.5406.1101.03  
Title: Dry Detention Basin and Discharge  
Structure Design

Prepared by: A. L. Morgan  
Date: 03/07/08  
Verified by: J.M. Stanek  
Date: 3/12/08  
Page No. A1 of A2  
Calc Rev: 0

**APPENDIX A**  
**Terramodel Output**  
**for Pond Volume**



**BLACK & VEATCH**

Owner: Florida Municipal Power Agency  
Plant: Cane Island Power Park Unit 4  
Project No. 147651  
File No. 52.5406.1101.03  
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Date: 3/12/08  
Page No. A2 of A2  
Calc Rev: 0

SURFACE TO DATUM VOLUME REPORT

Project: C:\Documents and Settings\mor45202\My Documents\FMPA\  
2-28-08 Updated Pond Contours.pro  
Report Generated: Monday, March 03, 2008 11:12:04 AM

DTM Surface Layer Name	Number of Points	Datum Elevation
DTM POND	286	79.00

Volume limited to that within the constraining boundary - Object 1116  
Area within boundary: 882,101.61 Sq. Ft. (20.2503 Acres)  
Total triangulated area: 72,257.26 Sq. Ft. (1.6588 Acres)

	Depth Range (ft)	Cut Volume (Cu. Yd.)	Accumulative Volume (Cu. Yd.)
74.00	-5.00 > -4.75	361.1	
	-4.75 > -4.50	370.8	
	-4.50 > -4.25	380.7	
75.00	-4.25 > -4.00	391.0	1503.6
	-4.00 > -3.75	401.1	
	-3.75 > -3.50	411.1	
	-3.50 > -3.25	421.3	
76.00	-3.25 > -3.00	431.8	3168.9
	-3.00 > -2.75	442.4	
	-2.75 > -2.50	452.8	
	-2.50 > -2.25	463.4	
77.00	-2.25 > -2.00	474.1	5001.6
	-2.00 > -1.75	484.7	
	-1.75 > -1.50	495.3	
	-1.50 > -1.25	505.9	
78.00	-1.25 > -1.00	516.7	7004.2
78.25	-1.00 > -0.75	550.3	7554.5
78.50	-0.75 > -0.50	576.5	8131.0
78.75	-0.50 > -0.25	604.0	8735.0
79.00	-0.25 > 0.00	632.8	9367.8

Excavation Volume Beneath Datum (Cu. Yd.)	Fill Volume Above Datum (Cu. Yd.)
9,367.8	0.0

Net Difference: 9,367.8 Cu. Yd. excess volume beneath datum





**Calculation Record**

Client Name: FLorida Municipal Power Agency Page _____ of _____

Project Name: Cane Island Power Park Unit 4 Project No.: 147651

Calculation Title: Hydrologic Analysis

Calculation No./File No.: 52.5406.1101.04

Calculation Is: (check all that apply)  Preliminary  Final  Nuclear Safety-Related

**Objective** Evaluate the hydrologic response to the design precipitation events for the pre- and post- development conditions.

Unverified Assumptions Requiring Subsequent Verification			
No.	Assumption	Verified By	Date

See Page _____ of this calculation for additional assumptions.

This Section Used for Computer Generated Calculations	
Program Name/Number: _____	Version: _____
Evidence of or reference to computer program verification, if applicable: _____ _____	
Bases or reference thereto supporting application of the computer program to the physical problem: _____ _____	

Review and Approval						
Rev	Prepared By	Date	Verified By	Date	Approved By	Date
0	A.L. Morgan <i>A.L. Morgan</i>	03/20/08	J. M. Stanek <i>J.M. Stanek</i>	3/26/08	<i>M. J. Dwyer</i>	3/26/08



**BLACK & VEATCH**

Owner: Florida Municipal Power Authority  
Plant: Cane Island  
Project No. 147651  
File No. 52.5406.1101.04  
Title: Hydrologic Analysis

Prepared by: A. L. Morgan  
Date: 3/20/08  
Verified by: J. M. Stanek  
Date: 3/26/08  
Page No. 2 of 6  
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## 1.0 PURPOSE

The purpose of this calculation is to:

- 1.1) Evaluate the hydrologic response of the site to a 25-year, 72-hour storm event given pre-development conditions.
- 1.2) Evaluate the hydrologic response of the site to a 100-year, 72-hour storm event given pre-development conditions.
- 1.3) Evaluate the hydrologic response of the site to a 25-year, 72-hour storm event given post-development conditions.
- 1.4) Evaluate the hydrologic response of the site to a 100-year, 72-hour storm event given post-development conditions.

## 2.0 REFERENCES

- 2.1) Site Certification Application, Volume 2, Kissimmee Utility Authority and Florida Municipal Power Agency, Cane Island Units 1-3, August 1998 and updated July 2001.
- 2.2) South Florida Water Management District, Management and Storage of Surface Waters: Permit Information Manual, Volume IV, 2007.
- 2.3) Black & Veatch Calculation, Project No. 147651, File No. 52.5406.1101.01, Title "Trench Drain and Culvert Design and Time of Concentration"
- 2.4) Black & Veatch Calculation, Project No. 147651, File No. 52.5406.1101.02, Title "Pre- and Post- Development Curve Numbers"
- 2.5) Black & Veatch Calculation, Project No. 147651, File No. 52.5406.1101.03, Title "Dry Detention Basin and Discharge Structure Design"
- 2.6) Interconnected Channel & Pond Routing (ICPR), Version 3.02, Service Pack 9, Streamline Technologies, Inc., [www.streamlnologies.com](http://www.streamlnologies.com).
- 2.7) Technical Release 55 (TR55), Urban Hydrology for Small Watersheds, USDA Soil Conservation Service, Conservation Engineering Division, June 1986.

## 3.0 ASSUMPTIONS

No assumptions.

## 4.0 DEFINITIONS OF UNITS AND CONSTANTS

Due to the high number of units and constants, they are defined within Section 7.0 Analysis.

## 5.0 PROCEDURE/METHODOLOGY OF DESIGN

- 5.1) Determine the pre-development 25-year, 72-hour storm event discharge.
- 5.2) Determine the post-development 25-year, 72-hour storm event discharge and verifying it is equal to or less than the pre-development discharge.
- 5.3) Determine the pre-development 100-year, 72-hour storm event discharge.
- 5.4) Determine the post-development 100-year, 72-hour storm event discharge and verifying it is equal to or less than the pre-development discharge.
- 5.5) Determine the post-development 100-year, 72-hour storm event peak stage and verify that floor elevations are at or above the peak stage.

## 6.0 CONCLUSIONS

- 6.1) The pre-development 25-year, 72-hour storm event discharge is 23.74 cfs. The post-development discharge is 19.62 cfs. This is less than the pre-development discharge, therefore detention basin and discharge structure are adequate.
- 6.2) The pre-development 100-year, 72-hour storm event discharge is 28.42 cfs. The post-development discharge is 24.29 cfs. This is less than the pre-development discharge, therefore detention basin and discharge structure are adequate to safely pass this storm event.
- 6.3) The post-development 100-year, 72-hour storm event peak stage is 78.61. The floor elevations of Unit 4 facilities are 82.00 feet. This is above the 100-year flood elevation as required by Reference 2.2.

## 7.0 ANALYSIS

- 7.1) Storm Event Input Used for Both Pre- and Post- Hydrologic Analyses
- 7.2) Pre-Development Specific ICPR Input
- 7.3) Post-Development Specific ICPR Input

## 8.0 APPENDICES

- 8.1) Appendix A - SFWMD References
- 8.2) Appendix B - ICPR Input File
- 8.3) Appendix C - ICPR Pond Output Files and Graphs
- 8.4) Appendix D - 25-Year, 72-Hour ICPR Time Series Files
- 8.5) Appendix E - 100-Year, 72-Hour ICPR Time Series Files



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Owner: Florida Municipal Power Authority  
Plant: Cane Island  
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Title: Hydrologic Analysis

Prepared by: A. L. Morgan  
Date: 3/20/68  
Verified by: J. M. Stanek  
Date: 3/26/68  
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## 7.1 Storm Event Input Used For Both Pre- and Post- Hydrologic Analyses

7.1.1 From Reference 2.2, Surface Water Management Design Aids, the design events are as follows:

10-Year, 24-Hour:	5.48 inches	(Appendix A, Figure C-4)
25-Year, 24-Hour:	6.57 inches	(Appendix A, Figure C-5)
10-Year, 72-Hour:	7.59 inches	(Appendix A, Figure C-7)
25-Year, 72-Hour:	10.29 inches	(Appendix A, Figure C-8)
100-Year, 72-Hour:	11.27 inches	(Appendix A, Figure C-9)

### 7.1.2 SFWMD CUMULATIVE PERCENTAGE OF PEAK ONE DAY RAINFALL (72-HOUR DISTRIBUTION)

TIME	%	TIME	%	TIME	%	TIME	%	TIME	%	TIME	%
0.00	0.0	13.00	7.9	26.00	16.4	39.00	27.9	52.00	44.4	65.00	123.2
0.25	0.2	13.25	8.1	26.25	16.6	39.25	28.1	52.25	45.0	65.25	123.6
0.50	0.3	13.50	8.2	26.50	16.8	39.50	28.4	52.50	45.5	65.50	124.1
0.75	0.5	13.75	8.4	26.75	17.0	39.75	28.6	52.75	46.0	65.75	124.5
1.00	0.6	14.00	8.5	27.00	17.3	40.00	28.8	53.00	46.6	66.00	125.0
1.25	0.8	14.25	8.7	27.25	17.5	40.25	29.0	53.25	47.1	66.25	125.4
1.50	0.9	14.50	8.8	27.50	17.7	40.50	29.2	53.50	47.6	66.50	125.9
1.75	1.1	14.75	9.0	27.75	17.9	40.75	29.5	53.75	48.1	66.75	126.3
2.00	1.2	15.00	9.1	28.00	18.2	41.00	29.7	54.00	48.7	67.00	126.8
2.25	1.4	15.25	9.3	28.25	18.4	41.25	29.9	54.25	49.2	67.25	127.3
2.50	1.5	15.50	9.4	28.50	18.6	41.50	30.1	54.50	49.7	67.50	127.7
2.75	1.7	15.75	9.6	28.75	18.8	41.75	30.4	54.75	50.3	67.75	128.2
3.00	1.8	16.00	9.7	29.00	19.0	42.00	30.6	55.00	50.8	68.00	128.6
3.25	2.0	16.25	9.9	29.25	19.3	42.25	30.8	55.25	51.3	68.25	129.1
3.50	2.1	16.50	10.0	29.50	19.5	42.50	31.0	55.50	51.9	68.50	129.5
3.75	2.3	16.75	10.2	29.75	19.7	42.75	31.2	55.75	52.4	68.75	130.0
4.00	2.4	17.00	10.3	30.00	19.9	43.00	31.5	56.00	52.9	69.00	130.4
4.25	2.6	17.25	10.5	30.25	20.1	43.25	31.7	56.25	53.5	69.25	130.9
4.50	2.7	17.50	10.6	30.50	20.4	43.50	31.9	56.50	54.0	69.50	131.4
4.75	2.9	17.75	10.8	30.75	20.6	43.75	32.1	56.75	54.5	69.75	131.8
5.00	3.0	18.00	10.9	31.00	20.8	44.00	32.4	57.00	55.1	70.00	132.3
5.25	3.2	18.25	11.1	31.25	21.0	44.25	32.6	57.25	55.6	70.25	132.7
5.50	3.3	18.50	11.3	31.50	21.3	44.50	32.8	57.50	56.1	70.50	133.2
5.75	3.5	18.75	11.4	31.75	21.5	44.75	33.0	57.75	56.7	70.75	133.6
6.00	3.6	19.00	11.6	32.00	21.7	45.00	33.2	58.00	57.2	71.00	134.1
6.25	3.8	19.25	11.7	32.25	21.9	45.25	33.5	58.25	58.6	71.25	134.5
6.50	4.0	19.50	11.9	32.50	22.1	45.50	33.7	58.50	60.0	71.50	135.0
6.75	4.1	19.75	12.0	32.75	22.4	45.75	33.9	58.75	61.4	71.75	135.4
7.00	4.3	20.00	12.2	33.00	22.6	46.00	34.1	59.00	62.8	72.00	135.9
7.25	4.4	20.25	12.3	33.25	22.8	46.25	34.3	59.25	65.3		
7.50	4.6	20.50	12.5	33.50	23.0	46.50	34.6	59.50	67.8		
7.75	4.7	20.75	12.6	33.75	23.3	46.75	34.8	59.75	82.8		
8.00	4.9	21.00	12.8	34.00	23.5	47.00	35.0	60.00	101.5		
8.25	5.0	21.25	12.9	34.25	23.7	47.25	35.2	60.25	105.2		
8.50	5.2	21.50	13.1	34.50	23.9	47.50	35.5	60.50	108.8		
8.75	5.3	21.75	13.2	34.75	24.1	47.75	35.7	60.75	110.7		
9.00	5.5	22.00	13.4	35.00	24.4	48.00	35.9	61.00	112.6		
9.25	5.6	22.25	13.5	35.25	24.6	48.25	36.4	61.25	113.9		
9.50	5.8	22.50	13.7	35.50	24.8	48.50	37.0	61.50	115.2		
9.75	5.9	22.75	13.8	35.75	25.0	48.75	37.5	61.75	116.5		
10.00	6.1	23.00	14.0	36.00	25.3	49.00	38.0	62.00	117.7		
10.25	6.2	23.25	14.1	36.25	25.5	49.25	38.6	62.25	118.2		
10.50	6.4	23.50	14.3	36.50	25.7	49.50	39.1	62.50	118.6		
10.75	6.5	23.75	14.4	36.75	25.9	49.75	39.6	62.75	119.1		
11.00	6.7	24.00	14.6	37.00	26.1	50.00	40.2	63.00	119.5		
11.25	6.8	24.25	14.8	37.25	26.4	50.25	40.7	63.25	120.0		
11.50	7.0	24.50	15.0	37.50	26.6	50.50	41.2	63.50	120.4		
11.75	7.1	24.75	15.3	37.75	26.8	50.75	41.8	63.75	120.9		
12.00	7.3	25.00	15.5	38.00	27.0	51.00	42.3	64.00	121.3		
12.25	7.5	25.25	15.7	38.25	27.2	51.25	42.8	64.25	121.8		
12.50	7.6	25.50	15.9	38.50	27.5	51.50	43.4	64.50	122.3		
12.75	7.8	25.75	16.2	38.75	27.7	51.75	43.9	64.75	122.7		



## 7.2 Pre-Development Input

$$A_{pre.contributing} := 15.06 \text{ acre}$$

$$A_{pre.contributing} = 0.02353 \text{ mi}^2 \quad (\text{Reference 2.4})$$

$$CN_{pre} := 45.0$$

(Reference 2.4)

The time of concentration was taken from the Unit 3 pre-development calculation. The Unit 4 area pre-development time of concentration was not calculated. The length of travel for Unit 3 pre-development is 770 feet. For Unit 4 area pre-development the approximate length of travel would be 400 feet. Given similar site conditions for pre- Unit 3 and Unit 4, engineering judgment says that Unit 3 time of concentration would govern.

$$t_{c.pre} := 0.41 \text{ hr}$$

(Reference 2.1)

$$t_{lag.pre} := 0.6 \cdot t_{c.pre}$$

$$t_{lag.pre} = 0.2460 \text{ hr}$$

### **SCS Runoff Curve Number method for Estimating Runoff**

(Reference 2.7)

$$Q = \frac{(P - 0.2S)^2}{(P + 0.8S)}$$

Q = runoff (in)  
P = rainfall (in)

S = potential maximum retention after runoff begins (in)

$$S = \frac{1000 - 10}{CN}$$

$$S := \left( \frac{1000}{CN_{pre}} - 10 \right)$$

$$S = 12.22$$

$$P_{25} := 10.29 \text{ in}$$

$$Q_{25.pre} := \frac{\text{in} \cdot (P_{25} - 0.2 \cdot S)^2}{(P_{25} + 0.8 \cdot S)} \quad Q_{25.pre} = 3.07 \text{ in}$$

$$V_{25.pre} := A_{pre.contributing} \cdot Q_{25.pre}$$

$$V_{25.pre} = 3.849 \text{ ft acre}$$

$$P_{100} := 11.27 \text{ in}$$

$$Q_{100.pre} := \frac{\text{in} \cdot (P_{100} - 0.2 \cdot S)^2}{(P_{100} + 0.8 \cdot S)} \quad Q_{100.pre} = 3.7 \text{ in}$$

$$V_{100.pre} := A_{pre.contributing} \cdot Q_{100.pre}$$

$$V_{100.pre} = 4.644 \text{ ft acre}$$





**BLACK & VEATCH**

Owner: Florida Municipal Power Authority  
Plant: Cane Island  
Project No. 147651  
File No. 52.5406.1101.04  
Title: Hydrologic Analysis

Prepared by: A. L. Morgan  
Date: 3/20/08  
Verified by: J. M. Stanek  
Date: 3/26/08  
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$$Q_{100.post} := \frac{in \cdot (P_{100} - 0.2 \cdot S)^2}{(P_{100} + 0.8 \cdot S)}$$

$$Q_{100.post} = 0.83 \text{ ft}$$

$$V_{25.post} := Q_{25.post} \cdot A_{post.contributing}$$

$$V_{25.post} = 9.67 \text{ ft acre}$$

$$V_{100.post} := Q_{100.post} \cdot A_{post.contributing}$$

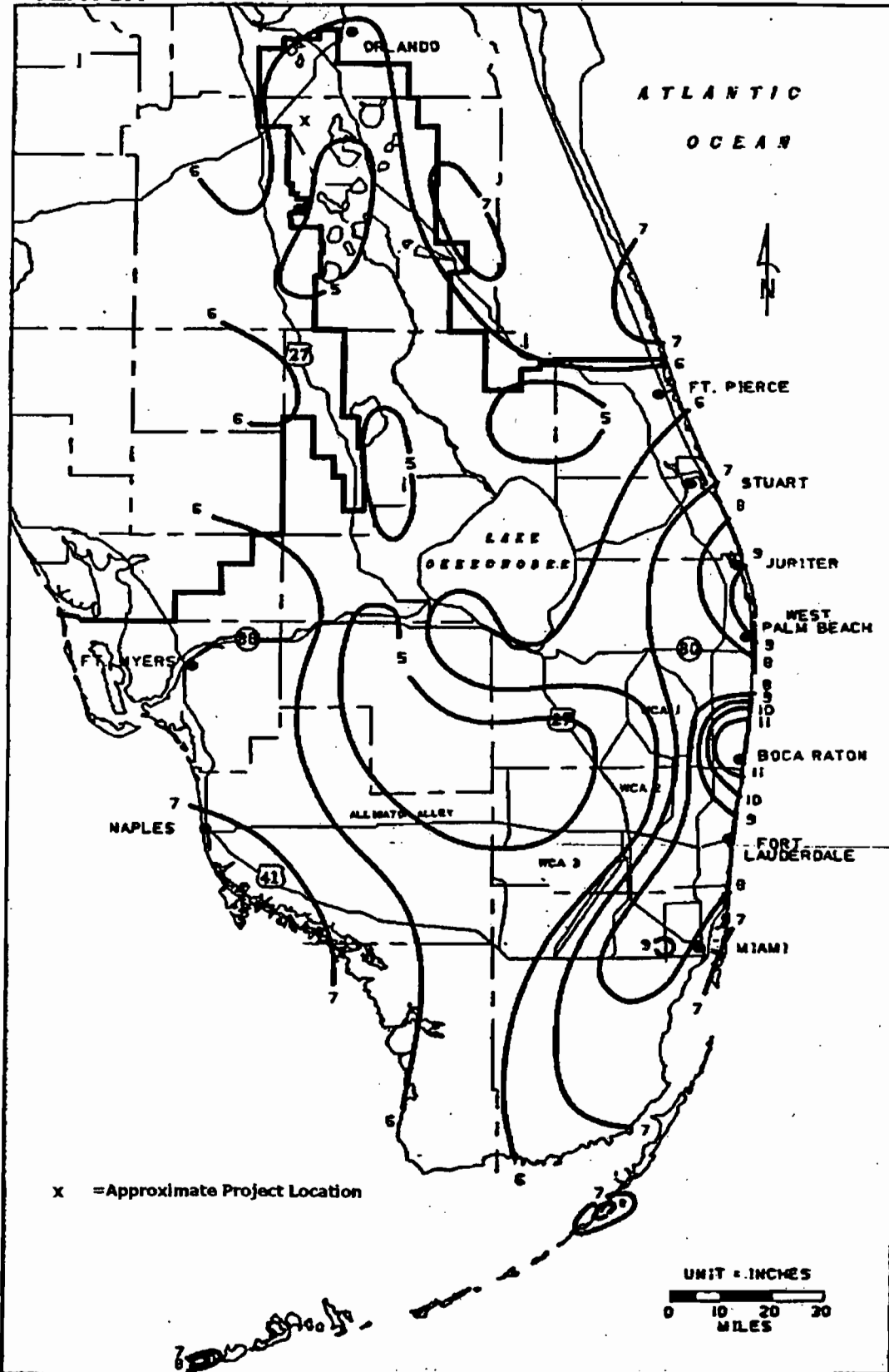
$$V_{100.post} = 10.71 \text{ ft acre}$$



Owner: Florida Municipal Power Agency  
Plant: Cane Island Power Park Unit 4  
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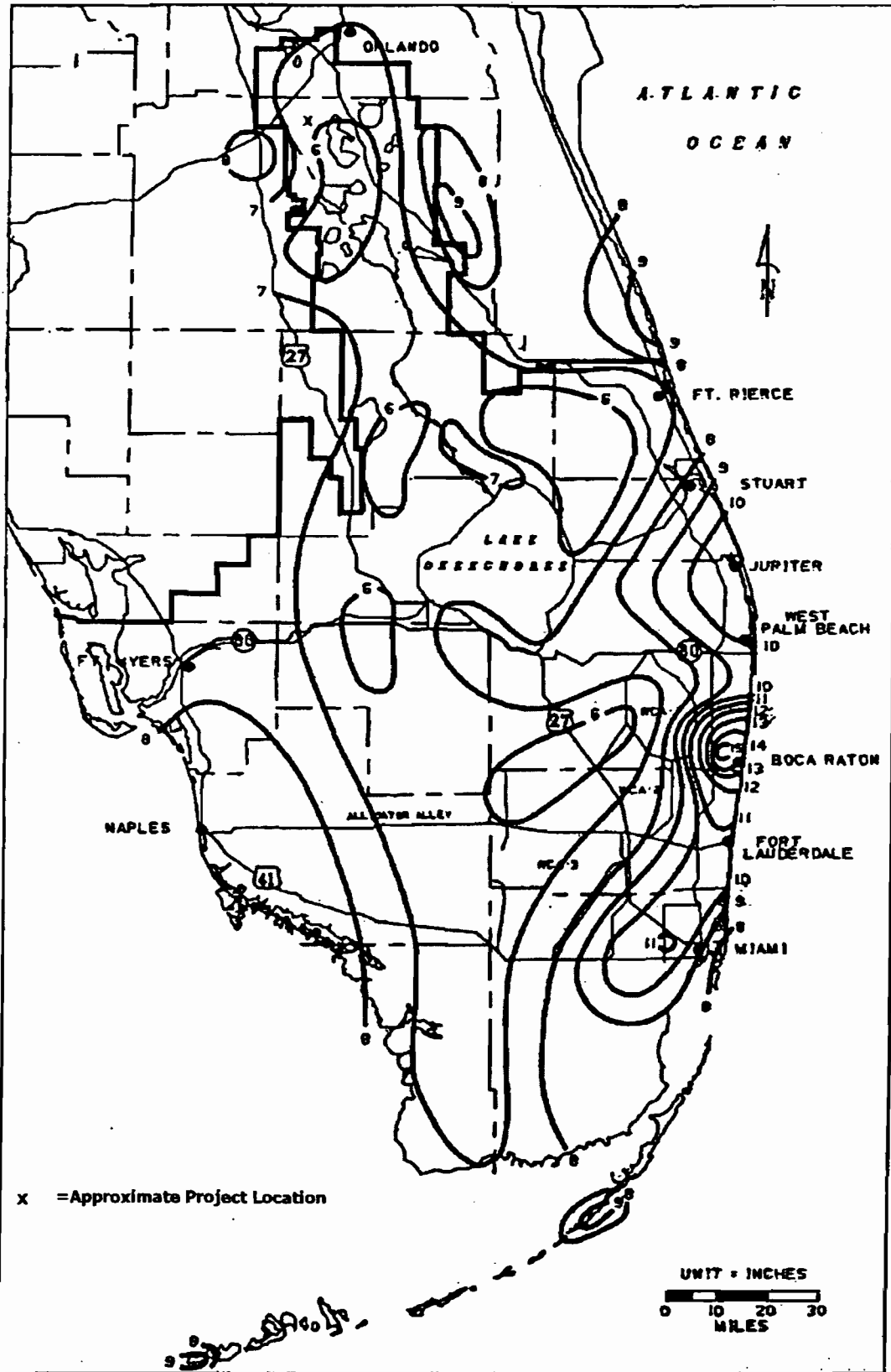
Prepared by: A. L. Morgan  
Date: 3/20/08  
Verified by: J.M. Stanek  
Date: 3/26/08  
Page No. A1 of A6  
Calc Rev: 0

## APPENDIX A SFWMD REFERENCES

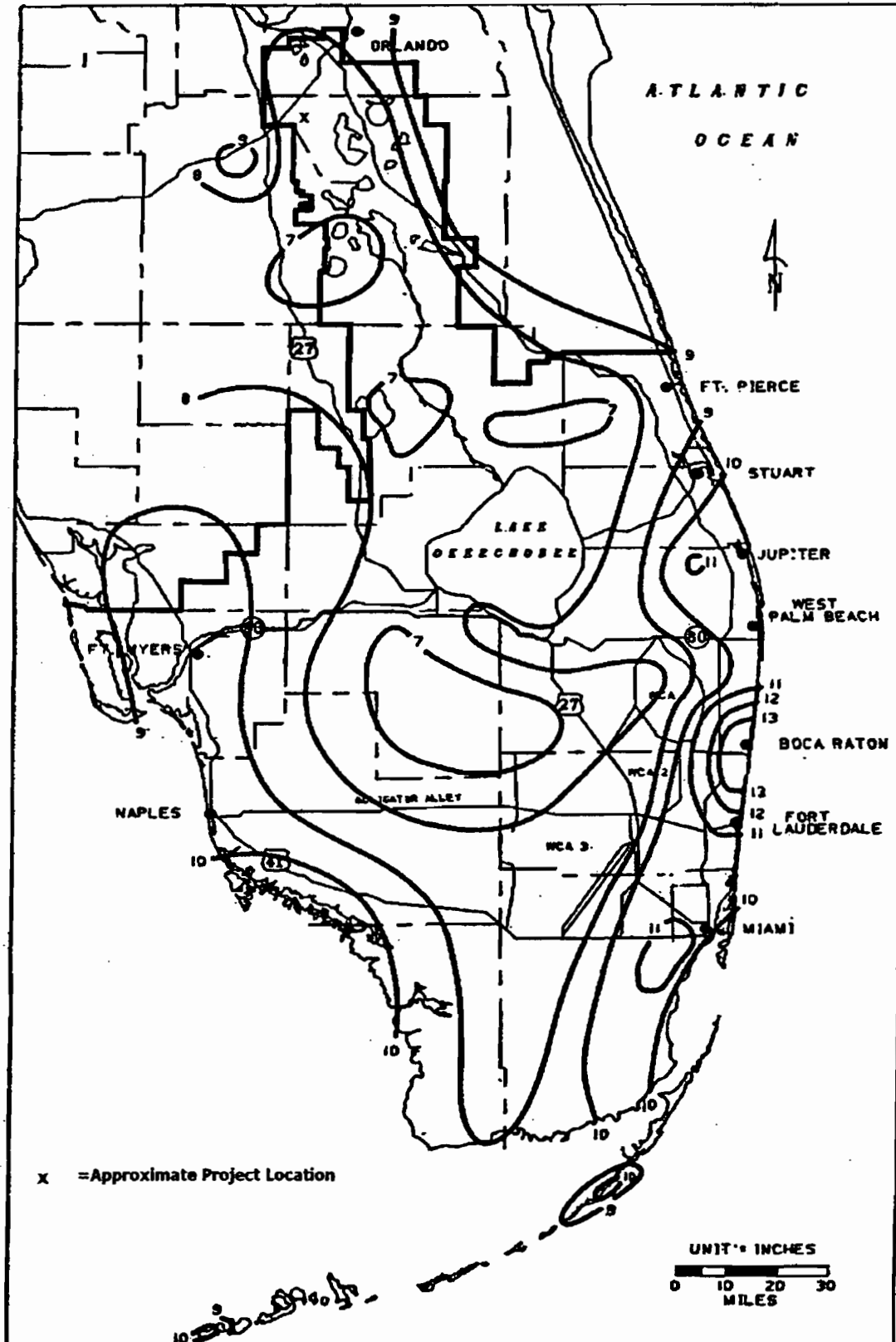


**FIGURE C-4. 1-DAY RAINFALL: 10-YEAR RETURN PERIOD**

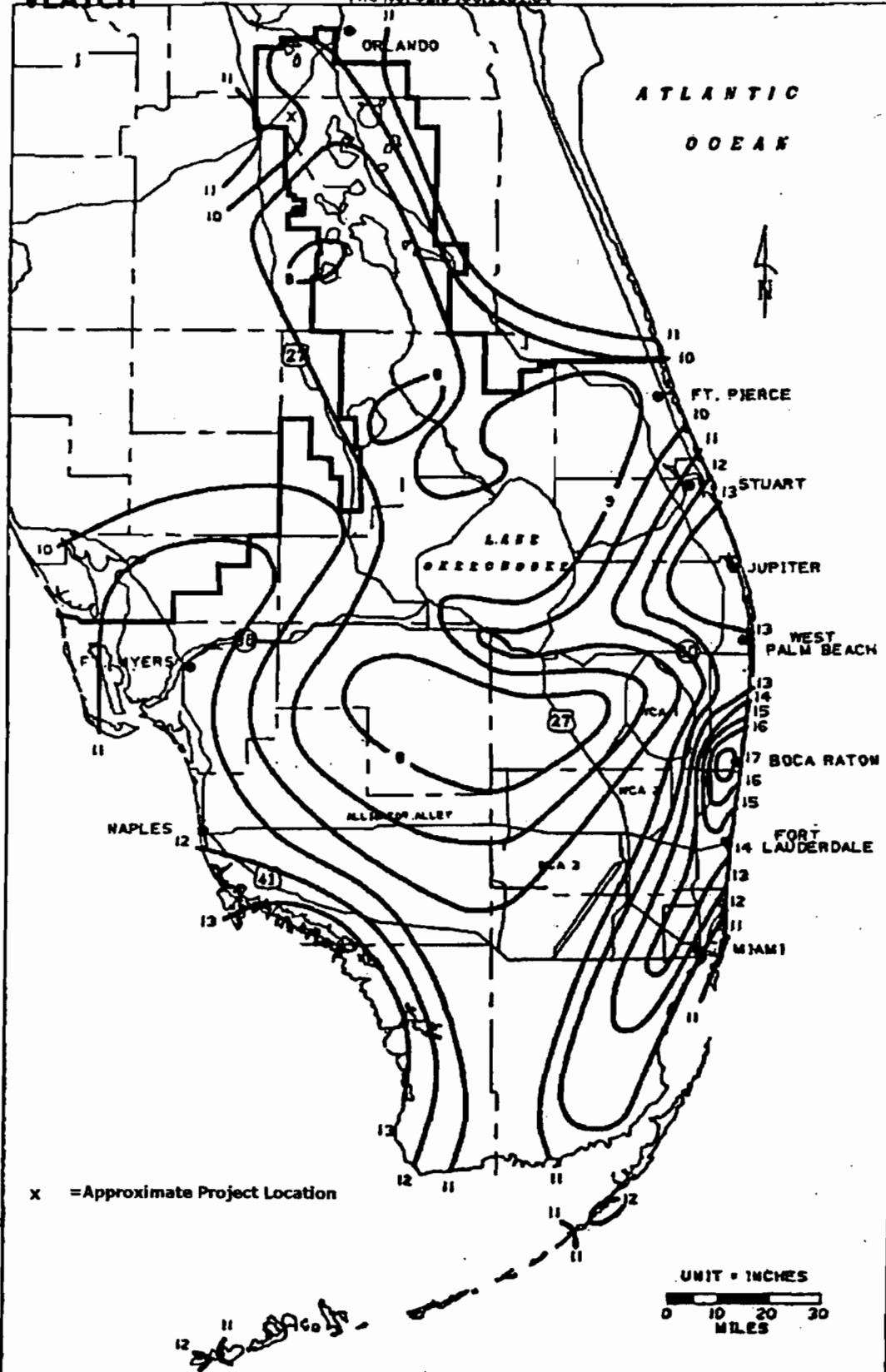




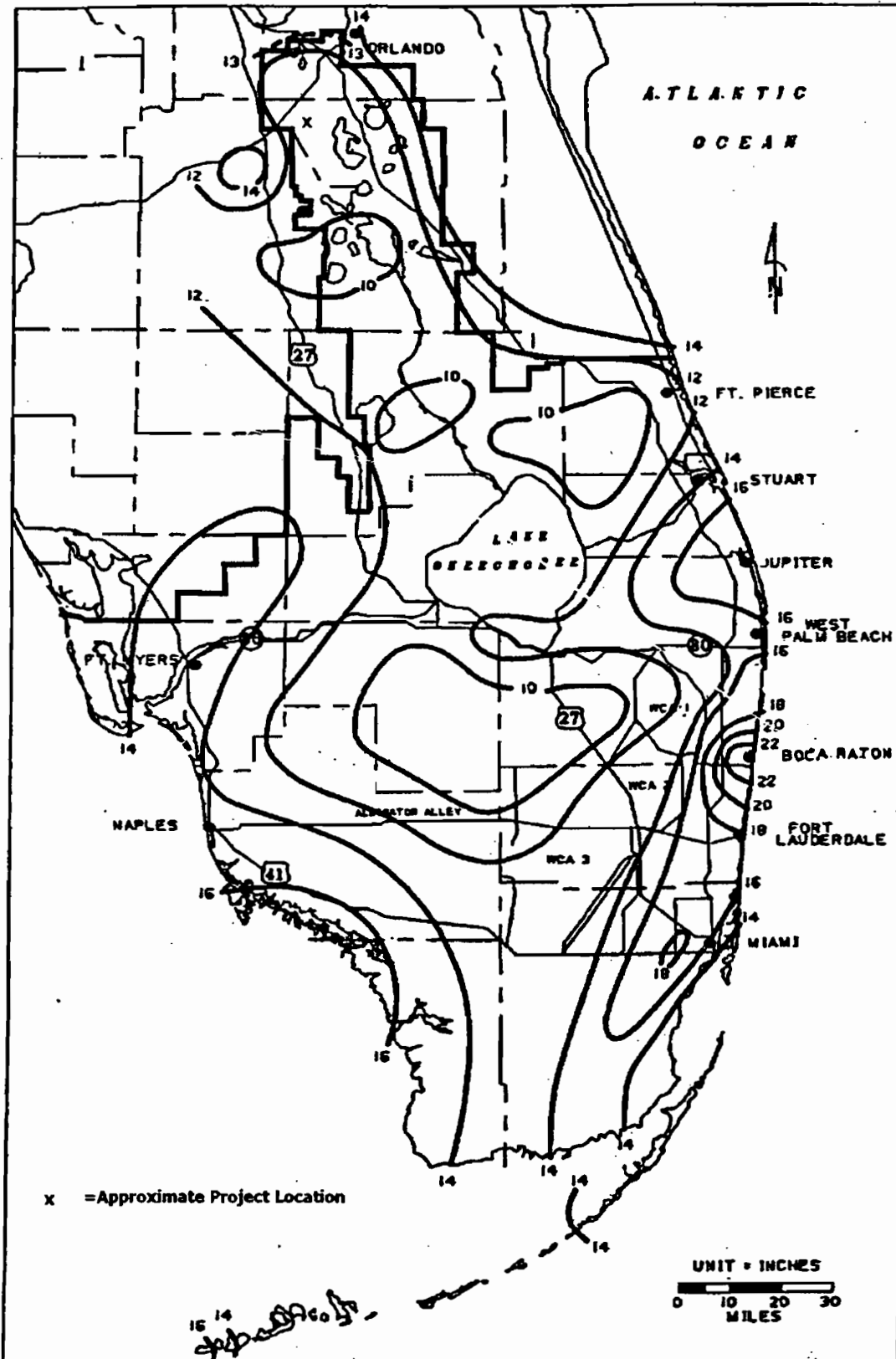
**FIGURE C-5. 1-DAY RAINFALL: 25-YEAR RETURN PERIOD**



**FIGURE C-7. 3-DAY RAINFALL: 10-YEAR RETURN PERIOD**



**FIGURE C-8. 3-DAY RAINFALL: 25-YEAR RETURN PERIOD**



**FIGURE C-9. 3-DAY RAINFALL: 100-YEAR RETURN PERIOD**



**BLACK & VEATCH**

Owner: Florida Municipal Power Agency  
Plant: Cane Island Power Park Unit 4  
Project No. 147651  
File No. 52.5406.1101.04  
Title: Hydrologic Analysis

Prepared by: A. L. Morgan  
Date: 3/20/08  
Verified by: J.M. Stanek  
Date: 3/26/08  
Page No. B1 of 5  
Calc Rev: 0

## APPENDIX B ICPR Input

Input_Report (2).TXT

=====  
Basins  
=====

Name: POST-DEV                    Node: POND                    Status: Onsite  
Group: BASE                    Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323                    Peaking Factor: 323.0  
Rainfall File:                    Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                    Time of Conc(min): 7.62  
Area(ac): 12.890                    Time shift(hrs): 0.00  
Curve Number: 89.50                    Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

Name: PRE-DEV                    Node: PRE-DEV                    Status: Onsite  
Group: BASE                    Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323                    Peaking Factor: 323.0  
Rainfall File:                    Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                    Time of Conc(min): 24.60  
Area(ac): 15.060                    Time shift(hrs): 0.00  
Curve Number: 45.00                    Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

=====  
Nodes  
=====

Name: POND                    Base Flow(cfs): 0.000                    Init Stage(ft): 74.000  
Group: BASE                    Warn Stage(ft): 79.000  
Type: Stage/Area

Stage(ft)	Area(ac)
74.000	0.8800
75.000	0.9800
76.000	1.0800
77.000	1.1900
78.000	1.3200
78.250	1.3500
78.500	1.4100
78.750	1.4600
79.000	1.6600

Name: POST-DEV                    Base Flow(cfs): 0.000                    Init Stage(ft): 76.000  
Group: BASE                    Warn Stage(ft): 76.000  
Type: Time/Stage

Time(hrs)	Stage(ft)
-----------	-----------

Input_Report (2).TXT

0.00 76.000  
999.00 76.000

Name: PRE-DEV Base Flow(cfs): 0.000 Init Stage(ft): 74.000  
Group: BASE Warn Stage(ft): 74.000  
Type: Time/Stage

Time(hrs) Stage(ft)  
-----  
0.00 74.000  
999.00 74.000

=====  
Cross Sections  
=====

Name: Encroachment: No Group: BASE

Station(ft) Elevation(ft) Manning's N  
-----

=====  
Weirs  
=====

Name: Orifice_Small From Node: POND  
Group: BASE To Node: POST-DEV  
Flow: Both Count: 1  
Type: Vertical: Mavis Geometry: Circular  
  
Span(in): 8.00  
Rise(in): 8.00  
Invert(ft): 76.000  
Control Elevation(ft): 76.000  
  
Bottom Clip(in): 0.000 TABLE  
Top Clip(in): 0.000  
Weir Discharge Coef: 3.200  
Orifice Discharge Coef: 0.600

Name: Orifices From Node: POND  
Group: BASE To Node: POST-DEV  
Flow: Both Count: 4  
Type: Vertical: Mavis Geometry: Circular  
  
Span(in): 10.00  
Rise(in): 10.00  
Invert(ft): 76.170  
Control Elevation(ft): 76.170  
  
Bottom Clip(in): 0.000 TABLE  
Top Clip(in): 0.000  
Weir Discharge Coef: 3.200  
Orifice Discharge Coef: 0.600

Input_Report (2).TXT

```

-----
Name: Weir                From Node: POND
Group: BASE              To Node: POST-DEV
Flow: Both              Count: 1
Type: Vertical: Mavis    Geometry: Rectangular

```

```

      Span(in): 120.00
      Rise(in): 9.00
      Invert(ft): 78.250
Control Elevation(ft): 78.250

```

TABLE

```

      Bottom Clip(in): 0.000
      Top Clip(in): 0.000
      Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

```

```

=====
=== Hydrology Simulations =====
=====

```

```

Name: 100yr
Filename: C:\Frias\Jobs\Energy\Cane_Island\100yr.R32

```

```

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: sfwmd72
Rainfall Amount(in): 11.27

```

```

Time(hrs)      Print Inc(min)
-----
72.000         5.00

```

```

-----
Name: 25yr
Filename: C:\Frias\Jobs\Energy\Cane_Island\25yr.R32

```

```

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: sfwmd72
Rainfall Amount(in): 10.29

```

```

Time(hrs)      Print Inc(min)
-----
72.000         5.00

```

```

=====
=== Routing Simulations =====
=====

```

```

Name: 100yrs           Hydrology Sim: 100yr
Filename: C:\Frias\Jobs\Energy\Cane_Island\100.I32

```

```

Execute: Yes          Restart: No          Patch: No
Alternative: No

```

```

      Max Delta z(ft): 1.00          Delta Z Factor: 0.00500
      Time Step Optimizer: 10.000

```



Start Time(hrs): 0.000	End Time(hrs): 100.00	Input_Report (2).TXT
Min Calc Time(sec): 0.5000	Max Calc Time(sec): 60.0000	
Boundary Stages:	Boundary Flows:	

Time(hrs)	Print Inc(min)
-----	-----
100.000	5.000
Group	Run
-----	-----
BASE	Yes

-----

Name: 25yrs                      Hydrology Sim: 25yr  
 Filename: C:\Frias\Jobs\Energy\Cane_Island\025.I32

Execute: Yes	Restart: No	Patch: No
Alternative: No		
Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500	
Time Step Optimizer: 10.000		
Start Time(hrs): 0.000	End Time(hrs): 100.00	
Min Calc Time(sec): 0.5000	Max Calc Time(sec): 60.0000	
Boundary Stages:	Boundary Flows:	

Time(hrs)	Print Inc(min)
-----	-----
100.000	5.000
Group	Run
-----	-----
BASE	Yes

=====  
 === Boundary Conditions ===  
 =====



**BLACK & VEATCH**

Owner: Florida Municipal Power Agency  
Plant: Cane Island Power Park Unit 4  
Project No. 147651  
File No. 52.5406.1101.04  
Title: Hydrologic Analysis

Prepared by: A. L. Morgan  
Date: 3/20/08  
Verified by: J.M. Stanek  
Date: 3/26/08  
Page No. C1 of 11  
Calc Rev: 0

**APPENDIX C  
ICPR Pond Output  
Files and Graphs**

147651

22.2706.1101.07

02 of 11

Name	Group	simulation	Max Time Stage hrs	NODE MAX Max Stage ft	25 YR Warning Stage ft	100 YR Max Delta Stage ft	YR.TXT Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max outflow cfs
POND	BASE	100yrs	60.27	78.607	79.000	0.0050	62353	60.00	70.752	60.27	24.287	
POND	BASE	25yrs	60.31	78.449	79.000	0.0050	60890	60.00	64.385	60.31	19.620	
POST-DEV	BASE	100yrs	0.00	76.000	76.000	0.0000	0	60.27	24.287	0.00	0.000	
POST-DEV	BASE	25yrs	0.00	76.000	76.000	0.0000	0	60.31	19.620	0.00	0.000	
PRE-DEV	BASE	100yrs	0.00	74.000	74.000	0.0000	0	60.08	27.990	0.00	0.000	
PRE-DEV	BASE	25yrs	0.00	74.000	74.000	0.0000	0	60.08	23.337	0.00	0.000	

Basin Name: POST-DEV  
 Group Name: BASE  
 Simulation: 100yr  
 Node Name: POND  
 Basin Type: SCS Unit Hydrograph

w/out Pond

Unit Hydrograph: Uh323  
 Peaking Fator: 323.0  
 Spec Time Inc (min): 1.02  
 Comp Time Inc (min): 1.02  
 Rainfall File: Sfwmd72  
 Rainfall Amount (in): 11.270  
 Storm Duration (hrs): 72.00  
 Status: Onsite  
 Time of Conc (min): 7.62  
 Time Shift (hrs): 0.00  
 Area (ac): 12.890  
 Vol of Unit Hyd (in): 1.001  
 Curve Number: 89.500  
 DCIA (%): 0.000  
 Time Max (hrs): 59.99  
 Flow Max (cfs): 70.868  
 Runoff Volume (in): 9.979  
 Runoff Volume (ft3): 466929.356

Basin Name: PRE-DEV  
 Group Name: BASE  
 Simulation: 100yr  
 Node Name: PRE-DEV  
 Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323  
 Peaking Fator: 323.0  
 Spec Time Inc (min): 3.28  
 Comp Time Inc (min): 3.28  
 Rainfall File: Sfwmd72  
 Rainfall Amount (in): 11.270  
 Storm Duration (hrs): 72.00  
 Status: Onsite  
 Time of Conc (min): 24.60  
 Time Shift (hrs): 0.00  
 Area (ac): 15.060  
 Vol of Unit Hyd (in): 1.000  
 Curve Number: 45.000  
 DCIA (%): 0.000  
 Time Max (hrs): 60.13  
 Flow Max (cfs): 28.416  
 Runoff Volume (in): 3.702  
 Runoff Volume (ft3): 202372.881

Basin Name: POST-DEV  
 Group Name: BASE  
 Simulation: 25yr  
 Node Name: POND  
 Basin Type: SCS Unit Hydrograph

w/out Pond

Unit Hydrograph: Uh323  
 Peaking Fator: 323.0  
 Spec Time Inc (min): 1.02  
 Comp Time Inc (min): 1.02  
 Rainfall File: Sfwmd72  
 Rainfall Amount (in): 10.290  
 Storm Duration (hrs): 72.00  
 Status: Onsite  
 Time of Conc (min): 7.62  
 Time Shift (hrs): 0.00  
 Area (ac): 12.890  
 Vol of Unit Hyd (in): 1.001  
 Curve Number: 89.500  
 DCIA (%): 0.000  
 Time Max (hrs): 59.99  
 Flow Max (cfs): 64.482  
 Runoff Volume (in): 9.009  
 Runoff Volume (ft3): 421515.747

Basin Name: PRE-DEV  
 Group Name: BASE  
 Simulation: 25yr  
 Node Name: PRE-DEV

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BASIN SUMMARY 25 YR 100 YR.TXT

Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323  
Peaking Fator: 323.0  
Spec Time Inc (min): 3.28  
Comp Time Inc (min): 3.28  
Rainfall File: sfwmd72  
Rainfall Amount (in): 10.290  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 24.60  
Time Shift (hrs): 0.00  
Area (ac): 15.060  
Vol of Unit Hyd (in): 1.000  
Curve Number: 45.000  
DCIA (%): 0.000  
  
Time Max (hrs): 60.13  
Flow Max (cfs): 23.740  
Runoff volume (in): 3.068  
Runoff volume (ft3): 167733.779

14 7651

52.5406.1101.04

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simulation	Basin	Group	Time Max hrs	Flow Max cfs	BASIN MAX Volume in	25 YR Volume ft3	100 YR. Volume ft3	YR.TXT
100yr	POST-DEV	BASE	59.99	70.868	9.979	466929.356		
25yr	POST-DEV	BASE	59.99	64.482	9.009	421515.747		
100yr	PRE-DEV	BASE	60.13	28.416	3.702	202372.881		
25yr	PRE-DEV	BASE	60.13	23.740	3.068	167733.779		

Name	Group	simulation	Max Time Flow hrs	LINK MAX 25 YR 100 YR.TXT			Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
				Max Flow cfs	Max Delta Q cfs	Max Time hrs				
Orifice_Small	BASE	100yrs	60.27	2.533	0.009	60.27	78.607	0.00	76.000	
Orifices	BASE	100yrs	60.27	14.923	0.060	60.27	78.607	0.00	76.000	
Weir	BASE	100yrs	60.27	6.831	-0.107	60.27	78.607	0.00	76.000	
Orifice_Small	BASE	25yrs	60.31	2.443	0.010	60.31	78.449	0.00	76.000	
Orifices	BASE	25yrs	60.31	14.328	0.059	60.31	78.449	0.00	76.000	
Weir	BASE	25yrs	60.31	2.849	-0.078	60.31	78.449	0.00	76.000	

KPR3 - C:\PRIAS\JOBS\ENERGY\CANE_ISLAND\CANE_ISLAND.KP - [Network Builder]

File Edit Window Data Record Utilities Groups... Hydrology Routing Simulations Reports Help

Left Click

Right Click

Select

Node

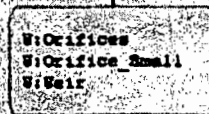
Link

Basin

Pen

Zoom In

Zoom Out



Commands | Unplaced | Legend

Import Coords

Delete

Print

Best Fit

Find Node

Find Basin

Find Link

Refresh

Groups

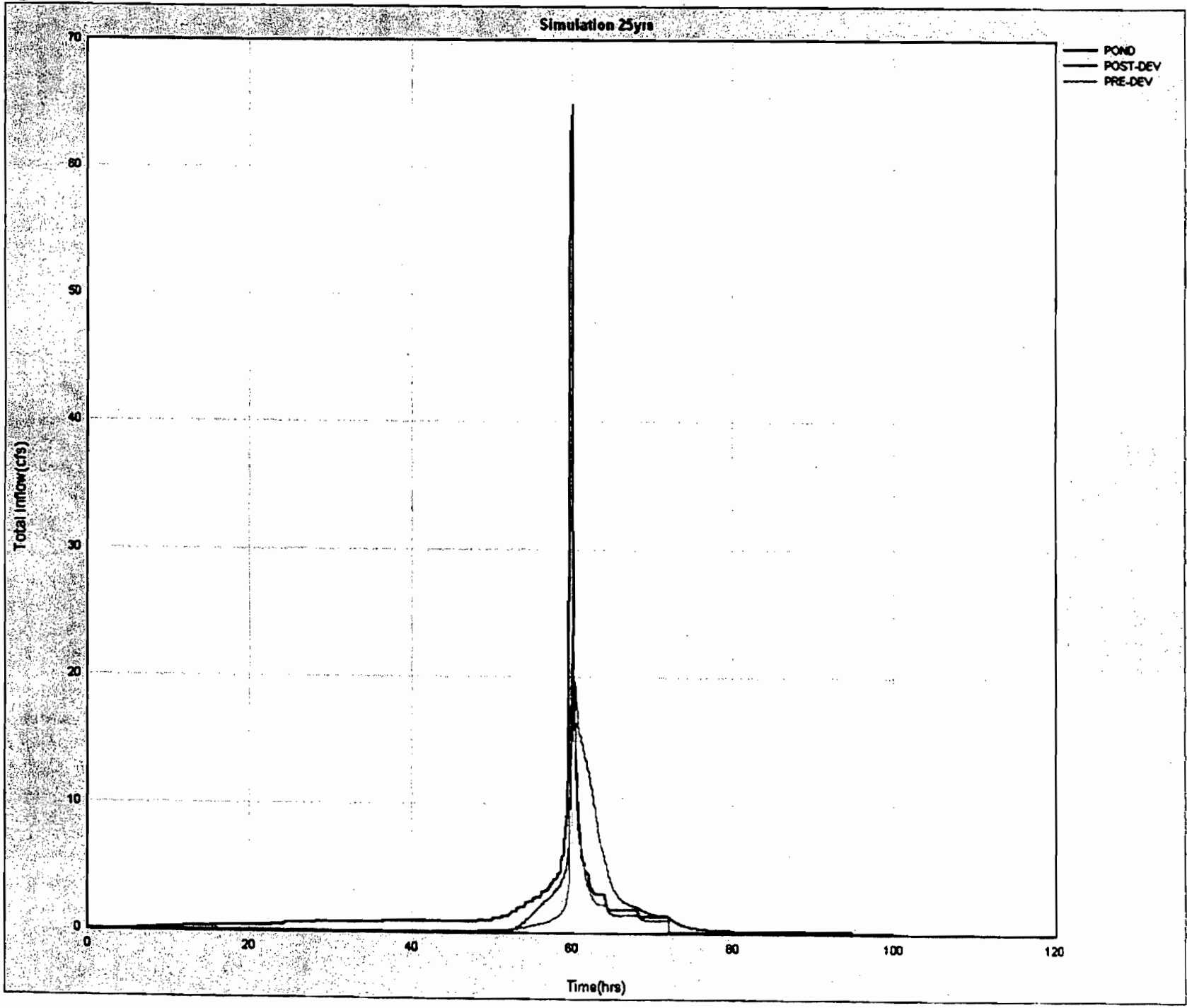
DXF Export

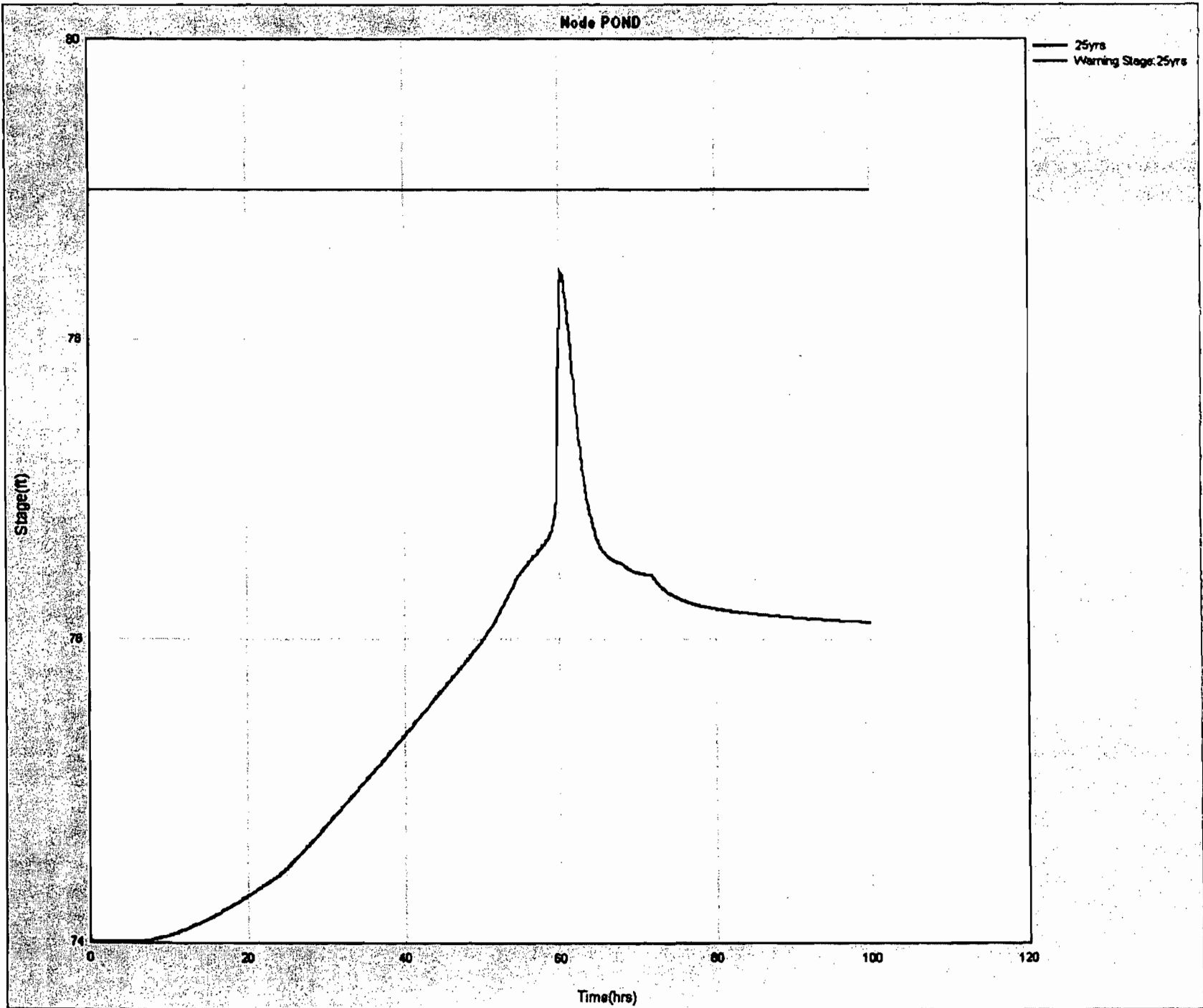
If the data displayed does not appear as expected, by clicking the refresh button before making any changes.

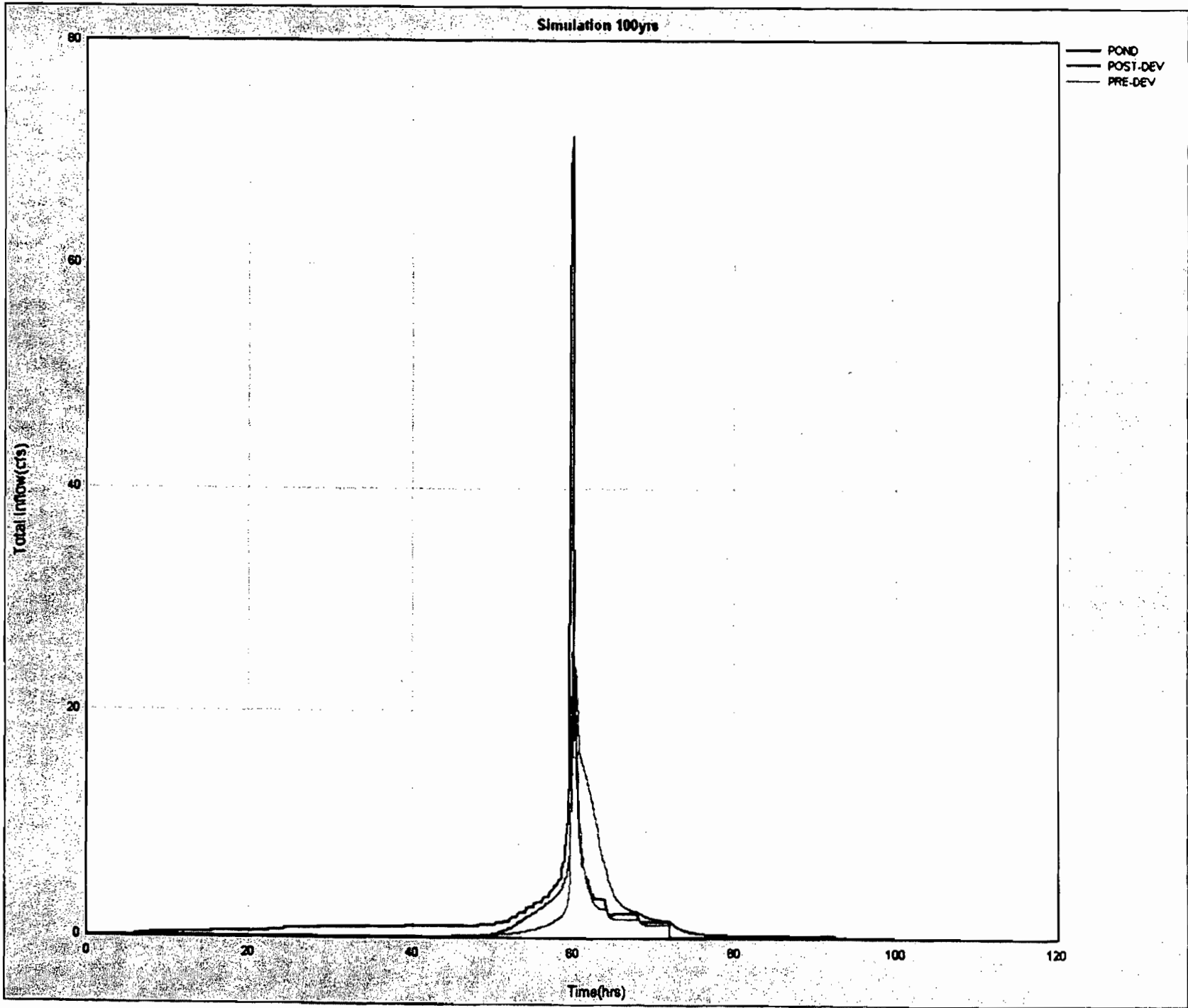
Left Click: Click and drag to move a container.

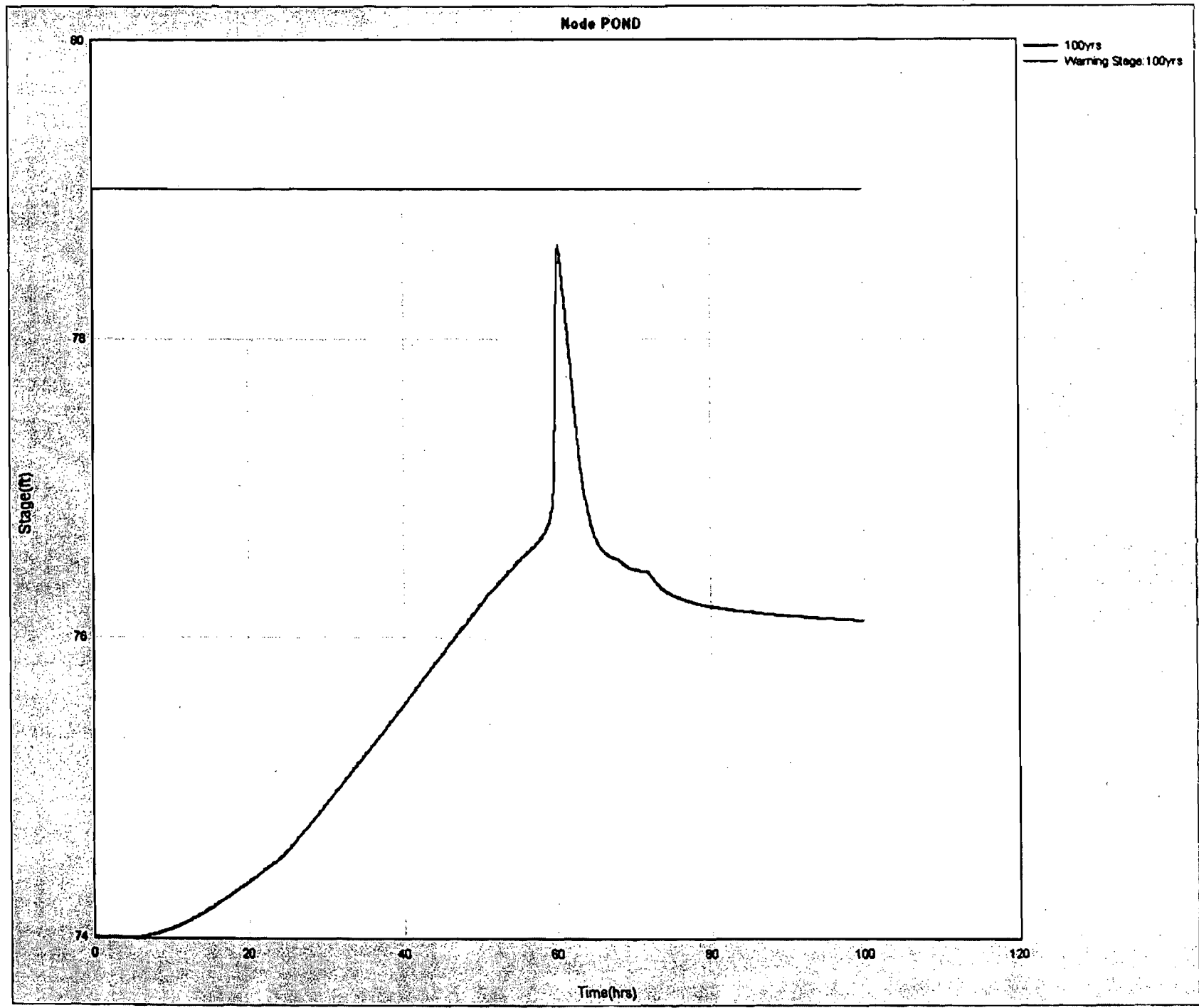
Right Click: Click and drag to pan.













**BLACK & VEATCH**

Owner: Florida Municipal Power Agency  
Plant: Cane Island Power Park Unit 4  
Project No. 147651  
File No. 52.5406.1101.04  
Title: Hydrologic Analysis

Prepared by: A. L. Morgan  
Date: 3/26/08  
Verified by: J.M. Stanek  
Date: 3/26/08  
Page No. D1 of 44  
Calc Rev: 0

**APPENDIX D**  
**25 Year, 72 Hour ICPR**  
**Time Series Files**

Simulation	Basin	Group	Time hrs	TIME SERIES 25 YR.TXT				Volume ft3	Volume in	Rate cfs	Velocity fps
				Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in				
25yr	POST-DEV	BASE	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	0.08	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	0.17	0.004	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	0.25	0.008	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	0.33	0.012	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	0.42	0.015	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	0.50	0.019	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	0.58	0.023	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	0.67	0.027	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	0.75	0.031	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	0.83	0.035	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	0.92	0.038	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	1.00	0.042	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	1.08	0.046	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	1.17	0.050	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	1.25	0.054	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	1.33	0.058	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	1.42	0.061	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	1.50	0.065	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	1.58	0.069	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	1.67	0.073	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	1.75	0.077	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	1.83	0.081	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	1.92	0.084	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	2.00	0.088	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	2.08	0.092	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	2.17	0.096	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	2.25	0.100	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	2.33	0.104	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	2.42	0.107	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	2.50	0.111	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	2.58	0.115	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	2.67	0.119	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	2.75	0.123	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	2.83	0.127	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	2.92	0.130	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	3.00	0.134	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	3.08	0.138	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	3.17	0.142	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	3.25	0.146	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	3.33	0.150	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	3.42	0.154	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	3.50	0.157	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	3.58	0.161	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	3.67	0.165	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	3.75	0.169	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	3.83	0.173	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	3.92	0.177	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	4.00	0.180	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	4.08	0.184	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	4.17	0.188	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	4.25	0.192	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	4.33	0.196	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	4.42	0.200	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	4.50	0.203	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	4.58	0.207	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	4.67	0.211	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	4.75	0.215	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	4.83	0.219	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	4.92	0.223	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	5.00	0.226	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	5.08	0.230	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	5.17	0.234	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	POST-DEV	BASE	5.25	0.238	0.004	0.000	0.000	0.038	0.000	0.000	
25yr	POST-DEV	BASE	5.33	0.242	0.004	0.000	0.000	0.371	0.000	0.002	
25yr	POST-DEV	BASE	5.42	0.246	0.004	0.000	0.000	1.380	0.000	0.005	
25yr	POST-DEV	BASE	5.50	0.249	0.004	0.000	0.000	3.298	0.000	0.008	
25yr	POST-DEV	BASE	5.50	0.249	0.004	0.000	0.000	6.240	0.000	0.012	

TIME SERIES 25 YR.TXT											
25yr	POST-DEV	BASE	5.58	0.253	0.004	0.000	0.000	10.266	0.000	0.015	0.000
25yr	POST-DEV	BASE	5.67	0.257	0.004	0.001	0.000	15.402	0.000	0.019	0.000
25yr	POST-DEV	BASE	5.75	0.261	0.004	0.001	0.000	21.653	0.000	0.023	0.000
25yr	POST-DEV	BASE	5.83	0.265	0.004	0.001	0.000	29.013	0.001	0.026	0.000
25yr	POST-DEV	BASE	5.92	0.269	0.004	0.001	0.000	37.472	0.001	0.030	0.000
25yr	POST-DEV	BASE	6.00	0.272	0.004	0.001	0.000	47.019	0.001	0.034	0.000
25yr	POST-DEV	BASE	6.08	0.276	0.004	0.002	0.000	57.643	0.001	0.037	0.000
25yr	POST-DEV	BASE	6.17	0.280	0.004	0.002	0.000	69.336	0.001	0.041	0.000
25yr	POST-DEV	BASE	6.25	0.284	0.004	0.002	0.000	82.085	0.002	0.044	0.000
25yr	POST-DEV	BASE	6.33	0.288	0.004	0.003	0.000	95.883	0.002	0.048	0.000
25yr	POST-DEV	BASE	6.42	0.292	0.004	0.003	0.000	110.718	0.002	0.051	0.000
25yr	POST-DEV	BASE	6.50	0.296	0.004	0.003	0.000	126.581	0.003	0.055	0.000
25yr	POST-DEV	BASE	6.58	0.299	0.004	0.004	0.000	143.462	0.003	0.058	0.000
25yr	POST-DEV	BASE	6.67	0.303	0.004	0.004	0.000	161.352	0.003	0.061	0.000
25yr	POST-DEV	BASE	6.75	0.307	0.004	0.005	0.000	180.242	0.004	0.065	0.000
25yr	POST-DEV	BASE	6.83	0.311	0.004	0.005	0.000	200.122	0.004	0.068	0.000
25yr	POST-DEV	BASE	6.92	0.315	0.004	0.006	0.000	220.983	0.005	0.071	0.000
25yr	POST-DEV	BASE	7.00	0.319	0.004	0.006	0.001	242.817	0.005	0.074	0.000
25yr	POST-DEV	BASE	7.08	0.322	0.004	0.007	0.001	265.613	0.006	0.078	0.000
25yr	POST-DEV	BASE	7.17	0.326	0.004	0.007	0.001	289.365	0.006	0.081	0.000
25yr	POST-DEV	BASE	7.25	0.330	0.004	0.008	0.001	314.062	0.007	0.084	0.000
25yr	POST-DEV	BASE	7.33	0.334	0.004	0.008	0.001	339.696	0.007	0.087	0.000
25yr	POST-DEV	BASE	7.42	0.338	0.004	0.009	0.001	366.259	0.008	0.090	0.000
25yr	POST-DEV	BASE	7.50	0.342	0.004	0.010	0.001	393.743	0.008	0.093	0.000
25yr	POST-DEV	BASE	7.58	0.345	0.004	0.010	0.001	422.138	0.009	0.096	0.000
25yr	POST-DEV	BASE	7.67	0.349	0.004	0.011	0.001	451.438	0.010	0.099	0.000
25yr	POST-DEV	BASE	7.75	0.353	0.004	0.012	0.001	481.633	0.010	0.102	0.000
25yr	POST-DEV	BASE	7.83	0.357	0.004	0.012	0.001	512.716	0.011	0.105	0.000
25yr	POST-DEV	BASE	7.92	0.361	0.004	0.013	0.001	544.679	0.012	0.108	0.000
25yr	POST-DEV	BASE	8.00	0.365	0.004	0.014	0.001	577.514	0.012	0.111	0.000
25yr	POST-DEV	BASE	8.08	0.368	0.004	0.014	0.001	611.214	0.013	0.114	0.000
25yr	POST-DEV	BASE	8.17	0.372	0.004	0.015	0.001	645.771	0.014	0.117	0.000
25yr	POST-DEV	BASE	8.25	0.376	0.004	0.016	0.001	681.177	0.015	0.119	0.000
25yr	POST-DEV	BASE	8.33	0.380	0.004	0.017	0.001	717.424	0.015	0.122	0.000
25yr	POST-DEV	BASE	8.42	0.384	0.004	0.018	0.001	754.507	0.016	0.125	0.000
25yr	POST-DEV	BASE	8.50	0.388	0.004	0.018	0.001	792.417	0.017	0.128	0.000
25yr	POST-DEV	BASE	8.58	0.391	0.004	0.019	0.001	831.146	0.018	0.130	0.000
25yr	POST-DEV	BASE	8.67	0.395	0.004	0.020	0.001	870.690	0.019	0.133	0.000
25yr	POST-DEV	BASE	8.75	0.399	0.004	0.021	0.001	911.038	0.019	0.136	0.000
25yr	POST-DEV	BASE	8.83	0.403	0.004	0.022	0.001	952.186	0.020	0.138	0.000
25yr	POST-DEV	BASE	8.92	0.407	0.004	0.023	0.001	994.126	0.021	0.141	0.000
25yr	POST-DEV	BASE	9.00	0.411	0.004	0.024	0.001	1036.852	0.022	0.144	0.000
25yr	POST-DEV	BASE	9.08	0.414	0.004	0.025	0.001	1080.355	0.023	0.146	0.000
25yr	POST-DEV	BASE	9.17	0.418	0.004	0.026	0.001	1124.632	0.024	0.149	0.000
25yr	POST-DEV	BASE	9.25	0.422	0.004	0.027	0.001	1169.674	0.025	0.151	0.000
25yr	POST-DEV	BASE	9.33	0.426	0.004	0.028	0.001	1215.475	0.026	0.154	0.000
25yr	POST-DEV	BASE	9.42	0.430	0.004	0.029	0.001	1262.028	0.027	0.156	0.000
25yr	POST-DEV	BASE	9.50	0.434	0.004	0.030	0.001	1309.328	0.028	0.159	0.000
25yr	POST-DEV	BASE	9.58	0.437	0.004	0.031	0.001	1357.368	0.029	0.161	0.000
25yr	POST-DEV	BASE	9.67	0.441	0.004	0.032	0.001	1406.142	0.030	0.164	0.000
25yr	POST-DEV	BASE	9.75	0.445	0.004	0.033	0.001	1455.644	0.031	0.166	0.000
25yr	POST-DEV	BASE	9.83	0.449	0.004	0.034	0.001	1505.867	0.032	0.169	0.000
25yr	POST-DEV	BASE	9.92	0.453	0.004	0.035	0.001	1556.807	0.033	0.171	0.000
25yr	POST-DEV	BASE	10.00	0.457	0.004	0.036	0.001	1608.455	0.034	0.173	0.000
25yr	POST-DEV	BASE	10.08	0.461	0.004	0.038	0.001	1660.808	0.035	0.176	0.000
25yr	POST-DEV	BASE	10.17	0.464	0.004	0.039	0.001	1713.859	0.037	0.178	0.000
25yr	POST-DEV	BASE	10.25	0.468	0.004	0.040	0.001	1767.603	0.038	0.180	0.000
25yr	POST-DEV	BASE	10.33	0.472	0.004	0.041	0.001	1822.033	0.039	0.183	0.000
25yr	POST-DEV	BASE	10.42	0.476	0.004	0.042	0.001	1877.144	0.040	0.185	0.000
25yr	POST-DEV	BASE	10.50	0.480	0.004	0.044	0.001	1932.931	0.041	0.187	0.000
25yr	POST-DEV	BASE	10.58	0.484	0.004	0.045	0.001	1989.388	0.043	0.189	0.000
25yr	POST-DEV	BASE	10.67	0.487	0.004	0.046	0.001	2046.510	0.044	0.192	0.000
25yr	POST-DEV	BASE	10.75	0.491	0.004	0.047	0.001	2104.292	0.045	0.194	0.000
25yr	POST-DEV	BASE	10.83	0.495	0.004	0.049	0.001	2162.727	0.046	0.196	0.000
25yr	POST-DEV	BASE	10.92	0.499	0.004	0.050	0.001	2221.811	0.047	0.198	0.000
25yr	POST-DEV	BASE	11.00	0.503	0.004	0.051	0.001	2281.538	0.049	0.200	0.000
25yr	POST-DEV	BASE	11.08	0.507	0.004	0.052	0.001	2341.904	0.050	0.202	0.000
25yr	POST-DEV	BASE	11.17	0.510	0.004	0.054	0.001	2402.904	0.051	0.204	0.000
25yr	POST-DEV	BASE	11.25	0.514	0.004	0.055	0.001	2464.531	0.053	0.206	0.000
25yr	POST-DEV	BASE	11.33	0.518	0.004	0.057	0.001	2526.782	0.054	0.209	0.000

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25yr	POST-DEV	BASE	11.42	0.522	0.004	0.058	0.001	2589.652	0.055	0.211	0.000
25yr	POST-DEV	BASE	11.50	0.526	0.004	0.059	0.001	2653.135	0.057	0.213	0.000
25yr	POST-DEV	BASE	11.58	0.530	0.004	0.061	0.001	2717.227	0.058	0.215	0.000
25yr	POST-DEV	BASE	11.67	0.533	0.004	0.062	0.001	2781.922	0.059	0.217	0.000
25yr	POST-DEV	BASE	11.75	0.537	0.004	0.063	0.001	2847.217	0.061	0.219	0.000
25yr	POST-DEV	BASE	11.83	0.541	0.004	0.065	0.001	2913.107	0.062	0.221	0.000
25yr	POST-DEV	BASE	11.92	0.545	0.004	0.066	0.001	2979.586	0.064	0.223	0.000
25yr	POST-DEV	BASE	12.00	0.549	0.004	0.068	0.001	3046.651	0.065	0.225	0.000
25yr	POST-DEV	BASE	12.08	0.553	0.004	0.069	0.001	3114.297	0.067	0.226	0.000
25yr	POST-DEV	BASE	12.17	0.556	0.004	0.071	0.001	3182.519	0.068	0.228	0.000
25yr	POST-DEV	BASE	12.25	0.560	0.004	0.072	0.001	3251.313	0.069	0.230	0.000
25yr	POST-DEV	BASE	12.33	0.564	0.004	0.074	0.002	3320.674	0.071	0.232	0.000
25yr	POST-DEV	BASE	12.42	0.568	0.004	0.075	0.002	3390.599	0.072	0.234	0.000
25yr	POST-DEV	BASE	12.50	0.572	0.004	0.077	0.002	3461.082	0.074	0.236	0.000
25yr	POST-DEV	BASE	12.58	0.576	0.004	0.078	0.002	3532.120	0.075	0.238	0.000
25yr	POST-DEV	BASE	12.67	0.579	0.004	0.080	0.002	3603.709	0.077	0.240	0.000
25yr	POST-DEV	BASE	12.75	0.583	0.004	0.081	0.002	3675.844	0.079	0.241	0.000
25yr	POST-DEV	BASE	12.83	0.587	0.004	0.083	0.002	3748.521	0.080	0.243	0.000
25yr	POST-DEV	BASE	12.92	0.591	0.004	0.085	0.002	3821.735	0.082	0.245	0.000
25yr	POST-DEV	BASE	13.00	0.595	0.004	0.086	0.002	3895.484	0.083	0.247	0.000
25yr	POST-DEV	BASE	13.08	0.599	0.004	0.088	0.002	3969.763	0.085	0.248	0.000
25yr	POST-DEV	BASE	13.17	0.603	0.004	0.089	0.002	4044.567	0.086	0.250	0.000
25yr	POST-DEV	BASE	13.25	0.606	0.004	0.091	0.002	4119.894	0.088	0.252	0.000
25yr	POST-DEV	BASE	13.33	0.610	0.004	0.093	0.002	4195.739	0.090	0.254	0.000
25yr	POST-DEV	BASE	13.42	0.614	0.004	0.094	0.002	4272.098	0.091	0.255	0.000
25yr	POST-DEV	BASE	13.50	0.618	0.004	0.096	0.002	4348.968	0.093	0.257	0.000
25yr	POST-DEV	BASE	13.58	0.622	0.004	0.098	0.002	4426.344	0.095	0.259	0.000
25yr	POST-DEV	BASE	13.67	0.626	0.004	0.099	0.002	4504.224	0.096	0.260	0.000
25yr	POST-DEV	BASE	13.75	0.629	0.004	0.101	0.002	4582.602	0.098	0.262	0.000
25yr	POST-DEV	BASE	13.83	0.633	0.004	0.103	0.002	4661.476	0.100	0.264	0.000
25yr	POST-DEV	BASE	13.92	0.637	0.004	0.104	0.002	4740.842	0.101	0.265	0.000
25yr	POST-DEV	BASE	14.00	0.641	0.004	0.106	0.002	4820.697	0.103	0.267	0.000
25yr	POST-DEV	BASE	14.08	0.645	0.004	0.108	0.002	4901.036	0.105	0.269	0.000
25yr	POST-DEV	BASE	14.17	0.649	0.004	0.110	0.002	4981.857	0.106	0.270	0.000
25yr	POST-DEV	BASE	14.25	0.652	0.004	0.111	0.002	5063.155	0.108	0.272	0.000
25yr	POST-DEV	BASE	14.33	0.656	0.004	0.113	0.002	5144.928	0.110	0.273	0.000
25yr	POST-DEV	BASE	14.42	0.660	0.004	0.115	0.002	5227.172	0.112	0.275	0.000
25yr	POST-DEV	BASE	14.50	0.664	0.004	0.117	0.002	5309.883	0.113	0.276	0.000
25yr	POST-DEV	BASE	14.58	0.668	0.004	0.119	0.002	5393.059	0.115	0.278	0.000
25yr	POST-DEV	BASE	14.67	0.672	0.004	0.120	0.002	5476.695	0.117	0.280	0.000
25yr	POST-DEV	BASE	14.75	0.675	0.004	0.122	0.002	5560.790	0.119	0.281	0.000
25yr	POST-DEV	BASE	14.83	0.679	0.004	0.124	0.002	5645.338	0.121	0.283	0.000
25yr	POST-DEV	BASE	14.92	0.683	0.004	0.126	0.002	5730.337	0.122	0.284	0.000
25yr	POST-DEV	BASE	15.00	0.687	0.004	0.128	0.002	5815.785	0.124	0.286	0.000
25yr	POST-DEV	BASE	15.08	0.691	0.004	0.130	0.002	5901.677	0.126	0.287	0.000
25yr	POST-DEV	BASE	15.17	0.695	0.004	0.131	0.002	5988.010	0.128	0.289	0.000
25yr	POST-DEV	BASE	15.25	0.698	0.004	0.133	0.002	6074.782	0.130	0.290	0.000
25yr	POST-DEV	BASE	15.33	0.702	0.004	0.135	0.002	6161.989	0.132	0.291	0.000
25yr	POST-DEV	BASE	15.42	0.706	0.004	0.137	0.002	6249.629	0.134	0.293	0.000
25yr	POST-DEV	BASE	15.50	0.710	0.004	0.139	0.002	6337.698	0.135	0.294	0.000
25yr	POST-DEV	BASE	15.58	0.714	0.004	0.141	0.002	6426.193	0.137	0.296	0.000
25yr	POST-DEV	BASE	15.67	0.718	0.004	0.143	0.002	6515.111	0.139	0.297	0.000
25yr	POST-DEV	BASE	15.75	0.721	0.004	0.145	0.002	6604.450	0.141	0.298	0.000
25yr	POST-DEV	BASE	15.83	0.725	0.004	0.147	0.002	6694.207	0.143	0.300	0.000
25yr	POST-DEV	BASE	15.92	0.729	0.004	0.149	0.002	6784.377	0.145	0.301	0.000
25yr	POST-DEV	BASE	16.00	0.733	0.004	0.151	0.002	6874.960	0.147	0.303	0.000
25yr	POST-DEV	BASE	16.08	0.737	0.004	0.152	0.002	6965.953	0.149	0.304	0.000
25yr	POST-DEV	BASE	16.17	0.741	0.004	0.154	0.002	7057.348	0.151	0.305	0.000
25yr	POST-DEV	BASE	16.25	0.745	0.004	0.156	0.002	7149.149	0.153	0.307	0.000
25yr	POST-DEV	BASE	16.33	0.748	0.004	0.158	0.002	7241.352	0.155	0.308	0.000
25yr	POST-DEV	BASE	16.42	0.752	0.004	0.160	0.002	7333.949	0.157	0.309	0.000
25yr	POST-DEV	BASE	16.50	0.756	0.004	0.162	0.002	7426.944	0.159	0.311	0.000
25yr	POST-DEV	BASE	16.58	0.760	0.004	0.164	0.002	7520.332	0.161	0.312	0.000
25yr	POST-DEV	BASE	16.67	0.764	0.004	0.166	0.002	7614.105	0.163	0.313	0.000
25yr	POST-DEV	BASE	16.75	0.768	0.004	0.168	0.002	7708.270	0.165	0.315	0.000
25yr	POST-DEV	BASE	16.83	0.771	0.004	0.171	0.002	7802.819	0.167	0.316	0.000
25yr	POST-DEV	BASE	16.92	0.775	0.004	0.173	0.002	7897.746	0.169	0.317	0.000
25yr	POST-DEV	BASE	17.00	0.779	0.004	0.175	0.002	7993.057	0.171	0.318	0.000
25yr	POST-DEV	BASE	17.08	0.783	0.004	0.177	0.002	8088.744	0.173	0.320	0.000
25yr	POST-DEV	BASE	17.17	0.787	0.004	0.179	0.002	8184.801	0.175	0.321	0.000



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25yr	POST-DEV	BASE	17.25	0.791	0.004	0.181	0.002	8281.234	0.177	0.322	0.000
25yr	POST-DEV	BASE	17.33	0.794	0.004	0.183	0.002	8378.037	0.179	0.323	0.000
25yr	POST-DEV	BASE	17.42	0.798	0.004	0.185	0.002	8475.203	0.181	0.325	0.000
25yr	POST-DEV	BASE	17.50	0.802	0.004	0.187	0.002	8572.737	0.183	0.326	0.000
25yr	POST-DEV	BASE	17.58	0.806	0.004	0.189	0.002	8670.633	0.185	0.327	0.000
25yr	POST-DEV	BASE	17.67	0.810	0.004	0.191	0.002	8768.885	0.187	0.328	0.000
25yr	POST-DEV	BASE	17.75	0.814	0.004	0.193	0.002	8867.497	0.190	0.329	0.000
25yr	POST-DEV	BASE	17.83	0.817	0.004	0.196	0.002	8966.465	0.192	0.330	0.000
25yr	POST-DEV	BASE	17.92	0.821	0.004	0.198	0.002	9065.781	0.194	0.332	0.000
25yr	POST-DEV	BASE	18.00	0.825	0.004	0.200	0.002	9165.451	0.196	0.333	0.000
25yr	POST-DEV	BASE	18.08	0.829	0.004	0.202	0.002	9265.470	0.198	0.334	0.000
25yr	POST-DEV	BASE	18.17	0.833	0.004	0.204	0.002	9365.830	0.200	0.335	0.000
25yr	POST-DEV	BASE	18.25	0.837	0.004	0.206	0.002	9466.538	0.202	0.336	0.000
25yr	POST-DEV	BASE	18.33	0.840	0.004	0.208	0.002	9567.586	0.204	0.337	0.000
25yr	POST-DEV	BASE	18.42	0.844	0.004	0.211	0.002	9668.973	0.207	0.339	0.000
25yr	POST-DEV	BASE	18.50	0.848	0.004	0.213	0.002	9770.696	0.209	0.340	0.000
25yr	POST-DEV	BASE	18.58	0.852	0.004	0.215	0.002	9872.754	0.211	0.341	0.000
25yr	POST-DEV	BASE	18.67	0.856	0.004	0.217	0.002	9975.145	0.213	0.342	0.000
25yr	POST-DEV	BASE	18.75	0.860	0.004	0.219	0.002	10077.865	0.215	0.343	0.000
25yr	POST-DEV	BASE	18.83	0.863	0.004	0.222	0.002	10180.914	0.218	0.344	0.000
25yr	POST-DEV	BASE	18.92	0.867	0.004	0.224	0.002	10284.289	0.220	0.345	0.000
25yr	POST-DEV	BASE	19.00	0.871	0.004	0.226	0.002	10387.988	0.222	0.346	0.000
25yr	POST-DEV	BASE	19.08	0.875	0.004	0.228	0.002	10492.010	0.224	0.347	0.000
25yr	POST-DEV	BASE	19.17	0.879	0.004	0.231	0.002	10596.352	0.226	0.348	0.000
25yr	POST-DEV	BASE	19.25	0.883	0.004	0.233	0.002	10701.011	0.229	0.349	0.000
25yr	POST-DEV	BASE	19.33	0.887	0.004	0.235	0.002	10805.986	0.231	0.350	0.000
25yr	POST-DEV	BASE	19.42	0.890	0.004	0.237	0.002	10911.275	0.233	0.351	0.000
25yr	POST-DEV	BASE	19.50	0.894	0.004	0.240	0.002	11016.877	0.235	0.353	0.000
25yr	POST-DEV	BASE	19.58	0.898	0.004	0.242	0.002	11122.788	0.238	0.354	0.000
25yr	POST-DEV	BASE	19.67	0.902	0.004	0.244	0.002	11229.008	0.240	0.355	0.000
25yr	POST-DEV	BASE	19.75	0.906	0.004	0.246	0.002	11335.533	0.242	0.356	0.000
25yr	POST-DEV	BASE	19.83	0.910	0.004	0.249	0.002	11442.363	0.245	0.357	0.000
25yr	POST-DEV	BASE	19.92	0.913	0.004	0.251	0.002	11549.496	0.247	0.358	0.000
25yr	POST-DEV	BASE	20.00	0.917	0.004	0.253	0.002	11656.929	0.249	0.359	0.000
25yr	POST-DEV	BASE	20.08	0.921	0.004	0.256	0.002	11764.660	0.251	0.360	0.000
25yr	POST-DEV	BASE	20.17	0.925	0.004	0.258	0.002	11872.688	0.254	0.361	0.000
25yr	POST-DEV	BASE	20.25	0.929	0.004	0.260	0.002	11981.012	0.256	0.362	0.000
25yr	POST-DEV	BASE	20.33	0.933	0.004	0.263	0.002	12089.628	0.258	0.363	0.000
25yr	POST-DEV	BASE	20.42	0.936	0.004	0.265	0.002	12198.535	0.261	0.364	0.000
25yr	POST-DEV	BASE	20.50	0.940	0.004	0.267	0.002	12307.732	0.263	0.364	0.000
25yr	POST-DEV	BASE	20.58	0.944	0.004	0.270	0.002	12417.217	0.265	0.365	0.000
25yr	POST-DEV	BASE	20.67	0.948	0.004	0.272	0.002	12526.987	0.268	0.366	0.000
25yr	PDST-DEV	BASE	20.75	0.952	0.004	0.274	0.002	12637.042	0.270	0.367	0.000
25yr	POST-DEV	BASE	20.83	0.956	0.004	0.277	0.002	12747.380	0.272	0.368	0.000
25yr	POST-DEV	BASE	20.92	0.959	0.004	0.279	0.002	12857.998	0.275	0.369	0.000
25yr	POST-DEV	BASE	21.00	0.963	0.004	0.282	0.002	12968.896	0.277	0.370	0.000
25yr	POST-DEV	BASE	21.08	0.967	0.004	0.284	0.002	13080.070	0.280	0.371	0.000
25yr	POST-DEV	BASE	21.17	0.971	0.004	0.286	0.002	13191.521	0.282	0.372	0.000
25yr	POST-DEV	BASE	21.25	0.975	0.004	0.289	0.002	13303.245	0.284	0.373	0.000
25yr	POST-DEV	BASE	21.33	0.979	0.004	0.291	0.002	13415.242	0.287	0.374	0.000
25yr	POST-DEV	BASE	21.42	0.982	0.004	0.294	0.002	13527.510	0.289	0.375	0.000
25yr	POST-DEV	BASE	21.50	0.986	0.004	0.296	0.002	13640.047	0.292	0.376	0.000
25yr	POST-DEV	BASE	21.58	0.990	0.004	0.298	0.002	13752.852	0.294	0.376	0.000
25yr	POST-DEV	BASE	21.67	0.994	0.004	0.301	0.002	13865.922	0.296	0.377	0.000
25yr	POST-DEV	BASE	21.75	0.998	0.004	0.303	0.002	13979.257	0.299	0.378	0.000
25yr	POST-DEV	BASE	21.83	1.002	0.004	0.306	0.002	14092.854	0.301	0.379	0.000
25yr	POST-DEV	BASE	21.92	1.005	0.004	0.308	0.002	14206.714	0.304	0.380	0.000
25yr	POST-DEV	BASE	22.00	1.009	0.004	0.311	0.002	14320.832	0.306	0.381	0.000
25yr	POST-DEV	BASE	22.08	1.013	0.004	0.313	0.002	14435.209	0.309	0.382	0.000
25yr	POST-DEV	BASE	22.17	1.017	0.004	0.315	0.002	14549.843	0.311	0.383	0.000
25yr	POST-DEV	BASE	22.25	1.021	0.004	0.318	0.002	14664.731	0.313	0.383	0.000
25yr	POST-DEV	BASE	22.33	1.025	0.004	0.320	0.002	14779.874	0.316	0.384	0.000
25yr	POST-DEV	BASE	22.42	1.029	0.004	0.323	0.002	14895.269	0.318	0.385	0.000
25yr	POST-DEV	BASE	22.50	1.032	0.004	0.325	0.002	15010.913	0.321	0.386	0.000
25yr	POST-DEV	BASE	22.58	1.036	0.004	0.328	0.002	15126.808	0.323	0.387	0.000
25yr	POST-DEV	BASE	22.67	1.040	0.004	0.330	0.002	15242.949	0.326	0.388	0.000
25yr	POST-DEV	BASE	22.75	1.044	0.004	0.333	0.002	15359.338	0.328	0.388	0.000
25yr	POST-DEV	BASE	22.83	1.048	0.004	0.335	0.003	15475.971	0.331	0.389	0.000
25yr	POST-DEV	BASE	22.92	1.052	0.004	0.338	0.003	15592.848	0.333	0.390	0.000
25yr	POST-DEV	BASE	23.00	1.055	0.004	0.340	0.003	15709.966	0.336	0.391	0.000

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25yr	POST-DEV	BASE	23.08	1.059	0.004	0.343	0.003	15827.325	0.338	0.392	0.000
25yr	POST-DEV	BASE	23.17	1.063	0.004	0.345	0.003	15944.924	0.341	0.392	0.000
25yr	POST-DEV	BASE	23.25	1.067	0.004	0.348	0.003	16062.760	0.343	0.393	0.000
25yr	POST-DEV	BASE	23.33	1.071	0.004	0.350	0.003	16180.833	0.346	0.394	0.000
25yr	POST-DEV	BASE	23.42	1.075	0.004	0.353	0.003	16299.141	0.348	0.395	0.000
25yr	POST-DEV	BASE	23.50	1.078	0.004	0.356	0.003	16417.682	0.351	0.396	0.000
25yr	POST-DEV	BASE	23.58	1.082	0.004	0.358	0.003	16536.455	0.353	0.396	0.000
25yr	POST-DEV	BASE	23.67	1.086	0.004	0.361	0.003	16655.461	0.356	0.397	0.000
25yr	POST-DEV	BASE	23.75	1.090	0.004	0.363	0.003	16774.695	0.359	0.398	0.000
25yr	POST-DEV	BASE	23.83	1.094	0.004	0.366	0.003	16894.160	0.361	0.399	0.000
25yr	POST-DEV	BASE	23.92	1.098	0.004	0.368	0.003	17013.852	0.364	0.399	0.000
25yr	POST-DEV	BASE	24.00	1.101	0.004	0.371	0.003	17133.861	0.366	0.401	0.000
25yr	POST-DEV	BASE	24.08	1.105	0.004	0.375	0.004	17262.453	0.369	0.457	0.000
25yr	POST-DEV	BASE	24.17	1.111	0.006	0.378	0.004	17409.113	0.372	0.521	0.000
25yr	POST-DEV	BASE	24.25	1.116	0.006	0.382	0.004	17570.146	0.376	0.552	0.000
25yr	POST-DEV	BASE	24.33	1.122	0.006	0.386	0.004	17738.531	0.379	0.570	0.000
25yr	POST-DEV	BASE	24.42	1.128	0.006	0.390	0.004	17911.189	0.383	0.581	0.000
25yr	POST-DEV	BASE	24.50	1.133	0.006	0.393	0.004	18086.400	0.387	0.587	0.000
25yr	POST-DEV	BASE	24.58	1.139	0.006	0.397	0.004	18263.096	0.390	0.591	0.000
25yr	POST-DEV	BASE	24.67	1.144	0.006	0.401	0.004	18440.564	0.394	0.592	0.000
25yr	POST-DEV	BASE	24.75	1.150	0.006	0.405	0.004	18618.488	0.398	0.594	0.000
25yr	POST-DEV	BASE	24.83	1.155	0.006	0.409	0.004	18796.855	0.402	0.595	0.000
25yr	POST-DEV	BASE	24.92	1.161	0.006	0.413	0.004	18975.662	0.406	0.597	0.000
25yr	POST-DEV	BASE	25.00	1.167	0.006	0.416	0.004	19154.904	0.409	0.598	0.000
25yr	POST-DEV	BASE	25.08	1.172	0.006	0.420	0.004	19334.578	0.413	0.600	0.000
25yr	POST-DEV	BASE	25.17	1.178	0.006	0.424	0.004	19514.680	0.417	0.601	0.000
25yr	POST-DEV	BASE	25.25	1.183	0.006	0.428	0.004	19695.207	0.421	0.602	0.000
25yr	POST-DEV	BASE	25.33	1.189	0.006	0.432	0.004	19876.156	0.425	0.604	0.000
25yr	POST-DEV	BASE	25.42	1.194	0.006	0.436	0.004	20057.523	0.429	0.605	0.000
25yr	POST-DEV	BASE	25.50	1.200	0.006	0.440	0.004	20239.307	0.433	0.607	0.000
25yr	POST-DEV	BASE	25.58	1.206	0.006	0.444	0.004	20421.502	0.436	0.608	0.000
25yr	POST-DEV	BASE	25.67	1.211	0.006	0.448	0.004	20604.105	0.440	0.609	0.000
25yr	POST-DEV	BASE	25.75	1.217	0.006	0.451	0.004	20787.115	0.444	0.611	0.000
25yr	POST-DEV	BASE	25.83	1.222	0.006	0.455	0.004	20970.527	0.448	0.612	0.000
25yr	POST-DEV	BASE	25.92	1.228	0.006	0.459	0.004	21154.338	0.452	0.613	0.000
25yr	POST-DEV	BASE	26.00	1.233	0.006	0.463	0.004	21338.545	0.456	0.615	0.000
25yr	POST-DEV	BASE	26.08	1.239	0.006	0.467	0.004	21523.146	0.460	0.616	0.000
25yr	POST-DEV	BASE	26.17	1.245	0.006	0.471	0.004	21708.137	0.464	0.617	0.000
25yr	POST-DEV	BASE	26.25	1.250	0.006	0.475	0.004	21893.516	0.468	0.619	0.000
25yr	POST-DEV	BASE	26.33	1.256	0.006	0.479	0.004	22079.277	0.472	0.620	0.000
25yr	POST-DEV	BASE	26.42	1.261	0.006	0.483	0.004	22265.422	0.476	0.621	0.000
25yr	POST-DEV	BASE	26.50	1.267	0.006	0.487	0.004	22451.943	0.480	0.622	0.000
25yr	POST-DEV	BASE	26.58	1.272	0.006	0.491	0.004	22638.842	0.484	0.624	0.000
25yr	POST-DEV	BASE	26.67	1.278	0.006	0.495	0.004	22826.111	0.488	0.625	0.000
25yr	POST-DEV	BASE	26.75	1.284	0.006	0.499	0.004	23013.752	0.492	0.626	0.000
25yr	POST-DEV	BASE	26.83	1.289	0.006	0.503	0.004	23201.760	0.496	0.627	0.000
25yr	POST-DEV	BASE	26.92	1.295	0.006	0.507	0.004	23390.131	0.500	0.629	0.000
25yr	POST-DEV	BASE	27.00	1.300	0.006	0.511	0.004	23578.865	0.504	0.630	0.000
25yr	POST-DEV	BASE	27.08	1.306	0.006	0.515	0.004	23767.957	0.508	0.631	0.000
25yr	POST-DEV	BASE	27.17	1.311	0.006	0.519	0.004	23957.406	0.512	0.632	0.000
25yr	POST-DEV	BASE	27.25	1.317	0.006	0.524	0.004	24147.209	0.516	0.633	0.000
25yr	POST-DEV	BASE	27.33	1.323	0.006	0.528	0.004	24337.363	0.520	0.634	0.000
25yr	POST-DEV	BASE	27.42	1.328	0.006	0.532	0.004	24527.865	0.524	0.636	0.000
25yr	POST-DEV	BASE	27.50	1.334	0.006	0.536	0.004	24718.713	0.528	0.637	0.000
25yr	POST-DEV	BASE	27.58	1.339	0.006	0.540	0.004	24909.904	0.532	0.638	0.000
25yr	POST-DEV	BASE	27.67	1.345	0.006	0.544	0.004	25101.436	0.536	0.639	0.000
25yr	POST-DEV	BASE	27.75	1.351	0.006	0.548	0.004	25293.307	0.541	0.640	0.000
25yr	POST-DEV	BASE	27.83	1.356	0.006	0.552	0.004	25485.512	0.545	0.641	0.000
25yr	POST-DEV	BASE	27.92	1.362	0.006	0.556	0.004	25678.051	0.549	0.642	0.000
25yr	POST-DEV	BASE	28.00	1.367	0.006	0.560	0.004	25870.922	0.553	0.643	0.000
25yr	POST-DEV	BASE	28.08	1.373	0.006	0.565	0.004	26064.121	0.557	0.645	0.000
25yr	POST-DEV	BASE	28.17	1.378	0.006	0.569	0.004	26257.646	0.561	0.646	0.000
25yr	POST-DEV	BASE	28.25	1.384	0.006	0.573	0.004	26451.496	0.565	0.647	0.000
25yr	POST-DEV	BASE	28.33	1.390	0.006	0.577	0.004	26645.666	0.569	0.648	0.000
25yr	POST-DEV	BASE	28.42	1.395	0.006	0.581	0.004	26840.156	0.574	0.649	0.000
25yr	POST-DEV	BASE	28.50	1.401	0.006	0.585	0.004	27034.963	0.578	0.650	0.000
25yr	POST-DEV	BASE	28.58	1.406	0.006	0.590	0.004	27230.084	0.582	0.651	0.000
25yr	POST-DEV	BASE	28.67	1.412	0.006	0.594	0.004	27425.518	0.586	0.652	0.000
25yr	POST-DEV	BASE	28.75	1.417	0.006	0.598	0.004	27621.262	0.590	0.653	0.000
25yr	POST-DEV	BASE	28.83	1.423	0.006	0.602	0.004	27817.313	0.595	0.654	0.000

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25yr	POST-DEV	BASE	28.92	1.429	0.006	0.606	0.004	28013.670	0.599	0.655	0.000
25yr	POST-DEV	BASE	29.00	1.434	0.006	0.611	0.004	28210.332	0.603	0.656	0.000
25yr	POST-DEV	BASE	29.08	1.440	0.006	0.615	0.004	28407.295	0.607	0.657	0.000
25yr	POST-DEV	BASE	29.17	1.445	0.006	0.619	0.004	28604.557	0.611	0.658	0.000
25yr	POST-DEV	BASE	29.25	1.451	0.006	0.623	0.004	28802.115	0.616	0.659	0.000
25yr	POST-DEV	BASE	29.33	1.456	0.006	0.627	0.004	28999.971	0.620	0.660	0.000
25yr	POST-DEV	BASE	29.42	1.462	0.006	0.632	0.004	29198.119	0.624	0.661	0.000
25yr	POST-DEV	BASE	29.50	1.468	0.006	0.636	0.004	29396.559	0.628	0.662	0.000
25yr	POST-DEV	BASE	29.58	1.473	0.006	0.640	0.004	29595.287	0.633	0.663	0.000
25yr	POST-DEV	BASE	29.67	1.479	0.006	0.645	0.004	29794.303	0.637	0.664	0.000
25yr	POST-DEV	BASE	29.75	1.484	0.006	0.649	0.004	29993.604	0.641	0.665	0.000
25yr	POST-DEV	BASE	29.83	1.490	0.006	0.653	0.004	30193.188	0.645	0.666	0.000
25yr	POST-DEV	BASE	29.92	1.495	0.006	0.657	0.004	30393.053	0.650	0.667	0.000
25yr	POST-DEV	BASE	30.00	1.501	0.006	0.662	0.004	30593.197	0.654	0.668	0.000
25yr	POST-DEV	BASE	30.08	1.507	0.006	0.666	0.004	30793.619	0.658	0.669	0.000
25yr	POST-DEV	BASE	30.17	1.512	0.006	0.670	0.004	30994.316	0.662	0.669	0.000
25yr	POST-DEV	BASE	30.25	1.518	0.006	0.675	0.004	31195.287	0.667	0.670	0.000
25yr	POST-DEV	BASE	30.33	1.523	0.006	0.679	0.004	31396.529	0.671	0.671	0.000
25yr	POST-DEV	BASE	30.42	1.529	0.006	0.683	0.004	31598.041	0.675	0.672	0.000
25yr	POST-DEV	BASE	30.50	1.534	0.006	0.687	0.004	31799.820	0.680	0.673	0.000
25yr	POST-DEV	BASE	30.58	1.540	0.006	0.692	0.004	32001.865	0.684	0.674	0.000
25yr	POST-DEV	BASE	30.67	1.546	0.006	0.696	0.004	32204.176	0.688	0.675	0.000
25yr	POST-DEV	BASE	30.75	1.551	0.006	0.700	0.004	32406.748	0.693	0.676	0.000
25yr	POST-DEV	BASE	30.83	1.557	0.006	0.705	0.004	32609.582	0.697	0.677	0.000
25yr	POST-DEV	BASE	30.92	1.562	0.006	0.709	0.004	32812.676	0.701	0.677	0.000
25yr	POST-DEV	BASE	31.00	1.568	0.006	0.714	0.004	33016.027	0.706	0.678	0.000
25yr	POST-DEV	BASE	31.08	1.573	0.006	0.718	0.004	33219.633	0.710	0.679	0.000
25yr	POST-DEV	BASE	31.17	1.579	0.006	0.722	0.004	33423.492	0.714	0.680	0.000
25yr	POST-DEV	BASE	31.25	1.585	0.006	0.727	0.004	33627.605	0.719	0.681	0.000
25yr	POST-DEV	BASE	31.33	1.590	0.006	0.731	0.004	33831.969	0.723	0.682	0.000
25yr	POST-DEV	BASE	31.42	1.596	0.006	0.735	0.004	34036.582	0.727	0.682	0.000
25yr	POST-DEV	BASE	31.50	1.601	0.006	0.740	0.004	34241.441	0.732	0.683	0.000
25yr	POST-DEV	BASE	31.58	1.607	0.006	0.744	0.004	34446.547	0.736	0.684	0.000
25yr	POST-DEV	BASE	31.67	1.612	0.006	0.749	0.004	34651.895	0.741	0.685	0.000
25yr	POST-DEV	BASE	31.75	1.618	0.006	0.753	0.004	34857.484	0.745	0.686	0.000
25yr	POST-DEV	BASE	31.83	1.624	0.006	0.757	0.004	35063.316	0.749	0.687	0.000
25yr	POST-DEV	BASE	31.92	1.629	0.006	0.762	0.004	35269.387	0.754	0.687	0.000
25yr	POST-DEV	BASE	32.00	1.635	0.006	0.766	0.004	35475.695	0.758	0.688	0.000
25yr	POST-DEV	BASE	32.08	1.640	0.006	0.771	0.004	35682.234	0.763	0.689	0.000
25yr	POST-DEV	BASE	32.17	1.646	0.006	0.775	0.004	35889.023	0.767	0.690	0.000
25yr	POST-DEV	BASE	32.25	1.651	0.006	0.779	0.004	36096.031	0.771	0.690	0.000
25yr	POST-DEV	BASE	32.33	1.657	0.006	0.784	0.004	36303.270	0.776	0.691	0.000
25yr	POST-DEV	BASE	32.42	1.663	0.006	0.788	0.004	36510.754	0.780	0.692	0.000
25yr	POST-DEV	BASE	32.50	1.668	0.006	0.793	0.004	36718.453	0.785	0.693	0.000
25yr	POST-DEV	BASE	32.58	1.674	0.006	0.797	0.004	36926.379	0.789	0.693	0.000
25yr	POST-DEV	BASE	32.67	1.679	0.006	0.802	0.004	37134.547	0.794	0.694	0.000
25yr	POST-DEV	BASE	32.75	1.685	0.006	0.806	0.004	37342.922	0.798	0.695	0.000
25yr	POST-DEV	BASE	32.83	1.690	0.006	0.811	0.004	37551.520	0.803	0.696	0.000
25yr	POST-DEV	BASE	32.92	1.696	0.006	0.815	0.004	37760.355	0.807	0.696	0.000
25yr	POST-DEV	BASE	33.00	1.702	0.006	0.820	0.004	37969.395	0.811	0.697	0.000
25yr	POST-DEV	BASE	33.08	1.707	0.006	0.824	0.004	38178.652	0.816	0.698	0.000
25yr	POST-DEV	BASE	33.17	1.713	0.006	0.829	0.004	38388.145	0.820	0.699	0.000
25yr	POST-DEV	BASE	33.25	1.718	0.006	0.833	0.004	38597.836	0.825	0.699	0.000
25yr	POST-DEV	BASE	33.33	1.724	0.006	0.838	0.004	38807.742	0.829	0.700	0.000
25yr	POST-DEV	BASE	33.42	1.729	0.006	0.842	0.004	39017.879	0.834	0.701	0.000
25yr	POST-DEV	BASE	33.50	1.735	0.006	0.846	0.005	39228.211	0.838	0.701	0.000
25yr	POST-DEV	BASE	33.58	1.741	0.006	0.851	0.005	39438.754	0.843	0.702	0.000
25yr	POST-DEV	BASE	33.67	1.746	0.006	0.856	0.005	39649.523	0.847	0.703	0.000
25yr	POST-DEV	BASE	33.75	1.752	0.006	0.860	0.005	39860.484	0.852	0.704	0.000
25yr	POST-DEV	BASE	33.83	1.757	0.006	0.865	0.005	40071.652	0.856	0.704	0.000
25yr	POST-DEV	BASE	33.92	1.763	0.006	0.869	0.005	40283.039	0.861	0.705	0.000
25yr	POST-DEV	BASE	34.00	1.768	0.006	0.874	0.005	40494.613	0.865	0.706	0.000
25yr	POST-DEV	BASE	34.08	1.774	0.006	0.878	0.005	40706.391	0.870	0.706	0.000
25yr	POST-DEV	BASE	34.17	1.780	0.006	0.883	0.005	40918.387	0.874	0.707	0.000
25yr	POST-DEV	BASE	34.25	1.785	0.006	0.887	0.005	41130.566	0.879	0.708	0.000
25yr	POST-DEV	BASE	34.33	1.791	0.006	0.892	0.005	41342.945	0.884	0.708	0.000
25yr	POST-DEV	BASE	34.42	1.796	0.006	0.896	0.005	41555.539	0.888	0.709	0.000
25yr	POST-DEV	BASE	34.50	1.802	0.006	0.901	0.005	41768.313	0.893	0.710	0.000
25yr	POST-DEV	BASE	34.58	1.807	0.006	0.905	0.005	41981.281	0.897	0.710	0.000
25yr	POST-DEV	BASE	34.67	1.813	0.006	0.910	0.005	42194.461	0.902	0.711	0.000

		TIME SERIES 25 YR.TXT									
25yr	POST-DEV	BASE	34.75	1.819	0.006	0.915	0.005	42407.816	0.906	0.712	0.000
25yr	POST-DEV	BASE	34.83	1.824	0.006	0.919	0.005	42621.367	0.911	0.712	0.000
25yr	POST-DEV	BASE	34.92	1.830	0.006	0.924	0.005	42835.125	0.915	0.713	0.000
25yr	POST-DEV	BASE	35.00	1.835	0.006	0.928	0.005	43049.055	0.920	0.713	0.000
25yr	POST-DEV	BASE	35.08	1.841	0.006	0.933	0.005	43263.172	0.925	0.714	0.000
25yr	POST-DEV	BASE	35.17	1.846	0.006	0.937	0.005	43477.492	0.929	0.715	0.000
25yr	POST-DEV	BASE	35.25	1.852	0.006	0.942	0.005	43691.984	0.934	0.715	0.000
25yr	POST-DEV	BASE	35.33	1.858	0.006	0.947	0.005	43906.660	0.938	0.716	0.000
25yr	POST-DEV	BASE	35.42	1.863	0.006	0.951	0.005	44121.539	0.943	0.717	0.000
25yr	POST-DEV	BASE	35.50	1.869	0.006	0.956	0.005	44336.582	0.948	0.717	0.000
25yr	POST-DEV	BASE	35.58	1.874	0.006	0.960	0.005	44551.809	0.952	0.718	0.000
25yr	POST-DEV	BASE	35.67	1.880	0.006	0.965	0.005	44767.230	0.957	0.718	0.000
25yr	POST-DEV	BASE	35.75	1.885	0.006	0.970	0.005	44982.816	0.961	0.719	0.000
25yr	POST-DEV	BASE	35.83	1.891	0.006	0.974	0.005	45198.582	0.966	0.720	0.000
25yr	POST-DEV	BASE	35.92	1.897	0.006	0.979	0.005	45414.543	0.971	0.720	0.000
25yr	POST-DEV	BASE	36.00	1.902	0.006	0.984	0.005	45630.664	0.975	0.721	0.000
25yr	POST-DEV	BASE	36.08	1.908	0.006	0.988	0.005	45847.285	0.980	0.723	0.000
25yr	POST-DEV	BASE	36.17	1.913	0.006	0.993	0.005	46064.820	0.984	0.727	0.000
25yr	POST-DEV	BASE	36.25	1.919	0.006	0.998	0.005	46283.094	0.989	0.729	0.000
25yr	POST-DEV	BASE	36.33	1.925	0.006	1.002	0.005	46501.832	0.994	0.730	0.000
25yr	POST-DEV	BASE	36.42	1.930	0.006	1.007	0.005	46720.914	0.999	0.731	0.000
25yr	POST-DEV	BASE	36.50	1.936	0.006	1.012	0.005	46940.254	1.003	0.732	0.000
25yr	POST-DEV	BASE	36.58	1.942	0.006	1.016	0.005	47159.809	1.008	0.732	0.000
25yr	POST-DEV	BASE	36.67	1.947	0.006	1.021	0.005	47379.547	1.013	0.733	0.000
25yr	POST-DEV	BASE	36.75	1.953	0.006	1.026	0.005	47599.457	1.017	0.733	0.000
25yr	POST-DEV	BASE	36.83	1.958	0.006	1.030	0.005	47819.539	1.022	0.734	0.000
25yr	POST-DEV	BASE	36.92	1.964	0.006	1.035	0.005	48039.789	1.027	0.734	0.000
25yr	POST-DEV	BASE	37.00	1.970	0.006	1.040	0.005	48260.207	1.031	0.735	0.000
25yr	POST-DEV	BASE	37.08	1.975	0.006	1.045	0.005	48480.793	1.036	0.736	0.000
25yr	POST-DEV	BASE	37.17	1.981	0.006	1.049	0.005	48701.543	1.041	0.736	0.000
25yr	POST-DEV	BASE	37.25	1.987	0.006	1.054	0.005	48922.457	1.046	0.737	0.000
25yr	POST-DEV	BASE	37.33	1.992	0.006	1.059	0.005	49143.535	1.050	0.737	0.000
25yr	POST-DEV	BASE	37.42	1.998	0.006	1.063	0.005	49364.777	1.055	0.738	0.000
25yr	POST-DEV	BASE	37.50	2.003	0.006	1.068	0.005	49586.184	1.060	0.738	0.000
25yr	POST-DEV	BASE	37.58	2.009	0.006	1.073	0.005	49807.750	1.064	0.739	0.000
25yr	POST-DEV	BASE	37.67	2.015	0.006	1.078	0.005	50029.477	1.069	0.739	0.000
25yr	POST-DEV	BASE	37.75	2.020	0.006	1.082	0.005	50251.363	1.074	0.740	0.000
25yr	POST-DEV	BASE	37.83	2.026	0.006	1.087	0.005	50473.406	1.079	0.740	0.000
25yr	POST-DEV	BASE	37.92	2.032	0.006	1.092	0.005	50695.609	1.083	0.741	0.000
25yr	POST-DEV	BASE	38.00	2.037	0.006	1.097	0.005	50917.969	1.088	0.741	0.000
25yr	POST-DEV	BASE	38.08	2.043	0.006	1.101	0.005	51140.484	1.093	0.742	0.000
25yr	POST-DEV	BASE	38.17	2.049	0.006	1.106	0.005	51363.152	1.098	0.742	0.000
25yr	POST-DEV	BASE	38.25	2.054	0.006	1.111	0.005	51585.977	1.102	0.743	0.000
25yr	POST-DEV	BASE	38.33	2.060	0.006	1.116	0.005	51808.953	1.107	0.744	0.000
25yr	POST-DEV	BASE	38.42	2.065	0.006	1.121	0.005	52032.082	1.112	0.744	0.000
25yr	POST-DEV	BASE	38.50	2.071	0.006	1.125	0.005	52255.363	1.117	0.745	0.000
25yr	POST-DEV	BASE	38.58	2.077	0.006	1.130	0.005	52478.793	1.122	0.745	0.000
25yr	POST-DEV	BASE	38.67	2.082	0.006	1.135	0.005	52702.375	1.126	0.746	0.000
25yr	POST-DEV	BASE	38.75	2.088	0.006	1.140	0.005	52926.105	1.131	0.746	0.000
25yr	POST-DEV	BASE	38.83	2.094	0.006	1.144	0.005	53149.984	1.136	0.747	0.000
25yr	POST-DEV	BASE	38.92	2.099	0.006	1.149	0.005	53374.008	1.141	0.747	0.000
25yr	POST-DEV	BASE	39.00	2.105	0.006	1.154	0.005	53598.180	1.145	0.747	0.000
25yr	POST-DEV	BASE	39.08	2.110	0.006	1.159	0.005	53822.496	1.150	0.748	0.000
25yr	POST-DEV	BASE	39.17	2.116	0.006	1.164	0.005	54046.957	1.155	0.748	0.000
25yr	POST-DEV	BASE	39.25	2.122	0.006	1.168	0.005	54271.563	1.160	0.749	0.000
25yr	POST-DEV	BASE	39.33	2.127	0.006	1.173	0.005	54496.313	1.165	0.749	0.000
25yr	POST-DEV	BASE	39.42	2.133	0.006	1.178	0.005	54721.203	1.169	0.750	0.000
25yr	POST-DEV	BASE	39.50	2.139	0.006	1.183	0.005	54946.234	1.174	0.750	0.000
25yr	POST-DEV	BASE	39.58	2.144	0.006	1.188	0.005	55171.406	1.179	0.751	0.000
25yr	POST-DEV	BASE	39.67	2.150	0.006	1.193	0.005	55396.719	1.184	0.751	0.000
25yr	POST-DEV	BASE	39.75	2.155	0.006	1.197	0.005	55622.172	1.189	0.752	0.000
25yr	POST-DEV	BASE	39.83	2.161	0.006	1.202	0.005	55847.762	1.194	0.752	0.000
25yr	POST-DEV	BASE	39.92	2.167	0.006	1.207	0.005	56073.492	1.198	0.753	0.000
25yr	POST-DEV	BASE	40.00	2.172	0.006	1.212	0.005	56299.359	1.203	0.753	0.000
25yr	POST-DEV	BASE	40.08	2.178	0.006	1.217	0.005	56525.363	1.208	0.754	0.000
25yr	POST-DEV	BASE	40.17	2.184	0.006	1.221	0.005	56751.500	1.213	0.754	0.000
25yr	POST-DEV	BASE	40.25	2.189	0.006	1.226	0.005	56977.773	1.218	0.754	0.000
25yr	POST-DEV	BASE	40.33	2.195	0.006	1.231	0.005	57204.180	1.223	0.755	0.000
25yr	POST-DEV	BASE	40.42	2.201	0.006	1.236	0.005	57430.719	1.227	0.755	0.000
25yr	POST-DEV	BASE	40.50	2.206	0.006	1.241	0.005	57657.391	1.232	0.756	0.000

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25yr	POST-DEV	BASE	40.58	2.212	0.006	1.246	0.005	57884.195	1.237	0.756	0.000
25yr	POST-DEV	BASE	40.67	2.217	0.006	1.251	0.005	58111.133	1.242	0.757	0.000
25yr	POST-DEV	BASE	40.75	2.223	0.006	1.255	0.005	58338.199	1.247	0.757	0.000
25yr	POST-DEV	BASE	40.83	2.229	0.006	1.260	0.005	58565.395	1.252	0.758	0.000
25yr	POST-DEV	BASE	40.92	2.234	0.006	1.265	0.005	58792.719	1.257	0.758	0.000
25yr	POST-DEV	BASE	41.00	2.240	0.006	1.270	0.005	59020.172	1.261	0.758	0.000
25yr	POST-DEV	BASE	41.08	2.246	0.006	1.275	0.005	59247.754	1.266	0.759	0.000
25yr	POST-DEV	BASE	41.17	2.251	0.006	1.280	0.005	59475.465	1.271	0.759	0.000
25yr	POST-DEV	BASE	41.25	2.257	0.006	1.285	0.005	59703.301	1.276	0.760	0.000
25yr	POST-DEV	BASE	41.33	2.262	0.006	1.289	0.005	59931.262	1.281	0.760	0.000
25yr	POST-DEV	BASE	41.42	2.268	0.006	1.294	0.005	60159.348	1.286	0.760	0.000
25yr	POST-DEV	BASE	41.50	2.274	0.006	1.299	0.005	60387.559	1.291	0.761	0.000
25yr	POST-DEV	BASE	41.58	2.279	0.006	1.304	0.005	60615.895	1.295	0.761	0.000
25yr	POST-DEV	BASE	41.67	2.285	0.006	1.309	0.005	60844.352	1.300	0.762	0.000
25yr	POST-DEV	BASE	41.75	2.291	0.006	1.314	0.005	61072.934	1.305	0.762	0.000
25yr	POST-DEV	BASE	41.83	2.296	0.006	1.319	0.005	61301.637	1.310	0.763	0.000
25yr	POST-DEV	BASE	41.92	2.302	0.006	1.324	0.005	61530.461	1.315	0.763	0.000
25yr	POST-DEV	BASE	42.00	2.307	0.006	1.329	0.005	61759.406	1.320	0.763	0.000
25yr	POST-DEV	BASE	42.08	2.313	0.006	1.333	0.005	61988.469	1.325	0.764	0.000
25yr	POST-DEV	BASE	42.17	2.319	0.006	1.338	0.005	62217.652	1.330	0.764	0.000
25yr	POST-DEV	BASE	42.25	2.324	0.006	1.343	0.005	62446.953	1.335	0.765	0.000
25yr	POST-DEV	BASE	42.33	2.330	0.006	1.348	0.005	62676.375	1.340	0.765	0.000
25yr	POST-DEV	BASE	42.42	2.336	0.006	1.353	0.005	62905.914	1.344	0.765	0.000
25yr	POST-DEV	BASE	42.50	2.341	0.006	1.358	0.005	63135.570	1.349	0.766	0.000
25yr	POST-DEV	BASE	42.58	2.347	0.006	1.363	0.005	63365.340	1.354	0.766	0.000
25yr	POST-DEV	BASE	42.67	2.353	0.006	1.368	0.005	63595.227	1.359	0.766	0.000
25yr	POST-DEV	BASE	42.75	2.358	0.006	1.373	0.005	63825.227	1.364	0.767	0.000
25yr	POST-DEV	BASE	42.83	2.364	0.006	1.378	0.005	64055.344	1.369	0.767	0.000
25yr	POST-DEV	BASE	42.92	2.369	0.006	1.383	0.005	64285.574	1.374	0.768	0.000
25yr	POST-DEV	BASE	43.00	2.375	0.006	1.388	0.005	64515.918	1.379	0.768	0.000
25yr	POST-DEV	BASE	43.08	2.381	0.006	1.392	0.005	64746.375	1.384	0.768	0.000
25yr	POST-DEV	BASE	43.17	2.386	0.006	1.397	0.005	64976.945	1.389	0.769	0.000
25yr	POST-DEV	BASE	43.25	2.392	0.006	1.402	0.005	65207.625	1.394	0.769	0.000
25yr	POST-DEV	BASE	43.33	2.398	0.006	1.407	0.005	65438.418	1.399	0.769	0.000
25yr	POST-DEV	BASE	43.42	2.403	0.006	1.412	0.005	65669.320	1.403	0.770	0.000
25yr	POST-DEV	BASE	43.50	2.409	0.006	1.417	0.005	65900.336	1.408	0.770	0.000
25yr	POST-DEV	BASE	43.58	2.414	0.006	1.422	0.005	66131.461	1.413	0.771	0.000
25yr	POST-DEV	BASE	43.67	2.420	0.006	1.427	0.005	66362.688	1.418	0.771	0.000
25yr	POST-DEV	BASE	43.75	2.426	0.006	1.432	0.005	66594.023	1.423	0.771	0.000
25yr	POST-DEV	BASE	43.83	2.431	0.006	1.437	0.005	66825.469	1.428	0.772	0.000
25yr	POST-DEV	BASE	43.92	2.437	0.006	1.442	0.005	67057.023	1.433	0.772	0.000
25yr	POST-DEV	BASE	44.00	2.443	0.006	1.447	0.005	67288.680	1.438	0.772	0.000
25yr	POST-DEV	BASE	44.08	2.448	0.006	1.452	0.005	67520.445	1.443	0.773	0.000
25yr	POST-DEV	BASE	44.17	2.454	0.006	1.457	0.005	67752.320	1.448	0.773	0.000
25yr	POST-DEV	BASE	44.25	2.459	0.006	1.462	0.005	67984.297	1.453	0.773	0.000
25yr	POST-DEV	BASE	44.33	2.465	0.006	1.467	0.005	68216.375	1.458	0.774	0.000
25yr	POST-DEV	BASE	44.42	2.471	0.006	1.472	0.005	68448.563	1.463	0.774	0.000
25yr	POST-DEV	BASE	44.50	2.476	0.006	1.477	0.005	68680.852	1.468	0.774	0.000
25yr	POST-DEV	BASE	44.58	2.482	0.006	1.482	0.005	68913.242	1.473	0.775	0.000
25yr	POST-DEV	BASE	44.67	2.488	0.006	1.487	0.005	69145.734	1.478	0.775	0.000
25yr	POST-DEV	BASE	44.75	2.493	0.006	1.491	0.005	69378.328	1.483	0.775	0.000
25yr	POST-DEV	BASE	44.83	2.499	0.006	1.496	0.005	69611.023	1.488	0.776	0.000
25yr	POST-DEV	BASE	44.92	2.505	0.006	1.501	0.005	69843.820	1.493	0.776	0.000
25yr	POST-DEV	BASE	45.00	2.510	0.006	1.506	0.005	70076.719	1.498	0.776	0.000
25yr	POST-DEV	BASE	45.08	2.516	0.006	1.511	0.005	70309.719	1.503	0.777	0.000
25yr	POST-DEV	BASE	45.17	2.521	0.006	1.516	0.005	70542.820	1.508	0.777	0.000
25yr	POST-DEV	BASE	45.25	2.527	0.006	1.521	0.005	70776.016	1.513	0.777	0.000
25yr	POST-DEV	BASE	45.33	2.533	0.006	1.526	0.005	71009.313	1.518	0.778	0.000
25yr	POST-DEV	BASE	45.42	2.538	0.006	1.531	0.005	71242.703	1.523	0.778	0.000
25yr	POST-DEV	BASE	45.50	2.544	0.006	1.536	0.005	71476.195	1.528	0.778	0.000
25yr	POST-DEV	BASE	45.58	2.550	0.006	1.541	0.005	71709.781	1.533	0.779	0.000
25yr	POST-DEV	BASE	45.67	2.555	0.006	1.546	0.005	71943.469	1.538	0.779	0.000
25yr	POST-DEV	BASE	45.75	2.561	0.006	1.551	0.005	72177.250	1.543	0.779	0.000
25yr	POST-DEV	BASE	45.83	2.566	0.006	1.556	0.005	72411.125	1.548	0.780	0.000
25yr	POST-DEV	BASE	45.92	2.572	0.006	1.561	0.005	72645.102	1.553	0.780	0.000
25yr	POST-DEV	BASE	46.00	2.578	0.006	1.566	0.005	72879.172	1.558	0.780	0.000
25yr	POST-DEV	BASE	46.08	2.583	0.006	1.571	0.005	73113.336	1.563	0.781	0.000
25yr	POST-DEV	BASE	46.17	2.589	0.006	1.576	0.005	73347.594	1.568	0.781	0.000
25yr	POST-DEV	BASE	46.25	2.595	0.006	1.581	0.005	73581.945	1.573	0.781	0.000
25yr	POST-DEV	BASE	46.33	2.600	0.006	1.586	0.005	73816.391	1.578	0.782	0.000



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25yr	POST-DEV	BASE	46.42	2.606	0.006	1.591	0.005	74050.922	1.583	0.782	0.000
25yr	POST-DEV	BASE	46.50	2.611	0.006	1.596	0.005	74285.547	1.588	0.782	0.000
25yr	POST-DEV	BASE	46.58	2.617	0.006	1.601	0.005	74520.266	1.593	0.783	0.000
25yr	POST-DEV	BASE	46.67	2.623	0.006	1.606	0.005	74755.078	1.598	0.783	0.000
25yr	POST-DEV	BASE	46.75	2.628	0.006	1.611	0.005	74989.977	1.603	0.783	0.000
25yr	POST-DEV	BASE	46.83	2.634	0.006	1.616	0.005	75224.969	1.608	0.783	0.000
25yr	POST-DEV	BASE	46.92	2.640	0.006	1.621	0.005	75460.047	1.613	0.784	0.000
25yr	POST-DEV	BASE	47.00	2.645	0.006	1.627	0.005	75695.219	1.618	0.784	0.000
25yr	POST-DEV	BASE	47.08	2.651	0.006	1.632	0.005	75930.477	1.623	0.784	0.000
25yr	POST-DEV	BASE	47.17	2.657	0.006	1.637	0.005	76165.828	1.628	0.785	0.000
25yr	POST-DEV	BASE	47.25	2.662	0.006	1.642	0.005	76401.266	1.633	0.785	0.000
25yr	POST-DEV	BASE	47.33	2.668	0.006	1.647	0.005	76636.789	1.638	0.785	0.000
25yr	POST-DEV	BASE	47.42	2.673	0.006	1.652	0.005	76872.398	1.643	0.786	0.000
25yr	POST-DEV	BASE	47.50	2.679	0.006	1.657	0.005	77108.094	1.648	0.786	0.000
25yr	POST-DEV	BASE	47.58	2.685	0.006	1.662	0.005	77343.883	1.653	0.786	0.000
25yr	POST-DEV	BASE	47.67	2.690	0.006	1.667	0.005	77579.758	1.658	0.786	0.000
25yr	POST-DEV	BASE	47.75	2.696	0.006	1.672	0.005	77815.719	1.663	0.787	0.000
25yr	POST-DEV	BASE	47.83	2.702	0.006	1.677	0.005	78051.766	1.668	0.787	0.000
25yr	POST-DEV	BASE	47.92	2.707	0.006	1.682	0.005	78287.891	1.673	0.787	0.000
25yr	POST-DEV	BASE	48.00	2.713	0.006	1.687	0.005	78524.117	1.678	0.788	0.000
25yr	POST-DEV	BASE	48.08	2.718	0.006	1.693	0.006	78764.086	1.683	0.812	0.000
25yr	POST-DEV	BASE	48.17	2.725	0.006	1.698	0.006	79012.563	1.689	0.844	0.000
25yr	POST-DEV	BASE	48.25	2.731	0.006	1.704	0.006	79268.148	1.694	0.860	0.000
25yr	POST-DEV	BASE	48.33	2.737	0.006	1.709	0.006	79527.297	1.700	0.868	0.000
25yr	POST-DEV	BASE	48.42	2.743	0.006	1.715	0.006	79788.469	1.705	0.873	0.000
25yr	POST-DEV	BASE	48.50	2.750	0.006	1.721	0.006	80050.789	1.711	0.876	0.000
25yr	POST-DEV	BASE	48.58	2.756	0.006	1.726	0.006	80313.734	1.716	0.877	0.000
25yr	POST-DEV	BASE	48.67	2.762	0.006	1.732	0.006	80576.953	1.722	0.878	0.000
25yr	POST-DEV	BASE	48.75	2.768	0.006	1.738	0.006	80840.281	1.728	0.878	0.000
25yr	POST-DEV	BASE	48.83	2.775	0.006	1.743	0.006	81103.711	1.733	0.878	0.000
25yr	POST-DEV	BASE	48.92	2.781	0.006	1.749	0.006	81367.234	1.739	0.879	0.000
25yr	POST-DEV	BASE	49.00	2.787	0.006	1.754	0.006	81630.859	1.745	0.879	0.000
25yr	POST-DEV	BASE	49.08	2.793	0.006	1.760	0.006	81895.344	1.750	0.884	0.000
25yr	POST-DEV	BASE	49.17	2.800	0.006	1.766	0.006	82161.703	1.756	0.891	0.000
25yr	POST-DEV	BASE	49.25	2.806	0.006	1.772	0.006	82429.656	1.762	0.895	0.000
25yr	POST-DEV	BASE	49.33	2.813	0.006	1.778	0.006	82698.445	1.767	0.897	0.000
25yr	POST-DEV	BASE	49.42	2.819	0.006	1.783	0.006	82967.742	1.773	0.898	0.000
25yr	POST-DEV	BASE	49.50	2.825	0.006	1.789	0.006	83237.367	1.779	0.899	0.000
25yr	POST-DEV	BASE	49.58	2.832	0.006	1.795	0.006	83507.203	1.785	0.900	0.000
25yr	POST-DEV	BASE	49.67	2.838	0.006	1.801	0.006	83777.172	1.790	0.900	0.000
25yr	POST-DEV	BASE	49.75	2.845	0.006	1.806	0.006	84047.242	1.796	0.900	0.000
25yr	POST-DEV	BASE	49.83	2.851	0.006	1.812	0.006	84317.406	1.802	0.901	0.000
25yr	POST-DEV	BASE	49.92	2.857	0.006	1.818	0.006	84587.664	1.808	0.901	0.000
25yr	POST-DEV	BASE	50.00	2.864	0.006	1.824	0.006	84858.109	1.814	0.902	0.000
25yr	POST-DEV	BASE	50.08	2.870	0.006	1.831	0.007	85136.250	1.820	0.952	0.000
25yr	POST-DEV	BASE	50.17	2.878	0.008	1.837	0.007	85430.492	1.826	1.009	0.000
25yr	POST-DEV	BASE	50.25	2.885	0.008	1.844	0.007	85737.320	1.832	1.036	0.000
25yr	POST-DEV	BASE	50.33	2.893	0.008	1.851	0.007	86050.469	1.839	1.051	0.000
25yr	POST-DEV	BASE	50.42	2.900	0.008	1.858	0.007	86367.172	1.846	1.060	0.000
25yr	POST-DEV	BASE	50.50	2.908	0.008	1.865	0.007	86685.891	1.853	1.065	0.000
25yr	POST-DEV	BASE	50.58	2.915	0.008	1.872	0.007	87005.664	1.859	1.067	0.000
25yr	POST-DEV	BASE	50.67	2.923	0.008	1.878	0.007	87325.852	1.866	1.068	0.000
25yr	POST-DEV	BASE	50.75	2.930	0.008	1.885	0.007	87646.172	1.873	1.068	0.000
25yr	POST-DEV	BASE	50.83	2.938	0.008	1.892	0.007	87966.625	1.880	1.068	0.000
25yr	POST-DEV	BASE	50.92	2.946	0.008	1.899	0.007	88287.203	1.887	1.069	0.000
25yr	POST-DEV	BASE	51.00	2.953	0.008	1.906	0.007	88607.945	1.894	1.069	0.000
25yr	POST-DEV	BASE	51.08	2.961	0.008	1.913	0.007	88933.289	1.901	1.099	0.000
25yr	POST-DEV	BASE	51.17	2.969	0.008	1.921	0.007	89268.289	1.908	1.134	0.000
25yr	POST-DEV	BASE	51.25	2.977	0.008	1.928	0.007	89610.930	1.915	1.150	0.000
25yr	POST-DEV	BASE	51.33	2.985	0.008	1.936	0.007	89957.422	1.923	1.160	0.000
25yr	POST-DEV	BASE	51.42	2.994	0.008	1.943	0.007	90306.117	1.930	1.165	0.000
25yr	POST-DEV	BASE	51.50	3.002	0.008	1.951	0.007	90656.086	1.937	1.168	0.000
25yr	POST-DEV	BASE	51.58	3.010	0.008	1.958	0.008	91006.758	1.945	1.170	0.000
25yr	POST-DEV	BASE	51.67	3.018	0.008	1.966	0.008	91357.742	1.952	1.170	0.000
25yr	POST-DEV	BASE	51.75	3.026	0.008	1.973	0.008	91708.875	1.960	1.171	0.000
25yr	POST-DEV	BASE	51.83	3.035	0.008	1.981	0.008	92060.148	1.967	1.171	0.000
25yr	POST-DEV	BASE	51.92	3.043	0.008	1.988	0.008	92411.563	1.975	1.172	0.000
25yr	POST-DEV	BASE	52.00	3.051	0.008	1.996	0.008	92763.211	1.983	1.173	0.000
25yr	POST-DEV	BASE	52.08	3.059	0.008	2.006	0.010	93131.063	1.990	1.280	0.000
25yr	POST-DEV	BASE	52.17	3.070	0.011	2.015	0.010	93533.742	1.999	1.405	0.000

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25yr	POST-DEV	BASE	52.25	3.081	0.011	2.025	0.010	93964.109	2.008	1.464	0.000
25yr	POST-DEV	BASE	52.33	3.092	0.011	2.035	0.010	94408.289	2.018	1.497	0.000
25yr	POST-DEV	BASE	52.42	3.102	0.011	2.045	0.010	94860.227	2.027	1.516	0.000
25yr	POST-DEV	BASE	52.50	3.113	0.011	2.055	0.010	95316.523	2.037	1.526	0.000
25yr	POST-DEV	BASE	52.58	3.124	0.011	2.065	0.010	95775.086	2.047	1.531	0.000
25yr	POST-DEV	BASE	52.67	3.134	0.011	2.074	0.010	96234.516	2.057	1.532	0.000
25yr	POST-DEV	BASE	52.75	3.145	0.011	2.084	0.010	96694.188	2.067	1.533	0.000
25yr	POST-DEV	BASE	52.83	3.156	0.011	2.094	0.010	97154.078	2.076	1.533	0.000
25yr	POST-DEV	BASE	52.92	3.167	0.011	2.104	0.010	97614.180	2.086	1.534	0.000
25yr	POST-DEV	BASE	53.00	3.177	0.011	2.114	0.010	98074.531	2.096	1.535	0.000
25yr	POST-DEV	BASE	53.08	3.188	0.011	2.126	0.012	98551.023	2.106	1.642	0.000
25yr	POST-DEV	BASE	53.17	3.201	0.013	2.138	0.012	99062.594	2.117	1.769	0.000
25yr	POST-DEV	BASE	53.25	3.214	0.013	2.150	0.012	99602.266	2.129	1.829	0.000
25yr	POST-DEV	BASE	53.33	3.228	0.013	2.162	0.012100155.984	2.141	1.862	0.000	
25yr	POST-DEV	BASE	53.42	3.241	0.013	2.174	0.012100717.617	2.153	1.882	0.000	
25yr	POST-DEV	BASE	53.50	3.254	0.013	2.187	0.012101283.750	2.165	1.892	0.000	
25yr	POST-DEV	BASE	53.58	3.267	0.013	2.199	0.012101852.250	2.177	1.898	0.000	
25yr	POST-DEV	BASE	53.67	3.280	0.013	2.211	0.012102421.711	2.189	1.899	0.000	
25yr	POST-DEV	BASE	53.75	3.294	0.013	2.223	0.012102991.500	2.201	1.900	0.000	
25yr	POST-DEV	BASE	53.83	3.307	0.013	2.235	0.012103561.586	2.213	1.901	0.000	
25yr	POST-DEV	BASE	53.92	3.320	0.013	2.247	0.012104131.969	2.225	1.902	0.000	
25yr	POST-DEV	BASE	54.00	3.333	0.013	2.260	0.012104702.680	2.238	1.903	0.000	
25yr	POST-DEV	BASE	54.08	3.346	0.013	2.274	0.015105290.008	2.250	2.013	0.000	
25yr	POST-DEV	BASE	54.17	3.362	0.016	2.289	0.015105913.805	2.264	2.146	0.000	
25yr	POST-DEV	BASE	54.25	3.378	0.016	2.303	0.015106567.125	2.278	2.209	0.000	
25yr	POST-DEV	BASE	54.33	3.394	0.016	2.318	0.015107235.211	2.292	2.245	0.000	
25yr	POST-DEV	BASE	54.42	3.409	0.016	2.333	0.015107911.656	2.306	2.265	0.000	
25yr	POST-DEV	BASE	54.50	3.425	0.016	2.347	0.015108592.875	2.321	2.276	0.000	
25yr	POST-DEV	BASE	54.58	3.441	0.016	2.362	0.015109276.648	2.335	2.282	0.000	
25yr	POST-DEV	BASE	54.67	3.457	0.016	2.377	0.015109961.500	2.350	2.284	0.000	
25yr	POST-DEV	BASE	54.75	3.472	0.016	2.391	0.015110646.758	2.365	2.285	0.000	
25yr	POST-DEV	BASE	54.83	3.488	0.016	2.406	0.015111332.398	2.379	2.286	0.000	
25yr	POST-DEV	BASE	54.92	3.504	0.016	2.421	0.015112018.406	2.394	2.287	0.000	
25yr	POST-DEV	BASE	55.00	3.520	0.016	2.435	0.015112704.852	2.409	2.289	0.000	
25yr	POST-DEV	BASE	55.08	3.535	0.016	2.452	0.017113407.828	2.424	2.398	0.000	
25yr	POST-DEV	BASE	55.17	3.554	0.018	2.469	0.017114147.430	2.440	2.533	0.000	
25yr	POST-DEV	BASE	55.25	3.572	0.018	2.487	0.017114917.023	2.456	2.597	0.000	
25yr	POST-DEV	BASE	55.33	3.590	0.018	2.504	0.017115701.648	2.473	2.633	0.000	
25yr	POST-DEV	BASE	55.42	3.609	0.018	2.521	0.017116494.813	2.490	2.654	0.000	
25yr	POST-DEV	BASE	55.50	3.627	0.018	2.538	0.017117292.875	2.507	2.666	0.000	
25yr	POST-DEV	BASE	55.58	3.645	0.018	2.555	0.017118093.602	2.524	2.672	0.000	
25yr	POST-DEV	BASE	55.67	3.664	0.018	2.572	0.017118895.484	2.541	2.674	0.000	
25yr	POST-DEV	BASE	55.75	3.682	0.018	2.589	0.017119697.852	2.558	2.675	0.000	
25yr	POST-DEV	BASE	55.83	3.700	0.018	2.607	0.017120500.664	2.575	2.677	0.000	
25yr	POST-DEV	BASE	55.92	3.719	0.018	2.624	0.017121303.914	2.592	2.678	0.000	
25yr	POST-DEV	BASE	56.00	3.737	0.018	2.641	0.017122107.695	2.610	2.680	0.000	
25yr	POST-DEV	BASE	56.08	3.755	0.018	2.661	0.020122931.109	2.627	2.809	0.000	
25yr	POST-DEV	BASE	56.17	3.777	0.021	2.681	0.020123798.578	2.646	2.974	0.000	
25yr	POST-DEV	BASE	56.25	3.798	0.021	2.701	0.020124702.508	2.665	3.052	0.000	
25yr	POST-DEV	BASE	56.33	3.820	0.021	2.721	0.020125624.703	2.685	3.096	0.000	
25yr	POST-DEV	BASE	56.42	3.841	0.021	2.741	0.020126557.250	2.705	3.121	0.000	
25yr	POST-DEV	BASE	56.50	3.863	0.021	2.762	0.020127495.742	2.725	3.135	0.000	
25yr	POST-DEV	BASE	56.58	3.884	0.021	2.782	0.020128437.453	2.745	3.143	0.000	
25yr	POST-DEV	BASE	56.67	3.905	0.021	2.802	0.020129380.563	2.765	3.145	0.000	
25yr	POST-DEV	BASE	56.75	3.927	0.021	2.822	0.020130324.242	2.785	3.146	0.000	
25yr	POST-DEV	BASE	56.83	3.948	0.021	2.842	0.020131268.438	2.805	3.148	0.000	
25yr	POST-DEV	BASE	56.92	3.970	0.021	2.862	0.020132213.156	2.826	3.150	0.000	
25yr	POST-DEV	BASE	57.00	3.991	0.021	2.883	0.020133158.531	2.846	3.153	0.000	
25yr	POST-DEV	BASE	57.08	4.012	0.021	2.907	0.024134128.750	2.867	3.316	0.000	
25yr	POST-DEV	BASE	57.17	4.038	0.025	2.930	0.024135155.500	2.889	3.529	0.000	
25yr	POST-DEV	BASE	57.25	4.063	0.025	2.954	0.024136229.547	2.911	3.631	0.000	
25yr	POST-DEV	BASE	57.33	4.088	0.025	2.978	0.024137327.266	2.935	3.687	0.000	
25yr	POST-DEV	BASE	57.42	4.114	0.025	3.002	0.024138438.359	2.959	3.720	0.000	
25yr	POST-DEV	BASE	57.50	4.139	0.025	3.027	0.024139557.234	2.983	3.739	0.000	
25yr	POST-DEV	BASE	57.58	4.165	0.025	3.053	0.026140694.672	3.007	3.844	0.000	
25yr	POST-DEV	BASE	57.67	4.192	0.028	3.079	0.026141865.391	3.032	3.961	0.000	
25yr	POST-DEV	BASE	57.75	4.220	0.028	3.105	0.026143062.141	3.057	4.017	0.000	
25yr	POST-DEV	BASE	57.83	4.247	0.028	3.131	0.026144272.109	3.083	4.049	0.000	
25yr	POST-DEV	BASE	57.92	4.275	0.028	3.157	0.026145489.719	3.109	4.068	0.000	
25yr	POST-DEV	BASE	58.00	4.302	0.028	3.184	0.026146711.953	3.135	4.080	0.000	

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25yr	POST-DEV	BASE	58.08	4.330	0.028	3.212	0.029147954.969	3.162	4.207	0.000
25yr	POST-DEV	BASE	58.17	4.360	0.030	3.241	0.029149241.750	3.190	4.372	0.000
25yr	POST-DEV	BASE	58.25	4.391	0.031	3.270	0.029150565.109	3.218	4.451	0.000
25yr	POST-DEV	BASE	58.33	4.422	0.031	3.300	0.029151906.906	3.247	4.495	0.000
25yr	POST-DEV	BASE	58.42	4.452	0.031	3.329	0.029153259.250	3.275	4.521	0.000
25yr	POST-DEV	BASE	58.50	4.483	0.031	3.358	0.029154618.141	3.304	4.538	0.000
25yr	POST-DEV	BASE	58.58	4.513	0.031	3.397	0.038156045.906	3.335	4.980	0.000
25yr	POST-DEV	BASE	58.67	4.554	0.041	3.435	0.039157620.141	3.369	5.515	0.000
25yr	POST-DEV	BASE	58.75	4.594	0.041	3.474	0.039159312.625	3.405	5.768	0.000
25yr	POST-DEV	BASE	58.83	4.635	0.041	3.513	0.039161064.234	3.442	5.909	0.000
25yr	POST-DEV	BASE	58.92	4.675	0.041	3.552	0.039162849.141	3.480	5.990	0.000
25yr	POST-DEV	BASE	59.00	4.716	0.041	3.592	0.040164654.578	3.519	6.046	0.000
25yr	POST-DEV	BASE	59.08	4.757	0.041	3.651	0.060166623.813	3.561	7.082	0.000
25yr	POST-DEV	BASE	59.17	4.820	0.063	3.711	0.060168921.141	3.610	8.233	0.000
25yr	POST-DEV	BASE	59.25	4.883	0.063	3.771	0.060171473.047	3.665	8.779	0.000
25yr	POST-DEV	BASE	59.33	4.945	0.063	3.831	0.060174152.313	3.722	9.082	0.000
25yr	POST-DEV	BASE	59.42	5.008	0.063	3.892	0.060176903.172	3.781	9.257	0.000
25yr	POST-DEV	BASE	59.50	5.070	0.063	3.957	0.066179701.734	3.841	9.400	0.000
25yr	POST-DEV	BASE	59.58	5.133	0.063	4.362	0.404184899.828	3.952	25.254	0.000
25yr	POST-DEV	BASE	59.67	5.558	0.425	4.777	0.415195456.656	4.177	45.125	0.000
25yr	POST-DEV	BASE	59.75	5.986	0.428	5.193	0.416210411.594	4.497	54.574	0.000
25yr	POST-DEV	BASE	59.83	6.414	0.428	5.611	0.418227574.859	4.864	59.847	0.000
25yr	POST-DEV	BASE	59.92	6.842	0.428	6.030	0.419245987.172	5.257	62.901	0.000
25yr	POST-DEV	BASE	60.00	7.270	0.428	6.430	0.400265081.156	5.665	64.392	0.000
25yr	POST-DEV	BASE	60.08	7.688	0.418	6.530	0.100282176.688	6.031	49.578	0.000
25yr	POST-DEV	BASE	60.17	7.780	0.091	6.619	0.090294363.563	6.291	31.668	0.000
25yr	POST-DEV	BASE	60.25	7.871	0.091	6.709	0.090302596.875	6.467	23.221	0.000
25yr	POST-DEV	BASE	60.33	7.962	0.091	6.799	0.090308869.406	6.601	18.596	0.000
25yr	POST-DEV	BASE	60.42	8.054	0.091	6.889	0.090314056.313	6.712	15.984	0.000
25yr	POST-DEV	BASE	60.50	8.145	0.091	6.979	0.090318647.844	6.810	14.627	0.000
25yr	POST-DEV	BASE	60.58	8.236	0.091	7.027	0.048322666.313	6.896	12.163	0.000
25yr	POST-DEV	BASE	60.67	8.286	0.049	7.075	0.048325954.500	6.966	9.758	0.000
25yr	POST-DEV	BASE	60.75	8.334	0.048	7.122	0.048328714.500	7.025	8.642	0.000
25yr	POST-DEV	BASE	60.83	8.382	0.048	7.170	0.048331215.500	7.079	8.031	0.000
25yr	POST-DEV	BASE	60.92	8.431	0.048	7.217	0.048333573.313	7.129	7.687	0.000
25yr	POST-DEV	BASE	61.00	8.479	0.048	7.264	0.047335851.406	7.178	7.500	0.000
25yr	POST-DEV	BASE	61.08	8.527	0.048	7.299	0.035337998.281	7.224	6.812	0.000
25yr	POST-DEV	BASE	61.17	8.562	0.035	7.334	0.035339933.875	7.265	6.092	0.000
25yr	POST-DEV	BASE	61.25	8.597	0.035	7.368	0.035341710.781	7.303	5.754	0.000
25yr	POST-DEV	BASE	61.33	8.632	0.035	7.403	0.035343409.375	7.339	5.570	0.000
25yr	POST-DEV	BASE	61.42	8.667	0.035	7.437	0.035345064.719	7.375	5.466	0.000
25yr	POST-DEV	BASE	61.50	8.702	0.035	7.472	0.035346696.375	7.410	5.412	0.000
25yr	POST-DEV	BASE	61.58	8.737	0.035	7.501	0.029348278.625	7.443	5.136	0.000
25yr	POST-DEV	BASE	61.67	8.767	0.029	7.529	0.029349770.188	7.475	4.807	0.000
25yr	POST-DEV	BASE	61.75	8.796	0.029	7.558	0.029351189.344	7.506	4.654	0.000
25yr	POST-DEV	BASE	61.83	8.825	0.029	7.587	0.029352572.875	7.535	4.570	0.000
25yr	POST-DEV	BASE	61.92	8.854	0.029	7.616	0.029353936.750	7.564	4.523	0.000
25yr	POST-DEV	BASE	62.00	8.883	0.029	7.644	0.028355289.250	7.593	4.494	0.000
25yr	POST-DEV	BASE	62.08	8.912	0.029	7.665	0.021356582.281	7.621	4.126	0.000
25yr	POST-DEV	BASE	62.17	8.934	0.021	7.686	0.021357755.531	7.646	3.695	0.000
25yr	POST-DEV	BASE	62.25	8.955	0.021	7.707	0.021358833.781	7.669	3.493	0.000
25yr	POST-DEV	BASE	62.33	8.976	0.021	7.728	0.021359865.031	7.691	3.382	0.000
25yr	POST-DEV	BASE	62.42	8.997	0.021	7.749	0.021360870.281	7.712	3.320	0.000
25yr	POST-DEV	BASE	62.50	9.019	0.021	7.770	0.021361861.281	7.734	3.287	0.000
25yr	POST-DEV	BASE	62.58	9.040	0.021	7.789	0.019362830.844	7.754	3.177	0.000
25yr	POST-DEV	BASE	62.67	9.059	0.019	7.808	0.019363764.500	7.774	3.048	0.000
25yr	POST-DEV	BASE	62.75	9.078	0.019	7.826	0.019364669.813	7.794	2.988	0.000
25yr	POST-DEV	BASE	62.83	9.097	0.019	7.845	0.019365561.219	7.813	2.955	0.000
25yr	POST-DEV	BASE	62.92	9.116	0.019	7.864	0.019366444.938	7.832	2.937	0.000
25yr	POST-DEV	BASE	63.00	9.135	0.019	7.883	0.019367324.438	7.850	2.927	0.000
25yr	POST-DEV	BASE	63.08	9.154	0.019	7.901	0.019368201.531	7.869	2.920	0.000
25yr	POST-DEV	BASE	63.17	9.173	0.019	7.920	0.019369077.219	7.888	2.917	0.000
25yr	POST-DEV	BASE	63.25	9.192	0.019	7.939	0.019369952.281	7.907	2.916	0.000
25yr	POST-DEV	BASE	63.33	9.211	0.019	7.957	0.019370827.094	7.925	2.916	0.000
25yr	POST-DEV	BASE	63.42	9.230	0.019	7.976	0.019371701.781	7.944	2.915	0.000
25yr	POST-DEV	BASE	63.50	9.249	0.019	7.995	0.019372576.406	7.963	2.915	0.000
25yr	POST-DEV	BASE	63.58	9.268	0.019	8.013	0.019373451.031	7.981	2.915	0.000
25yr	POST-DEV	BASE	63.67	9.287	0.019	8.032	0.019374325.688	8.000	2.916	0.000
25yr	POST-DEV	BASE	63.75	9.305	0.019	8.051	0.019375200.406	8.019	2.916	0.000
25yr	POST-DEV	BASE	63.83	9.324	0.019	8.069	0.019376075.156	8.037	2.916	0.000



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25yr	POST-DEV	BASE	63.92	9.343	0.019	8.088	0.019376949.938	8.056	2.916	0.000
25yr	POST-DEV	BASE	64.00	9.362	0.019	8.106	0.018377824.344	8.075	2.913	0.000
25yr	POST-DEV	BASE	64.08	9.381	0.019	8.118	0.012378648.125	8.092	2.578	0.000
25yr	POST-DEV	BASE	64.17	9.393	0.011	8.129	0.011379358.313	8.108	2.157	0.000
25yr	POST-DEV	BASE	64.25	9.404	0.011	8.140	0.011379975.688	8.121	1.959	0.000
25yr	POST-DEV	BASE	64.33	9.415	0.011	8.151	0.011380547.031	8.133	1.850	0.000
25yr	POST-DEV	BASE	64.42	9.427	0.011	8.163	0.011381092.844	8.145	1.789	0.000
25yr	POST-DEV	BASE	64.50	9.438	0.011	8.174	0.011381624.750	8.156	1.757	0.000
25yr	POST-DEV	BASE	64.58	9.449	0.011	8.185	0.011382149.750	8.167	1.743	0.000
25yr	POST-DEV	BASE	64.67	9.460	0.011	8.196	0.011382672.469	8.178	1.742	0.000
25yr	POST-DEV	BASE	64.75	9.472	0.011	8.207	0.011383195.188	8.190	1.742	0.000
25yr	POST-DEV	BASE	64.83	9.483	0.011	8.218	0.011383717.906	8.201	1.742	0.000
25yr	POST-DEV	BASE	64.92	9.494	0.011	8.230	0.011384240.563	8.212	1.742	0.000
25yr	POST-DEV	BASE	65.00	9.506	0.011	8.241	0.011384763.313	8.223	1.742	0.000
25yr	POST-DEV	BASE	65.08	9.517	0.011	8.252	0.011385286.656	8.234	1.746	0.000
25yr	POST-DEV	BASE	65.17	9.528	0.011	8.263	0.011385811.188	8.245	1.751	0.000
25yr	POST-DEV	BASE	65.25	9.540	0.011	8.275	0.011386336.875	8.257	1.753	0.000
25yr	POST-DEV	BASE	65.33	9.551	0.011	8.286	0.011386863.094	8.268	1.755	0.000
25yr	POST-DEV	BASE	65.42	9.563	0.011	8.297	0.011387389.531	8.279	1.755	0.000
25yr	POST-DEV	BASE	65.50	9.574	0.011	8.308	0.011387916.219	8.290	1.756	0.000
25yr	POST-DEV	BASE	65.58	9.585	0.011	8.320	0.011388443.000	8.302	1.756	0.000
25yr	POST-DEV	BASE	65.67	9.597	0.011	8.331	0.011388969.750	8.313	1.756	0.000
25yr	POST-DEV	BASE	65.75	9.608	0.011	8.342	0.011389496.594	8.324	1.756	0.000
25yr	POST-DEV	BASE	65.83	9.620	0.011	8.353	0.011390023.469	8.335	1.756	0.000
25yr	POST-DEV	BASE	65.92	9.631	0.011	8.365	0.011390550.250	8.347	1.756	0.000
25yr	POST-DEV	BASE	66.00	9.642	0.011	8.376	0.011391077.125	8.358	1.756	0.000
25yr	POST-DEV	BASE	66.08	9.654	0.011	8.387	0.011391604.031	8.369	1.756	0.000
25yr	POST-DEV	BASE	66.17	9.665	0.011	8.398	0.011392130.813	8.381	1.756	0.000
25yr	POST-DEV	BASE	66.25	9.677	0.011	8.410	0.011392657.688	8.392	1.756	0.000
25yr	POST-DEV	BASE	66.33	9.688	0.011	8.421	0.011393184.563	8.403	1.756	0.000
25yr	POST-DEV	BASE	66.42	9.699	0.011	8.432	0.011393711.375	8.414	1.756	0.000
25yr	POST-DEV	BASE	66.50	9.711	0.011	8.443	0.011394238.281	8.426	1.756	0.000
25yr	POST-DEV	BASE	66.58	9.722	0.011	8.455	0.011394765.188	8.437	1.756	0.000
25yr	POST-DEV	BASE	66.67	9.734	0.011	8.466	0.011395292.031	8.448	1.756	0.000
25yr	POST-DEV	BASE	66.75	9.745	0.011	8.477	0.011395818.969	8.459	1.756	0.000
25yr	POST-DEV	BASE	66.83	9.756	0.011	8.488	0.011396345.906	8.471	1.756	0.000
25yr	POST-DEV	BASE	66.92	9.768	0.011	8.500	0.011396872.781	8.482	1.756	0.000
25yr	POST-DEV	BASE	67.00	9.779	0.011	8.511	0.011397399.750	8.493	1.757	0.000
25yr	POST-DEV	BASE	67.08	9.790	0.011	8.522	0.011397926.750	8.504	1.757	0.000
25yr	POST-DEV	BASE	67.17	9.802	0.011	8.533	0.011398453.656	8.516	1.757	0.000
25yr	POST-DEV	BASE	67.25	9.813	0.011	8.545	0.011398980.656	8.527	1.757	0.000
25yr	POST-DEV	BASE	67.33	9.825	0.011	8.556	0.011399507.688	8.538	1.757	0.000
25yr	POST-DEV	BASE	67.42	9.836	0.011	8.567	0.011400034.656	8.549	1.757	0.000
25yr	POST-DEV	BASE	67.50	9.847	0.011	8.578	0.011400561.719	8.561	1.757	0.000
25yr	POST-DEV	BASE	67.58	9.859	0.011	8.590	0.011401088.781	8.572	1.757	0.000
25yr	POST-DEV	BASE	67.67	9.870	0.011	8.601	0.011401615.781	8.583	1.757	0.000
25yr	POST-DEV	BASE	67.75	9.882	0.011	8.612	0.011402142.875	8.595	1.757	0.000
25yr	POST-DEV	BASE	67.83	9.893	0.011	8.624	0.011402669.969	8.606	1.757	0.000
25yr	POST-DEV	BASE	67.92	9.904	0.011	8.635	0.011403197.000	8.617	1.757	0.000
25yr	POST-DEV	BASE	68.00	9.916	0.011	8.646	0.011403723.813	8.628	1.755	0.000
25yr	POST-DEV	BASE	68.08	9.927	0.011	8.653	0.008404222.906	8.639	1.572	0.000
25yr	POST-DEV	BASE	68.17	9.935	0.008	8.661	0.007404663.625	8.648	1.366	0.000
25yr	POST-DEV	BASE	68.25	9.942	0.008	8.668	0.007405058.906	8.657	1.269	0.000
25yr	POST-DEV	BASE	68.33	9.950	0.008	8.676	0.007405431.594	8.665	1.216	0.000
25yr	POST-DEV	BASE	68.42	9.957	0.008	8.683	0.007405791.719	8.672	1.186	0.000
25yr	POST-DEV	BASE	68.50	9.965	0.008	8.691	0.007406145.063	8.680	1.170	0.000
25yr	POST-DEV	BASE	68.58	9.972	0.008	8.698	0.007406495.031	8.688	1.163	0.000
25yr	POST-DEV	BASE	68.67	9.980	0.008	8.706	0.007406843.906	8.695	1.163	0.000
25yr	POST-DEV	BASE	68.75	9.987	0.008	8.713	0.007407192.813	8.702	1.163	0.000
25yr	POST-DEV	BASE	68.83	9.995	0.008	8.720	0.007407541.719	8.710	1.163	0.000
25yr	POST-DEV	BASE	68.92	10.002	0.008	8.728	0.007407890.563	8.717	1.163	0.000
25yr	POST-DEV	BASE	69.00	10.010	0.008	8.735	0.007408239.469	8.725	1.163	0.000
25yr	POST-DEV	BASE	69.08	10.018	0.008	8.743	0.007408588.375	8.732	1.163	0.000
25yr	POST-DEV	BASE	69.17	10.025	0.008	8.750	0.007408937.250	8.740	1.163	0.000
25yr	POST-DEV	BASE	69.25	10.033	0.008	8.758	0.007409286.188	8.747	1.163	0.000
25yr	POST-DEV	BASE	69.33	10.040	0.008	8.765	0.007409635.125	8.755	1.163	0.000
25yr	POST-DEV	BASE	69.42	10.048	0.008	8.773	0.007409984.000	8.762	1.163	0.000
25yr	POST-DEV	BASE	69.50	10.055	0.008	8.780	0.007410332.938	8.770	1.163	0.000
25yr	POST-DEV	BASE	69.58	10.063	0.008	8.788	0.007410681.875	8.777	1.163	0.000
25yr	POST-DEV	BASE	69.67	10.070	0.008	8.795	0.007411030.781	8.784	1.163	0.000

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25yr	POST-DEV	BASE	69.75	10.078	0.008	8.802	0.007411379.750	8.792	1.163	0.000	
25yr	POST-DEV	BASE	69.83	10.085	0.008	8.810	0.007411728.719	8.799	1.163	0.000	
25yr	POST-DEV	BASE	69.92	10.093	0.008	8.817	0.007412077.625	8.807	1.163	0.000	
25yr	POST-DEV	BASE	70.00	10.100	0.008	8.825	0.007412426.594	8.814	1.163	0.000	
25yr	POST-DEV	BASE	70.08	10.108	0.008	8.832	0.007412775.875	8.822	1.165	0.000	
25yr	POST-DEV	BASE	70.17	10.116	0.008	8.840	0.007413125.750	8.829	1.168	0.000	
25yr	POST-DEV	BASE	70.25	10.123	0.008	8.847	0.007413476.219	8.837	1.169	0.000	
25yr	POST-DEV	BASE	70.33	10.131	0.008	8.855	0.007413826.938	8.844	1.169	0.000	
25yr	POST-DEV	BASE	70.42	10.138	0.008	8.862	0.007414177.750	8.852	1.170	0.000	
25yr	POST-DEV	BASE	70.50	10.146	0.008	8.870	0.007414528.688	8.859	1.170	0.000	
25yr	POST-DEV	BASE	70.58	10.154	0.008	8.877	0.007414879.688	8.867	1.170	0.000	
25yr	POST-DEV	BASE	70.67	10.161	0.008	8.885	0.007415230.625	8.874	1.170	0.000	
25yr	POST-DEV	BASE	70.75	10.169	0.008	8.892	0.007415581.625	8.882	1.170	0.000	
25yr	POST-DEV	BASE	70.83	10.176	0.008	8.900	0.007415932.625	8.889	1.170	0.000	
25yr	POST-DEV	BASE	70.92	10.184	0.008	8.907	0.007416283.594	8.897	1.170	0.000	
25yr	POST-DEV	BASE	71.00	10.191	0.008	8.915	0.007416634.625	8.904	1.170	0.000	
25yr	POST-DEV	BASE	71.08	10.199	0.008	8.922	0.007416985.656	8.912	1.170	0.000	
25yr	POST-DEV	BASE	71.17	10.207	0.008	8.930	0.007417336.625	8.919	1.170	0.000	
25yr	POST-DEV	BASE	71.25	10.214	0.008	8.937	0.007417687.656	8.927	1.170	0.000	
25yr	POST-DEV	BASE	71.33	10.222	0.008	8.945	0.007418038.688	8.934	1.170	0.000	
25yr	POST-DEV	BASE	71.42	10.229	0.008	8.952	0.007418389.688	8.942	1.170	0.000	
25yr	POST-DEV	BASE	71.50	10.237	0.008	8.960	0.007418740.750	8.949	1.170	0.000	
25yr	POST-DEV	BASE	71.58	10.245	0.008	8.967	0.007419091.813	8.957	1.170	0.000	
25yr	POST-DEV	BASE	71.67	10.252	0.008	8.975	0.007419442.813	8.964	1.170	0.000	
25yr	POST-DEV	BASE	71.75	10.260	0.008	8.982	0.007419793.875	8.972	1.170	0.000	
25yr	POST-DEV	BASE	71.83	10.267	0.008	8.990	0.007420144.969	8.979	1.170	0.000	
25yr	POST-DEV	BASE	71.92	10.275	0.008	8.997	0.007420496.000	8.987	1.170	0.000	
25yr	POST-DEV	BASE	72.00	10.282	0.008	9.005	0.007420846.938	8.994	1.169	0.000	
25yr	PRE-DEV	BASE	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	0.08	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	0.17	0.004	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	0.25	0.008	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	0.33	0.012	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	0.42	0.015	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	0.50	0.019	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	0.58	0.023	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	0.67	0.027	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	0.75	0.031	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	0.83	0.035	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	0.92	0.038	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	1.00	0.042	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	1.08	0.046	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	1.17	0.050	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	1.25	0.054	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	1.33	0.058	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	1.42	0.061	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	1.50	0.065	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	1.58	0.069	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	1.67	0.073	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	1.75	0.077	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	1.83	0.081	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	1.92	0.084	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	2.00	0.088	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	2.08	0.092	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	2.17	0.096	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	2.25	0.100	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	2.33	0.104	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	2.42	0.107	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	2.50	0.111	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	2.58	0.115	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	2.67	0.119	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	2.75	0.123	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	2.83	0.127	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	2.92	0.130	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	3.00	0.134	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	3.08	0.138	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	3.17	0.142	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	3.25	0.146	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	3.33	0.150	0.004	0.000	0.000	0.000	0.000	0.000	
25yr	PRE-DEV	BASE	3.42	0.154	0.004	0.000	0.000	0.000	0.000	0.000	



















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25yr	PRE-DEV	BASE	44.33	2.465	0.006	0.000	0.000	0.328	0.000	0.001	0.000
25yr	PRE-DEV	BASE	44.42	2.471	0.006	0.000	0.000	0.658	0.000	0.001	0.000
25yr	PRE-DEV	BASE	44.50	2.476	0.006	0.000	0.000	1.152	0.000	0.002	0.000
25yr	PRE-DEV	BASE	44.58	2.482	0.006	0.000	0.000	1.834	0.000	0.003	0.000
25yr	PRE-DEV	BASE	44.67	2.488	0.006	0.000	0.000	2.720	0.000	0.003	0.000
25yr	PRE-DEV	BASE	44.75	2.493	0.006	0.000	0.000	3.824	0.000	0.004	0.000
25yr	PRE-DEV	BASE	44.83	2.499	0.006	0.000	0.000	5.157	0.000	0.005	0.000
25yr	PRE-DEV	BASE	44.92	2.505	0.006	0.000	0.000	6.730	0.000	0.006	0.000
25yr	PRE-DEV	BASE	45.00	2.510	0.006	0.000	0.000	8.549	0.000	0.006	0.000
25yr	PRE-DEV	BASE	45.08	2.516	0.006	0.000	0.000	10.622	0.000	0.007	0.000
25yr	PRE-DEV	BASE	45.17	2.521	0.006	0.001	0.000	12.954	0.000	0.008	0.000
25yr	PRE-DEV	BASE	45.25	2.527	0.006	0.001	0.000	15.549	0.000	0.009	0.000
25yr	PRE-DEV	BASE	45.33	2.533	0.006	0.001	0.000	18.411	0.000	0.010	0.000
25yr	PRE-DEV	BASE	45.42	2.538	0.006	0.001	0.000	21.543	0.000	0.011	0.000
25yr	PRE-DEV	BASE	45.50	2.544	0.006	0.001	0.000	24.947	0.000	0.012	0.000
25yr	PRE-DEV	BASE	45.58	2.550	0.006	0.001	0.000	28.624	0.001	0.013	0.000
25yr	PRE-DEV	BASE	45.67	2.555	0.006	0.001	0.000	32.578	0.001	0.014	0.000
25yr	PRE-DEV	BASE	45.75	2.561	0.006	0.001	0.000	36.807	0.001	0.015	0.000
25yr	PRE-DEV	BASE	45.83	2.566	0.006	0.001	0.000	41.313	0.001	0.015	0.000
25yr	PRE-DEV	BASE	45.92	2.572	0.006	0.001	0.000	46.096	0.001	0.016	0.000
25yr	PRE-DEV	BASE	46.00	2.578	0.006	0.002	0.000	51.157	0.001	0.017	0.000
25yr	PRE-DEV	BASE	46.08	2.583	0.006	0.002	0.000	56.493	0.001	0.018	0.000
25yr	PRE-DEV	BASE	46.17	2.589	0.006	0.002	0.000	62.106	0.001	0.019	0.000
25yr	PRE-DEV	BASE	46.25	2.595	0.006	0.002	0.000	67.994	0.001	0.020	0.000
25yr	PRE-DEV	BASE	46.33	2.600	0.006	0.002	0.000	74.158	0.001	0.021	0.000
25yr	PRE-DEV	BASE	46.42	2.606	0.006	0.002	0.000	80.597	0.001	0.022	0.000
25yr	PRE-DEV	BASE	46.50	2.611	0.006	0.002	0.000	87.311	0.002	0.023	0.000
25yr	PRE-DEV	BASE	46.58	2.617	0.006	0.003	0.000	94.298	0.002	0.024	0.000
25yr	PRE-DEV	BASE	46.67	2.623	0.006	0.003	0.000	101.560	0.002	0.025	0.000
25yr	PRE-DEV	BASE	46.75	2.628	0.006	0.003	0.000	109.095	0.002	0.026	0.000
25yr	PRE-DEV	BASE	46.83	2.634	0.006	0.003	0.000	116.903	0.002	0.026	0.000
25yr	PRE-DEV	BASE	46.92	2.640	0.006	0.003	0.000	124.984	0.002	0.027	0.000
25yr	PRE-DEV	BASE	47.00	2.645	0.006	0.003	0.000	133.337	0.002	0.028	0.000
25yr	PRE-DEV	BASE	47.08	2.651	0.006	0.004	0.000	141.963	0.003	0.029	0.000
25yr	PRE-DEV	BASE	47.17	2.657	0.006	0.004	0.000	150.860	0.003	0.030	0.000
25yr	PRE-DEV	BASE	47.25	2.662	0.006	0.004	0.000	160.028	0.003	0.031	0.000
25yr	PRE-DEV	BASE	47.33	2.668	0.006	0.004	0.000	169.467	0.003	0.032	0.000
25yr	PRE-DEV	BASE	47.42	2.673	0.006	0.004	0.000	179.177	0.003	0.033	0.000
25yr	PRE-DEV	BASE	47.50	2.679	0.006	0.005	0.000	189.156	0.003	0.034	0.000
25yr	PRE-DEV	BASE	47.58	2.685	0.006	0.005	0.000	199.406	0.004	0.035	0.000
25yr	PRE-DEV	BASE	47.67	2.690	0.006	0.005	0.000	209.925	0.004	0.036	0.000
25yr	PRE-DEV	BASE	47.75	2.696	0.006	0.005	0.000	220.713	0.004	0.036	0.000
25yr	PRE-DEV	BASE	47.83	2.702	0.006	0.006	0.000	231.770	0.004	0.037	0.000
25yr	PRE-DEV	BASE	47.92	2.707	0.006	0.006	0.000	243.095	0.004	0.038	0.000
25yr	PRE-DEV	BASE	48.00	2.713	0.006	0.006	0.000	254.688	0.005	0.039	0.000
25yr	PRE-DEV	BASE	48.08	2.718	0.006	0.006	0.000	266.571	0.005	0.040	0.000
25yr	PRE-DEV	BASE	48.17	2.725	0.006	0.007	0.000	278.804	0.005	0.041	0.000
25yr	PRE-DEV	BASE	48.25	2.731	0.006	0.007	0.000	291.479	0.005	0.043	0.000
25yr	PRE-DEV	BASE	48.33	2.737	0.006	0.007	0.000	304.652	0.006	0.045	0.000
25yr	PRE-DEV	BASE	48.42	2.743	0.006	0.007	0.000	318.312	0.006	0.046	0.000
25yr	PRE-DEV	BASE	48.50	2.750	0.006	0.008	0.000	332.428	0.006	0.048	0.000
25yr	PRE-DEV	BASE	48.58	2.756	0.006	0.008	0.000	346.968	0.006	0.049	0.000
25yr	PRE-DEV	BASE	48.67	2.762	0.006	0.008	0.000	361.912	0.007	0.050	0.000
25yr	PRE-DEV	BASE	48.75	2.768	0.006	0.009	0.000	377.242	0.007	0.052	0.000
25yr	PRE-DEV	BASE	48.83	2.775	0.006	0.009	0.000	392.949	0.007	0.053	0.000
25yr	PRE-DEV	BASE	48.92	2.781	0.006	0.009	0.000	409.025	0.007	0.054	0.000
25yr	PRE-DEV	BASE	49.00	2.787	0.006	0.010	0.000	425.462	0.008	0.055	0.000
25yr	PRE-DEV	BASE	49.08	2.793	0.006	0.010	0.000	442.259	0.008	0.057	0.000
25yr	PRE-DEV	BASE	49.17	2.800	0.006	0.010	0.000	459.428	0.008	0.058	0.000
25yr	PRE-DEV	BASE	49.25	2.806	0.006	0.011	0.000	476.988	0.009	0.059	0.000
25yr	PRE-DEV	BASE	49.33	2.813	0.006	0.011	0.000	494.949	0.009	0.061	0.000
25yr	PRE-DEV	BASE	49.42	2.819	0.006	0.012	0.000	513.306	0.009	0.062	0.000
25yr	PRE-DEV	BASE	49.50	2.825	0.006	0.012	0.000	532.048	0.010	0.063	0.000
25yr	PRE-DEV	BASE	49.58	2.832	0.006	0.012	0.000	551.162	0.010	0.064	0.000
25yr	PRE-DEV	BASE	49.67	2.838	0.006	0.013	0.000	570.641	0.010	0.066	0.000
25yr	PRE-DEV	BASE	49.75	2.845	0.006	0.013	0.000	590.478	0.011	0.067	0.000
25yr	PRE-DEV	BASE	49.83	2.851	0.006	0.013	0.000	610.668	0.011	0.068	0.000
25yr	PRE-DEV	BASE	49.92	2.857	0.006	0.014	0.000	631.207	0.012	0.069	0.000
25yr	PRE-DEV	BASE	50.00	2.864	0.006	0.014	0.000	652.097	0.012	0.070	0.000
25yr	PRE-DEV	BASE	50.08	2.870	0.006	0.015	0.000	673.397	0.012	0.072	0.000

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25yr	PRE-DEV	BASE	50.17	2.878	0.008	0.015	0.001	695.289	0.013	0.074	0.000
25yr	PRE-DEV	BASE	50.25	2.885	0.008	0.016	0.001	718.018	0.013	0.077	0.000
25yr	PRE-DEV	BASE	50.33	2.893	0.008	0.016	0.001	741.714	0.014	0.081	0.000
25yr	PRE-DEV	BASE	50.42	2.900	0.008	0.017	0.001	766.343	0.014	0.084	0.000
25yr	PRE-DEV	BASE	50.50	2.908	0.008	0.017	0.001	791.810	0.014	0.086	0.000
25yr	PRE-DEV	BASE	50.58	2.915	0.008	0.018	0.001	818.027	0.015	0.089	0.000
25yr	PRE-DEV	BASE	50.67	2.923	0.008	0.019	0.001	844.929	0.015	0.091	0.000
25yr	PRE-DEV	BASE	50.75	2.930	0.008	0.019	0.001	872.470	0.016	0.093	0.000
25yr	PRE-DEV	BASE	50.83	2.938	0.008	0.020	0.001	900.620	0.016	0.095	0.000
25yr	PRE-DEV	BASE	50.92	2.946	0.008	0.020	0.001	929.353	0.017	0.097	0.000
25yr	PRE-DEV	BASE	51.00	2.953	0.008	0.021	0.001	958.648	0.018	0.099	0.000
25yr	PRE-DEV	BASE	51.08	2.961	0.008	0.022	0.001	988.533	0.018	0.101	0.000
25yr	PRE-DEV	BASE	51.17	2.969	0.008	0.022	0.001	1019.119	0.019	0.103	0.000
25yr	PRE-DEV	BASE	51.25	2.977	0.008	0.023	0.001	1050.576	0.019	0.106	0.000
25yr	PRE-DEV	BASE	51.33	2.985	0.008	0.024	0.001	1082.998	0.020	0.110	0.000
25yr	PRE-DEV	BASE	51.42	2.994	0.008	0.024	0.001	1116.341	0.020	0.113	0.000
25yr	PRE-DEV	BASE	51.50	3.002	0.008	0.025	0.001	1150.526	0.021	0.115	0.000
25yr	PRE-DEV	BASE	51.58	3.010	0.008	0.026	0.001	1185.484	0.022	0.118	0.000
25yr	PRE-DEV	BASE	51.67	3.018	0.008	0.026	0.001	1221.161	0.022	0.120	0.000
25yr	PRE-DEV	BASE	51.75	3.026	0.008	0.027	0.001	1257.520	0.023	0.122	0.000
25yr	PRE-DEV	BASE	51.83	3.035	0.008	0.028	0.001	1294.535	0.024	0.124	0.000
25yr	PRE-DEV	BASE	51.92	3.043	0.008	0.029	0.001	1332.181	0.024	0.127	0.000
25yr	PRE-DEV	BASE	52.00	3.051	0.008	0.029	0.001	1370.450	0.025	0.129	0.000
25yr	PRE-DEV	BASE	52.08	3.059	0.008	0.030	0.001	1409.510	0.026	0.132	0.000
25yr	PRE-DEV	BASE	52.17	3.070	0.011	0.031	0.001	1449.905	0.027	0.138	0.000
25yr	PRE-DEV	BASE	52.25	3.081	0.011	0.033	0.001	1492.385	0.027	0.146	0.000
25yr	PRE-DEV	BASE	52.33	3.092	0.011	0.034	0.001	1537.348	0.028	0.154	0.000
25yr	PRE-DEV	BASE	52.42	3.102	0.011	0.035	0.001	1584.684	0.029	0.162	0.000
25yr	PRE-DEV	BASE	52.50	3.113	0.011	0.036	0.001	1634.094	0.030	0.168	0.000
25yr	PRE-DEV	BASE	52.58	3.124	0.011	0.037	0.001	1685.302	0.031	0.174	0.000
25yr	PRE-DEV	BASE	52.67	3.134	0.011	0.038	0.001	1738.105	0.032	0.179	0.000
25yr	PRE-DEV	BASE	52.75	3.145	0.011	0.039	0.001	1792.360	0.033	0.183	0.000
25yr	PRE-DEV	BASE	52.83	3.156	0.011	0.040	0.001	1847.972	0.034	0.188	0.000
25yr	PRE-DEV	BASE	52.92	3.167	0.011	0.041	0.001	1904.860	0.035	0.192	0.000
25yr	PRE-DEV	BASE	53.00	3.177	0.011	0.043	0.001	1962.972	0.036	0.196	0.000
25yr	PRE-DEV	BASE	53.08	3.188	0.011	0.044	0.001	2022.462	0.037	0.201	0.000
25yr	PRE-DEV	BASE	53.17	3.201	0.013	0.046	0.002	2083.951	0.038	0.209	0.000
25yr	PRE-DEV	BASE	53.25	3.214	0.013	0.047	0.002	2148.298	0.039	0.220	0.000
25yr	PRE-DEV	BASE	53.33	3.228	0.013	0.049	0.002	2215.945	0.041	0.231	0.000
25yr	PRE-DEV	BASE	53.42	3.241	0.013	0.050	0.002	2286.764	0.042	0.241	0.000
25yr	PRE-DEV	BASE	53.50	3.254	0.013	0.052	0.002	2360.386	0.043	0.250	0.000
25yr	PRE-DEV	BASE	53.58	3.267	0.013	0.054	0.002	2436.463	0.045	0.257	0.000
25yr	PRE-DEV	BASE	53.67	3.280	0.013	0.055	0.002	2514.743	0.046	0.264	0.000
25yr	PRE-DEV	BASE	53.75	3.294	0.013	0.057	0.002	2595.041	0.047	0.271	0.000
25yr	PRE-DEV	BASE	53.83	3.307	0.013	0.059	0.002	2677.232	0.049	0.277	0.000
25yr	PRE-DEV	BASE	53.92	3.320	0.013	0.060	0.002	2761.207	0.051	0.283	0.000
25yr	PRE-DEV	BASE	54.00	3.333	0.013	0.062	0.002	2846.878	0.052	0.288	0.000
25yr	PRE-DEV	BASE	54.08	3.346	0.013	0.064	0.002	2934.445	0.054	0.295	0.000
25yr	PRE-DEV	BASE	54.17	3.362	0.016	0.066	0.002	3024.635	0.055	0.306	0.000
25yr	PRE-DEV	BASE	54.25	3.378	0.016	0.068	0.002	3118.523	0.057	0.320	0.000
25yr	PRE-DEV	BASE	54.33	3.394	0.016	0.071	0.002	3216.722	0.059	0.335	0.000
25yr	PRE-DEV	BASE	54.42	3.409	0.016	0.073	0.002	3319.027	0.061	0.347	0.000
25yr	PRE-DEV	BASE	54.50	3.425	0.016	0.075	0.002	3424.976	0.063	0.359	0.000
25yr	PRE-DEV	BASE	54.58	3.441	0.016	0.077	0.002	3534.143	0.065	0.369	0.000
25yr	PRE-DEV	BASE	54.67	3.457	0.016	0.080	0.002	3646.207	0.067	0.378	0.000
25yr	PRE-DEV	BASE	54.75	3.472	0.016	0.082	0.002	3760.944	0.069	0.387	0.000
25yr	PRE-DEV	BASE	54.83	3.488	0.016	0.085	0.002	3878.199	0.071	0.395	0.000
25yr	PRE-DEV	BASE	54.92	3.504	0.016	0.087	0.002	3997.835	0.073	0.403	0.000
25yr	PRE-DEV	BASE	55.00	3.520	0.016	0.089	0.002	4119.737	0.075	0.410	0.000
25yr	PRE-DEV	BASE	55.08	3.535	0.016	0.092	0.003	4244.128	0.078	0.419	0.000
25yr	PRE-DEV	BASE	55.17	3.554	0.018	0.095	0.003	4371.871	0.080	0.432	0.000
25yr	PRE-DEV	BASE	55.25	3.572	0.018	0.098	0.003	4504.244	0.082	0.450	0.000
25yr	PRE-DEV	BASE	55.33	3.590	0.018	0.101	0.003	4641.950	0.085	0.468	0.000
25yr	PRE-DEV	BASE	55.42	3.609	0.018	0.104	0.003	4784.753	0.088	0.484	0.000
25yr	PRE-DEV	BASE	55.50	3.627	0.018	0.107	0.003	4932.098	0.090	0.498	0.000
25yr	PRE-DEV	BASE	55.58	3.645	0.018	0.111	0.003	5083.476	0.093	0.511	0.000
25yr	PRE-DEV	BASE	55.67	3.664	0.018	0.114	0.003	5238.502	0.096	0.523	0.000
25yr	PRE-DEV	BASE	55.75	3.682	0.018	0.117	0.003	5396.903	0.099	0.533	0.000
25yr	PRE-DEV	BASE	55.83	3.700	0.018	0.120	0.003	5558.491	0.102	0.544	0.000
25yr	PRE-DEV	BASE	55.92	3.719	0.018	0.124	0.003	5723.103	0.105	0.554	0.000

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25yr	PRE-DEV	BASE	56.00	3.737	0.018	0.127	0.003	5890.623	0.108	0.563	0.000
25yr	PRE-DEV	BASE	56.08	3.755	0.018	0.131	0.004	6061.342	0.111	0.575	0.000
25yr	PRE-DEV	BASE	56.17	3.777	0.021	0.135	0.004	6236.521	0.114	0.593	0.000
25yr	PRE-DEV	BASE	56.25	3.798	0.021	0.139	0.004	6417.931	0.117	0.616	0.000
25yr	PRE-DEV	BASE	56.33	3.820	0.021	0.143	0.004	6606.496	0.121	0.641	0.000
25yr	PRE-DEV	BASE	56.42	3.841	0.021	0.147	0.004	6801.980	0.124	0.663	0.000
25yr	PRE-DEV	BASE	56.50	3.863	0.021	0.152	0.004	7003.608	0.128	0.682	0.000
25yr	PRE-DEV	BASE	56.58	3.884	0.021	0.156	0.004	7210.650	0.132	0.699	0.000
25yr	PRE-DEV	BASE	56.67	3.905	0.021	0.160	0.004	7422.576	0.136	0.714	0.000
25yr	PRE-DEV	BASE	56.75	3.927	0.021	0.165	0.004	7638.996	0.140	0.729	0.000
25yr	PRE-DEV	BASE	56.83	3.948	0.021	0.169	0.004	7859.645	0.144	0.742	0.000
25yr	PRE-DEV	BASE	56.92	3.970	0.021	0.174	0.005	8084.292	0.148	0.755	0.000
25yr	PRE-DEV	BASE	57.00	3.991	0.021	0.178	0.005	8312.773	0.152	0.768	0.000
25yr	PRE-DEV	BASE	57.08	4.012	0.021	0.184	0.005	8545.562	0.156	0.784	0.000
25yr	PRE-DEV	BASE	57.17	4.038	0.025	0.189	0.006	8784.461	0.161	0.809	0.000
25yr	PRE-DEV	BASE	57.25	4.063	0.025	0.195	0.006	9032.113	0.165	0.842	0.000
25yr	PRE-DEV	BASE	57.33	4.088	0.025	0.201	0.006	9290.021	0.170	0.877	0.000
25yr	PRE-DEV	BASE	57.42	4.114	0.025	0.206	0.006	9557.762	0.175	0.908	0.000
25yr	PRE-DEV	BASE	57.50	4.139	0.025	0.212	0.006	9834.203	0.180	0.935	0.000
25yr	PRE-DEV	BASE	57.58	4.165	0.025	0.219	0.006	10118.679	0.185	0.961	0.000
25yr	PRE-DEV	BASE	57.67	4.192	0.028	0.225	0.007	10411.535	0.190	0.991	0.000
25yr	PRE-DEV	BASE	57.75	4.220	0.028	0.232	0.007	10713.862	0.196	1.025	0.000
25yr	PRE-DEV	BASE	57.83	4.247	0.028	0.238	0.007	11026.216	0.202	1.058	0.000
25yr	PRE-DEV	BASE	57.92	4.275	0.028	0.245	0.007	11347.967	0.208	1.087	0.000
25yr	PRE-DEV	BASE	58.00	4.302	0.028	0.252	0.007	11678.140	0.214	1.114	0.000
25yr	PRE-DEV	BASE	58.08	4.330	0.028	0.260	0.008	12016.470	0.220	1.142	0.000
25yr	PRE-DEV	BASE	58.17	4.360	0.030	0.267	0.008	12363.975	0.226	1.175	0.000
25yr	PRE-DEV	BASE	58.25	4.391	0.031	0.275	0.008	12722.699	0.233	1.216	0.000
25yr	PRE-DEV	BASE	58.33	4.422	0.031	0.283	0.008	13093.795	0.240	1.258	0.000
25yr	PRE-DEV	BASE	58.42	4.452	0.031	0.291	0.008	13476.563	0.247	1.294	0.000
25yr	PRE-DEV	BASE	58.50	4.483	0.031	0.300	0.008	13869.882	0.254	1.328	0.000
25yr	PRE-DEV	BASE	58.58	4.513	0.031	0.310	0.011	14274.754	0.261	1.371	0.000
25yr	PRE-DEV	BASE	58.67	4.554	0.041	0.322	0.011	14696.581	0.269	1.441	0.000
25yr	PRE-DEV	BASE	58.75	4.594	0.041	0.333	0.011	15143.598	0.277	1.539	0.000
25yr	PRE-DEV	BASE	58.83	4.635	0.041	0.344	0.011	15620.273	0.286	1.639	0.000
25yr	PRE-DEV	BASE	58.92	4.675	0.041	0.356	0.012	16124.924	0.295	1.726	0.000
25yr	PRE-DEV	BASE	59.00	4.716	0.041	0.369	0.013	16654.221	0.305	1.803	0.000
25yr	PRE-DEV	BASE	59.08	4.757	0.041	0.387	0.018	17209.883	0.315	1.901	0.000
25yr	PRE-DEV	BASE	59.17	4.820	0.063	0.406	0.019	17805.158	0.326	2.067	0.000
25yr	PRE-DEV	BASE	59.25	4.883	0.063	0.425	0.019	18459.422	0.338	2.295	0.000
25yr	PRE-DEV	BASE	59.33	4.945	0.063	0.444	0.020	19182.463	0.351	2.526	0.000
25yr	PRE-DEV	BASE	59.42	5.008	0.063	0.464	0.020	19970.598	0.365	2.729	0.000
25yr	PRE-DEV	BASE	59.50	5.070	0.063	0.504	0.040	20824.488	0.381	2.964	0.000
25yr	PRE-DEV	BASE	59.58	5.133	0.063	0.632	0.128	21824.955	0.399	3.706	0.000
25yr	PRE-DEV	BASE	59.67	5.558	0.425	0.796	0.164	23275.309	0.426	5.963	0.000
25yr	PRE-DEV	BASE	59.75	5.986	0.428	0.973	0.177	25613.764	0.469	9.627	0.000
25yr	PRE-DEV	BASE	59.83	6.414	0.428	1.164	0.191	29125.107	0.533	13.782	0.000
25yr	PRE-DEV	BASE	59.92	6.842	0.428	1.366	0.202	33846.922	0.619	17.696	0.000
25yr	PRE-DEV	BASE	60.00	7.270	0.428	1.549	0.183	39663.789	0.726	21.083	0.000
25yr	PRE-DEV	BASE	60.08	7.688	0.418	1.621	0.072	46326.820	0.847	23.337	0.000
25yr	PRE-DEV	BASE	60.17	7.780	0.091	1.669	0.047	53322.328	0.975	23.299	0.000
25yr	PRE-DEV	BASE	60.25	7.871	0.091	1.716	0.048	60006.496	1.098	21.262	0.000
25yr	PRE-DEV	BASE	60.33	7.962	0.091	1.765	0.048	66006.727	1.207	18.740	0.000
25yr	PRE-DEV	BASE	60.42	8.054	0.091	1.813	0.049	71314.461	1.305	16.645	0.000
25yr	PRE-DEV	BASE	60.50	8.145	0.091	1.860	0.046	76078.266	1.392	15.114	0.000
25yr	PRE-DEV	BASE	60.58	8.236	0.091	1.889	0.029	80430.055	1.471	13.898	0.000
25yr	PRE-DEV	BASE	60.67	8.286	0.049	1.915	0.026	84423.359	1.544	12.724	0.000
25yr	PRE-DEV	BASE	60.75	8.334	0.048	1.941	0.026	88053.063	1.611	11.474	0.000
25yr	PRE-DEV	BASE	60.83	8.382	0.048	1.968	0.026	91317.914	1.670	10.291	0.000
25yr	PRE-DEV	BASE	60.92	8.431	0.048	1.995	0.027	94261.484	1.724	9.333	0.000
25yr	PRE-DEV	BASE	61.00	8.479	0.048	2.021	0.026	96943.641	1.773	8.549	0.000
25yr	PRE-DEV	BASE	61.08	8.527	0.048	2.041	0.020	99407.508	1.818	7.877	0.000
25yr	PRE-DEV	BASE	61.17	8.562	0.035	2.060	0.020	101673.820	1.860	7.231	0.000
25yr	PRE-DEV	BASE	61.25	8.597	0.035	2.080	0.020	103747.164	1.898	6.591	0.000
25yr	PRE-DEV	BASE	61.33	8.632	0.035	2.099	0.020	105636.578	1.932	6.005	0.000
25yr	PRE-DEV	BASE	61.42	8.667	0.035	2.119	0.020	107364.531	1.964	5.514	0.000
25yr	PRE-DEV	BASE	61.50	8.702	0.035	2.139	0.020	108953.852	1.993	5.081	0.000
25yr	PRE-DEV	BASE	61.58	8.737	0.035	2.155	0.017	110423.023	2.020	4.713	0.000
25yr	PRE-DEV	BASE	61.67	8.767	0.029	2.172	0.017	111786.305	2.045	4.375	0.000
25yr	PRE-DEV	BASE	61.75	8.796	0.029	2.188	0.017	113050.773	2.068	4.055	0.000

		TIME SERIES 25 YR.TXT								
25yr	PRE-DEV	BASE	61.83	8.825	0.029	2.205	0.017114225.773	2.089	3.779	0.000
25yr	PRE-DEV	BASE	61.92	8.854	0.029	2.222	0.017115330.664	2.110	3.587	0.000
25yr	PRE-DEV	BASE	62.00	8.883	0.029	2.238	0.016116388.094	2.129	3.462	0.000
25yr	PRE-DEV	BASE	62.08	8.912	0.029	2.250	0.013117409.336	2.148	3.346	0.000
25yr	PRE-DEV	BASE	62.17	8.934	0.021	2.263	0.012118391.367	2.166	3.201	0.000
25yr	PRE-DEV	BASE	62.25	8.955	0.021	2.275	0.012119324.938	2.183	3.023	0.000
25yr	PRE-DEV	BASE	62.33	8.976	0.021	2.287	0.012120206.773	2.199	2.856	0.000
25yr	PRE-DEV	BASE	62.42	8.997	0.021	2.299	0.012121043.719	2.214	2.724	0.000
25yr	PRE-DEV	BASE	62.50	9.019	0.021	2.312	0.012121845.984	2.229	2.625	0.000
25yr	PRE-DEV	BASE	62.58	9.040	0.021	2.323	0.011122620.992	2.243	2.542	0.000
25yr	PRE-DEV	BASE	62.67	9.059	0.019	2.334	0.011123371.461	2.257	2.461	0.000
25yr	PRE-DEV	BASE	62.75	9.078	0.019	2.345	0.011124097.422	2.270	2.379	0.000
25yr	PRE-DEV	BASE	62.83	9.097	0.019	2.356	0.011124799.719	2.283	2.303	0.000
25yr	PRE-DEV	BASE	62.92	9.116	0.019	2.367	0.011125481.672	2.295	2.243	0.000
25yr	PRE-DEV	BASE	63.00	9.135	0.019	2.378	0.011126147.672	2.308	2.197	0.000
25yr	PRE-DEV	BASE	63.08	9.154	0.019	2.389	0.011126801.219	2.319	2.160	0.000
25yr	PRE-DEV	BASE	63.17	9.173	0.019	2.400	0.011127444.758	2.331	2.130	0.000
25yr	PRE-DEV	BASE	63.25	9.192	0.019	2.411	0.011128080.172	2.343	2.106	0.000
25yr	PRE-DEV	BASE	63.33	9.211	0.019	2.422	0.011128708.930	2.354	2.086	0.000
25yr	PRE-DEV	BASE	63.42	9.230	0.019	2.433	0.011129332.438	2.366	2.071	0.000
25yr	PRE-DEV	BASE	63.50	9.249	0.019	2.444	0.011129951.984	2.377	2.060	0.000
25yr	PRE-DEV	BASE	63.58	9.268	0.019	2.456	0.011130568.555	2.388	2.051	0.000
25yr	PRE-DEV	BASE	63.67	9.287	0.019	2.467	0.011131182.844	2.400	2.044	0.000
25yr	PRE-DEV	BASE	63.75	9.305	0.019	2.478	0.011131795.453	2.411	2.040	0.000
25yr	PRE-DEV	BASE	63.83	9.324	0.019	2.489	0.011132406.891	2.422	2.037	0.000
25yr	PRE-DEV	BASE	63.92	9.343	0.019	2.500	0.011133017.688	2.433	2.035	0.000
25yr	PRE-DEV	BASE	64.00	9.362	0.019	2.511	0.011133628.125	2.444	2.034	0.000
25yr	PRE-DEV	BASE	64.08	9.381	0.019	2.518	0.007134235.078	2.455	2.012	0.000
25yr	PRE-DEV	BASE	64.17	9.393	0.011	2.525	0.007134828.406	2.466	1.944	0.000
25yr	PRE-DEV	BASE	64.25	9.404	0.011	2.532	0.007135394.219	2.477	1.828	0.000
25yr	PRE-DEV	BASE	64.33	9.415	0.011	2.538	0.007135924.813	2.486	1.709	0.000
25yr	PRE-DEV	BASE	64.42	9.427	0.011	2.545	0.007136423.047	2.495	1.613	0.000
25yr	PRE-DEV	BASE	64.50	9.438	0.011	2.552	0.007136895.625	2.504	1.538	0.000
25yr	PRE-DEV	BASE	64.58	9.449	0.011	2.559	0.007137348.406	2.512	1.481	0.000
25yr	PRE-DEV	BASE	64.67	9.460	0.011	2.565	0.007137785.734	2.520	1.435	0.000
25yr	PRE-DEV	BASE	64.75	9.472	0.011	2.572	0.007138210.766	2.528	1.398	0.000
25yr	PRE-DEV	BASE	64.83	9.483	0.011	2.579	0.007138625.547	2.536	1.367	0.000
25yr	PRE-DEV	BASE	64.92	9.494	0.011	2.586	0.007139031.750	2.543	1.342	0.000
25yr	PRE-DEV	BASE	65.00	9.506	0.011	2.592	0.007139431.094	2.551	1.320	0.000
25yr	PRE-DEV	BASE	65.08	9.517	0.011	2.599	0.007139824.672	2.558	1.303	0.000
25yr	PRE-DEV	BASE	65.17	9.528	0.011	2.606	0.007140213.516	2.565	1.289	0.000
25yr	PRE-DEV	BASE	65.25	9.540	0.011	2.613	0.007140598.719	2.572	1.279	0.000
25yr	PRE-DEV	BASE	65.33	9.551	0.011	2.620	0.007140981.047	2.579	1.270	0.000
25yr	PRE-DEV	BASE	65.42	9.563	0.011	2.627	0.007141361.031	2.586	1.263	0.000
25yr	PRE-DEV	BASE	65.50	9.574	0.011	2.634	0.007141739.281	2.593	1.258	0.000
25yr	PRE-DEV	BASE	65.58	9.585	0.011	2.640	0.007142116.094	2.600	1.254	0.000
25yr	PRE-DEV	BASE	65.67	9.597	0.011	2.647	0.007142491.766	2.607	1.251	0.000
25yr	PRE-DEV	BASE	65.75	9.608	0.011	2.654	0.007142866.734	2.613	1.249	0.000
25yr	PRE-DEV	BASE	65.83	9.620	0.011	2.661	0.007143241.188	2.620	1.248	0.000
25yr	PRE-DEV	BASE	65.92	9.631	0.011	2.668	0.007143615.391	2.627	1.247	0.000
25yr	PRE-DEV	BASE	66.00	9.642	0.011	2.675	0.007143989.828	2.634	1.249	0.000
25yr	PRE-DEV	BASE	66.08	9.654	0.011	2.682	0.007144364.609	2.641	1.250	0.000
25yr	PRE-DEV	BASE	66.17	9.665	0.011	2.689	0.007144739.672	2.648	1.251	0.000
25yr	PRE-DEV	BASE	66.25	9.677	0.011	2.695	0.007145115.125	2.654	1.252	0.000
25yr	PRE-DEV	BASE	66.33	9.688	0.011	2.702	0.007145490.906	2.661	1.253	0.000
25yr	PRE-DEV	BASE	66.42	9.699	0.011	2.709	0.007145866.938	2.668	1.254	0.000
25yr	PRE-DEV	BASE	66.50	9.711	0.011	2.716	0.007146243.344	2.675	1.255	0.000
25yr	PRE-DEV	BASE	66.58	9.722	0.011	2.723	0.007146620.063	2.682	1.256	0.000
25yr	PRE-DEV	BASE	66.67	9.734	0.011	2.730	0.007146997.016	2.689	1.257	0.000
25yr	PRE-DEV	BASE	66.75	9.745	0.011	2.737	0.007147374.328	2.696	1.258	0.000
25yr	PRE-DEV	BASE	66.83	9.756	0.011	2.744	0.007147751.938	2.703	1.259	0.000
25yr	PRE-DEV	BASE	66.92	9.768	0.011	2.751	0.007148129.781	2.710	1.260	0.000
25yr	PRE-DEV	BASE	67.00	9.779	0.011	2.758	0.007148507.969	2.717	1.261	0.000
25yr	PRE-DEV	BASE	67.08	9.790	0.011	2.765	0.007148886.438	2.723	1.262	0.000
25yr	PRE-DEV	BASE	67.17	9.802	0.011	2.772	0.007149265.141	2.730	1.263	0.000
25yr	PRE-DEV	BASE	67.25	9.813	0.011	2.779	0.007149644.188	2.737	1.264	0.000
25yr	PRE-DEV	BASE	67.33	9.825	0.011	2.786	0.007150023.516	2.744	1.265	0.000
25yr	PRE-DEV	BASE	67.42	9.836	0.011	2.793	0.007150403.063	2.751	1.266	0.000
25yr	PRE-DEV	BASE	67.50	9.847	0.011	2.800	0.007150782.953	2.758	1.267	0.000
25yr	PRE-DEV	BASE	67.58	9.859	0.011	2.807	0.007151163.125	2.765	1.268	0.000

		TIME SERIES 25 YR.TXT								
25yr	PRE-DEV	BASE	67.67	9.870	0.011	2.813	0.007151543.516	2.772	1.269	0.000
25yr	PRE-DEV	BASE	67.75	9.882	0.011	2.820	0.007151924.250	2.779	1.270	0.000
25yr	PRE-DEV	BASE	67.83	9.893	0.011	2.827	0.007152305.266	2.786	1.270	0.000
25yr	PRE-DEV	BASE	67.92	9.904	0.011	2.834	0.007152686.500	2.793	1.271	0.000
25yr	PRE-DEV	BASE	68.00	9.916	0.011	2.841	0.007153067.984	2.800	1.272	0.000
25yr	PRE-DEV	BASE	68.08	9.927	0.011	2.846	0.005153447.656	2.807	1.259	0.000
25yr	PRE-DEV	BASE	68.17	9.935	0.008	2.851	0.005153820.063	2.814	1.224	0.000
25yr	PRE-DEV	BASE	68.25	9.942	0.008	2.855	0.005154177.766	2.820	1.161	0.000
25yr	PRE-DEV	BASE	68.33	9.950	0.008	2.860	0.005154516.703	2.826	1.099	0.000
25yr	PRE-DEV	BASE	68.42	9.957	0.008	2.865	0.005154838.797	2.832	1.049	0.000
25yr	PRE-DEV	BASE	68.50	9.965	0.008	2.869	0.005155147.594	2.838	1.010	0.000
25yr	PRE-DEV	BASE	68.58	9.972	0.008	2.874	0.005155446.078	2.843	0.980	0.000
25yr	PRE-DEV	BASE	68.67	9.980	0.008	2.879	0.005155736.484	2.849	0.956	0.000
25yr	PRE-DEV	BASE	68.75	9.987	0.008	2.883	0.005156020.469	2.854	0.937	0.000
25yr	PRE-DEV	BASE	68.83	9.995	0.008	2.888	0.005156299.078	2.859	0.920	0.000
25yr	PRE-DEV	BASE	68.92	10.002	0.008	2.893	0.005156573.156	2.864	0.907	0.000
25yr	PRE-DEV	BASE	69.00	10.010	0.008	2.897	0.005156843.625	2.869	0.896	0.000
25yr	PRE-DEV	BASE	69.08	10.018	0.008	2.902	0.005157111.031	2.874	0.887	0.000
25yr	PRE-DEV	BASE	69.17	10.025	0.008	2.907	0.005157375.844	2.879	0.879	0.000
25yr	PRE-DEV	BASE	69.25	10.033	0.008	2.911	0.005157638.578	2.884	0.872	0.000
25yr	PRE-DEV	BASE	69.33	10.040	0.008	2.916	0.005157899.563	2.888	0.867	0.000
25yr	PRE-DEV	BASE	69.42	10.048	0.008	2.921	0.005158159.094	2.893	0.863	0.000
25yr	PRE-DEV	BASE	69.50	10.055	0.008	2.925	0.005158417.531	2.898	0.860	0.000
25yr	PRE-DEV	BASE	69.58	10.063	0.008	2.930	0.005158675.078	2.903	0.857	0.000
25yr	PRE-DEV	BASE	69.67	10.070	0.008	2.935	0.005158931.891	2.907	0.855	0.000
25yr	PRE-DEV	BASE	69.75	10.078	0.008	2.939	0.005159188.234	2.912	0.854	0.000
25yr	PRE-DEV	BASE	69.83	10.085	0.008	2.944	0.005159444.219	2.917	0.853	0.000
25yr	PRE-DEV	BASE	69.92	10.093	0.008	2.949	0.005159699.984	2.921	0.853	0.000
25yr	PRE-DEV	BASE	70.00	10.100	0.008	2.953	0.005159955.813	2.926	0.853	0.000
25yr	PRE-DEV	BASE	70.08	10.108	0.008	2.958	0.005160211.781	2.931	0.853	0.000
25yr	PRE-DEV	BASE	70.17	10.116	0.008	2.963	0.005160467.906	2.935	0.854	0.000
25yr	PRE-DEV	BASE	70.25	10.123	0.008	2.968	0.005160724.359	2.940	0.855	0.000
25yr	PRE-DEV	BASE	70.33	10.131	0.008	2.972	0.005160981.141	2.945	0.856	0.000
25yr	PRE-DEV	BASE	70.42	10.138	0.008	2.977	0.005161238.203	2.949	0.857	0.000
25yr	PRE-DEV	BASE	70.50	10.146	0.008	2.982	0.005161495.578	2.954	0.858	0.000
25yr	PRE-DEV	BASE	70.58	10.154	0.008	2.986	0.005161753.188	2.959	0.859	0.000
25yr	PRE-DEV	BASE	70.67	10.161	0.008	2.991	0.005162010.969	2.964	0.860	0.000
25yr	PRE-DEV	BASE	70.75	10.169	0.008	2.996	0.005162268.984	2.968	0.860	0.000
25yr	PRE-DEV	BASE	70.83	10.176	0.008	3.001	0.005162527.172	2.973	0.861	0.000
25yr	PRE-DEV	BASE	70.92	10.184	0.008	3.005	0.005162785.500	2.978	0.861	0.000
25yr	PRE-DEV	BASE	71.00	10.191	0.008	3.010	0.005163044.031	2.982	0.862	0.000
25yr	PRE-DEV	BASE	71.08	10.199	0.008	3.015	0.005163302.719	2.987	0.862	0.000
25yr	PRE-DEV	BASE	71.17	10.207	0.008	3.020	0.005163561.516	2.992	0.863	0.000
25yr	PRE-DEV	BASE	71.25	10.214	0.008	3.024	0.005163820.484	2.997	0.863	0.000
25yr	PRE-DEV	BASE	71.33	10.222	0.008	3.029	0.005164079.594	3.001	0.864	0.000
25yr	PRE-DEV	BASE	71.42	10.229	0.008	3.034	0.005164338.797	3.006	0.864	0.000
25yr	PRE-DEV	BASE	71.50	10.237	0.008	3.039	0.005164598.172	3.011	0.865	0.000
25yr	PRE-DEV	BASE	71.58	10.245	0.008	3.043	0.005164857.688	3.016	0.865	0.000
25yr	PRE-DEV	BASE	71.67	10.252	0.008	3.048	0.005165117.281	3.020	0.866	0.000
25yr	PRE-DEV	BASE	71.75	10.260	0.008	3.053	0.005165377.047	3.025	0.866	0.000
25yr	PRE-DEV	BASE	71.83	10.267	0.008	3.058	0.005165636.938	3.030	0.866	0.000
25yr	PRE-DEV	BASE	71.92	10.275	0.008	3.062	0.005165896.906	3.035	0.867	0.000
25yr	PRE-DEV	BASE	72.00	10.282	0.008	3.067	0.004166156.859	3.039	0.866	0.000





				POND	TIME	SERIES	25	YR.	TXT				
25yrs	POND	BASE	5.52	74.000	79.000	38334	0.012	0.000	0.0	0.0			
25yrs	POND	BASE	5.60	74.000	79.000	38334	0.016	0.000	0.0	0.0			
25yrs	POND	BASE	5.68	74.000	79.000	38335	0.020	0.000	0.0	0.0			
25yrs	POND	BASE	5.77	74.001	79.000	38335	0.023	0.000	0.0	0.0			
25yrs	POND	BASE	5.85	74.001	79.000	38336	0.027	0.000	0.0	0.0			
25yrs	POND	BASE	5.93	74.001	79.000	38337	0.031	0.000	0.0	0.0			
25yrs	POND	BASE	6.02	74.001	79.000	38338	0.034	0.000	0.0	0.0			
25yrs	POND	BASE	6.10	74.002	79.000	38340	0.038	0.000	0.0	0.0			
25yrs	POND	BASE	6.18	74.002	79.000	38341	0.041	0.000	0.0	0.0			
25yrs	POND	BASE	6.27	74.002	79.000	38342	0.045	0.000	0.0	0.0			
25yrs	POND	BASE	6.35	74.003	79.000	38344	0.048	0.000	0.0	0.0			
25yrs	POND	BASE	6.43	74.003	79.000	38346	0.052	0.000	0.0	0.0			
25yrs	POND	BASE	6.52	74.003	79.000	38348	0.055	0.000	0.0	0.0			
25yrs	POND	BASE	6.60	74.004	79.000	38349	0.059	0.000	0.0	0.0			
25yrs	POND	BASE	6.68	74.004	79.000	38352	0.062	0.000	0.0	0.0			
25yrs	POND	BASE	6.77	74.005	79.000	38354	0.065	0.000	0.0	0.0			
25yrs	POND	BASE	6.85	74.005	79.000	38356	0.069	0.000	0.0	0.0			
25yrs	POND	BASE	6.93	74.006	79.000	38358	0.072	0.000	0.0	0.0			
25yrs	POND	BASE	7.02	74.006	79.000	38361	0.075	0.000	0.0	0.0			
25yrs	POND	BASE	7.10	74.007	79.000	38363	0.078	0.000	0.0	0.0			
25yrs	POND	BASE	7.18	74.008	79.000	38366	0.081	0.000	0.0	0.0			
25yrs	POND	BASE	7.27	74.008	79.000	38369	0.084	0.000	0.0	0.0			
25yrs	POND	BASE	7.35	74.009	79.000	38372	0.088	0.000	0.0	0.0			
25yrs	POND	BASE	7.43	74.010	79.000	38375	0.091	0.000	0.0	0.0			
25yrs	POND	BASE	7.52	74.010	79.000	38378	0.094	0.000	0.0	0.0			
25yrs	POND	BASE	7.60	74.011	79.000	38381	0.097	0.000	0.0	0.0			
25yrs	POND	BASE	7.68	74.012	79.000	38385	0.100	0.000	0.0	0.0			
25yrs	POND	BASE	7.77	74.013	79.000	38388	0.103	0.000	0.0	0.0			
25yrs	POND	BASE	7.85	74.014	79.000	38392	0.106	0.000	0.0	0.0			
25yrs	POND	BASE	7.93	74.014	79.000	38395	0.109	0.000	0.0	0.0			
25yrs	POND	BASE	8.02	74.015	79.000	38399	0.111	0.000	0.0	0.0			
25yrs	POND	BASE	8.10	74.016	79.000	38403	0.114	0.000	0.0	0.0			
25yrs	POND	BASE	8.18	74.017	79.000	38407	0.117	0.000	0.0	0.0			
25yrs	POND	BASE	8.27	74.018	79.000	38411	0.120	0.000	0.0	0.0			
25yrs	POND	BASE	8.35	74.019	79.000	38415	0.123	0.000	0.0	0.0			
25yrs	POND	BASE	8.43	74.020	79.000	38419	0.126	0.000	0.0	0.0			
25yrs	POND	BASE	8.52	74.021	79.000	38424	0.128	0.000	0.0	0.0			
25yrs	POND	BASE	8.60	74.022	79.000	38428	0.131	0.000	0.0	0.0			
25yrs	POND	BASE	8.68	74.023	79.000	38432	0.134	0.000	0.0	0.0			
25yrs	POND	BASE	8.77	74.024	79.000	38437	0.136	0.000	0.0	0.0			
25yrs	POND	BASE	8.85	74.025	79.000	38442	0.139	0.000	0.0	0.0			
25yrs	POND	BASE	8.93	74.026	79.000	38447	0.142	0.000	0.0	0.0			
25yrs	POND	BASE	9.02	74.027	79.000	38451	0.144	0.000	0.0	0.0			
25yrs	POND	BASE	9.10	74.028	79.000	38456	0.147	0.000	0.0	0.0			
25yrs	POND	BASE	9.18	74.030	79.000	38461	0.149	0.000	0.0	0.0			
25yrs	POND	BASE	9.27	74.031	79.000	38466	0.152	0.000	0.0	0.0			
25yrs	POND	BASE	9.35	74.032	79.000	38472	0.154	0.000	0.0	0.0			
25yrs	POND	BASE	9.43	74.033	79.000	38477	0.157	0.000	0.0	0.0			
25yrs	POND	BASE	9.52	74.034	79.000	38482	0.159	0.000	0.0	0.0			
25yrs	POND	BASE	9.60	74.036	79.000	38488	0.162	0.000	0.0	0.0			
25yrs	POND	BASE	9.68	74.037	79.000	38493	0.164	0.000	0.0	0.0			
25yrs	POND	BASE	9.77	74.038	79.000	38499	0.167	0.000	0.0	0.0			
25yrs	POND	BASE	9.85	74.039	79.000	38505	0.169	0.000	0.0	0.0			
25yrs	POND	BASE	9.93	74.041	79.000	38510	0.171	0.000	0.0	0.0			
25yrs	POND	BASE	10.02	74.042	79.000	38516	0.174	0.000	0.0	0.0			
25yrs	POND	BASE	10.10	74.043	79.000	38522	0.176	0.000	0.0	0.0			
25yrs	POND	BASE	10.18	74.045	79.000	38528	0.178	0.000	0.0	0.0			
25yrs	POND	BASE	10.27	74.046	79.000	38534	0.181	0.000	0.0	0.0			
25yrs	POND	BASE	10.35	74.048	79.000	38541	0.183	0.000	0.0	0.0			
25yrs	POND	BASE	10.43	74.049	79.000	38547	0.185	0.000	0.0	0.0			
25yrs	POND	BASE	10.52	74.051	79.000	38553	0.188	0.000	0.0	0.0			
25yrs	POND	BASE	10.60	74.052	79.000	38559	0.190	0.000	0.0	0.0			
25yrs	POND	BASE	10.68	74.054	79.000	38566	0.192	0.000	0.0	0.0			
25yrs	POND	BASE	10.77	74.055	79.000	38572	0.194	0.000	0.0	0.0			
25yrs	POND	BASE	10.85	74.057	79.000	38579	0.196	0.000	0.0	0.0			
25yrs	POND	BASE	10.93	74.058	79.000	38586	0.198	0.000	0.1	0.0			
25yrs	POND	BASE	11.02	74.060	79.000	38593	0.201	0.000	0.1	0.0			
25yrs	POND	BASE	11.10	74.061	79.000	38599	0.203	0.000	0.1	0.0			
25yrs	POND	BASE	11.18	74.063	79.000	38606	0.205	0.000	0.1	0.0			
25yrs	POND	BASE	11.27	74.064	79.000	38613	0.207	0.000	0.1	0.0			



				POND TIME	SERIES	25 YR.TXT				
25yrs	POND	BASE	11.35	74.066	79.000	38620	0.209	0.000	0.1	0.0
25yrs	POND	BASE	11.43	74.068	79.000	38627	0.211	0.000	0.1	0.0
25yrs	POND	BASE	11.52	74.069	79.000	38635	0.213	0.000	0.1	0.0
25yrs	POND	BASE	11.60	74.071	79.000	38642	0.215	0.000	0.1	0.0
25yrs	POND	BASE	11.68	74.073	79.000	38649	0.217	0.000	0.1	0.0
25yrs	POND	BASE	11.77	74.074	79.000	38656	0.219	0.000	0.1	0.0
25yrs	POND	BASE	11.85	74.076	79.000	38664	0.221	0.000	0.1	0.0
25yrs	POND	BASE	11.93	74.078	79.000	38671	0.223	0.000	0.1	0.0
25yrs	POND	BASE	12.02	74.079	79.000	38679	0.225	0.000	0.1	0.0
25yrs	POND	BASE	12.10	74.081	79.000	38687	0.227	0.000	0.1	0.0
25yrs	POND	BASE	12.18	74.083	79.000	38694	0.229	0.000	0.1	0.0
25yrs	POND	BASE	12.27	74.085	79.000	38702	0.231	0.000	0.1	0.0
25yrs	POND	BASE	12.35	74.087	79.000	38710	0.233	0.000	0.1	0.0
25yrs	POND	BASE	12.43	74.088	79.000	38718	0.234	0.000	0.1	0.0
25yrs	POND	BASE	12.52	74.090	79.000	38726	0.236	0.000	0.1	0.0
25yrs	POND	BASE	12.60	74.092	79.000	38734	0.238	0.000	0.1	0.0
25yrs	POND	BASE	12.68	74.094	79.000	38742	0.240	0.000	0.1	0.0
25yrs	POND	BASE	12.77	74.096	79.000	38750	0.242	0.000	0.1	0.0
25yrs	POND	BASE	12.85	74.098	79.000	38758	0.244	0.000	0.1	0.0
25yrs	POND	BASE	12.93	74.100	79.000	38766	0.245	0.000	0.1	0.0
25yrs	POND	BASE	13.02	74.101	79.000	38775	0.247	0.000	0.1	0.0
25yrs	POND	BASE	13.10	74.103	79.000	38783	0.249	0.000	0.1	0.0
25yrs	POND	BASE	13.18	74.105	79.000	38791	0.251	0.000	0.1	0.0
25yrs	POND	BASE	13.27	74.107	79.000	38800	0.252	0.000	0.1	0.0
25yrs	POND	BASE	13.35	74.109	79.000	38808	0.254	0.000	0.1	0.0
25yrs	POND	BASE	13.43	74.111	79.000	38817	0.256	0.000	0.1	0.0
25yrs	POND	BASE	13.52	74.113	79.000	38826	0.257	0.000	0.1	0.0
25yrs	POND	BASE	13.60	74.115	79.000	38834	0.259	0.000	0.1	0.0
25yrs	POND	BASE	13.68	74.117	79.000	38843	0.261	0.000	0.1	0.0
25yrs	POND	BASE	13.77	74.119	79.000	38852	0.262	0.000	0.1	0.0
25yrs	POND	BASE	13.85	74.121	79.000	38861	0.264	0.000	0.1	0.0
25yrs	POND	BASE	13.93	74.123	79.000	38870	0.266	0.000	0.1	0.0
25yrs	POND	BASE	14.02	74.125	79.000	38879	0.267	0.000	0.1	0.0
25yrs	POND	BASE	14.10	74.127	79.000	38888	0.269	0.000	0.1	0.0
25yrs	POND	BASE	14.18	74.129	79.000	38897	0.271	0.000	0.1	0.0
25yrs	POND	BASE	14.27	74.132	79.000	38906	0.272	0.000	0.1	0.0
25yrs	POND	BASE	14.35	74.134	79.000	38915	0.274	0.000	0.1	0.0
25yrs	POND	BASE	14.43	74.136	79.000	38924	0.275	0.000	0.1	0.0
25yrs	POND	BASE	14.52	74.138	79.000	38933	0.277	0.000	0.1	0.0
25yrs	POND	BASE	14.60	74.140	79.000	38943	0.278	0.000	0.1	0.0
25yrs	POND	BASE	14.68	74.142	79.000	38952	0.280	0.000	0.1	0.0
25yrs	POND	BASE	14.77	74.144	79.000	38961	0.281	0.000	0.1	0.0
25yrs	POND	BASE	14.85	74.146	79.000	38971	0.283	0.000	0.1	0.0
25yrs	POND	BASE	14.93	74.149	79.000	38980	0.284	0.000	0.1	0.0
25yrs	POND	BASE	15.02	74.151	79.000	38990	0.286	0.000	0.1	0.0
25yrs	POND	BASE	15.10	74.153	79.000	39000	0.287	0.000	0.1	0.0
25yrs	POND	BASE	15.18	74.155	79.000	39009	0.289	0.000	0.1	0.0
25yrs	POND	BASE	15.27	74.158	79.000	39019	0.290	0.000	0.1	0.0
25yrs	POND	BASE	15.35	74.160	79.000	39029	0.292	0.000	0.1	0.0
25yrs	POND	BASE	15.43	74.162	79.000	39038	0.293	0.000	0.1	0.0
25yrs	POND	BASE	15.52	74.164	79.000	39048	0.295	0.000	0.1	0.0
25yrs	POND	BASE	15.60	74.167	79.000	39058	0.296	0.000	0.1	0.0
25yrs	POND	BASE	15.68	74.169	79.000	39068	0.297	0.000	0.1	0.0
25yrs	POND	BASE	15.77	74.171	79.000	39078	0.299	0.000	0.2	0.0
25yrs	POND	BASE	15.85	74.173	79.000	39088	0.300	0.000	0.2	0.0
25yrs	POND	BASE	15.93	74.176	79.000	39098	0.302	0.000	0.2	0.0
25yrs	POND	BASE	16.02	74.178	79.000	39108	0.303	0.000	0.2	0.0
25yrs	POND	BASE	16.10	74.180	79.000	39118	0.304	0.000	0.2	0.0
25yrs	POND	BASE	16.18	74.183	79.000	39129	0.306	0.000	0.2	0.0
25yrs	POND	BASE	16.27	74.185	79.000	39139	0.307	0.000	0.2	0.0
25yrs	POND	BASE	16.35	74.187	79.000	39149	0.308	0.000	0.2	0.0
25yrs	POND	BASE	16.43	74.190	79.000	39159	0.310	0.000	0.2	0.0
25yrs	POND	BASE	16.52	74.192	79.000	39170	0.311	0.000	0.2	0.0
25yrs	POND	BASE	16.60	74.195	79.000	39180	0.312	0.000	0.2	0.0
25yrs	POND	BASE	16.68	74.197	79.000	39191	0.313	0.000	0.2	0.0
25yrs	POND	BASE	16.77	74.199	79.000	39201	0.315	0.000	0.2	0.0
25yrs	POND	BASE	16.85	74.202	79.000	39212	0.316	0.000	0.2	0.0
25yrs	POND	BASE	16.93	74.204	79.000	39222	0.317	0.000	0.2	0.0
25yrs	POND	BASE	17.02	74.207	79.000	39233	0.319	0.000	0.2	0.0
25yrs	POND	BASE	17.10	74.209	79.000	39243	0.320	0.000	0.2	0.0

		POND TIME		SERIES 25	YR.TXT					
25yrs	POND	BASE	17.18	74.211	79.000	39254	0.321	0.000	0.2	0.0
25yrs	POND	BASE	17.27	74.214	79.000	39265	0.322	0.000	0.2	0.0
25yrs	POND	BASE	17.35	74.216	79.000	39275	0.324	0.000	0.2	0.0
25yrs	POND	BASE	17.43	74.219	79.000	39286	0.325	0.000	0.2	0.0
25yrs	POND	BASE	17.52	74.221	79.000	39297	0.326	0.000	0.2	0.0
25yrs	POND	BASE	17.60	74.224	79.000	39308	0.327	0.000	0.2	0.0
25yrs	POND	BASE	17.68	74.226	79.000	39319	0.328	0.000	0.2	0.0
25yrs	POND	BASE	17.77	74.229	79.000	39330	0.330	0.000	0.2	0.0
25yrs	POND	BASE	17.85	74.231	79.000	39341	0.331	0.000	0.2	0.0
25yrs	POND	BASE	17.93	74.234	79.000	39352	0.332	0.000	0.2	0.0
25yrs	POND	BASE	18.02	74.236	79.000	39363	0.333	0.000	0.2	0.0
25yrs	POND	BASE	18.10	74.239	79.000	39374	0.334	0.000	0.2	0.0
25yrs	POND	BASE	18.18	74.242	79.000	39385	0.335	0.000	0.2	0.0
25yrs	POND	BASE	18.27	74.244	79.000	39396	0.336	0.000	0.2	0.0
25yrs	POND	BASE	18.35	74.247	79.000	39407	0.338	0.000	0.2	0.0
25yrs	POND	BASE	18.43	74.249	79.000	39418	0.339	0.000	0.2	0.0
25yrs	POND	BASE	18.52	74.252	79.000	39430	0.340	0.000	0.2	0.0
25yrs	POND	BASE	18.60	74.254	79.000	39441	0.341	0.000	0.2	0.0
25yrs	POND	BASE	18.68	74.257	79.000	39452	0.342	0.000	0.2	0.0
25yrs	POND	BASE	18.77	74.260	79.000	39464	0.343	0.000	0.2	0.0
25yrs	POND	BASE	18.85	74.262	79.000	39475	0.344	0.000	0.2	0.0
25yrs	POND	BASE	18.93	74.265	79.000	39486	0.345	0.000	0.2	0.0
25yrs	POND	BASE	19.02	74.267	79.000	39498	0.346	0.000	0.2	0.0
25yrs	POND	BASE	19.10	74.270	79.000	39509	0.347	0.000	0.2	0.0
25yrs	POND	BASE	19.18	74.273	79.000	39521	0.349	0.000	0.2	0.0
25yrs	POND	BASE	19.27	74.275	79.000	39532	0.350	0.000	0.2	0.0
25yrs	POND	BASE	19.35	74.278	79.000	39544	0.351	0.000	0.2	0.0
25yrs	POND	BASE	19.43	74.281	79.000	39556	0.352	0.000	0.3	0.0
25yrs	POND	BASE	19.52	74.283	79.000	39567	0.353	0.000	0.3	0.0
25yrs	POND	BASE	19.60	74.286	79.000	39579	0.354	0.000	0.3	0.0
25yrs	POND	BASE	19.68	74.289	79.000	39591	0.355	0.000	0.3	0.0
25yrs	POND	BASE	19.77	74.291	79.000	39602	0.356	0.000	0.3	0.0
25yrs	POND	BASE	19.85	74.294	79.000	39614	0.357	0.000	0.3	0.0
25yrs	POND	BASE	19.93	74.297	79.000	39626	0.358	0.000	0.3	0.0
25yrs	POND	BASE	20.02	74.300	79.000	39638	0.359	0.000	0.3	0.0
25yrs	POND	BASE	20.10	74.302	79.000	39649	0.360	0.000	0.3	0.0
25yrs	POND	BASE	20.18	74.305	79.000	39661	0.361	0.000	0.3	0.0
25yrs	POND	BASE	20.27	74.308	79.000	39673	0.362	0.000	0.3	0.0
25yrs	POND	BASE	20.35	74.310	79.000	39685	0.363	0.000	0.3	0.0
25yrs	POND	BASE	20.43	74.313	79.000	39697	0.364	0.000	0.3	0.0
25yrs	POND	BASE	20.52	74.316	79.000	39709	0.365	0.000	0.3	0.0
25yrs	POND	BASE	20.60	74.319	79.000	39721	0.366	0.000	0.3	0.0
25yrs	POND	BASE	20.68	74.321	79.000	39733	0.367	0.000	0.3	0.0
25yrs	POND	BASE	20.77	74.324	79.000	39745	0.368	0.000	0.3	0.0
25yrs	POND	BASE	20.85	74.327	79.000	39757	0.368	0.000	0.3	0.0
25yrs	POND	BASE	20.93	74.330	79.000	39769	0.369	0.000	0.3	0.0
25yrs	POND	BASE	21.02	74.333	79.000	39782	0.370	0.000	0.3	0.0
25yrs	POND	BASE	21.10	74.335	79.000	39794	0.371	0.000	0.3	0.0
25yrs	POND	BASE	21.18	74.338	79.000	39806	0.372	0.000	0.3	0.0
25yrs	POND	BASE	21.27	74.341	79.000	39818	0.373	0.000	0.3	0.0
25yrs	POND	BASE	21.35	74.344	79.000	39831	0.374	0.000	0.3	0.0
25yrs	POND	BASE	21.43	74.347	79.000	39843	0.375	0.000	0.3	0.0
25yrs	POND	BASE	21.52	74.349	79.000	39855	0.376	0.000	0.3	0.0
25yrs	POND	BASE	21.60	74.352	79.000	39867	0.377	0.000	0.3	0.0
25yrs	POND	BASE	21.68	74.355	79.000	39880	0.378	0.000	0.3	0.0
25yrs	POND	BASE	21.77	74.358	79.000	39892	0.378	0.000	0.3	0.0
25yrs	POND	BASE	21.85	74.361	79.000	39905	0.379	0.000	0.3	0.0
25yrs	POND	BASE	21.93	74.364	79.000	39917	0.380	0.000	0.3	0.0
25yrs	POND	BASE	22.02	74.367	79.000	39929	0.381	0.000	0.3	0.0
25yrs	POND	BASE	22.10	74.369	79.000	39942	0.382	0.000	0.3	0.0
25yrs	POND	BASE	22.18	74.372	79.000	39954	0.383	0.000	0.3	0.0
25yrs	POND	BASE	22.27	74.375	79.000	39967	0.384	0.000	0.3	0.0
25yrs	POND	BASE	22.35	74.378	79.000	39980	0.384	0.000	0.3	0.0
25yrs	POND	BASE	22.43	74.381	79.000	39992	0.385	0.000	0.3	0.0
25yrs	POND	BASE	22.52	74.384	79.000	40005	0.386	0.000	0.3	0.0
25yrs	POND	BASE	22.60	74.387	79.000	40017	0.387	0.000	0.3	0.0
25yrs	POND	BASE	22.68	74.390	79.000	40030	0.388	0.000	0.4	0.0
25yrs	POND	BASE	22.77	74.393	79.000	40043	0.389	0.000	0.4	0.0
25yrs	POND	BASE	22.85	74.395	79.000	40055	0.389	0.000	0.4	0.0
25yrs	POND	BASE	22.93	74.398	79.000	40068	0.390	0.000	0.4	0.0

		POND TIME		SERIES 25		YR.TXT				
25yrs	POND	BASE	23.02	74.401	79.000	40081	0.391	0.000	0.4	0.0
25yrs	POND	BASE	23.10	74.404	79.000	40094	0.392	0.000	0.4	0.0
25yrs	POND	BASE	23.18	74.407	79.000	40106	0.393	0.000	0.4	0.0
25yrs	POND	BASE	23.27	74.410	79.000	40119	0.393	0.000	0.4	0.0
25yrs	POND	BASE	23.35	74.413	79.000	40132	0.394	0.000	0.4	0.0
25yrs	POND	BASE	23.43	74.416	79.000	40145	0.395	0.000	0.4	0.0
25yrs	POND	BASE	23.52	74.419	79.000	40158	0.396	0.000	0.4	0.0
25yrs	POND	BASE	23.60	74.422	79.000	40171	0.396	0.000	0.4	0.0
25yrs	POND	BASE	23.68	74.425	79.000	40183	0.397	0.000	0.4	0.0
25yrs	POND	BASE	23.77	74.428	79.000	40196	0.398	0.000	0.4	0.0
25yrs	POND	BASE	23.85	74.431	79.000	40209	0.399	0.000	0.4	0.0
25yrs	POND	BASE	23.93	74.434	79.000	40222	0.400	0.000	0.4	0.0
25yrs	POND	BASE	24.02	74.437	79.000	40235	0.412	0.000	0.4	0.0
25yrs	POND	BASE	24.10	74.440	79.000	40250	0.469	0.000	0.4	0.0
25yrs	POND	BASE	24.18	74.444	79.000	40266	0.527	0.000	0.4	0.0
25yrs	POND	BASE	24.27	74.448	79.000	40283	0.556	0.000	0.4	0.0
25yrs	POND	BASE	24.35	74.452	79.000	40302	0.572	0.000	0.4	0.0
25yrs	POND	BASE	24.43	74.456	79.000	40321	0.582	0.000	0.4	0.0
25yrs	POND	BASE	24.52	74.461	79.000	40339	0.588	0.000	0.4	0.0
25yrs	POND	BASE	24.60	74.465	79.000	40359	0.591	0.000	0.4	0.0
25yrs	POND	BASE	24.68	74.469	79.000	40378	0.593	0.000	0.4	0.0
25yrs	POND	BASE	24.77	74.474	79.000	40397	0.594	0.000	0.4	0.0
25yrs	POND	BASE	24.85	74.478	79.000	40416	0.596	0.000	0.4	0.0
25yrs	POND	BASE	24.93	74.483	79.000	40435	0.597	0.000	0.4	0.0
25yrs	POND	BASE	25.02	74.487	79.000	40455	0.598	0.000	0.4	0.0
25yrs	POND	BASE	25.10	74.492	79.000	40474	0.600	0.000	0.4	0.0
25yrs	POND	BASE	25.18	74.496	79.000	40494	0.601	0.000	0.4	0.0
25yrs	POND	BASE	25.27	74.500	79.000	40513	0.603	0.000	0.5	0.0
25yrs	POND	BASE	25.35	74.505	79.000	40532	0.604	0.000	0.5	0.0
25yrs	POND	BASE	25.43	74.509	79.000	40552	0.606	0.000	0.5	0.0
25yrs	POND	BASE	25.52	74.514	79.000	40571	0.607	0.000	0.5	0.0
25yrs	POND	BASE	25.60	74.518	79.000	40591	0.608	0.000	0.5	0.0
25yrs	POND	BASE	25.68	74.523	79.000	40611	0.610	0.000	0.5	0.0
25yrs	POND	BASE	25.77	74.527	79.000	40630	0.611	0.000	0.5	0.0
25yrs	POND	BASE	25.85	74.532	79.000	40650	0.612	0.000	0.5	0.0
25yrs	POND	BASE	25.93	74.536	79.000	40670	0.614	0.000	0.5	0.0
25yrs	POND	BASE	26.02	74.541	79.000	40689	0.615	0.000	0.5	0.0
25yrs	POND	BASE	26.10	74.546	79.000	40709	0.616	0.000	0.5	0.0
25yrs	POND	BASE	26.18	74.550	79.000	40729	0.618	0.000	0.5	0.0
25yrs	POND	BASE	26.27	74.555	79.000	40749	0.619	0.000	0.5	0.0
25yrs	POND	BASE	26.35	74.559	79.000	40769	0.620	0.000	0.5	0.0
25yrs	POND	BASE	26.43	74.564	79.000	40788	0.621	0.000	0.5	0.0
25yrs	POND	BASE	26.52	74.568	79.000	40808	0.623	0.000	0.5	0.0
25yrs	POND	BASE	26.60	74.573	79.000	40828	0.624	0.000	0.5	0.0
25yrs	POND	BASE	26.68	74.577	79.000	40848	0.625	0.000	0.5	0.0
25yrs	POND	BASE	26.77	74.582	79.000	40868	0.626	0.000	0.5	0.0
25yrs	POND	BASE	26.85	74.587	79.000	40888	0.628	0.000	0.5	0.0
25yrs	POND	BASE	26.93	74.591	79.000	40908	0.629	0.000	0.5	0.0
25yrs	POND	BASE	27.02	74.596	79.000	40929	0.630	0.000	0.5	0.0
25yrs	POND	BASE	27.10	74.601	79.000	40949	0.631	0.000	0.5	0.0
25yrs	POND	BASE	27.18	74.605	79.000	40969	0.632	0.000	0.6	0.0
25yrs	POND	BASE	27.27	74.610	79.000	40989	0.633	0.000	0.6	0.0
25yrs	POND	BASE	27.35	74.614	79.000	41009	0.635	0.000	0.6	0.0
25yrs	POND	BASE	27.43	74.619	79.000	41029	0.636	0.000	0.6	0.0
25yrs	POND	BASE	27.52	74.624	79.000	41050	0.637	0.000	0.6	0.0
25yrs	POND	BASE	27.60	74.628	79.000	41070	0.638	0.000	0.6	0.0
25yrs	POND	BASE	27.68	74.633	79.000	41090	0.639	0.000	0.6	0.0
25yrs	POND	BASE	27.77	74.638	79.000	41111	0.640	0.000	0.6	0.0
25yrs	POND	BASE	27.85	74.642	79.000	41131	0.641	0.000	0.6	0.0
25yrs	POND	BASE	27.93	74.647	79.000	41151	0.643	0.000	0.6	0.0
25yrs	POND	BASE	28.02	74.652	79.000	41172	0.644	0.000	0.6	0.0
25yrs	POND	BASE	28.10	74.656	79.000	41192	0.645	0.000	0.6	0.0
25yrs	POND	BASE	28.18	74.661	79.000	41213	0.646	0.000	0.6	0.0
25yrs	POND	BASE	28.27	74.666	79.000	41233	0.647	0.000	0.6	0.0
25yrs	POND	BASE	28.35	74.671	79.000	41254	0.648	0.000	0.6	0.0
25yrs	POND	BASE	28.43	74.675	79.000	41274	0.649	0.000	0.6	0.0
25yrs	POND	BASE	28.52	74.680	79.000	41295	0.650	0.000	0.6	0.0
25yrs	POND	BASE	28.60	74.685	79.000	41315	0.651	0.000	0.6	0.0
25yrs	POND	BASE	28.68	74.689	79.000	41336	0.652	0.000	0.6	0.0
25yrs	POND	BASE	28.77	74.694	79.000	41357	0.653	0.000	0.6	0.0

			POND	TIME	SERIES	25	YR.	TXT			
25yrs	POND	BASE	28.85	74.699	79.000	41377	0.654	0.000	0.6	0.0	
25yrs	POND	BASE	28.93	74.704	79.000	41398	0.655	0.000	0.6	0.0	
25yrs	POND	BASE	29.02	74.708	79.000	41419	0.656	0.000	0.6	0.0	
25yrs	POND	BASE	29.10	74.713	79.000	41439	0.657	0.000	0.7	0.0	
25yrs	POND	BASE	29.18	74.718	79.000	41460	0.658	0.000	0.7	0.0	
25yrs	POND	BASE	29.27	74.723	79.000	41481	0.659	0.000	0.7	0.0	
25yrs	POND	BASE	29.35	74.727	79.000	41502	0.660	0.000	0.7	0.0	
25yrs	POND	BASE	29.43	74.732	79.000	41523	0.661	0.000	0.7	0.0	
25yrs	POND	BASE	29.52	74.737	79.000	41543	0.662	0.000	0.7	0.0	
25yrs	POND	BASE	29.60	74.742	79.000	41564	0.663	0.000	0.7	0.0	
25yrs	POND	BASE	29.68	74.747	79.000	41585	0.664	0.000	0.7	0.0	
25yrs	POND	BASE	29.77	74.751	79.000	41606	0.665	0.000	0.7	0.0	
25yrs	POND	BASE	29.85	74.756	79.000	41627	0.666	0.000	0.7	0.0	
25yrs	POND	BASE	29.93	74.761	79.000	41648	0.667	0.000	0.7	0.0	
25yrs	POND	BASE	30.02	74.766	79.000	41669	0.668	0.000	0.7	0.0	
25yrs	POND	BASE	30.10	74.771	79.000	41690	0.669	0.000	0.7	0.0	
25yrs	POND	BASE	30.18	74.775	79.000	41711	0.670	0.000	0.7	0.0	
25yrs	POND	BASE	30.27	74.780	79.000	41732	0.671	0.000	0.7	0.0	
25yrs	POND	BASE	30.35	74.785	79.000	41753	0.671	0.000	0.7	0.0	
25yrs	POND	BASE	30.43	74.790	79.000	41774	0.672	0.000	0.7	0.0	
25yrs	POND	BASE	30.52	74.795	79.000	41795	0.673	0.000	0.7	0.0	
25yrs	POND	BASE	30.60	74.800	79.000	41816	0.674	0.000	0.7	0.0	
25yrs	POND	BASE	30.68	74.804	79.000	41837	0.675	0.000	0.7	0.0	
25yrs	POND	BASE	30.77	74.809	79.000	41858	0.676	0.000	0.7	0.0	
25yrs	POND	BASE	30.85	74.814	79.000	41879	0.677	0.000	0.7	0.0	
25yrs	POND	BASE	30.93	74.819	79.000	41900	0.678	0.000	0.8	0.0	
25yrs	POND	BASE	31.02	74.824	79.000	41921	0.678	0.000	0.8	0.0	
25yrs	POND	BASE	31.10	74.829	79.000	41942	0.679	0.000	0.8	0.0	
25yrs	POND	BASE	31.18	74.834	79.000	41964	0.680	0.000	0.8	0.0	
25yrs	POND	BASE	31.27	74.838	79.000	41985	0.681	0.000	0.8	0.0	
25yrs	POND	BASE	31.35	74.843	79.000	42006	0.682	0.000	0.8	0.0	
25yrs	POND	BASE	31.43	74.848	79.000	42027	0.683	0.000	0.8	0.0	
25yrs	POND	BASE	31.52	74.853	79.000	42048	0.683	0.000	0.8	0.0	
25yrs	POND	BASE	31.60	74.858	79.000	42070	0.684	0.000	0.8	0.0	
25yrs	POND	BASE	31.68	74.863	79.000	42091	0.685	0.000	0.8	0.0	
25yrs	POND	BASE	31.77	74.868	79.000	42112	0.686	0.000	0.8	0.0	
25yrs	POND	BASE	31.85	74.873	79.000	42133	0.687	0.000	0.8	0.0	
25yrs	POND	BASE	31.93	74.877	79.000	42155	0.687	0.000	0.8	0.0	
25yrs	POND	BASE	32.02	74.882	79.000	42176	0.688	0.000	0.8	0.0	
25yrs	POND	BASE	32.10	74.887	79.000	42197	0.689	0.000	0.8	0.0	
25yrs	POND	BASE	32.18	74.892	79.000	42219	0.690	0.000	0.8	0.0	
25yrs	POND	BASE	32.27	74.897	79.000	42240	0.691	0.000	0.8	0.0	
25yrs	POND	BASE	32.35	74.902	79.000	42262	0.691	0.000	0.8	0.0	
25yrs	POND	BASE	32.43	74.907	79.000	42283	0.692	0.000	0.8	0.0	
25yrs	POND	BASE	32.52	74.912	79.000	42304	0.693	0.000	0.8	0.0	
25yrs	POND	BASE	32.60	74.917	79.000	42326	0.694	0.000	0.8	0.0	
25yrs	POND	BASE	32.68	74.922	79.000	42347	0.694	0.000	0.9	0.0	
25yrs	POND	BASE	32.77	74.926	79.000	42369	0.695	0.000	0.9	0.0	
25yrs	POND	BASE	32.85	74.931	79.000	42390	0.696	0.000	0.9	0.0	
25yrs	POND	BASE	32.93	74.936	79.000	42411	0.697	0.000	0.9	0.0	
25yrs	POND	BASE	33.02	74.941	79.000	42433	0.697	0.000	0.9	0.0	
25yrs	POND	BASE	33.10	74.946	79.000	42454	0.698	0.000	0.9	0.0	
25yrs	POND	BASE	33.18	74.951	79.000	42476	0.699	0.000	0.9	0.0	
25yrs	POND	BASE	33.27	74.956	79.000	42497	0.699	0.000	0.9	0.0	
25yrs	POND	BASE	33.35	74.961	79.000	42519	0.700	0.000	0.9	0.0	
25yrs	POND	BASE	33.43	74.966	79.000	42540	0.701	0.000	0.9	0.0	
25yrs	POND	BASE	33.52	74.971	79.000	42562	0.702	0.000	0.9	0.0	
25yrs	POND	BASE	33.60	74.976	79.000	42584	0.702	0.000	0.9	0.0	
25yrs	POND	BASE	33.68	74.981	79.000	42605	0.703	0.000	0.9	0.0	
25yrs	POND	BASE	33.77	74.986	79.000	42627	0.704	0.000	0.9	0.0	
25yrs	POND	BASE	33.85	74.991	79.000	42648	0.704	0.000	0.9	0.0	
25yrs	POND	BASE	33.93	74.996	79.000	42670	0.705	0.000	0.9	0.0	
25yrs	POND	BASE	34.02	75.001	79.000	42691	0.706	0.000	0.9	0.0	
25yrs	POND	BASE	34.10	75.006	79.000	42713	0.706	0.000	0.9	0.0	
25yrs	POND	BASE	34.18	75.011	79.000	42735	0.707	0.000	0.9	0.0	
25yrs	POND	BASE	34.27	75.015	79.000	42756	0.708	0.000	0.9	0.0	
25yrs	POND	BASE	34.35	75.020	79.000	42778	0.708	0.000	1.0	0.0	
25yrs	POND	BASE	34.43	75.025	79.000	42800	0.709	0.000	1.0	0.0	
25yrs	POND	BASE	34.52	75.030	79.000	42821	0.710	0.000	1.0	0.0	
25yrs	POND	BASE	34.60	75.035	79.000	42843	0.710	0.000	1.0	0.0	

			POND	TIME	SERIES	25	YR.	TXT				
25yrs	POND	BASE	34.68	75.040	79.000	42865	0.711	0.000	1.0	0.0		
25yrs	POND	BASE	34.77	75.045	79.000	42886	0.712	0.000	1.0	0.0		
25yrs	POND	BASE	34.85	75.050	79.000	42908	0.712	0.000	1.0	0.0		
25yrs	POND	BASE	34.93	75.055	79.000	42930	0.713	0.000	1.0	0.0		
25yrs	POND	BASE	35.02	75.060	79.000	42951	0.714	0.000	1.0	0.0		
25yrs	POND	BASE	35.10	75.065	79.000	42973	0.714	0.000	1.0	0.0		
25yrs	POND	BASE	35.18	75.070	79.000	42995	0.715	0.000	1.0	0.0		
25yrs	POND	BASE	35.27	75.075	79.000	43017	0.715	0.000	1.0	0.0		
25yrs	POND	BASE	35.35	75.080	79.000	43038	0.716	0.000	1.0	0.0		
25yrs	POND	BASE	35.43	75.085	79.000	43060	0.717	0.000	1.0	0.0		
25yrs	POND	BASE	35.52	75.090	79.000	43082	0.717	0.000	1.0	0.0		
25yrs	POND	BASE	35.60	75.095	79.000	43104	0.718	0.000	1.0	0.0		
25yrs	POND	BASE	35.68	75.100	79.000	43125	0.718	0.000	1.0	0.0		
25yrs	POND	BASE	35.77	75.105	79.000	43147	0.719	0.000	1.0	0.0		
25yrs	POND	BASE	35.85	75.110	79.000	43169	0.720	0.000	1.0	0.0		
25yrs	POND	BASE	35.93	75.115	79.000	43191	0.720	0.000	1.0	0.0		
25yrs	POND	BASE	36.02	75.120	79.000	43212	0.721	0.000	1.0	0.0		
25yrs	POND	BASE	36.10	75.125	79.000	43234	0.724	0.000	1.1	0.0		
25yrs	POND	BASE	36.18	75.130	79.000	43256	0.727	0.000	1.1	0.0		
25yrs	POND	BASE	36.27	75.135	79.000	43278	0.729	0.000	1.1	0.0		
25yrs	POND	BASE	36.35	75.140	79.000	43300	0.730	0.000	1.1	0.0		
25yrs	POND	BASE	36.43	75.145	79.000	43322	0.731	0.000	1.1	0.0		
25yrs	POND	BASE	36.52	75.150	79.000	43344	0.732	0.000	1.1	0.0		
25yrs	POND	BASE	36.60	75.156	79.000	43366	0.732	0.000	1.1	0.0		
25yrs	POND	BASE	36.68	75.161	79.000	43388	0.733	0.000	1.1	0.0		
25yrs	POND	BASE	36.77	75.166	79.000	43411	0.733	0.000	1.1	0.0		
25yrs	POND	BASE	36.85	75.171	79.000	43433	0.734	0.000	1.1	0.0		
25yrs	POND	BASE	36.93	75.176	79.000	43455	0.735	0.000	1.1	0.0		
25yrs	POND	BASE	37.02	75.181	79.000	43477	0.735	0.000	1.1	0.0		
25yrs	POND	BASE	37.10	75.186	79.000	43499	0.736	0.000	1.1	0.0		
25yrs	POND	BASE	37.18	75.191	79.000	43521	0.736	0.000	1.1	0.0		
25yrs	POND	BASE	37.27	75.196	79.000	43543	0.737	0.000	1.1	0.0		
25yrs	POND	BASE	37.35	75.201	79.000	43565	0.737	0.000	1.1	0.0		
25yrs	POND	BASE	37.43	75.206	79.000	43587	0.738	0.000	1.1	0.0		
25yrs	POND	BASE	37.52	75.211	79.000	43609	0.738	0.000	1.1	0.0		
25yrs	POND	BASE	37.60	75.216	79.000	43632	0.739	0.000	1.1	0.0		
25yrs	POND	BASE	37.68	75.222	79.000	43654	0.739	0.000	1.1	0.0		
25yrs	POND	BASE	37.77	75.227	79.000	43676	0.740	0.000	1.2	0.0		
25yrs	POND	BASE	37.85	75.232	79.000	43698	0.741	0.000	1.2	0.0		
25yrs	POND	BASE	37.93	75.237	79.000	43720	0.741	0.000	1.2	0.0		
25yrs	POND	BASE	38.02	75.242	79.000	43742	0.742	0.000	1.2	0.0		
25yrs	POND	BASE	38.10	75.247	79.000	43764	0.742	0.000	1.2	0.0		
25yrs	POND	BASE	38.18	75.252	79.000	43787	0.743	0.000	1.2	0.0		
25yrs	POND	BASE	38.27	75.257	79.000	43809	0.743	0.000	1.2	0.0		
25yrs	POND	BASE	38.35	75.262	79.000	43831	0.744	0.000	1.2	0.0		
25yrs	POND	BASE	38.43	75.267	79.000	43853	0.744	0.000	1.2	0.0		
25yrs	POND	BASE	38.52	75.272	79.000	43875	0.745	0.000	1.2	0.0		
25yrs	POND	BASE	38.60	75.277	79.000	43897	0.745	0.000	1.2	0.0		
25yrs	POND	BASE	38.68	75.283	79.000	43920	0.746	0.000	1.2	0.0		
25yrs	POND	BASE	38.77	75.288	79.000	43942	0.746	0.000	1.2	0.0		
25yrs	POND	BASE	38.85	75.293	79.000	43964	0.747	0.000	1.2	0.0		
25yrs	POND	BASE	38.93	75.298	79.000	43986	0.747	0.000	1.2	0.0		
25yrs	POND	BASE	39.02	75.303	79.000	44008	0.748	0.000	1.2	0.0		
25yrs	POND	BASE	39.10	75.308	79.000	44031	0.748	0.000	1.2	0.0		
25yrs	POND	BASE	39.18	75.313	79.000	44053	0.749	0.000	1.2	0.0		
25yrs	POND	BASE	39.27	75.318	79.000	44075	0.749	0.000	1.2	0.0		
25yrs	POND	BASE	39.35	75.323	79.000	44097	0.749	0.000	1.3	0.0		
25yrs	POND	BASE	39.43	75.328	79.000	44119	0.750	0.000	1.3	0.0		
25yrs	POND	BASE	39.52	75.334	79.000	44142	0.750	0.000	1.3	0.0		
25yrs	POND	BASE	39.60	75.339	79.000	44164	0.751	0.000	1.3	0.0		
25yrs	POND	BASE	39.68	75.344	79.000	44186	0.751	0.000	1.3	0.0		
25yrs	POND	BASE	39.77	75.349	79.000	44208	0.752	0.000	1.3	0.0		
25yrs	POND	BASE	39.85	75.354	79.000	44231	0.752	0.000	1.3	0.0		
25yrs	POND	BASE	39.93	75.359	79.000	44253	0.753	0.000	1.3	0.0		
25yrs	POND	BASE	40.02	75.364	79.000	44275	0.753	0.000	1.3	0.0		
25yrs	POND	BASE	40.10	75.369	79.000	44297	0.754	0.000	1.3	0.0		
25yrs	POND	BASE	40.18	75.374	79.000	44319	0.754	0.000	1.3	0.0		
25yrs	POND	BASE	40.27	75.379	79.000	44342	0.755	0.000	1.3	0.0		
25yrs	POND	BASE	40.35	75.385	79.000	44364	0.755	0.000	1.3	0.0		
25yrs	POND	BASE	40.43	75.390	79.000	44386	0.755	0.000	1.3	0.0		

			POND	TIME	SERIES	25	YR.TXT				
25yrs	POND	BASE	40.52	75.395	79.000	44408	0.756	0.000	1.3	0.0	
25yrs	POND	BASE	40.60	75.400	79.000	44431	0.756	0.000	1.3	0.0	
25yrs	POND	BASE	40.68	75.405	79.000	44453	0.757	0.000	1.3	0.0	
25yrs	POND	BASE	40.77	75.410	79.000	44475	0.757	0.000	1.3	0.0	
25yrs	POND	BASE	40.85	75.415	79.000	44497	0.758	0.000	1.3	0.0	
25yrs	POND	BASE	40.93	75.420	79.000	44520	0.758	0.000	1.4	0.0	
25yrs	POND	BASE	41.02	75.425	79.000	44542	0.758	0.000	1.4	0.0	
25yrs	POND	BASE	41.10	75.431	79.000	44564	0.759	0.000	1.4	0.0	
25yrs	POND	BASE	41.18	75.436	79.000	44586	0.759	0.000	1.4	0.0	
25yrs	POND	BASE	41.27	75.441	79.000	44609	0.760	0.000	1.4	0.0	
25yrs	POND	BASE	41.35	75.446	79.000	44631	0.760	0.000	1.4	0.0	
25yrs	POND	BASE	41.43	75.451	79.000	44653	0.761	0.000	1.4	0.0	
25yrs	POND	BASE	41.52	75.456	79.000	44675	0.761	0.000	1.4	0.0	
25yrs	POND	BASE	41.60	75.461	79.000	44698	0.761	0.000	1.4	0.0	
25yrs	POND	BASE	41.68	75.466	79.000	44720	0.762	0.000	1.4	0.0	
25yrs	POND	BASE	41.77	75.471	79.000	44742	0.762	0.000	1.4	0.0	
25yrs	POND	BASE	41.85	75.477	79.000	44765	0.763	0.000	1.4	0.0	
25yrs	POND	BASE	41.93	75.482	79.000	44787	0.763	0.000	1.4	0.0	
25yrs	POND	BASE	42.02	75.487	79.000	44809	0.763	0.000	1.4	0.0	
25yrs	POND	BASE	42.10	75.492	79.000	44831	0.764	0.000	1.4	0.0	
25yrs	POND	BASE	42.18	75.497	79.000	44854	0.764	0.000	1.4	0.0	
25yrs	POND	BASE	42.27	75.502	79.000	44876	0.765	0.000	1.4	0.0	
25yrs	POND	BASE	42.35	75.507	79.000	44898	0.765	0.000	1.4	0.0	
25yrs	POND	BASE	42.43	75.512	79.000	44920	0.765	0.000	1.4	0.0	
25yrs	POND	BASE	42.52	75.517	79.000	44943	0.766	0.000	1.5	0.0	
25yrs	POND	BASE	42.60	75.523	79.000	44965	0.766	0.000	1.5	0.0	
25yrs	POND	BASE	42.68	75.528	79.000	44987	0.767	0.000	1.5	0.0	
25yrs	POND	BASE	42.77	75.533	79.000	45009	0.767	0.000	1.5	0.0	
25yrs	POND	BASE	42.85	75.538	79.000	45032	0.767	0.000	1.5	0.0	
25yrs	POND	BASE	42.93	75.543	79.000	45054	0.768	0.000	1.5	0.0	
25yrs	POND	BASE	43.02	75.548	79.000	45076	0.768	0.000	1.5	0.0	
25yrs	POND	BASE	43.10	75.553	79.000	45099	0.768	0.000	1.5	0.0	
25yrs	POND	BASE	43.18	75.558	79.000	45121	0.769	0.000	1.5	0.0	
25yrs	POND	BASE	43.27	75.563	79.000	45143	0.769	0.000	1.5	0.0	
25yrs	POND	BASE	43.35	75.569	79.000	45165	0.770	0.000	1.5	0.0	
25yrs	POND	BASE	43.43	75.574	79.000	45188	0.770	0.000	1.5	0.0	
25yrs	POND	BASE	43.52	75.579	79.000	45210	0.770	0.000	1.5	0.0	
25yrs	POND	BASE	43.60	75.584	79.000	45232	0.771	0.000	1.5	0.0	
25yrs	POND	BASE	43.68	75.589	79.000	45254	0.771	0.000	1.5	0.0	
25yrs	POND	BASE	43.77	75.594	79.000	45277	0.771	0.000	1.5	0.0	
25yrs	POND	BASE	43.85	75.599	79.000	45299	0.772	0.000	1.5	0.0	
25yrs	POND	BASE	43.93	75.604	79.000	45321	0.772	0.000	1.5	0.0	
25yrs	POND	BASE	44.02	75.609	79.000	45343	0.772	0.000	1.5	0.0	
25yrs	POND	BASE	44.10	75.615	79.000	45366	0.773	0.000	1.6	0.0	
25yrs	POND	BASE	44.18	75.620	79.000	45388	0.773	0.000	1.6	0.0	
25yrs	POND	BASE	44.27	75.625	79.000	45410	0.773	0.000	1.6	0.0	
25yrs	POND	BASE	44.35	75.630	79.000	45432	0.774	0.000	1.6	0.0	
25yrs	POND	BASE	44.43	75.635	79.000	45455	0.774	0.000	1.6	0.0	
25yrs	POND	BASE	44.52	75.640	79.000	45477	0.775	0.000	1.6	0.0	
25yrs	POND	BASE	44.60	75.645	79.000	45499	0.775	0.000	1.6	0.0	
25yrs	POND	BASE	44.68	75.650	79.000	45522	0.775	0.000	1.6	0.0	
25yrs	POND	BASE	44.77	75.655	79.000	45544	0.776	0.000	1.6	0.0	
25yrs	POND	BASE	44.85	75.661	79.000	45566	0.776	0.000	1.6	0.0	
25yrs	POND	BASE	44.93	75.666	79.000	45588	0.776	0.000	1.6	0.0	
25yrs	POND	BASE	45.02	75.671	79.000	45611	0.777	0.000	1.6	0.0	
25yrs	POND	BASE	45.10	75.676	79.000	45633	0.777	0.000	1.6	0.0	
25yrs	POND	BASE	45.18	75.681	79.000	45655	0.777	0.000	1.6	0.0	
25yrs	POND	BASE	45.27	75.686	79.000	45677	0.778	0.000	1.6	0.0	
25yrs	POND	BASE	45.35	75.691	79.000	45700	0.778	0.000	1.6	0.0	
25yrs	POND	BASE	45.43	75.696	79.000	45722	0.778	0.000	1.6	0.0	
25yrs	POND	BASE	45.52	75.701	79.000	45744	0.779	0.000	1.6	0.0	
25yrs	POND	BASE	45.60	75.706	79.000	45766	0.779	0.000	1.6	0.0	
25yrs	POND	BASE	45.68	75.712	79.000	45788	0.779	0.000	1.7	0.0	
25yrs	POND	BASE	45.77	75.717	79.000	45811	0.779	0.000	1.7	0.0	
25yrs	POND	BASE	45.85	75.722	79.000	45833	0.780	0.000	1.7	0.0	
25yrs	POND	BASE	45.93	75.727	79.000	45855	0.780	0.000	1.7	0.0	
25yrs	POND	BASE	46.02	75.732	79.000	45877	0.780	0.000	1.7	0.0	
25yrs	POND	BASE	46.10	75.737	79.000	45900	0.781	0.000	1.7	0.0	
25yrs	POND	BASE	46.18	75.742	79.000	45922	0.781	0.000	1.7	0.0	
25yrs	POND	BASE	46.27	75.747	79.000	45944	0.781	0.000	1.7	0.0	



				POND TIME	SERIES 25	YR.TXT				
25yrs	POND	BASE	46.35	75.752	79.000	45966	0.782	0.000	1.7	0.0
25yrs	POND	BASE	46.43	75.758	79.000	45989	0.782	0.000	1.7	0.0
25yrs	POND	BASE	46.52	75.763	79.000	46011	0.782	0.000	1.7	0.0
25yrs	POND	BASE	46.60	75.768	79.000	46033	0.783	0.000	1.7	0.0
25yrs	POND	BASE	46.68	75.773	79.000	46055	0.783	0.000	1.7	0.0
25yrs	POND	BASE	46.77	75.778	79.000	46077	0.783	0.000	1.7	0.0
25yrs	POND	BASE	46.85	75.783	79.000	46100	0.784	0.000	1.7	0.0
25yrs	POND	BASE	46.93	75.788	79.000	46122	0.784	0.000	1.7	0.0
25yrs	POND	BASE	47.02	75.793	79.000	46144	0.784	0.000	1.7	0.0
25yrs	POND	BASE	47.10	75.798	79.000	46166	0.784	0.000	1.7	0.0
25yrs	POND	BASE	47.18	75.803	79.000	46188	0.785	0.000	1.7	0.0
25yrs	POND	BASE	47.27	75.809	79.000	46211	0.785	0.000	1.8	0.0
25yrs	POND	BASE	47.35	75.814	79.000	46233	0.785	0.000	1.8	0.0
25yrs	POND	BASE	47.43	75.819	79.000	46255	0.786	0.000	1.8	0.0
25yrs	POND	BASE	47.52	75.824	79.000	46277	0.786	0.000	1.8	0.0
25yrs	POND	BASE	47.60	75.829	79.000	46299	0.786	0.000	1.8	0.0
25yrs	POND	BASE	47.68	75.834	79.000	46322	0.786	0.000	1.8	0.0
25yrs	POND	BASE	47.77	75.839	79.000	46344	0.787	0.000	1.8	0.0
25yrs	POND	BASE	47.85	75.844	79.000	46366	0.787	0.000	1.8	0.0
25yrs	POND	BASE	47.93	75.849	79.000	46388	0.787	0.000	1.8	0.0
25yrs	POND	BASE	48.02	75.854	79.000	46410	0.792	0.000	1.8	0.0
25yrs	POND	BASE	48.10	75.860	79.000	46433	0.818	0.000	1.8	0.0
25yrs	POND	BASE	48.18	75.865	79.000	46457	0.847	0.000	1.8	0.0
25yrs	POND	BASE	48.27	75.870	79.000	46481	0.861	0.000	1.8	0.0
25yrs	POND	BASE	48.35	75.876	79.000	46505	0.869	0.000	1.8	0.0
25yrs	POND	BASE	48.43	75.882	79.000	46529	0.874	0.000	1.8	0.0
25yrs	POND	BASE	48.52	75.887	79.000	46554	0.876	0.000	1.8	0.0
25yrs	POND	BASE	48.60	75.893	79.000	46579	0.877	0.000	1.8	0.0
25yrs	POND	BASE	48.68	75.899	79.000	46603	0.878	0.000	1.9	0.0
25yrs	POND	BASE	48.77	75.904	79.000	46628	0.878	0.000	1.9	0.0
25yrs	POND	BASE	48.85	75.910	79.000	46652	0.878	0.000	1.9	0.0
25yrs	POND	BASE	48.93	75.916	79.000	46677	0.879	0.000	1.9	0.0
25yrs	POND	BASE	49.02	75.921	79.000	46702	0.880	0.000	1.9	0.0
25yrs	POND	BASE	49.10	75.927	79.000	46726	0.886	0.000	1.9	0.0
25yrs	POND	BASE	49.18	75.933	79.000	46751	0.892	0.000	1.9	0.0
25yrs	POND	BASE	49.27	75.938	79.000	46776	0.895	0.000	1.9	0.0
25yrs	POND	BASE	49.35	75.944	79.000	46801	0.897	0.000	1.9	0.0
25yrs	POND	BASE	49.43	75.950	79.000	46826	0.898	0.000	1.9	0.0
25yrs	POND	BASE	49.52	75.956	79.000	46851	0.899	0.000	1.9	0.0
25yrs	POND	BASE	49.60	75.961	79.000	46876	0.900	0.000	1.9	0.0
25yrs	POND	BASE	49.68	75.967	79.000	46901	0.900	0.000	1.9	0.0
25yrs	POND	BASE	49.77	75.973	79.000	46927	0.900	0.000	1.9	0.0
25yrs	POND	BASE	49.85	75.979	79.000	46952	0.901	0.000	1.9	0.0
25yrs	POND	BASE	49.93	75.984	79.000	46977	0.901	0.000	1.9	0.0
25yrs	POND	BASE	50.02	75.990	79.000	47002	0.912	0.000	1.9	0.0
25yrs	POND	BASE	50.10	75.996	79.000	47028	0.963	0.000	2.0	0.0
25yrs	POND	BASE	50.18	76.002	79.000	47056	1.015	0.000	2.0	0.0
25yrs	POND	BASE	50.27	76.009	79.000	47088	1.039	0.000	2.0	0.0
25yrs	POND	BASE	50.35	76.016	79.000	47120	1.053	0.000	2.0	0.0
25yrs	POND	BASE	50.43	76.022	79.000	47152	1.061	0.000	2.0	0.0
25yrs	POND	BASE	50.52	76.029	79.000	47184	1.065	0.001	2.0	0.0
25yrs	POND	BASE	50.60	76.036	79.000	47217	1.067	0.002	2.0	0.0
25yrs	POND	BASE	50.68	76.043	79.000	47249	1.068	0.004	2.0	0.0
25yrs	POND	BASE	50.77	76.049	79.000	47282	1.068	0.006	2.0	0.0
25yrs	POND	BASE	50.85	76.056	79.000	47314	1.068	0.007	2.0	0.0
25yrs	POND	BASE	50.93	76.063	79.000	47346	1.069	0.010	2.0	0.0
25yrs	POND	BASE	51.02	76.070	79.000	47378	1.075	0.012	2.0	0.0
25yrs	POND	BASE	51.10	76.076	79.000	47411	1.106	0.015	2.0	0.0
25yrs	POND	BASE	51.18	76.083	79.000	47444	1.137	0.018	2.1	0.0
25yrs	POND	BASE	51.27	76.090	79.000	47478	1.152	0.022	2.1	0.0
25yrs	POND	BASE	51.35	76.098	79.000	47513	1.161	0.025	2.1	0.0
25yrs	POND	BASE	51.43	76.105	79.000	47547	1.166	0.030	2.1	0.0
25yrs	POND	BASE	51.52	76.112	79.000	47581	1.168	0.034	2.1	0.0
25yrs	POND	BASE	51.60	76.119	79.000	47616	1.170	0.039	2.1	0.0
25yrs	POND	BASE	51.68	76.126	79.000	47650	1.170	0.043	2.1	0.0
25yrs	POND	BASE	51.77	76.133	79.000	47684	1.171	0.049	2.1	0.0
25yrs	POND	BASE	51.85	76.140	79.000	47717	1.171	0.054	2.1	0.0
25yrs	POND	BASE	51.93	76.147	79.000	47751	1.172	0.060	2.1	0.0
25yrs	POND	BASE	52.02	76.154	79.000	47784	1.194	0.065	2.1	0.0
25yrs	POND	BASE	52.10	76.162	79.000	47820	1.304	0.072	2.1	0.0

			POND	TIME	SERIES	25	YR.	TXT				
25yrs	POND	BASE	52.18	76.170	79.000	47859	1.416	0.079	2.1	0.0		
25yrs	POND	BASE	52.27	76.178	79.000	47900	1.471	0.087	2.2	0.0		
25yrs	POND	BASE	52.35	76.187	79.000	47941	1.501	0.096	2.2	0.0		
25yrs	POND	BASE	52.43	76.196	79.000	47984	1.518	0.107	2.2	0.0		
25yrs	POND	BASE	52.52	76.205	79.000	48026	1.527	0.122	2.2	0.0		
25yrs	POND	BASE	52.60	76.214	79.000	48068	1.531	0.140	2.2	0.0		
25yrs	POND	BASE	52.68	76.222	79.000	48109	1.532	0.160	2.2	0.0		
25yrs	POND	BASE	52.77	76.231	79.000	48150	1.533	0.181	2.2	0.0		
25yrs	POND	BASE	52.85	76.239	79.000	48190	1.533	0.204	2.2	0.0		
25yrs	POND	BASE	52.93	76.247	79.000	48229	1.534	0.230	2.2	0.0		
25yrs	POND	BASE	53.02	76.255	79.000	48268	1.556	0.257	2.3	0.0		
25yrs	POND	BASE	53.10	76.264	79.000	48308	1.666	0.287	2.3	0.0		
25yrs	POND	BASE	53.18	76.272	79.000	48350	1.781	0.321	2.3	0.0		
25yrs	POND	BASE	53.27	76.282	79.000	48394	1.836	0.358	2.3	0.0		
25yrs	POND	BASE	53.35	76.291	79.000	48438	1.866	0.398	2.3	0.0		
25yrs	POND	BASE	53.43	76.300	79.000	48481	1.884	0.440	2.3	0.0		
25yrs	POND	BASE	53.52	76.309	79.000	48523	1.893	0.483	2.3	0.0		
25yrs	POND	BASE	53.60	76.317	79.000	48565	1.898	0.527	2.3	0.0		
25yrs	POND	BASE	53.68	76.326	79.000	48605	1.899	0.572	2.4	0.0		
25yrs	POND	BASE	53.77	76.334	79.000	48643	1.900	0.617	2.4	0.0		
25yrs	POND	BASE	53.85	76.341	79.000	48681	1.901	0.662	2.4	0.0		
25yrs	POND	BASE	53.93	76.349	79.000	48717	1.902	0.707	2.4	0.0		
25yrs	POND	BASE	54.02	76.356	79.000	48751	1.924	0.752	2.4	0.1		
25yrs	POND	BASE	54.10	76.364	79.000	48787	2.039	0.799	2.4	0.1		
25yrs	POND	BASE	54.18	76.371	79.000	48825	2.158	0.851	2.4	0.1		
25yrs	POND	BASE	54.27	76.380	79.000	48863	2.216	0.906	2.4	0.1		
25yrs	POND	BASE	54.35	76.388	79.000	48902	2.249	0.961	2.5	0.1		
25yrs	POND	BASE	54.43	76.395	79.000	48939	2.267	1.017	2.5	0.1		
25yrs	POND	BASE	54.52	76.403	79.000	48975	2.278	1.072	2.5	0.1		
25yrs	POND	BASE	54.60	76.410	79.000	49010	2.282	1.127	2.5	0.1		
25yrs	POND	BASE	54.68	76.417	79.000	49043	2.284	1.180	2.5	0.1		
25yrs	POND	BASE	54.77	76.424	79.000	49075	2.285	1.232	2.5	0.1		
25yrs	POND	BASE	54.85	76.430	79.000	49105	2.286	1.282	2.6	0.1		
25yrs	POND	BASE	54.93	76.436	79.000	49134	2.288	1.331	2.6	0.1		
25yrs	POND	BASE	55.02	76.442	79.000	49161	2.310	1.378	2.6	0.1		
25yrs	POND	BASE	55.10	76.448	79.000	49189	2.424	1.427	2.6	0.2		
25yrs	POND	BASE	55.18	76.454	79.000	49220	2.546	1.481	2.6	0.2		
25yrs	POND	BASE	55.27	76.460	79.000	49251	2.604	1.537	2.6	0.2		
25yrs	POND	BASE	55.35	76.467	79.000	49282	2.637	1.594	2.7	0.2		
25yrs	POND	BASE	55.43	76.473	79.000	49312	2.657	1.650	2.7	0.2		
25yrs	POND	BASE	55.52	76.479	79.000	49341	2.667	1.704	2.7	0.2		
25yrs	POND	BASE	55.60	76.485	79.000	49368	2.672	1.756	2.7	0.2		
25yrs	POND	BASE	55.68	76.490	79.000	49394	2.674	1.806	2.7	0.2		
25yrs	POND	BASE	55.77	76.495	79.000	49419	2.676	1.854	2.8	0.2		
25yrs	POND	BASE	55.85	76.500	79.000	49442	2.677	1.900	2.8	0.3		
25yrs	POND	BASE	55.93	76.505	79.000	49464	2.679	1.944	2.8	0.3		
25yrs	POND	BASE	56.02	76.509	79.000	49485	2.705	1.985	2.8	0.3		
25yrs	POND	BASE	56.10	76.514	79.000	49507	2.841	2.030	2.8	0.3		
25yrs	POND	BASE	56.18	76.519	79.000	49533	2.989	2.082	2.8	0.3		
25yrs	POND	BASE	56.27	76.525	79.000	49559	3.061	2.136	2.9	0.3		
25yrs	POND	BASE	56.35	76.530	79.000	49586	3.101	2.191	2.9	0.3		
25yrs	POND	BASE	56.43	76.536	79.000	49612	3.124	2.246	2.9	0.4		
25yrs	POND	BASE	56.52	76.541	79.000	49637	3.137	2.298	2.9	0.4		
25yrs	POND	BASE	56.60	76.546	79.000	49661	3.143	2.349	3.0	0.4		
25yrs	POND	BASE	56.68	76.551	79.000	49683	3.145	2.397	3.0	0.4		
25yrs	POND	BASE	56.77	76.555	79.000	49704	3.147	2.442	3.0	0.4		
25yrs	POND	BASE	56.85	76.559	79.000	49724	3.149	2.485	3.0	0.4		
25yrs	POND	BASE	56.93	76.563	79.000	49743	3.150	2.525	3.0	0.5		
25yrs	POND	BASE	57.02	76.567	79.000	49760	3.184	2.564	3.1	0.5		
25yrs	POND	BASE	57.10	76.571	79.000	49780	3.357	2.607	3.1	0.5		
25yrs	POND	BASE	57.18	76.576	79.000	49804	3.549	2.660	3.1	0.5		
25yrs	POND	BASE	57.27	76.581	79.000	49830	3.642	2.719	3.1	0.5		
25yrs	POND	BASE	57.35	76.587	79.000	49857	3.694	2.778	3.2	0.5		
25yrs	POND	BASE	57.43	76.592	79.000	49883	3.724	2.837	3.2	0.6		
25yrs	POND	BASE	57.52	76.598	79.000	49908	3.760	2.893	3.2	0.6		
25yrs	POND	BASE	57.60	76.603	79.000	49934	3.867	2.952	3.2	0.6		
25yrs	POND	BASE	57.68	76.609	79.000	49961	3.972	3.014	3.3	0.6		
25yrs	POND	BASE	57.77	76.614	79.000	49989	4.024	3.077	3.3	0.6		
25yrs	POND	BASE	57.85	76.620	79.000	50016	4.053	3.138	3.3	0.7		
25yrs	POND	BASE	57.93	76.625	79.000	50041	4.071	3.197	3.3	0.7		



25yrs	POND	BASE	58.02	76.631	79.000	50066	4.105	3.254	3.4	0.7
25yrs	POND	BASE	58.10	76.636	79.000	50092	4.239	3.313	3.4	0.7
25yrs	POND	BASE	58.18	76.642	79.000	50120	4.387	3.378	3.4	0.8
25yrs	POND	BASE	58.27	76.648	79.000	50149	4.459	3.446	3.5	0.8
25yrs	POND	BASE	58.35	76.654	79.000	50178	4.500	3.511	3.5	0.8
25yrs	POND	BASE	58.43	76.660	79.000	50205	4.524	3.573	3.5	0.8
25yrs	POND	BASE	58.52	76.665	79.000	50232	4.625	3.633	3.6	0.9
25yrs	POND	BASE	58.60	76.672	79.000	50266	5.084	3.716	3.6	0.9
25yrs	POND	BASE	58.68	76.682	79.000	50311	5.564	3.832	3.6	0.9
25yrs	POND	BASE	58.77	76.692	79.000	50363	5.796	3.964	3.7	0.9
25yrs	POND	BASE	58.85	76.703	79.000	50415	5.925	4.100	3.7	1.0
25yrs	POND	BASE	58.93	76.714	79.000	50467	6.001	4.234	3.7	1.0
25yrs	POND	BASE	59.02	76.725	79.000	50517	6.248	4.366	3.8	1.0
25yrs	POND	BASE	59.10	76.738	79.000	50583	7.307	4.541	3.8	1.0
25yrs	POND	BASE	59.18	76.757	79.000	50674	8.340	4.784	3.9	1.1
25yrs	POND	BASE	59.27	76.779	79.000	50779	8.839	5.065	3.9	1.1
25yrs	POND	BASE	59.35	76.802	79.000	50887	9.116	5.349	4.0	1.2
25yrs	POND	BASE	59.43	76.824	79.000	50992	9.285	5.611	4.1	1.2
25yrs	POND	BASE	59.51	76.845	79.000	51096	11.858	5.865	4.1	1.2
25yrs	POND	BASE	59.59	76.911	79.000	51410	25.996	6.602	4.3	1.3
25yrs	POND	BASE	59.67	77.071	79.000	52236	45.214	8.274	4.5	1.3
25yrs	POND	BASE	59.75	77.299	79.000	53530	54.605	10.512	4.8	1.4
25yrs	POND	BASE	59.83	77.552	79.000	54962	59.854	12.169	5.2	1.5
25yrs	POND	BASE	59.92	77.817	79.000	56460	62.925	13.688	5.7	1.5
25yrs	POND	BASE	60.00	78.074	79.000	57888	64.210	15.021	6.1	1.6
25yrs	POND	BASE	60.08	78.285	79.000	59175	49.422	16.241	6.5	1.8
25yrs	POND	BASE	60.17	78.402	79.000	60393	31.488	18.453	6.8	1.9
25yrs	POND	BASE	60.25	78.442	79.000	60817	23.179	19.441	7.0	2.0
25yrs	POND	BASE	60.33	78.449	79.000	60884	18.548	19.604	7.1	2.1
25yrs	POND	BASE	60.42	78.437	79.000	60762	15.915	19.307	7.2	2.3
25yrs	POND	BASE	60.51	78.418	79.000	60557	14.443	18.824	7.3	2.4
25yrs	POND	BASE	60.59	78.391	79.000	60281	11.988	18.207	7.4	2.5
25yrs	POND	BASE	60.67	78.355	79.000	59902	9.650	17.434	7.5	2.7
25yrs	POND	BASE	60.75	78.318	79.000	59516	8.631	16.747	7.6	2.8
25yrs	POND	BASE	60.84	78.276	79.000	59077	8.017	16.119	7.6	2.9
25yrs	POND	BASE	60.92	78.234	79.000	58721	7.675	15.789	7.7	3.0
25yrs	POND	BASE	61.01	78.191	79.000	58499	7.438	15.588	7.7	3.1
25yrs	POND	BASE	61.08	78.152	79.000	58291	6.804	15.398	7.8	3.2
25yrs	POND	BASE	61.17	78.105	79.000	58047	6.080	15.171	7.8	3.3
25yrs	POND	BASE	61.26	78.056	79.000	57793	5.743	14.931	7.9	3.4
25yrs	POND	BASE	61.34	78.007	79.000	57538	5.561	14.687	7.9	3.5
25yrs	POND	BASE	61.42	77.964	79.000	57294	5.466	14.464	7.9	3.6
25yrs	POND	BASE	61.50	77.916	79.000	57023	5.404	14.217	8.0	3.7
25yrs	POND	BASE	61.59	77.868	79.000	56753	5.119	13.965	8.0	3.8
25yrs	POND	BASE	61.67	77.820	79.000	56480	4.795	13.706	8.0	3.9
25yrs	POND	BASE	61.76	77.772	79.000	56206	4.645	13.442	8.1	4.0
25yrs	POND	BASE	61.84	77.729	79.000	55962	4.569	13.203	8.1	4.1
25yrs	POND	BASE	61.92	77.682	79.000	55697	4.521	12.936	8.1	4.2
25yrs	POND	BASE	62.01	77.636	79.000	55437	4.468	12.670	8.2	4.3
25yrs	POND	BASE	62.09	77.590	79.000	55177	4.085	12.398	8.2	4.4
25yrs	POND	BASE	62.17	77.548	79.000	54938	3.692	12.143	8.2	4.4
25yrs	POND	BASE	62.25	77.501	79.000	54671	3.488	11.851	8.2	4.5
25yrs	POND	BASE	62.34	77.454	79.000	54407	3.378	11.555	8.3	4.6
25yrs	POND	BASE	62.42	77.408	79.000	54149	3.317	11.257	8.3	4.7
25yrs	POND	BASE	62.50	77.368	79.000	53922	3.286	10.990	8.3	4.8
25yrs	POND	BASE	62.59	77.325	79.000	53675	3.172	10.692	8.3	4.8
25yrs	POND	BASE	62.67	77.282	79.000	53434	3.044	10.390	8.4	4.9
25yrs	POND	BASE	62.76	77.240	79.000	53198	2.985	10.088	8.4	5.0
25yrs	POND	BASE	62.83	77.204	79.000	52992	2.955	9.816	8.4	5.1
25yrs	POND	BASE	62.92	77.165	79.000	52770	2.936	9.489	8.4	5.1
25yrs	POND	BASE	63.00	77.128	79.000	52561	2.927	9.014	8.4	5.2
25yrs	POND	BASE	63.09	77.094	79.000	52366	2.920	8.570	8.5	5.2
25yrs	POND	BASE	63.18	77.062	79.000	52185	2.917	8.157	8.5	5.3
25yrs	POND	BASE	63.25	77.035	79.000	52033	2.916	7.809	8.5	5.4
25yrs	POND	BASE	63.34	77.007	79.000	51875	2.916	7.447	8.5	5.4
25yrs	POND	BASE	63.42	76.980	79.000	51742	2.915	7.279	8.5	5.5
25yrs	POND	BASE	63.51	76.955	79.000	51621	2.915	7.047	8.6	5.5
25yrs	POND	BASE	63.59	76.933	79.000	51515	2.915	6.833	8.6	5.6
25yrs	POND	BASE	63.67	76.910	79.000	51406	2.916	6.594	8.6	5.6
25yrs	POND	BASE	63.76	76.889	79.000	51304	2.916	6.361	8.6	5.7

			POND	TIME	SERIES	25	YR.	TXT				
25yrs	POND	BASE	63.84	76.869	79.000	51208	2.916	6.135	8.6	5.7		
25yrs	POND	BASE	63.92	76.852	79.000	51129	2.916	5.947	8.7	5.7		
25yrs	POND	BASE	64.01	76.833	79.000	51037	2.870	5.720	8.7	5.8		
25yrs	POND	BASE	64.09	76.817	79.000	50958	2.541	5.527	8.7	5.8		
25yrs	POND	BASE	64.17	76.799	79.000	50874	2.147	5.317	8.7	5.9		
25yrs	POND	BASE	64.25	76.781	79.000	50788	1.958	5.088	8.7	5.9		
25yrs	POND	BASE	64.34	76.761	79.000	50691	1.842	4.827	8.7	5.9		
25yrs	POND	BASE	64.42	76.744	79.000	50611	1.786	4.616	8.8	6.0		
25yrs	POND	BASE	64.50	76.729	79.000	50536	1.756	4.418	8.8	6.0		
25yrs	POND	BASE	64.58	76.714	79.000	50466	1.743	4.231	8.8	6.0		
25yrs	POND	BASE	64.68	76.697	79.000	50386	1.742	4.026	8.8	6.0		
25yrs	POND	BASE	64.76	76.684	79.000	50323	1.742	3.863	8.8	6.1		
25yrs	POND	BASE	64.85	76.672	79.000	50265	1.742	3.713	8.8	6.1		
25yrs	POND	BASE	64.93	76.661	79.000	50210	1.742	3.583	8.8	6.1		
25yrs	POND	BASE	65.01	76.650	79.000	50159	1.743	3.470	8.8	6.1		
25yrs	POND	BASE	65.10	76.640	79.000	50111	1.747	3.358	8.9	6.2		
25yrs	POND	BASE	65.18	76.631	79.000	50066	1.751	3.254	8.9	6.2		
25yrs	POND	BASE	65.26	76.622	79.000	50024	1.754	3.158	8.9	6.2		
25yrs	POND	BASE	65.35	76.614	79.000	49985	1.755	3.068	8.9	6.2		
25yrs	POND	BASE	65.43	76.606	79.000	49948	1.755	2.984	8.9	6.2		
25yrs	POND	BASE	65.51	76.599	79.000	49914	1.756	2.906	8.9	6.3		
25yrs	POND	BASE	65.60	76.592	79.000	49882	1.756	2.834	8.9	6.3		
25yrs	POND	BASE	65.68	76.586	79.000	49852	1.756	2.766	8.9	6.3		
25yrs	POND	BASE	65.76	76.580	79.000	49823	1.756	2.703	9.0	6.3		
25yrs	POND	BASE	65.85	76.574	79.000	49797	1.756	2.644	9.0	6.4		
25yrs	POND	BASE	65.93	76.569	79.000	49772	1.756	2.589	9.0	6.4		
25yrs	POND	BASE	66.01	76.564	79.000	49749	1.756	2.538	9.0	6.4		
25yrs	POND	BASE	66.10	76.560	79.000	49727	1.756	2.490	9.0	6.4		
25yrs	POND	BASE	66.18	76.555	79.000	49706	1.756	2.446	9.0	6.4		
25yrs	POND	BASE	66.26	76.551	79.000	49686	1.756	2.404	9.0	6.4		
25yrs	POND	BASE	66.35	76.548	79.000	49668	1.756	2.365	9.0	6.5		
25yrs	POND	BASE	66.43	76.544	79.000	49651	1.756	2.329	9.0	6.5		
25yrs	POND	BASE	66.51	76.541	79.000	49635	1.756	2.294	9.1	6.5		
25yrs	POND	BASE	66.60	76.537	79.000	49620	1.756	2.262	9.1	6.5		
25yrs	POND	BASE	66.68	76.534	79.000	49606	1.756	2.232	9.1	6.5		
25yrs	POND	BASE	66.76	76.532	79.000	49592	1.756	2.204	9.1	6.5		
25yrs	POND	BASE	66.85	76.529	79.000	49580	1.756	2.178	9.1	6.6		
25yrs	POND	BASE	66.93	76.527	79.000	49568	1.756	2.153	9.1	6.6		
25yrs	POND	BASE	67.01	76.524	79.000	49556	1.757	2.130	9.1	6.6		
25yrs	POND	BASE	67.10	76.522	79.000	49546	1.757	2.109	9.1	6.6		
25yrs	POND	BASE	67.18	76.520	79.000	49536	1.757	2.088	9.2	6.6		
25yrs	POND	BASE	67.26	76.518	79.000	49527	1.757	2.069	9.2	6.6		
25yrs	POND	BASE	67.35	76.516	79.000	49518	1.757	2.051	9.2	6.6		
25yrs	POND	BASE	67.43	76.514	79.000	49509	1.757	2.034	9.2	6.7		
25yrs	POND	BASE	67.51	76.513	79.000	49502	1.757	2.018	9.2	6.7		
25yrs	POND	BASE	67.60	76.511	79.000	49494	1.757	2.004	9.2	6.7		
25yrs	POND	BASE	67.68	76.510	79.000	49487	1.757	1.989	9.2	6.7		
25yrs	POND	BASE	67.76	76.508	79.000	49481	1.757	1.976	9.2	6.7		
25yrs	POND	BASE	67.85	76.507	79.000	49474	1.757	1.964	9.3	6.7		
25yrs	POND	BASE	67.93	76.506	79.000	49468	1.757	1.952	9.3	6.7		
25yrs	POND	BASE	68.01	76.505	79.000	49463	1.724	1.941	9.3	6.7		
25yrs	POND	BASE	68.10	76.503	79.000	49454	1.537	1.923	9.3	6.8		
25yrs	POND	BASE	68.18	76.500	79.000	49440	1.350	1.896	9.3	6.8		
25yrs	POND	BASE	68.26	76.496	79.000	49423	1.260	1.863	9.3	6.8		
25yrs	POND	BASE	68.35	76.493	79.000	49406	1.211	1.828	9.3	6.8		
25yrs	POND	BASE	68.43	76.489	79.000	49388	1.183	1.793	9.3	6.8		
25yrs	POND	BASE	68.51	76.485	79.000	49370	1.169	1.760	9.3	6.8		
25yrs	POND	BASE	68.60	76.482	79.000	49353	1.163	1.727	9.3	6.8		
25yrs	POND	BASE	68.68	76.478	79.000	49337	1.163	1.697	9.3	6.9		
25yrs	POND	BASE	68.76	76.475	79.000	49322	1.163	1.668	9.4	6.9		
25yrs	POND	BASE	68.85	76.472	79.000	49308	1.163	1.641	9.4	6.9		
25yrs	POND	BASE	68.93	76.469	79.000	49294	1.163	1.616	9.4	6.9		
25yrs	POND	BASE	69.01	76.467	79.000	49281	1.163	1.592	9.4	6.9		
25yrs	POND	BASE	69.10	76.464	79.000	49269	1.163	1.570	9.4	6.9		
25yrs	POND	BASE	69.18	76.462	79.000	49257	1.163	1.549	9.4	6.9		
25yrs	POND	BASE	69.26	76.459	79.000	49246	1.163	1.529	9.4	6.9		
25yrs	POND	BASE	69.35	76.457	79.000	49236	1.163	1.510	9.4	6.9		
25yrs	POND	BASE	69.43	76.455	79.000	49226	1.163	1.492	9.4	6.9		
25yrs	POND	BASE	69.51	76.453	79.000	49217	1.163	1.475	9.4	7.0		
25yrs	POND	BASE	69.60	76.451	79.000	49208	1.163	1.460	9.4	7.0		

			POND	TIME	SERIES	25	YR.	TXT				
25yrs	POND	BASE	69.68	76.450	79.000	49199	1.163	1.445	9.4	7.0		
25yrs	POND	BASE	69.76	76.448	79.000	49191	1.163	1.430	9.5	7.0		
25yrs	POND	BASE	69.85	76.446	79.000	49184	1.163	1.417	9.5	7.0		
25yrs	POND	BASE	69.93	76.445	79.000	49176	1.163	1.404	9.5	7.0		
25yrs	POND	BASE	70.01	76.443	79.000	49169	1.164	1.392	9.5	7.0		
25yrs	POND	BASE	70.10	76.442	79.000	49163	1.166	1.381	9.5	7.0		
25yrs	POND	BASE	70.18	76.441	79.000	49157	1.168	1.370	9.5	7.0		
25yrs	POND	BASE	70.26	76.440	79.000	49151	1.169	1.360	9.5	7.0		
25yrs	POND	BASE	70.35	76.438	79.000	49146	1.169	1.351	9.5	7.1		
25yrs	POND	BASE	70.43	76.437	79.000	49140	1.170	1.342	9.5	7.1		
25yrs	POND	BASE	70.51	76.436	79.000	49135	1.170	1.334	9.5	7.1		
25yrs	POND	BASE	70.60	76.435	79.000	49131	1.170	1.326	9.5	7.1		
25yrs	POND	BASE	70.68	76.434	79.000	49126	1.170	1.318	9.5	7.1		
25yrs	POND	BASE	70.76	76.434	79.000	49122	1.170	1.311	9.5	7.1		
25yrs	POND	BASE	70.85	76.433	79.000	49118	1.170	1.304	9.6	7.1		
25yrs	POND	BASE	70.93	76.432	79.000	49114	1.170	1.298	9.6	7.1		
25yrs	POND	BASE	71.01	76.431	79.000	49111	1.170	1.291	9.6	7.1		
25yrs	POND	BASE	71.10	76.430	79.000	49107	1.170	1.286	9.6	7.1		
25yrs	POND	BASE	71.18	76.430	79.000	49104	1.170	1.280	9.6	7.1		
25yrs	POND	BASE	71.26	76.429	79.000	49101	1.170	1.275	9.6	7.2		
25yrs	POND	BASE	71.35	76.428	79.000	49098	1.170	1.270	9.6	7.2		
25yrs	POND	BASE	71.43	76.428	79.000	49095	1.170	1.265	9.6	7.2		
25yrs	POND	BASE	71.51	76.427	79.000	49092	1.170	1.260	9.6	7.2		
25yrs	POND	BASE	71.60	76.427	79.000	49089	1.170	1.256	9.6	7.2		
25yrs	POND	BASE	71.68	76.426	79.000	49087	1.170	1.252	9.6	7.2		
25yrs	POND	BASE	71.76	76.426	79.000	49085	1.170	1.248	9.6	7.2		
25yrs	POND	BASE	71.85	76.425	79.000	49082	1.170	1.244	9.7	7.2		
25yrs	POND	BASE	71.93	76.425	79.000	49080	1.170	1.241	9.7	7.2		
25yrs	POND	BASE	72.01	76.424	79.000	49075	0.000	1.232	9.7	7.2		
25yrs	POND	BASE	72.10	76.416	79.000	49039	0.000	1.174	9.7	7.2		
25yrs	POND	BASE	72.18	76.409	79.000	49006	0.000	1.120	9.7	7.2		
25yrs	POND	BASE	72.26	76.403	79.000	48974	0.000	1.070	9.7	7.3		
25yrs	POND	BASE	72.35	76.396	79.000	48943	0.000	1.023	9.7	7.3		
25yrs	POND	BASE	72.43	76.390	79.000	48913	0.000	0.979	9.7	7.3		
25yrs	POND	BASE	72.51	76.384	79.000	48885	0.000	0.937	9.7	7.3		
25yrs	POND	BASE	72.60	76.378	79.000	48858	0.000	0.898	9.7	7.3		
25yrs	POND	BASE	72.68	76.373	79.000	48832	0.000	0.861	9.7	7.3		
25yrs	POND	BASE	72.76	76.368	79.000	48807	0.000	0.827	9.7	7.3		
25yrs	POND	BASE	72.85	76.363	79.000	48783	0.000	0.794	9.7	7.3		
25yrs	POND	BASE	72.93	76.358	79.000	48760	0.000	0.763	9.7	7.3		
25yrs	POND	BASE	73.01	76.353	79.000	48738	0.000	0.735	9.7	7.3		
25yrs	POND	BASE	73.10	76.349	79.000	48717	0.000	0.708	9.7	7.3		
25yrs	POND	BASE	73.18	76.345	79.000	48696	0.000	0.682	9.7	7.3		
25yrs	POND	BASE	73.26	76.341	79.000	48677	0.000	0.657	9.7	7.3		
25yrs	POND	BASE	73.35	76.337	79.000	48657	0.000	0.634	9.7	7.3		
25yrs	POND	BASE	73.43	76.333	79.000	48639	0.000	0.612	9.7	7.3		
25yrs	POND	BASE	73.51	76.329	79.000	48621	0.000	0.591	9.7	7.3		
25yrs	POND	BASE	73.60	76.325	79.000	48604	0.000	0.571	9.7	7.3		
25yrs	POND	BASE	73.68	76.322	79.000	48587	0.000	0.552	9.7	7.3		
25yrs	POND	BASE	73.76	76.319	79.000	48571	0.000	0.534	9.7	7.4		
25yrs	POND	BASE	73.85	76.315	79.000	48556	0.000	0.517	9.7	7.4		
25yrs	POND	BASE	73.93	76.312	79.000	48541	0.000	0.501	9.7	7.4		
25yrs	POND	BASE	74.01	76.309	79.000	48526	0.000	0.486	9.7	7.4		
25yrs	POND	BASE	74.10	76.306	79.000	48512	0.000	0.471	9.7	7.4		
25yrs	POND	BASE	74.18	76.303	79.000	48498	0.000	0.457	9.7	7.4		
25yrs	POND	BASE	74.26	76.300	79.000	48485	0.000	0.444	9.7	7.4		
25yrs	POND	BASE	74.35	76.298	79.000	48472	0.000	0.431	9.7	7.4		
25yrs	POND	BASE	74.43	76.295	79.000	48459	0.000	0.419	9.7	7.4		
25yrs	POND	BASE	74.51	76.293	79.000	48447	0.000	0.407	9.7	7.4		
25yrs	POND	BASE	74.60	76.290	79.000	48435	0.000	0.395	9.7	7.4		
25yrs	POND	BASE	74.68	76.288	79.000	48423	0.000	0.385	9.7	7.4		
25yrs	POND	BASE	74.76	76.285	79.000	48412	0.000	0.374	9.7	7.4		
25yrs	POND	BASE	74.85	76.283	79.000	48401	0.000	0.364	9.7	7.4		
25yrs	POND	BASE	74.93	76.281	79.000	48390	0.000	0.355	9.7	7.4		
25yrs	POND	BASE	75.01	76.279	79.000	48380	0.000	0.346	9.7	7.4		
25yrs	POND	BASE	75.10	76.277	79.000	48370	0.000	0.337	9.7	7.4		
25yrs	POND	BASE	75.18	76.274	79.000	48360	0.000	0.329	9.7	7.4		
25yrs	POND	BASE	75.26	76.272	79.000	48350	0.000	0.321	9.7	7.4		
25yrs	POND	BASE	75.35	76.270	79.000	48341	0.000	0.313	9.7	7.4		
25yrs	POND	BASE	75.43	76.269	79.000	48331	0.000	0.306	9.7	7.4		

			POND	TIME	SERIES	25	YR.TXT				
25yrs	POND	BASE	75.51	76.267	79.000	48322	0.000	0.299	9.7	7.4	
25yrs	POND	BASE	75.60	76.265	79.000	48314	0.000	0.292	9.7	7.4	
25yrs	POND	BASE	75.68	76.263	79.000	48305	0.000	0.285	9.7	7.4	
25yrs	POND	BASE	75.76	76.261	79.000	48297	0.000	0.279	9.7	7.4	
25yrs	POND	BASE	75.85	76.260	79.000	48288	0.000	0.272	9.7	7.4	
25yrs	POND	BASE	75.93	76.258	79.000	48280	0.000	0.267	9.7	7.4	
25yrs	POND	BASE	76.01	76.256	79.000	48273	0.000	0.261	9.7	7.4	
25yrs	POND	BASE	76.10	76.255	79.000	48265	0.000	0.255	9.7	7.4	
25yrs	POND	BASE	76.18	76.253	79.000	48257	0.000	0.250	9.7	7.4	
25yrs	POND	BASE	76.26	76.252	79.000	48250	0.000	0.244	9.7	7.4	
25yrs	POND	BASE	76.35	76.250	79.000	48243	0.000	0.239	9.7	7.4	
25yrs	POND	BASE	76.43	76.249	79.000	48236	0.000	0.235	9.7	7.4	
25yrs	POND	BASE	76.51	76.247	79.000	48229	0.000	0.230	9.7	7.4	
25yrs	POND	BASE	76.60	76.246	79.000	48222	0.000	0.225	9.7	7.4	
25yrs	POND	BASE	76.68	76.244	79.000	48215	0.000	0.221	9.7	7.4	
25yrs	POND	BASE	76.76	76.243	79.000	48209	0.000	0.217	9.7	7.4	
25yrs	POND	BASE	76.85	76.242	79.000	48202	0.000	0.212	9.7	7.4	
25yrs	POND	BASE	76.93	76.240	79.000	48196	0.000	0.208	9.7	7.4	
25yrs	POND	BASE	77.01	76.239	79.000	48190	0.000	0.205	9.7	7.4	
25yrs	POND	BASE	77.10	76.238	79.000	48184	0.000	0.201	9.7	7.4	
25yrs	POND	BASE	77.18	76.236	79.000	48178	0.000	0.197	9.7	7.4	
25yrs	POND	BASE	77.26	76.235	79.000	48172	0.000	0.194	9.7	7.4	
25yrs	POND	BASE	77.35	76.234	79.000	48166	0.000	0.190	9.7	7.4	
25yrs	POND	BASE	77.43	76.233	79.000	48161	0.000	0.187	9.7	7.4	
25yrs	POND	BASE	77.51	76.232	79.000	48155	0.000	0.184	9.7	7.4	
25yrs	POND	BASE	77.60	76.231	79.000	48150	0.000	0.181	9.7	7.4	
25yrs	POND	BASE	77.68	76.229	79.000	48144	0.000	0.178	9.7	7.4	
25yrs	POND	BASE	77.76	76.228	79.000	48139	0.000	0.175	9.7	7.5	
25yrs	POND	BASE	77.85	76.227	79.000	48134	0.000	0.173	9.7	7.5	
25yrs	POND	BASE	77.93	76.226	79.000	48129	0.000	0.170	9.7	7.5	
25yrs	POND	BASE	78.01	76.225	79.000	48124	0.000	0.167	9.7	7.5	
25yrs	POND	BASE	78.10	76.224	79.000	48119	0.000	0.165	9.7	7.5	
25yrs	POND	BASE	78.18	76.223	79.000	48114	0.000	0.162	9.7	7.5	
25yrs	POND	BASE	78.26	76.222	79.000	48109	0.000	0.160	9.7	7.5	
25yrs	POND	BASE	78.35	76.221	79.000	48104	0.000	0.157	9.7	7.5	
25yrs	POND	BASE	78.43	76.220	79.000	48100	0.000	0.155	9.7	7.5	
25yrs	POND	BASE	78.51	76.219	79.000	48095	0.000	0.153	9.7	7.5	
25yrs	POND	BASE	78.60	76.218	79.000	48091	0.000	0.151	9.7	7.5	
25yrs	POND	BASE	78.68	76.217	79.000	48086	0.000	0.149	9.7	7.5	
25yrs	POND	BASE	78.76	76.216	79.000	48082	0.000	0.146	9.7	7.5	
25yrs	POND	BASE	78.85	76.215	79.000	48077	0.000	0.144	9.7	7.5	
25yrs	POND	BASE	78.93	76.215	79.000	48073	0.000	0.142	9.7	7.5	
25yrs	POND	BASE	79.01	76.214	79.000	48069	0.000	0.140	9.7	7.5	
25yrs	POND	BASE	79.10	76.213	79.000	48065	0.000	0.139	9.7	7.5	
25yrs	POND	BASE	79.18	76.212	79.000	48061	0.000	0.137	9.7	7.5	
25yrs	POND	BASE	79.26	76.211	79.000	48056	0.000	0.135	9.7	7.5	
25yrs	POND	BASE	79.35	76.210	79.000	48052	0.000	0.133	9.7	7.5	
25yrs	POND	BASE	79.43	76.209	79.000	48048	0.000	0.131	9.7	7.5	
25yrs	POND	BASE	79.51	76.209	79.000	48045	0.000	0.130	9.7	7.5	
25yrs	POND	BASE	79.60	76.208	79.000	48041	0.000	0.128	9.7	7.5	
25yrs	POND	BASE	79.68	76.207	79.000	48037	0.000	0.127	9.7	7.5	
25yrs	POND	BASE	79.76	76.206	79.000	48033	0.000	0.125	9.7	7.5	
25yrs	POND	BASE	79.85	76.205	79.000	48029	0.000	0.123	9.7	7.5	
25yrs	POND	BASE	79.93	76.205	79.000	48026	0.000	0.122	9.7	7.5	
25yrs	POND	BASE	80.01	76.204	79.000	48022	0.000	0.121	9.7	7.5	
25yrs	POND	BASE	80.10	76.203	79.000	48019	0.000	0.119	9.7	7.5	
25yrs	POND	BASE	80.18	76.202	79.000	48015	0.000	0.118	9.7	7.5	
25yrs	POND	BASE	80.26	76.202	79.000	48011	0.000	0.116	9.7	7.5	
25yrs	POND	BASE	80.35	76.201	79.000	48008	0.000	0.115	9.7	7.5	
25yrs	POND	BASE	80.43	76.200	79.000	48005	0.000	0.114	9.7	7.5	
25yrs	POND	BASE	80.51	76.200	79.000	48001	0.000	0.113	9.7	7.5	
25yrs	POND	BASE	80.60	76.199	79.000	47998	0.000	0.111	9.7	7.5	
25yrs	POND	BASE	80.68	76.198	79.000	47994	0.000	0.110	9.7	7.5	
25yrs	POND	BASE	80.76	76.198	79.000	47991	0.000	0.109	9.7	7.5	
25yrs	POND	BASE	80.85	76.197	79.000	47988	0.000	0.108	9.7	7.5	
25yrs	POND	BASE	80.93	76.196	79.000	47985	0.000	0.107	9.7	7.5	
25yrs	POND	BASE	81.01	76.195	79.000	47982	0.000	0.106	9.7	7.5	
25yrs	POND	BASE	81.10	76.195	79.000	47978	0.000	0.105	9.7	7.5	
25yrs	POND	BASE	81.18	76.194	79.000	47975	0.000	0.104	9.7	7.5	
25yrs	POND	BASE	81.26	76.194	79.000	47972	0.000	0.103	9.7	7.5	

			POND	TIME	SERIES	25	YR.TXT				
25yrs	POND	BASE	81.35	76.193	79.000	47969	0.000	0.102	9.7	7.5	
25yrs	POND	BASE	81.43	76.192	79.000	47966	0.000	0.101	9.7	7.5	
25yrs	POND	BASE	81.51	76.192	79.000	47963	0.000	0.101	9.7	7.5	
25yrs	POND	BASE	81.60	76.191	79.000	47960	0.000	0.100	9.7	7.5	
25yrs	POND	BASE	81.68	76.190	79.000	47957	0.000	0.099	9.7	7.5	
25yrs	POND	BASE	81.76	76.190	79.000	47954	0.000	0.099	9.7	7.5	
25yrs	POND	BASE	81.85	76.189	79.000	47951	0.000	0.098	9.7	7.5	
25yrs	POND	BASE	81.93	76.189	79.000	47948	0.000	0.097	9.7	7.5	
25yrs	POND	BASE	82.01	76.188	79.000	47945	0.000	0.097	9.7	7.5	
25yrs	POND	BASE	82.10	76.187	79.000	47942	0.000	0.096	9.7	7.5	
25yrs	POND	BASE	82.18	76.187	79.000	47940	0.000	0.095	9.7	7.5	
25yrs	POND	BASE	82.26	76.186	79.000	47937	0.000	0.095	9.7	7.5	
25yrs	POND	BASE	82.35	76.186	79.000	47934	0.000	0.094	9.7	7.5	
25yrs	POND	BASE	82.43	76.185	79.000	47931	0.000	0.094	9.7	7.5	
25yrs	POND	BASE	82.51	76.184	79.000	47928	0.000	0.093	9.7	7.5	
25yrs	POND	BASE	82.60	76.184	79.000	47925	0.000	0.092	9.7	7.5	
25yrs	POND	BASE	82.68	76.183	79.000	47923	0.000	0.092	9.7	7.5	
25yrs	POND	BASE	82.76	76.183	79.000	47920	0.000	0.091	9.7	7.5	
25yrs	POND	BASE	82.85	76.182	79.000	47917	0.000	0.091	9.7	7.5	
25yrs	POND	BASE	82.93	76.181	79.000	47914	0.000	0.090	9.7	7.5	
25yrs	POND	BASE	83.01	76.181	79.000	47912	0.000	0.090	9.7	7.5	
25yrs	POND	BASE	83.10	76.180	79.000	47909	0.000	0.089	9.7	7.5	
25yrs	POND	BASE	83.18	76.180	79.000	47906	0.000	0.089	9.7	7.5	
25yrs	POND	BASE	83.26	76.179	79.000	47904	0.000	0.088	9.7	7.5	
25yrs	POND	BASE	83.35	76.179	79.000	47901	0.000	0.088	9.7	7.5	
25yrs	POND	BASE	83.43	76.178	79.000	47898	0.000	0.087	9.7	7.5	
25yrs	POND	BASE	83.51	76.178	79.000	47896	0.000	0.086	9.7	7.5	
25yrs	POND	BASE	83.60	76.177	79.000	47893	0.000	0.086	9.7	7.5	
25yrs	POND	BASE	83.68	76.177	79.000	47891	0.000	0.085	9.7	7.5	
25yrs	POND	BASE	83.76	76.176	79.000	47888	0.000	0.085	9.7	7.5	
25yrs	POND	BASE	83.85	76.175	79.000	47886	0.000	0.084	9.7	7.5	
25yrs	POND	BASE	83.93	76.175	79.000	47883	0.000	0.084	9.7	7.5	
25yrs	POND	BASE	84.01	76.174	79.000	47881	0.000	0.083	9.7	7.5	
25yrs	POND	BASE	84.10	76.174	79.000	47878	0.000	0.083	9.7	7.5	
25yrs	POND	BASE	84.18	76.173	79.000	47876	0.000	0.082	9.7	7.5	
25yrs	POND	BASE	84.26	76.173	79.000	47873	0.000	0.082	9.7	7.5	
25yrs	POND	BASE	84.35	76.172	79.000	47871	0.000	0.081	9.7	7.5	
25yrs	POND	BASE	84.43	76.172	79.000	47868	0.000	0.081	9.7	7.5	
25yrs	POND	BASE	84.51	76.171	79.000	47866	0.000	0.081	9.7	7.5	
25yrs	POND	BASE	84.60	76.171	79.000	47863	0.000	0.080	9.7	7.5	
25yrs	POND	BASE	84.68	76.170	79.000	47861	0.000	0.080	9.7	7.5	
25yrs	POND	BASE	84.76	76.170	79.000	47859	0.000	0.079	9.7	7.5	
25yrs	POND	BASE	84.85	76.169	79.000	47856	0.000	0.079	9.7	7.5	
25yrs	POND	BASE	84.93	76.169	79.000	47854	0.000	0.078	9.7	7.5	
25yrs	POND	BASE	85.01	76.168	79.000	47852	0.000	0.078	9.7	7.5	
25yrs	POND	BASE	85.10	76.168	79.000	47849	0.000	0.077	9.7	7.5	
25yrs	POND	BASE	85.18	76.167	79.000	47847	0.000	0.077	9.7	7.5	
25yrs	POND	BASE	85.26	76.167	79.000	47845	0.000	0.076	9.7	7.5	
25yrs	POND	BASE	85.35	76.166	79.000	47842	0.000	0.076	9.7	7.5	
25yrs	POND	BASE	85.43	76.166	79.000	47840	0.000	0.076	9.7	7.5	
25yrs	POND	BASE	85.51	76.165	79.000	47838	0.000	0.075	9.7	7.5	
25yrs	POND	BASE	85.60	76.165	79.000	47836	0.000	0.075	9.7	7.5	
25yrs	POND	BASE	85.68	76.165	79.000	47833	0.000	0.074	9.7	7.5	
25yrs	POND	BASE	85.76	76.164	79.000	47831	0.000	0.074	9.7	7.5	
25yrs	POND	BASE	85.85	76.164	79.000	47829	0.000	0.073	9.7	7.5	
25yrs	POND	BASE	85.93	76.163	79.000	47827	0.000	0.073	9.7	7.5	
25yrs	POND	BASE	86.01	76.163	79.000	47824	0.000	0.073	9.7	7.5	
25yrs	POND	BASE	86.10	76.162	79.000	47822	0.000	0.072	9.7	7.5	
25yrs	POND	BASE	86.18	76.162	79.000	47820	0.000	0.072	9.7	7.5	
25yrs	POND	BASE	86.26	76.161	79.000	47818	0.000	0.071	9.7	7.5	
25yrs	POND	BASE	86.35	76.161	79.000	47816	0.000	0.071	9.7	7.5	
25yrs	POND	BASE	86.43	76.160	79.000	47814	0.000	0.071	9.7	7.5	
25yrs	POND	BASE	86.51	76.160	79.000	47812	0.000	0.070	9.7	7.5	
25yrs	POND	BASE	86.60	76.160	79.000	47809	0.000	0.070	9.7	7.5	
25yrs	POND	BASE	86.68	76.159	79.000	47807	0.000	0.069	9.7	7.5	
25yrs	POND	BASE	86.76	76.159	79.000	47805	0.000	0.069	9.7	7.5	
25yrs	POND	BASE	86.85	76.158	79.000	47803	0.000	0.069	9.7	7.5	
25yrs	POND	BASE	86.93	76.158	79.000	47801	0.000	0.068	9.7	7.5	
25yrs	POND	BASE	87.01	76.157	79.000	47799	0.000	0.068	9.7	7.5	
25yrs	POND	BASE	87.10	76.157	79.000	47797	0.000	0.068	9.7	7.5	

				POND	TIME	SERIES	25	YR.TXT				
25yrs	POND	BASE	87.18	76.157	79.000	47795	0.000	0.067	9.7	7.5		
25yrs	POND	BASE	87.26	76.156	79.000	47793	0.000	0.067	9.7	7.5		
25yrs	POND	BASE	87.35	76.156	79.000	47791	0.000	0.066	9.7	7.5		
25yrs	POND	BASE	87.43	76.155	79.000	47789	0.000	0.066	9.7	7.5		
25yrs	POND	BASE	87.51	76.155	79.000	47787	0.000	0.066	9.7	7.5		
25yrs	POND	BASE	87.60	76.154	79.000	47785	0.000	0.065	9.7	7.5		
25yrs	POND	BASE	87.68	76.154	79.000	47783	0.000	0.065	9.7	7.5		
25yrs	POND	BASE	87.76	76.154	79.000	47781	0.000	0.065	9.7	7.5		
25yrs	POND	BASE	87.85	76.153	79.000	47779	0.000	0.064	9.7	7.5		
25yrs	POND	BASE	87.93	76.153	79.000	47777	0.000	0.064	9.7	7.5		
25yrs	POND	BASE	88.01	76.152	79.000	47775	0.000	0.064	9.7	7.5		
25yrs	POND	BASE	88.10	76.152	79.000	47773	0.000	0.063	9.7	7.5		
25yrs	POND	BASE	88.18	76.152	79.000	47772	0.000	0.063	9.7	7.5		
25yrs	POND	BASE	88.26	76.151	79.000	47770	0.000	0.063	9.7	7.5		
25yrs	POND	BASE	88.35	76.151	79.000	47768	0.000	0.062	9.7	7.5		
25yrs	POND	BASE	88.43	76.150	79.000	47766	0.000	0.062	9.7	7.5		
25yrs	POND	BASE	88.51	76.150	79.000	47764	0.000	0.062	9.7	7.5		
25yrs	POND	BASE	88.60	76.150	79.000	47762	0.000	0.061	9.7	7.5		
25yrs	POND	BASE	88.68	76.149	79.000	47760	0.000	0.061	9.7	7.5		
25yrs	POND	BASE	88.76	76.149	79.000	47758	0.000	0.061	9.7	7.5		
25yrs	POND	BASE	88.85	76.149	79.000	47757	0.000	0.060	9.7	7.5		
25yrs	POND	BASE	88.93	76.148	79.000	47755	0.000	0.060	9.7	7.5		
25yrs	POND	BASE	89.01	76.148	79.000	47753	0.000	0.060	9.7	7.5		
25yrs	POND	BASE	89.10	76.147	79.000	47751	0.000	0.060	9.7	7.5		
25yrs	POND	BASE	89.18	76.147	79.000	47749	0.000	0.059	9.7	7.5		
25yrs	POND	BASE	89.26	76.147	79.000	47748	0.000	0.059	9.7	7.5		
25yrs	POND	BASE	89.35	76.146	79.000	47746	0.000	0.059	9.7	7.5		
25yrs	POND	BASE	89.43	76.146	79.000	47744	0.000	0.058	9.7	7.5		
25yrs	POND	BASE	89.51	76.146	79.000	47742	0.000	0.058	9.7	7.5		
25yrs	POND	BASE	89.60	76.145	79.000	47741	0.000	0.058	9.7	7.5		
25yrs	POND	BASE	89.68	76.145	79.000	47739	0.000	0.057	9.7	7.5		
25yrs	POND	BASE	89.76	76.145	79.000	47737	0.000	0.057	9.7	7.5		
25yrs	POND	BASE	89.85	76.144	79.000	47735	0.000	0.057	9.7	7.5		
25yrs	POND	BASE	89.93	76.144	79.000	47734	0.000	0.057	9.7	7.5		
25yrs	POND	BASE	90.01	76.143	79.000	47732	0.000	0.056	9.7	7.5		
25yrs	POND	BASE	90.10	76.143	79.000	47730	0.000	0.056	9.7	7.5		
25yrs	POND	BASE	90.18	76.143	79.000	47729	0.000	0.056	9.7	7.5		
25yrs	POND	BASE	90.26	76.142	79.000	47727	0.000	0.056	9.7	7.5		
25yrs	POND	BASE	90.35	76.142	79.000	47725	0.000	0.055	9.7	7.5		
25yrs	POND	BASE	90.43	76.142	79.000	47724	0.000	0.055	9.7	7.5		
25yrs	POND	BASE	90.51	76.141	79.000	47722	0.000	0.055	9.7	7.5		
25yrs	POND	BASE	90.60	76.141	79.000	47720	0.000	0.054	9.7	7.5		
25yrs	POND	BASE	90.68	76.141	79.000	47719	0.000	0.054	9.7	7.5		
25yrs	POND	BASE	90.76	76.140	79.000	47717	0.000	0.054	9.7	7.5		
25yrs	POND	BASE	90.85	76.140	79.000	47715	0.000	0.054	9.7	7.5		
25yrs	POND	BASE	90.93	76.140	79.000	47714	0.000	0.053	9.7	7.5		
25yrs	POND	BASE	91.01	76.139	79.000	47712	0.000	0.053	9.7	7.5		
25yrs	POND	BASE	91.10	76.139	79.000	47711	0.000	0.053	9.7	7.5		
25yrs	POND	BASE	91.18	76.139	79.000	47709	0.000	0.053	9.7	7.5		
25yrs	POND	BASE	91.26	76.138	79.000	47708	0.000	0.052	9.7	7.5		
25yrs	POND	BASE	91.35	76.138	79.000	47706	0.000	0.052	9.7	7.5		
25yrs	POND	BASE	91.43	76.138	79.000	47704	0.000	0.052	9.7	7.6		
25yrs	POND	BASE	91.51	76.137	79.000	47703	0.000	0.052	9.7	7.6		
25yrs	POND	BASE	91.60	76.137	79.000	47701	0.000	0.051	9.7	7.6		
25yrs	POND	BASE	91.68	76.137	79.000	47700	0.000	0.051	9.7	7.6		
25yrs	POND	BASE	91.76	76.136	79.000	47698	0.000	0.051	9.7	7.6		
25yrs	POND	BASE	91.85	76.136	79.000	47697	0.000	0.051	9.7	7.6		
25yrs	POND	BASE	91.93	76.136	79.000	47695	0.000	0.050	9.7	7.6		
25yrs	POND	BASE	92.01	76.135	79.000	47694	0.000	0.050	9.7	7.6		
25yrs	POND	BASE	92.10	76.135	79.000	47692	0.000	0.050	9.7	7.6		
25yrs	POND	BASE	92.18	76.135	79.000	47691	0.000	0.050	9.7	7.6		
25yrs	POND	BASE	92.26	76.134	79.000	47689	0.000	0.049	9.7	7.6		
25yrs	POND	BASE	92.35	76.134	79.000	47688	0.000	0.049	9.7	7.6		
25yrs	POND	BASE	92.43	76.134	79.000	47686	0.000	0.049	9.7	7.6		
25yrs	POND	BASE	92.51	76.134	79.000	47685	0.000	0.049	9.7	7.6		
25yrs	POND	BASE	92.60	76.133	79.000	47683	0.000	0.049	9.7	7.6		
25yrs	POND	BASE	92.68	76.133	79.000	47682	0.000	0.048	9.7	7.6		
25yrs	POND	BASE	92.76	76.133	79.000	47680	0.000	0.048	9.7	7.6		
25yrs	POND	BASE	92.85	76.132	79.000	47679	0.000	0.048	9.7	7.6		
25yrs	POND	BASE	92.93	76.132	79.000	47677	0.000	0.048	9.7	7.6		



			POND TIME	SERIES 25	YR.TXT					
25yrs	POND	BASE	93.01	76.132	79.000	47676	0.000	0.047	9.7	7.6
25yrs	POND	BASE	93.10	76.131	79.000	47675	0.000	0.047	9.7	7.6
25yrs	POND	BASE	93.18	76.131	79.000	47673	0.000	0.047	9.7	7.6
25yrs	POND	BASE	93.26	76.131	79.000	47672	0.000	0.047	9.7	7.6
25yrs	POND	BASE	93.35	76.131	79.000	47670	0.000	0.047	9.7	7.6
25yrs	POND	BASE	93.43	76.130	79.000	47669	0.000	0.046	9.7	7.6
25yrs	POND	BASE	93.51	76.130	79.000	47668	0.000	0.046	9.7	7.6
25yrs	POND	BASE	93.60	76.130	79.000	47666	0.000	0.046	9.7	7.6
25yrs	POND	BASE	93.68	76.129	79.000	47665	0.000	0.046	9.7	7.6
25yrs	POND	BASE	93.76	76.129	79.000	47663	0.000	0.045	9.7	7.6
25yrs	POND	BASE	93.85	76.129	79.000	47662	0.000	0.045	9.7	7.6
25yrs	POND	BASE	93.93	76.129	79.000	47661	0.000	0.045	9.7	7.6
25yrs	POND	BASE	94.01	76.128	79.000	47659	0.000	0.045	9.7	7.6
25yrs	POND	BASE	94.10	76.128	79.000	47658	0.000	0.045	9.7	7.6
25yrs	POND	BASE	94.18	76.128	79.000	47657	0.000	0.044	9.7	7.6
25yrs	POND	BASE	94.26	76.127	79.000	47655	0.000	0.044	9.7	7.6
25yrs	POND	BASE	94.35	76.127	79.000	47654	0.000	0.044	9.7	7.6
25yrs	POND	BASE	94.43	76.127	79.000	47653	0.000	0.044	9.7	7.6
25yrs	POND	BASE	94.51	76.127	79.000	47651	0.000	0.044	9.7	7.6
25yrs	POND	BASE	94.60	76.126	79.000	47650	0.000	0.043	9.7	7.6
25yrs	POND	BASE	94.68	76.126	79.000	47649	0.000	0.043	9.7	7.6
25yrs	POND	BASE	94.76	76.126	79.000	47647	0.000	0.043	9.7	7.6
25yrs	POND	BASE	94.85	76.125	79.000	47646	0.000	0.043	9.7	7.6
25yrs	POND	BASE	94.93	76.125	79.000	47645	0.000	0.043	9.7	7.6
25yrs	POND	BASE	95.01	76.125	79.000	47643	0.000	0.043	9.7	7.6
25yrs	POND	BASE	95.10	76.125	79.000	47642	0.000	0.042	9.7	7.6
25yrs	POND	BASE	95.18	76.124	79.000	47641	0.000	0.042	9.7	7.6
25yrs	POND	BASE	95.26	76.124	79.000	47640	0.000	0.042	9.7	7.6
25yrs	POND	BASE	95.35	76.124	79.000	47638	0.000	0.042	9.7	7.6
25yrs	POND	BASE	95.43	76.124	79.000	47637	0.000	0.042	9.7	7.6
25yrs	POND	BASE	95.51	76.123	79.000	47636	0.000	0.041	9.7	7.6
25yrs	POND	BASE	95.60	76.123	79.000	47635	0.000	0.041	9.7	7.6
25yrs	POND	BASE	95.68	76.123	79.000	47633	0.000	0.041	9.7	7.6
25yrs	POND	BASE	95.76	76.123	79.000	47632	0.000	0.041	9.7	7.6
25yrs	POND	BASE	95.85	76.122	79.000	47631	0.000	0.041	9.7	7.6
25yrs	POND	BASE	95.93	76.122	79.000	47630	0.000	0.041	9.7	7.6
25yrs	POND	BASE	96.01	76.122	79.000	47628	0.000	0.040	9.7	7.6
25yrs	POND	BASE	96.10	76.122	79.000	47627	0.000	0.040	9.7	7.6
25yrs	POND	BASE	96.18	76.121	79.000	47626	0.000	0.040	9.7	7.6
25yrs	POND	BASE	96.26	76.121	79.000	47625	0.000	0.040	9.7	7.6
25yrs	POND	BASE	96.35	76.121	79.000	47624	0.000	0.040	9.7	7.6
25yrs	POND	BASE	96.43	76.121	79.000	47622	0.000	0.039	9.7	7.6
25yrs	POND	BASE	96.51	76.120	79.000	47621	0.000	0.039	9.7	7.6
25yrs	POND	BASE	96.60	76.120	79.000	47620	0.000	0.039	9.7	7.6
25yrs	POND	BASE	96.68	76.120	79.000	47619	0.000	0.039	9.7	7.6
25yrs	POND	BASE	96.76	76.120	79.000	47618	0.000	0.039	9.7	7.6
25yrs	POND	BASE	96.85	76.119	79.000	47617	0.000	0.039	9.7	7.6
25yrs	POND	BASE	96.93	76.119	79.000	47615	0.000	0.038	9.7	7.6
25yrs	POND	BASE	97.01	76.119	79.000	47614	0.000	0.038	9.7	7.6
25yrs	POND	BASE	97.10	76.119	79.000	47613	0.000	0.038	9.7	7.6
25yrs	POND	BASE	97.18	76.118	79.000	47612	0.000	0.038	9.7	7.6
25yrs	POND	BASE	97.26	76.118	79.000	47611	0.000	0.038	9.7	7.6
25yrs	POND	BASE	97.35	76.118	79.000	47610	0.000	0.038	9.7	7.6
25yrs	POND	BASE	97.43	76.118	79.000	47608	0.000	0.038	9.7	7.6
25yrs	POND	BASE	97.51	76.117	79.000	47607	0.000	0.037	9.7	7.6
25yrs	POND	BASE	97.60	76.117	79.000	47606	0.000	0.037	9.7	7.6
25yrs	POND	BASE	97.68	76.117	79.000	47605	0.000	0.037	9.7	7.6
25yrs	POND	BASE	97.76	76.117	79.000	47604	0.000	0.037	9.7	7.6
25yrs	POND	BASE	97.85	76.116	79.000	47603	0.000	0.037	9.7	7.6
25yrs	POND	BASE	97.93	76.116	79.000	47602	0.000	0.037	9.7	7.6
25yrs	POND	BASE	98.01	76.116	79.000	47601	0.000	0.036	9.7	7.6
25yrs	POND	BASE	98.10	76.116	79.000	47600	0.000	0.036	9.7	7.6
25yrs	POND	BASE	98.18	76.116	79.000	47598	0.000	0.036	9.7	7.6
25yrs	POND	BASE	98.26	76.115	79.000	47597	0.000	0.036	9.7	7.6
25yrs	POND	BASE	98.35	76.115	79.000	47596	0.000	0.036	9.7	7.6
25yrs	POND	BASE	98.43	76.115	79.000	47595	0.000	0.036	9.7	7.6
25yrs	POND	BASE	98.51	76.115	79.000	47594	0.000	0.036	9.7	7.6
25yrs	POND	BASE	98.60	76.114	79.000	47593	0.000	0.035	9.7	7.6
25yrs	POND	BASE	98.68	76.114	79.000	47592	0.000	0.035	9.7	7.6
25yrs	POND	BASE	98.76	76.114	79.000	47591	0.000	0.035	9.7	7.6

			POND	TIME	SERIES	25	YR.TXT				
25yrs	POND	BASE	98.85	76.114	79.000	47590	0.000	0.035	9.7	7.6	
25yrs	POND	BASE	98.93	76.114	79.000	47589	0.000	0.035	9.7	7.6	
25yrs	POND	BASE	99.01	76.113	79.000	47588	0.000	0.035	9.7	7.6	
25yrs	POND	BASE	99.10	76.113	79.000	47587	0.000	0.035	9.7	7.6	
25yrs	POND	BASE	99.18	76.113	79.000	47586	0.000	0.035	9.7	7.6	
25yrs	POND	BASE	99.26	76.113	79.000	47585	0.000	0.034	9.7	7.6	
25yrs	POND	BASE	99.35	76.112	79.000	47584	0.000	0.034	9.7	7.6	
25yrs	POND	BASE	99.43	76.112	79.000	47583	0.000	0.034	9.7	7.6	
25yrs	POND	BASE	99.51	76.112	79.000	47582	0.000	0.034	9.7	7.6	
25yrs	POND	BASE	99.60	76.112	79.000	47580	0.000	0.034	9.7	7.6	
25yrs	POND	BASE	99.68	76.112	79.000	47579	0.000	0.034	9.7	7.6	
25yrs	POND	BASE	99.76	76.111	79.000	47578	0.000	0.034	9.7	7.6	
25yrs	POND	BASE	99.85	76.111	79.000	47577	0.000	0.033	9.7	7.6	
25yrs	POND	BASE	99.93	76.111	79.000	47576	0.000	0.033	9.7	7.6	
25yrs	POND	BASE	100.01	76.111	79.000	47576	0.000	0.033	9.7	7.6	





**BLACK & VEATCH**

Owner: Florida Municipal Power Agency  
Plant: Cane Island Power Park Unit 4  
Project No. 147651  
File No. 52.5406.1101.04  
Title: Hydrologic Analysis

Prepared by: A. L. Morgan  
Date: 3/20/08  
Verified by: J.M. Stanek  
Date: 3/26/08  
Page No. 51 of 50  
Calc Rev: 0

**APPENDIX E**  
**100 Year, 72 Hour ICPR**  
**Time Series Files**

Simulation	Basin	Group	Time hrs	Sum Rain in	TIME SERIES 100 YR.TXT			Volume ft3	Volume in	Rate cfs	velocity fps
					Inc Rain in	SumExcess Rain in	IncExcess Rain in				
100yr	POST-DEV	BASE	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	0.08	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	0.17	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	0.25	0.008	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	0.33	0.013	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	0.42	0.017	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	0.50	0.021	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	0.58	0.025	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	0.67	0.029	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	0.75	0.034	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	0.83	0.038	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	0.92	0.042	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	1.00	0.046	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	1.08	0.050	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	1.17	0.055	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	1.25	0.059	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	1.33	0.063	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	1.42	0.067	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	1.50	0.071	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	1.58	0.076	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	1.67	0.080	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	1.75	0.084	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	1.83	0.088	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	1.92	0.092	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	2.00	0.097	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	2.08	0.101	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	2.17	0.105	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	2.25	0.109	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	2.33	0.113	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	2.42	0.118	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	2.50	0.122	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	2.58	0.126	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	2.67	0.130	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	2.75	0.135	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	2.83	0.139	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	2.92	0.143	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	3.00	0.147	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	3.08	0.151	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	3.17	0.156	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	3.25	0.160	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	3.33	0.164	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	3.42	0.168	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	3.50	0.172	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	3.58	0.177	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	3.67	0.181	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	3.75	0.185	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	3.83	0.189	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	3.92	0.193	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	4.00	0.198	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	4.08	0.202	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	4.17	0.206	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	4.25	0.210	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	4.33	0.214	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	4.42	0.219	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	4.50	0.223	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	4.58	0.227	0.004	0.000	0.000	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	4.67	0.231	0.004	0.000	0.001	0.000	0.000	0.000	0.000
100yr	POST-DEV	BASE	4.75	0.235	0.004	0.000	0.115	0.000	0.001	0.000	0.000

TIME SERIES 100 YR.TXT											
100yr	POST-DEV	BASE	4.83	0.240	0.004	0.000	0.000	0.728	0.000	0.003	0.000
100yr	POST-DEV	BASE	4.92	0.244	0.004	0.000	0.000	2.261	0.000	0.007	0.000
100yr	POST-DEV	BASE	5.00	0.248	0.004	0.000	0.000	4.937	0.000	0.011	0.000
100yr	POST-DEV	BASE	5.08	0.252	0.004	0.000	0.000	8.867	0.000	0.015	0.000
100yr	POST-DEV	BASE	5.17	0.256	0.004	0.001	0.000	14.105	0.000	0.020	0.000
100yr	POST-DEV	BASE	5.25	0.261	0.004	0.001	0.000	20.673	0.000	0.024	0.000
100yr	POST-DEV	BASE	5.33	0.265	0.004	0.001	0.000	28.572	0.001	0.029	0.000
100yr	POST-DEV	BASE	5.42	0.269	0.004	0.001	0.000	37.790	0.001	0.033	0.000
100yr	POST-DEV	BASE	5.50	0.273	0.004	0.002	0.000	48.313	0.001	0.037	0.000
100yr	POST-DEV	BASE	5.58	0.277	0.004	0.002	0.000	60.127	0.001	0.042	0.000
100yr	POST-DEV	BASE	5.67	0.282	0.004	0.002	0.000	73.220	0.002	0.046	0.000
100yr	POST-DEV	BASE	5.75	0.286	0.004	0.002	0.000	87.577	0.002	0.050	0.000
100yr	POST-DEV	BASE	5.83	0.290	0.004	0.003	0.000	103.187	0.002	0.054	0.000
100yr	POST-DEV	BASE	5.92	0.294	0.004	0.003	0.000	120.035	0.003	0.058	0.000
100yr	POST-DEV	BASE	6.00	0.298	0.004	0.004	0.000	138.110	0.003	0.062	0.000
100yr	POST-DEV	BASE	6.08	0.303	0.004	0.004	0.000	157.399	0.003	0.066	0.000
100yr	POST-DEV	BASE	6.17	0.307	0.004	0.005	0.000	177.890	0.004	0.070	0.000
100yr	POST-DEV	BASE	6.25	0.311	0.004	0.005	0.001	199.570	0.004	0.074	0.000
100yr	POST-DEV	BASE	6.33	0.315	0.004	0.006	0.001	222.427	0.005	0.078	0.000
100yr	POST-DEV	BASE	6.42	0.319	0.004	0.006	0.001	246.450	0.005	0.082	0.000
100yr	POST-DEV	BASE	6.50	0.324	0.004	0.007	0.001	271.627	0.006	0.086	0.000
100yr	POST-DEV	BASE	6.58	0.328	0.004	0.007	0.001	297.947	0.006	0.090	0.000
100yr	POST-DEV	BASE	6.67	0.332	0.004	0.008	0.001	325.397	0.007	0.093	0.000
100yr	POST-DEV	BASE	6.75	0.336	0.004	0.009	0.001	353.967	0.008	0.097	0.000
100yr	POST-DEV	BASE	6.83	0.340	0.004	0.009	0.001	383.646	0.008	0.101	0.000
100yr	POST-DEV	BASE	6.92	0.345	0.004	0.010	0.001	414.422	0.009	0.104	0.000
100yr	POST-DEV	BASE	7.00	0.349	0.004	0.011	0.001	446.286	0.010	0.108	0.000
100yr	POST-DEV	BASE	7.08	0.353	0.004	0.012	0.001	479.226	0.010	0.112	0.000
100yr	POST-DEV	BASE	7.17	0.357	0.004	0.012	0.001	513.232	0.011	0.115	0.000
100yr	POST-DEV	BASE	7.25	0.361	0.004	0.013	0.001	548.293	0.012	0.119	0.000
100yr	POST-DEV	BASE	7.33	0.366	0.004	0.014	0.001	584.400	0.012	0.122	0.000
100yr	POST-DEV	BASE	7.42	0.370	0.004	0.015	0.001	621.542	0.013	0.126	0.000
100yr	POST-DEV	BASE	7.50	0.374	0.004	0.016	0.001	659.709	0.014	0.129	0.000
100yr	POST-DEV	BASE	7.58	0.378	0.004	0.017	0.001	698.891	0.015	0.132	0.000
100yr	POST-DEV	BASE	7.67	0.382	0.004	0.017	0.001	739.079	0.016	0.136	0.000
100yr	POST-DEV	BASE	7.75	0.387	0.004	0.018	0.001	780.263	0.017	0.139	0.000
100yr	POST-DEV	BASE	7.83	0.391	0.004	0.019	0.001	822.433	0.018	0.142	0.000
100yr	POST-DEV	BASE	7.92	0.395	0.004	0.020	0.001	865.581	0.018	0.145	0.000
100yr	POST-DEV	BASE	8.00	0.399	0.004	0.021	0.001	909.696	0.019	0.149	0.000
100yr	POST-DEV	BASE	8.08	0.404	0.004	0.022	0.001	954.770	0.020	0.152	0.000
100yr	POST-DEV	BASE	8.17	0.408	0.004	0.023	0.001	1000.795	0.021	0.155	0.000
100yr	POST-DEV	BASE	8.25	0.412	0.004	0.024	0.001	1047.760	0.022	0.158	0.000
100yr	POST-DEV	BASE	8.33	0.416	0.004	0.025	0.001	1095.657	0.023	0.161	0.000
100yr	POST-DEV	BASE	8.42	0.420	0.004	0.026	0.001	1144.479	0.024	0.164	0.000
100yr	POST-DEV	BASE	8.50	0.425	0.004	0.028	0.001	1194.214	0.026	0.167	0.000
100yr	POST-DEV	BASE	8.58	0.429	0.004	0.029	0.001	1244.856	0.027	0.170	0.000
100yr	POST-DEV	BASE	8.67	0.433	0.004	0.030	0.001	1296.397	0.028	0.173	0.000
100yr	POST-DEV	BASE	8.75	0.437	0.004	0.031	0.001	1348.826	0.029	0.176	0.000
100yr	POST-DEV	BASE	8.83	0.441	0.004	0.032	0.001	1402.138	0.030	0.179	0.000
100yr	POST-DEV	BASE	8.92	0.446	0.004	0.033	0.001	1456.324	0.031	0.182	0.000
100yr	POST-DEV	BASE	9.00	0.450	0.004	0.035	0.001	1511.374	0.032	0.185	0.000
100yr	POST-DEV	BASE	9.08	0.454	0.004	0.036	0.001	1567.283	0.033	0.188	0.000
100yr	POST-DEV	BASE	9.17	0.458	0.004	0.037	0.001	1624.042	0.035	0.191	0.000
100yr	POST-DEV	BASE	9.25	0.462	0.004	0.038	0.001	1681.643	0.036	0.193	0.000
100yr	POST-DEV	BASE	9.33	0.467	0.004	0.040	0.001	1740.079	0.037	0.196	0.000
100yr	POST-DEV	BASE	9.42	0.471	0.004	0.041	0.001	1799.343	0.038	0.199	0.000
100yr	POST-DEV	BASE	9.50	0.475	0.004	0.042	0.001	1859.426	0.040	0.202	0.000
100yr	POST-DEV	BASE	9.58	0.479	0.004	0.044	0.001	1920.322	0.041	0.204	0.000
100yr	POST-DEV	BASE	9.67	0.483	0.004	0.045	0.001	1982.023	0.042	0.207	0.000
100yr	POST-DEV	BASE	9.75	0.488	0.004	0.046	0.001	2044.522	0.044	0.210	0.000
100yr	POST-DEV	BASE	9.83	0.492	0.004	0.048	0.001	2107.813	0.045	0.212	0.000

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100yr	POST-DEV	BASE	9.92	0.496	0.004	0.049	0.001	2171.888	0.046	0.215	0.000
100yr	POST-DEV	BASE	10.00	0.500	0.004	0.050	0.001	2236.740	0.048	0.217	0.000
100yr	POST-DEV	BASE	10.08	0.504	0.004	0.052	0.001	2302.362	0.049	0.220	0.000
100yr	POST-DEV	BASE	10.17	0.509	0.004	0.053	0.001	2368.749	0.051	0.223	0.000
100yr	POST-DEV	BASE	10.25	0.513	0.004	0.055	0.001	2435.892	0.052	0.225	0.000
100yr	POST-DEV	BASE	10.33	0.517	0.004	0.056	0.001	2503.786	0.054	0.228	0.000
100yr	POST-DEV	BASE	10.42	0.521	0.004	0.058	0.001	2572.424	0.055	0.230	0.000
100yr	POST-DEV	BASE	10.50	0.525	0.004	0.059	0.002	2641.799	0.056	0.232	0.000
100yr	POST-DEV	BASE	10.58	0.530	0.004	0.061	0.002	2711.906	0.058	0.235	0.000
100yr	POST-DEV	BASE	10.67	0.534	0.004	0.062	0.002	2782.738	0.059	0.237	0.000
100yr	POST-DEV	BASE	10.75	0.538	0.004	0.064	0.002	2854.289	0.061	0.240	0.000
100yr	POST-DEV	BASE	10.83	0.542	0.004	0.065	0.002	2926.552	0.063	0.242	0.000
100yr	POST-DEV	BASE	10.92	0.546	0.004	0.067	0.002	2999.521	0.064	0.244	0.000
100yr	POST-DEV	BASE	11.00	0.551	0.004	0.069	0.002	3073.192	0.066	0.247	0.000
100yr	POST-DEV	BASE	11.08	0.555	0.004	0.070	0.002	3147.557	0.067	0.249	0.000
100yr	POST-DEV	BASE	11.17	0.559	0.004	0.072	0.002	3222.611	0.069	0.251	0.000
100yr	POST-DEV	BASE	11.25	0.563	0.004	0.074	0.002	3298.347	0.070	0.254	0.000
100yr	POST-DEV	BASE	11.33	0.567	0.004	0.075	0.002	3374.761	0.072	0.256	0.000
100yr	POST-DEV	BASE	11.42	0.572	0.004	0.077	0.002	3451.846	0.074	0.258	0.000
100yr	POST-DEV	BASE	11.50	0.576	0.004	0.079	0.002	3529.598	0.075	0.260	0.000
100yr	POST-DEV	BASE	11.58	0.580	0.004	0.080	0.002	3608.010	0.077	0.262	0.000
100yr	POST-DEV	BASE	11.67	0.584	0.004	0.082	0.002	3687.077	0.079	0.265	0.000
100yr	POST-DEV	BASE	11.75	0.588	0.004	0.084	0.002	3766.793	0.081	0.267	0.000
100yr	POST-DEV	BASE	11.83	0.593	0.004	0.085	0.002	3847.154	0.082	0.269	0.000
100yr	POST-DEV	BASE	11.92	0.597	0.004	0.087	0.002	3928.153	0.084	0.271	0.000
100yr	POST-DEV	BASE	12.00	0.601	0.004	0.089	0.002	4009.786	0.086	0.273	0.000
100yr	POST-DEV	BASE	12.08	0.605	0.004	0.091	0.002	4092.047	0.087	0.275	0.000
100yr	POST-DEV	BASE	12.17	0.609	0.004	0.093	0.002	4174.932	0.089	0.277	0.000
100yr	POST-DEV	BASE	12.25	0.614	0.004	0.094	0.002	4258.435	0.091	0.279	0.000
100yr	POST-DEV	BASE	12.33	0.618	0.004	0.096	0.002	4342.551	0.093	0.281	0.000
100yr	POST-DEV	BASE	12.42	0.622	0.004	0.098	0.002	4427.275	0.095	0.283	0.000
100yr	POST-DEV	BASE	12.50	0.626	0.004	0.100	0.002	4512.603	0.096	0.285	0.000
100yr	POST-DEV	BASE	12.58	0.630	0.004	0.102	0.002	4598.528	0.098	0.287	0.000
100yr	POST-DEV	BASE	12.67	0.635	0.004	0.104	0.002	4685.048	0.100	0.289	0.000
100yr	POST-DEV	BASE	12.75	0.639	0.004	0.105	0.002	4772.156	0.102	0.291	0.000
100yr	POST-DEV	BASE	12.83	0.643	0.004	0.107	0.002	4859.849	0.104	0.293	0.000
100yr	POST-DEV	BASE	12.92	0.647	0.004	0.109	0.002	4948.122	0.106	0.295	0.000
100yr	POST-DEV	BASE	13.00	0.651	0.004	0.111	0.002	5036.969	0.108	0.297	0.000
100yr	POST-DEV	BASE	13.08	0.656	0.004	0.113	0.002	5126.386	0.110	0.299	0.000
100yr	POST-DEV	BASE	13.17	0.660	0.004	0.115	0.002	5216.370	0.111	0.301	0.000
100yr	POST-DEV	BASE	13.25	0.664	0.004	0.117	0.002	5306.915	0.113	0.303	0.000
100yr	POST-DEV	BASE	13.33	0.668	0.004	0.119	0.002	5398.016	0.115	0.305	0.000
100yr	POST-DEV	BASE	13.42	0.673	0.004	0.121	0.002	5489.670	0.117	0.306	0.000
100yr	POST-DEV	BASE	13.50	0.677	0.004	0.123	0.002	5581.873	0.119	0.308	0.000
100yr	POST-DEV	BASE	13.58	0.681	0.004	0.125	0.002	5674.620	0.121	0.310	0.000
100yr	POST-DEV	BASE	13.67	0.685	0.004	0.127	0.002	5767.906	0.123	0.312	0.000
100yr	POST-DEV	BASE	13.75	0.689	0.004	0.129	0.002	5861.728	0.125	0.314	0.000
100yr	POST-DEV	BASE	13.83	0.694	0.004	0.131	0.002	5956.081	0.127	0.315	0.000
100yr	POST-DEV	BASE	13.92	0.698	0.004	0.133	0.002	6050.962	0.129	0.317	0.000
100yr	POST-DEV	BASE	14.00	0.702	0.004	0.135	0.002	6146.366	0.131	0.319	0.000
100yr	POST-DEV	BASE	14.08	0.706	0.004	0.137	0.002	6242.289	0.133	0.321	0.000
100yr	POST-DEV	BASE	14.17	0.710	0.004	0.139	0.002	6338.728	0.135	0.322	0.000
100yr	POST-DEV	BASE	14.25	0.715	0.004	0.141	0.002	6435.677	0.138	0.324	0.000
100yr	POST-DEV	BASE	14.33	0.719	0.004	0.144	0.002	6533.134	0.140	0.326	0.000
100yr	POST-DEV	BASE	14.42	0.723	0.004	0.146	0.002	6631.095	0.142	0.327	0.000
100yr	POST-DEV	BASE	14.50	0.727	0.004	0.148	0.002	6729.555	0.144	0.329	0.000
100yr	POST-DEV	BASE	14.58	0.731	0.004	0.150	0.002	6828.512	0.146	0.331	0.000
100yr	POST-DEV	BASE	14.67	0.736	0.004	0.152	0.002	6927.960	0.148	0.332	0.000
100yr	POST-DEV	BASE	14.75	0.740	0.004	0.154	0.002	7027.897	0.150	0.334	0.000
100yr	POST-DEV	BASE	14.83	0.744	0.004	0.156	0.002	7128.319	0.152	0.336	0.000
100yr	POST-DEV	BASE	14.92	0.748	0.004	0.159	0.002	7229.222	0.155	0.337	0.000

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100yr	POST-DEV	BASE	15.00	0.752	0.004	0.161	0.002	7330.603	0.157	0.339	0.000
100yr	POST-DEV	BASE	15.08	0.757	0.004	0.163	0.002	7432.458	0.159	0.340	0.000
100yr	POST-DEV	BASE	15.17	0.761	0.004	0.165	0.002	7534.783	0.161	0.342	0.000
100yr	POST-DEV	BASE	15.25	0.765	0.004	0.167	0.002	7637.575	0.163	0.343	0.000
100yr	POST-DEV	BASE	15.33	0.769	0.004	0.170	0.002	7740.831	0.165	0.345	0.000
100yr	POST-DEV	BASE	15.42	0.773	0.004	0.172	0.002	7844.546	0.168	0.346	0.000
100yr	POST-DEV	BASE	15.50	0.778	0.004	0.174	0.002	7948.719	0.170	0.348	0.000
100yr	POST-DEV	BASE	15.58	0.782	0.004	0.176	0.002	8053.345	0.172	0.350	0.000
100yr	POST-DEV	BASE	15.67	0.786	0.004	0.179	0.002	8158.421	0.174	0.351	0.000
100yr	POST-DEV	BASE	15.75	0.790	0.004	0.181	0.002	8263.944	0.177	0.352	0.000
100yr	POST-DEV	BASE	15.83	0.794	0.004	0.183	0.002	8369.911	0.179	0.354	0.000
100yr	POST-DEV	BASE	15.92	0.799	0.004	0.185	0.002	8476.318	0.181	0.355	0.000
100yr	POST-DEV	BASE	16.00	0.803	0.004	0.188	0.002	8583.162	0.183	0.357	0.000
100yr	POST-DEV	BASE	16.08	0.807	0.004	0.190	0.002	8690.441	0.186	0.358	0.000
100yr	POST-DEV	BASE	16.17	0.811	0.004	0.192	0.002	8798.147	0.188	0.360	0.000
100yr	POST-DEV	BASE	16.25	0.815	0.004	0.195	0.002	8906.285	0.190	0.361	0.000
100yr	POST-DEV	BASE	16.33	0.820	0.004	0.197	0.002	9014.848	0.193	0.363	0.000
100yr	POST-DEV	BASE	16.42	0.824	0.004	0.199	0.002	9123.827	0.195	0.364	0.000
100yr	POST-DEV	BASE	16.50	0.828	0.004	0.202	0.002	9233.229	0.197	0.365	0.000
100yr	POST-DEV	BASE	16.58	0.832	0.004	0.204	0.002	9343.048	0.200	0.367	0.000
100yr	POST-DEV	BASE	16.67	0.836	0.004	0.206	0.002	9453.274	0.202	0.368	0.000
100yr	POST-DEV	BASE	16.75	0.841	0.004	0.209	0.002	9563.915	0.204	0.369	0.000
100yr	POST-DEV	BASE	16.83	0.845	0.004	0.211	0.002	9674.962	0.207	0.371	0.000
100yr	POST-DEV	BASE	16.92	0.849	0.004	0.214	0.002	9786.409	0.209	0.372	0.000
100yr	POST-DEV	BASE	17.00	0.853	0.004	0.216	0.002	9898.262	0.212	0.374	0.000
100yr	POST-DEV	BASE	17.08	0.857	0.004	0.218	0.002	10010.513	0.214	0.375	0.000
100yr	POST-DEV	BASE	17.17	0.862	0.004	0.221	0.002	10123.154	0.216	0.376	0.000
100yr	POST-DEV	BASE	17.25	0.866	0.004	0.223	0.002	10236.193	0.219	0.377	0.000
100yr	POST-DEV	BASE	17.33	0.870	0.004	0.226	0.002	10349.622	0.221	0.379	0.000
100yr	POST-DEV	BASE	17.42	0.874	0.004	0.228	0.002	10463.434	0.224	0.380	0.000
100yr	POST-DEV	BASE	17.50	0.878	0.004	0.231	0.002	10577.634	0.226	0.381	0.000
100yr	POST-DEV	BASE	17.58	0.883	0.004	0.233	0.002	10692.216	0.229	0.383	0.000
100yr	POST-DEV	BASE	17.67	0.887	0.004	0.236	0.002	10807.173	0.231	0.384	0.000
100yr	POST-DEV	BASE	17.75	0.891	0.004	0.238	0.002	10922.511	0.233	0.385	0.000
100yr	POST-DEV	BASE	17.83	0.895	0.004	0.240	0.002	11038.223	0.236	0.386	0.000
100yr	POST-DEV	BASE	17.92	0.899	0.004	0.243	0.002	11154.302	0.238	0.388	0.000
100yr	POST-DEV	BASE	18.00	0.904	0.004	0.245	0.003	11270.754	0.241	0.389	0.000
100yr	POST-DEV	BASE	18.08	0.908	0.004	0.248	0.003	11387.572	0.243	0.390	0.000
100yr	POST-DEV	BASE	18.17	0.912	0.004	0.251	0.003	11504.750	0.246	0.391	0.000
100yr	POST-DEV	BASE	18.25	0.916	0.004	0.253	0.003	11622.294	0.248	0.392	0.000
100yr	POST-DEV	BASE	18.33	0.920	0.004	0.256	0.003	11740.195	0.251	0.394	0.000
100yr	POST-DEV	BASE	18.42	0.925	0.004	0.258	0.003	11858.453	0.253	0.395	0.000
100yr	POST-DEV	BASE	18.50	0.929	0.004	0.261	0.003	11977.065	0.256	0.396	0.000
100yr	POST-DEV	BASE	18.58	0.933	0.004	0.263	0.003	12096.029	0.259	0.397	0.000
100yr	POST-DEV	BASE	18.67	0.937	0.004	0.266	0.003	12215.342	0.261	0.398	0.000
100yr	POST-DEV	BASE	18.75	0.942	0.004	0.268	0.003	12335.002	0.264	0.399	0.000
100yr	POST-DEV	BASE	18.83	0.946	0.004	0.271	0.003	12455.007	0.266	0.401	0.000
100yr	POST-DEV	BASE	18.92	0.950	0.004	0.274	0.003	12575.354	0.269	0.402	0.000
100yr	POST-DEV	BASE	19.00	0.954	0.004	0.276	0.003	12696.040	0.271	0.403	0.000
100yr	POST-DEV	BASE	19.08	0.958	0.004	0.279	0.003	12817.064	0.274	0.404	0.000
100yr	POST-DEV	BASE	19.17	0.963	0.004	0.281	0.003	12938.425	0.277	0.405	0.000
100yr	POST-DEV	BASE	19.25	0.967	0.004	0.284	0.003	13060.118	0.279	0.406	0.000
100yr	POST-DEV	BASE	19.33	0.971	0.004	0.287	0.003	13182.143	0.282	0.407	0.000
100yr	POST-DEV	BASE	19.42	0.975	0.004	0.289	0.003	13304.496	0.284	0.408	0.000
100yr	POST-DEV	BASE	19.50	0.979	0.004	0.292	0.003	13427.177	0.287	0.409	0.000
100yr	POST-DEV	BASE	19.58	0.984	0.004	0.294	0.003	13550.182	0.290	0.411	0.000
100yr	POST-DEV	BASE	19.67	0.988	0.004	0.297	0.003	13673.509	0.292	0.412	0.000
100yr	POST-DEV	BASE	19.75	0.992	0.004	0.300	0.003	13797.156	0.295	0.413	0.000
100yr	POST-DEV	BASE	19.83	0.996	0.004	0.302	0.003	13921.122	0.298	0.414	0.000
100yr	POST-DEV	BASE	19.92	1.000	0.004	0.305	0.003	14045.404	0.300	0.415	0.000
100yr	POST-DEV	BASE	20.00	1.005	0.004	0.308	0.003	14170.001	0.303	0.416	0.000

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100yr	POST-DEV	BASE	20.08	1.009	0.004	0.310	0.003	14294.909	0.306	0.417	0.000
100yr	POST-DEV	BASE	20.17	1.013	0.004	0.313	0.003	14420.128	0.308	0.418	0.000
100yr	POST-DEV	BASE	20.25	1.017	0.004	0.316	0.003	14545.654	0.311	0.419	0.000
100yr	POST-DEV	BASE	20.33	1.021	0.004	0.319	0.003	14671.487	0.314	0.420	0.000
100yr	POST-DEV	BASE	20.42	1.026	0.004	0.321	0.003	14797.624	0.316	0.421	0.000
100yr	POST-DEV	BASE	20.50	1.030	0.004	0.324	0.003	14924.063	0.319	0.422	0.000
100yr	POST-DEV	BASE	20.58	1.034	0.004	0.327	0.003	15050.803	0.322	0.423	0.000
100yr	POST-DEV	BASE	20.67	1.038	0.004	0.329	0.003	15177.841	0.324	0.424	0.000
100yr	POST-DEV	BASE	20.75	1.042	0.004	0.332	0.003	15305.175	0.327	0.425	0.000
100yr	POST-DEV	BASE	20.83	1.047	0.004	0.335	0.003	15432.804	0.330	0.426	0.000
100yr	POST-DEV	BASE	20.92	1.051	0.004	0.338	0.003	15560.726	0.333	0.427	0.000
100yr	POST-DEV	BASE	21.00	1.055	0.004	0.340	0.003	15688.938	0.335	0.428	0.000
100yr	POST-DEV	BASE	21.08	1.059	0.004	0.343	0.003	15817.438	0.338	0.429	0.000
100yr	POST-DEV	BASE	21.17	1.063	0.004	0.346	0.003	15946.227	0.341	0.430	0.000
100yr	POST-DEV	BASE	21.25	1.068	0.004	0.349	0.003	16075.300	0.344	0.431	0.000
100yr	POST-DEV	BASE	21.33	1.072	0.004	0.351	0.003	16204.657	0.346	0.432	0.000
100yr	POST-DEV	BASE	21.42	1.076	0.004	0.354	0.003	16334.296	0.349	0.433	0.000
100yr	POST-DEV	BASE	21.50	1.080	0.004	0.357	0.003	16464.215	0.352	0.434	0.000
100yr	POST-DEV	BASE	21.58	1.084	0.004	0.360	0.003	16594.412	0.355	0.434	0.000
100yr	POST-DEV	BASE	21.67	1.089	0.004	0.363	0.003	16724.887	0.357	0.435	0.000
100yr	POST-DEV	BASE	21.75	1.093	0.004	0.365	0.003	16855.635	0.360	0.436	0.000
100yr	POST-DEV	BASE	21.83	1.097	0.004	0.368	0.003	16986.656	0.363	0.437	0.000
100yr	POST-DEV	BASE	21.92	1.101	0.004	0.371	0.003	17117.949	0.366	0.438	0.000
100yr	POST-DEV	BASE	22.00	1.105	0.004	0.374	0.003	17249.512	0.369	0.439	0.000
100yr	POST-DEV	BASE	22.08	1.110	0.004	0.377	0.003	17381.342	0.371	0.440	0.000
100yr	POST-DEV	BASE	22.17	1.114	0.004	0.379	0.003	17513.439	0.374	0.441	0.000
100yr	POST-DEV	BASE	22.25	1.118	0.004	0.382	0.003	17645.801	0.377	0.442	0.000
100yr	POST-DEV	BASE	22.33	1.122	0.004	0.385	0.003	17778.426	0.380	0.443	0.000
100yr	POST-DEV	BASE	22.42	1.126	0.004	0.388	0.003	17911.313	0.383	0.443	0.000
100yr	POST-DEV	BASE	22.50	1.131	0.004	0.391	0.003	18044.459	0.386	0.444	0.000
100yr	POST-DEV	BASE	22.58	1.135	0.004	0.394	0.003	18177.863	0.388	0.445	0.000
100yr	POST-DEV	BASE	22.67	1.139	0.004	0.397	0.003	18311.525	0.391	0.446	0.000
100yr	POST-DEV	BASE	22.75	1.143	0.004	0.399	0.003	18445.443	0.394	0.447	0.000
100yr	POST-DEV	BASE	22.83	1.147	0.004	0.402	0.003	18579.613	0.397	0.448	0.000
100yr	POST-DEV	BASE	22.92	1.152	0.004	0.405	0.003	18714.037	0.400	0.448	0.000
100yr	POST-DEV	BASE	23.00	1.156	0.004	0.408	0.003	18848.711	0.403	0.449	0.000
100yr	POST-DEV	BASE	23.08	1.160	0.004	0.411	0.003	18983.633	0.406	0.450	0.000
100yr	POST-DEV	BASE	23.17	1.164	0.004	0.414	0.003	19118.803	0.409	0.451	0.000
100yr	POST-DEV	BASE	23.25	1.168	0.004	0.417	0.003	19254.219	0.411	0.452	0.000
100yr	POST-DEV	BASE	23.33	1.173	0.004	0.420	0.003	19389.881	0.414	0.453	0.000
100yr	POST-DEV	BASE	23.42	1.177	0.004	0.423	0.003	19525.785	0.417	0.453	0.000
100yr	POST-DEV	BASE	23.50	1.181	0.004	0.426	0.003	19661.932	0.420	0.454	0.000
100yr	POST-DEV	BASE	23.58	1.185	0.004	0.428	0.003	19798.318	0.423	0.455	0.000
100yr	POST-DEV	BASE	23.67	1.190	0.004	0.431	0.003	19934.943	0.426	0.456	0.000
100yr	POST-DEV	BASE	23.75	1.194	0.004	0.434	0.003	20071.807	0.429	0.457	0.000
100yr	POST-DEV	BASE	23.83	1.198	0.004	0.437	0.003	20208.906	0.432	0.457	0.000
100yr	POST-DEV	BASE	23.92	1.202	0.004	0.440	0.003	20346.240	0.435	0.458	0.000
100yr	POST-DEV	BASE	24.00	1.206	0.004	0.443	0.003	20483.912	0.438	0.460	0.000
100yr	POST-DEV	BASE	24.08	1.211	0.004	0.447	0.004	20631.398	0.441	0.524	0.000
100yr	POST-DEV	BASE	24.17	1.217	0.006	0.452	0.004	20799.570	0.445	0.598	0.000
100yr	POST-DEV	BASE	24.25	1.223	0.006	0.456	0.004	20984.180	0.448	0.633	0.000
100yr	POST-DEV	BASE	24.33	1.229	0.006	0.460	0.004	21177.170	0.453	0.653	0.000
100yr	POST-DEV	BASE	24.42	1.235	0.006	0.465	0.004	21375.012	0.457	0.666	0.000
100yr	POST-DEV	BASE	24.50	1.241	0.006	0.469	0.004	21575.729	0.461	0.673	0.000
100yr	POST-DEV	BASE	24.58	1.247	0.006	0.473	0.004	21778.094	0.465	0.677	0.000
100yr	POST-DEV	BASE	24.67	1.253	0.006	0.478	0.004	21981.293	0.470	0.678	0.000
100yr	POST-DEV	BASE	24.75	1.259	0.006	0.482	0.004	22184.963	0.474	0.680	0.000
100yr	POST-DEV	BASE	24.83	1.266	0.006	0.487	0.004	22389.090	0.478	0.681	0.000
100yr	POST-DEV	BASE	24.92	1.272	0.006	0.491	0.004	22593.668	0.483	0.683	0.000
100yr	POST-DEV	BASE	25.00	1.278	0.006	0.495	0.004	22798.693	0.487	0.684	0.000
100yr	POST-DEV	BASE	25.08	1.284	0.006	0.500	0.004	23004.164	0.492	0.686	0.000

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100yr	POST-DEV	BASE	25.17	1.290	0.006	0.504	0.004	23210.074	0.496	0.687	0.000
100yr	POST-DEV	BASE	25.25	1.296	0.006	0.509	0.004	23416.422	0.500	0.689	0.000
100yr	POST-DEV	BASE	25.33	1.302	0.006	0.513	0.004	23623.203	0.505	0.690	0.000
100yr	POST-DEV	BASE	25.42	1.308	0.006	0.517	0.004	23830.414	0.509	0.691	0.000
100yr	POST-DEV	BASE	25.50	1.314	0.006	0.522	0.004	24038.051	0.514	0.693	0.000
100yr	POST-DEV	BASE	25.58	1.320	0.006	0.526	0.004	24246.111	0.518	0.694	0.000
100yr	POST-DEV	BASE	25.67	1.327	0.006	0.531	0.004	24454.592	0.523	0.696	0.000
100yr	POST-DEV	BASE	25.75	1.333	0.006	0.535	0.004	24663.488	0.527	0.697	0.000
100yr	POST-DEV	BASE	25.83	1.339	0.006	0.540	0.004	24872.797	0.532	0.698	0.000
100yr	POST-DEV	BASE	25.92	1.345	0.006	0.544	0.004	25082.516	0.536	0.700	0.000
100yr	POST-DEV	BASE	26.00	1.351	0.006	0.549	0.005	25292.639	0.541	0.701	0.000
100yr	POST-DEV	BASE	26.08	1.357	0.006	0.553	0.005	25503.166	0.545	0.702	0.000
100yr	POST-DEV	BASE	26.17	1.363	0.006	0.558	0.005	25714.092	0.550	0.704	0.000
100yr	POST-DEV	BASE	26.25	1.369	0.006	0.562	0.005	25925.414	0.554	0.705	0.000
100yr	POST-DEV	BASE	26.33	1.375	0.006	0.567	0.005	26137.131	0.559	0.706	0.000
100yr	POST-DEV	BASE	26.42	1.381	0.006	0.571	0.005	26349.236	0.563	0.708	0.000
100yr	POST-DEV	BASE	26.50	1.388	0.006	0.576	0.005	26561.730	0.568	0.709	0.000
100yr	POST-DEV	BASE	26.58	1.394	0.006	0.581	0.005	26774.607	0.572	0.710	0.000
100yr	POST-DEV	BASE	26.67	1.400	0.006	0.585	0.005	26987.865	0.577	0.711	0.000
100yr	POST-DEV	BASE	26.75	1.406	0.006	0.590	0.005	27201.502	0.581	0.713	0.000
100yr	POST-DEV	BASE	26.83	1.412	0.006	0.594	0.005	27415.514	0.586	0.714	0.000
100yr	POST-DEV	BASE	26.92	1.418	0.006	0.599	0.005	27629.898	0.590	0.715	0.000
100yr	POST-DEV	BASE	27.00	1.424	0.006	0.604	0.005	27844.652	0.595	0.716	0.000
100yr	POST-DEV	BASE	27.08	1.430	0.006	0.608	0.005	28059.771	0.600	0.718	0.000
100yr	POST-DEV	BASE	27.17	1.436	0.006	0.613	0.005	28275.256	0.604	0.719	0.000
100yr	POST-DEV	BASE	27.25	1.443	0.006	0.617	0.005	28491.100	0.609	0.720	0.000
100yr	POST-DEV	BASE	27.33	1.449	0.006	0.622	0.005	28707.303	0.614	0.721	0.000
100yr	POST-DEV	BASE	27.42	1.455	0.006	0.627	0.005	28923.861	0.618	0.722	0.000
100yr	POST-DEV	BASE	27.50	1.461	0.006	0.631	0.005	29140.771	0.623	0.724	0.000
100yr	POST-DEV	BASE	27.58	1.467	0.006	0.636	0.005	29358.031	0.627	0.725	0.000
100yr	POST-DEV	BASE	27.67	1.473	0.006	0.641	0.005	29575.639	0.632	0.726	0.000
100yr	POST-DEV	BASE	27.75	1.479	0.006	0.645	0.005	29793.590	0.637	0.727	0.000
100yr	POST-DEV	BASE	27.83	1.485	0.006	0.650	0.005	30011.885	0.641	0.728	0.000
100yr	POST-DEV	BASE	27.92	1.491	0.006	0.655	0.005	30230.518	0.646	0.729	0.000
100yr	POST-DEV	BASE	28.00	1.497	0.006	0.659	0.005	30449.488	0.651	0.730	0.000
100yr	POST-DEV	BASE	28.08	1.504	0.006	0.664	0.005	30668.793	0.655	0.732	0.000
100yr	POST-DEV	BASE	28.17	1.510	0.006	0.669	0.005	30888.430	0.660	0.733	0.000
100yr	POST-DEV	BASE	28.25	1.516	0.006	0.673	0.005	31108.396	0.665	0.734	0.000
100yr	POST-DEV	BASE	28.33	1.522	0.006	0.678	0.005	31328.689	0.670	0.735	0.000
100yr	POST-DEV	BASE	28.42	1.528	0.006	0.683	0.005	31549.307	0.674	0.736	0.000
100yr	POST-DEV	BASE	28.50	1.534	0.006	0.688	0.005	31770.246	0.679	0.737	0.000
100yr	POST-DEV	BASE	28.58	1.540	0.006	0.692	0.005	31991.506	0.684	0.738	0.000
100yr	POST-DEV	BASE	28.67	1.546	0.006	0.697	0.005	32213.082	0.688	0.739	0.000
100yr	POST-DEV	BASE	28.75	1.552	0.006	0.702	0.005	32434.973	0.693	0.740	0.000
100yr	POST-DEV	BASE	28.83	1.558	0.006	0.707	0.005	32657.176	0.698	0.741	0.000
100yr	POST-DEV	BASE	28.92	1.565	0.006	0.711	0.005	32879.691	0.703	0.742	0.000
100yr	POST-DEV	BASE	29.00	1.571	0.006	0.716	0.005	33102.512	0.707	0.743	0.000
100yr	POST-DEV	BASE	29.08	1.577	0.006	0.721	0.005	33325.641	0.712	0.744	0.000
100yr	POST-DEV	BASE	29.17	1.583	0.006	0.726	0.005	33549.070	0.717	0.745	0.000
100yr	POST-DEV	BASE	29.25	1.589	0.006	0.731	0.005	33772.805	0.722	0.746	0.000
100yr	POST-DEV	BASE	29.33	1.595	0.006	0.735	0.005	33996.836	0.727	0.747	0.000
100yr	POST-DEV	BASE	29.42	1.601	0.006	0.740	0.005	34221.164	0.731	0.748	0.000
100yr	POST-DEV	BASE	29.50	1.607	0.006	0.745	0.005	34445.789	0.736	0.749	0.000
100yr	POST-DEV	BASE	29.58	1.613	0.006	0.750	0.005	34670.707	0.741	0.750	0.000
100yr	POST-DEV	BASE	29.67	1.619	0.006	0.755	0.005	34895.914	0.746	0.751	0.000
100yr	POST-DEV	BASE	29.75	1.626	0.006	0.759	0.005	35121.410	0.751	0.752	0.000
100yr	POST-DEV	BASE	29.83	1.632	0.006	0.764	0.005	35347.191	0.755	0.753	0.000
100yr	POST-DEV	BASE	29.92	1.638	0.006	0.769	0.005	35573.258	0.760	0.754	0.000
100yr	POST-DEV	BASE	30.00	1.644	0.006	0.774	0.005	35799.609	0.765	0.755	0.000
100yr	POST-DEV	BASE	30.08	1.650	0.006	0.779	0.005	36026.238	0.770	0.756	0.000
100yr	POST-DEV	BASE	30.17	1.656	0.006	0.784	0.005	36253.148	0.775	0.757	0.000



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100yr	POST-DEV	BASE	30.25	1.662	0.006	0.788	0.005	36480.332	0.780	0.758	0.000
100yr	POST-DEV	BASE	30.33	1.668	0.006	0.793	0.005	36707.793	0.785	0.759	0.000
100yr	POST-DEV	BASE	30.42	1.674	0.006	0.798	0.005	36935.527	0.789	0.760	0.000
100yr	POST-DEV	BASE	30.50	1.681	0.006	0.803	0.005	37163.531	0.794	0.760	0.000
100yr	POST-DEV	BASE	30.58	1.687	0.006	0.808	0.005	37391.805	0.799	0.761	0.000
100yr	POST-DEV	BASE	30.67	1.693	0.006	0.813	0.005	37620.344	0.804	0.762	0.000
100yr	POST-DEV	BASE	30.75	1.699	0.006	0.818	0.005	37849.148	0.809	0.763	0.000
100yr	POST-DEV	BASE	30.83	1.705	0.006	0.823	0.005	38078.215	0.814	0.764	0.000
100yr	POST-DEV	BASE	30.92	1.711	0.006	0.828	0.005	38307.543	0.819	0.765	0.000
100yr	POST-DEV	BASE	31.00	1.717	0.006	0.833	0.005	38537.133	0.824	0.766	0.000
100yr	POST-DEV	BASE	31.08	1.723	0.006	0.837	0.005	38766.980	0.829	0.767	0.000
100yr	POST-DEV	BASE	31.17	1.729	0.006	0.842	0.005	38997.082	0.833	0.767	0.000
100yr	POST-DEV	BASE	31.25	1.735	0.006	0.847	0.005	39227.438	0.838	0.768	0.000
100yr	POST-DEV	BASE	31.33	1.742	0.006	0.852	0.005	39458.047	0.843	0.769	0.000
100yr	POST-DEV	BASE	31.42	1.748	0.006	0.857	0.005	39688.906	0.848	0.770	0.000
100yr	POST-DEV	BASE	31.50	1.754	0.006	0.862	0.005	39920.016	0.853	0.771	0.000
100yr	POST-DEV	BASE	31.58	1.760	0.006	0.867	0.005	40151.371	0.858	0.772	0.000
100yr	POST-DEV	BASE	31.67	1.766	0.006	0.872	0.005	40382.973	0.863	0.772	0.000
100yr	POST-DEV	BASE	31.75	1.772	0.006	0.877	0.005	40614.820	0.868	0.773	0.000
100yr	POST-DEV	BASE	31.83	1.778	0.006	0.882	0.005	40846.910	0.873	0.774	0.000
100yr	POST-DEV	BASE	31.92	1.784	0.006	0.887	0.005	41079.242	0.878	0.775	0.000
100yr	POST-DEV	BASE	32.00	1.790	0.006	0.892	0.005	41311.813	0.883	0.776	0.000
100yr	POST-DEV	BASE	32.08	1.796	0.006	0.897	0.005	41544.613	0.888	0.776	0.000
100yr	POST-DEV	BASE	32.17	1.803	0.006	0.902	0.005	41777.668	0.893	0.777	0.000
100yr	POST-DEV	BASE	32.25	1.809	0.006	0.907	0.005	42010.941	0.898	0.778	0.000
100yr	POST-DEV	BASE	32.33	1.815	0.006	0.912	0.005	42244.445	0.903	0.779	0.000
100yr	POST-DEV	BASE	32.42	1.821	0.006	0.917	0.005	42478.199	0.908	0.780	0.000
100yr	POST-DEV	BASE	32.50	1.827	0.006	0.922	0.005	42712.164	0.913	0.780	0.000
100yr	POST-DEV	BASE	32.58	1.833	0.006	0.927	0.005	42946.359	0.918	0.781	0.000
100yr	POST-DEV	BASE	32.67	1.839	0.006	0.932	0.005	43180.797	0.923	0.782	0.000
100yr	POST-DEV	BASE	32.75	1.845	0.006	0.937	0.005	43415.441	0.928	0.783	0.000
100yr	POST-DEV	BASE	32.83	1.851	0.006	0.942	0.005	43650.313	0.933	0.783	0.000
100yr	POST-DEV	BASE	32.92	1.858	0.006	0.947	0.005	43885.422	0.938	0.784	0.000
100yr	POST-DEV	BASE	33.00	1.864	0.006	0.952	0.005	44120.734	0.943	0.785	0.000
100yr	POST-DEV	BASE	33.08	1.870	0.006	0.957	0.005	44356.266	0.948	0.785	0.000
100yr	POST-DEV	BASE	33.17	1.876	0.006	0.962	0.005	44592.035	0.953	0.786	0.000
100yr	POST-DEV	BASE	33.25	1.882	0.006	0.967	0.005	44828.004	0.958	0.787	0.000
100yr	POST-DEV	BASE	33.33	1.888	0.006	0.972	0.005	45064.188	0.963	0.788	0.000
100yr	POST-DEV	BASE	33.42	1.894	0.006	0.977	0.005	45300.602	0.968	0.788	0.000
100yr	POST-DEV	BASE	33.50	1.900	0.006	0.982	0.005	45537.211	0.973	0.789	0.000
100yr	POST-DEV	BASE	33.58	1.906	0.006	0.987	0.005	45774.031	0.978	0.790	0.000
100yr	POST-DEV	BASE	33.67	1.912	0.006	0.992	0.005	46011.078	0.983	0.790	0.000
100yr	POST-DEV	BASE	33.75	1.919	0.006	0.998	0.005	46248.316	0.988	0.791	0.000
100yr	POST-DEV	BASE	33.83	1.925	0.006	1.003	0.005	46485.762	0.993	0.792	0.000
100yr	POST-DEV	BASE	33.92	1.931	0.006	1.008	0.005	46723.430	0.999	0.793	0.000
100yr	POST-DEV	BASE	34.00	1.937	0.006	1.013	0.005	46961.285	1.004	0.793	0.000
100yr	POST-DEV	BASE	34.08	1.943	0.006	1.018	0.005	47199.344	1.009	0.794	0.000
100yr	POST-DEV	BASE	34.17	1.949	0.006	1.023	0.005	47437.621	1.014	0.795	0.000
100yr	POST-DEV	BASE	34.25	1.955	0.006	1.028	0.005	47676.082	1.019	0.795	0.000
100yr	POST-DEV	BASE	34.33	1.961	0.006	1.033	0.005	47914.742	1.024	0.796	0.000
100yr	POST-DEV	BASE	34.42	1.967	0.006	1.038	0.005	48153.617	1.029	0.797	0.000
100yr	POST-DEV	BASE	34.50	1.973	0.006	1.043	0.005	48392.672	1.034	0.797	0.000
100yr	POST-DEV	BASE	34.58	1.980	0.006	1.049	0.005	48631.922	1.039	0.798	0.000
100yr	POST-DEV	BASE	34.67	1.986	0.006	1.054	0.005	48871.383	1.044	0.798	0.000
100yr	POST-DEV	BASE	34.75	1.992	0.006	1.059	0.005	49111.020	1.050	0.799	0.000
100yr	POST-DEV	BASE	34.83	1.998	0.006	1.064	0.005	49350.848	1.055	0.800	0.000
100yr	POST-DEV	BASE	34.92	2.004	0.006	1.069	0.005	49590.887	1.060	0.800	0.000
100yr	POST-DEV	BASE	35.00	2.010	0.006	1.074	0.005	49831.094	1.065	0.801	0.000
100yr	POST-DEV	BASE	35.08	2.016	0.006	1.079	0.005	50071.492	1.070	0.802	0.000
100yr	POST-DEV	BASE	35.17	2.022	0.006	1.084	0.005	50312.094	1.075	0.802	0.000
100yr	POST-DEV	BASE	35.25	2.028	0.006	1.090	0.005	50552.863	1.080	0.803	0.000



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100yr	POST-DEV	BASE	35.33	2.035	0.006	1.095	0.005	50793.816	1.086	0.804	0.000
100yr	POST-DEV	BASE	35.42	2.041	0.006	1.100	0.005	51034.973	1.091	0.804	0.000
100yr	POST-DEV	BASE	35.50	2.047	0.006	1.105	0.005	51276.293	1.096	0.805	0.000
100yr	POST-DEV	BASE	35.58	2.053	0.006	1.110	0.005	51517.797	1.101	0.805	0.000
100yr	POST-DEV	BASE	35.67	2.059	0.006	1.115	0.005	51759.500	1.106	0.806	0.000
100yr	POST-DEV	BASE	35.75	2.065	0.006	1.121	0.005	52001.363	1.111	0.807	0.000
100yr	POST-DEV	BASE	35.83	2.071	0.006	1.126	0.005	52243.402	1.117	0.807	0.000
100yr	POST-DEV	BASE	35.92	2.077	0.006	1.131	0.005	52485.637	1.122	0.808	0.000
100yr	POST-DEV	BASE	36.00	2.083	0.006	1.136	0.005	52728.031	1.127	0.808	0.000
100yr	POST-DEV	BASE	36.08	2.089	0.006	1.141	0.005	52970.965	1.132	0.811	0.000
100yr	POST-DEV	BASE	36.17	2.096	0.006	1.147	0.005	53214.902	1.137	0.815	0.000
100yr	POST-DEV	BASE	36.25	2.102	0.006	1.152	0.005	53459.648	1.143	0.817	0.000
100yr	POST-DEV	BASE	36.33	2.108	0.006	1.157	0.005	53704.891	1.148	0.818	0.000
100yr	POST-DEV	BASE	36.42	2.114	0.006	1.162	0.005	53950.496	1.153	0.819	0.000
100yr	POST-DEV	BASE	36.50	2.120	0.006	1.168	0.005	54196.367	1.158	0.820	0.000
100yr	POST-DEV	BASE	36.58	2.126	0.006	1.173	0.005	54442.461	1.164	0.821	0.000
100yr	POST-DEV	BASE	36.67	2.133	0.006	1.178	0.005	54688.738	1.169	0.821	0.000
100yr	POST-DEV	BASE	36.75	2.139	0.006	1.183	0.005	54935.188	1.174	0.822	0.000
100yr	POST-DEV	BASE	36.83	2.145	0.006	1.189	0.005	55181.805	1.179	0.822	0.000
100yr	POST-DEV	BASE	36.92	2.151	0.006	1.194	0.005	55428.590	1.185	0.823	0.000
100yr	POST-DEV	BASE	37.00	2.157	0.006	1.199	0.005	55675.543	1.190	0.823	0.000
100yr	POST-DEV	BASE	37.08	2.163	0.006	1.205	0.005	55922.660	1.195	0.824	0.000
100yr	POST-DEV	BASE	37.17	2.170	0.006	1.210	0.005	56169.945	1.200	0.825	0.000
100yr	POST-DEV	BASE	37.25	2.176	0.006	1.215	0.005	56417.395	1.206	0.825	0.000
100yr	POST-DEV	BASE	37.33	2.182	0.006	1.220	0.005	56665.004	1.211	0.826	0.000
100yr	POST-DEV	BASE	37.42	2.188	0.006	1.226	0.005	56912.777	1.216	0.826	0.000
100yr	POST-DEV	BASE	37.50	2.194	0.006	1.231	0.005	57160.711	1.222	0.827	0.000
100yr	POST-DEV	BASE	37.58	2.200	0.006	1.236	0.005	57408.805	1.227	0.827	0.000
100yr	POST-DEV	BASE	37.67	2.207	0.006	1.242	0.005	57657.059	1.232	0.828	0.000
100yr	POST-DEV	BASE	37.75	2.213	0.006	1.247	0.005	57905.469	1.238	0.828	0.000
100yr	POST-DEV	BASE	37.83	2.219	0.006	1.252	0.005	58154.039	1.243	0.829	0.000
100yr	POST-DEV	BASE	37.92	2.225	0.006	1.258	0.005	58402.766	1.248	0.829	0.000
100yr	POST-DEV	BASE	38.00	2.231	0.006	1.263	0.005	58651.648	1.253	0.830	0.000
100yr	POST-DEV	BASE	38.08	2.237	0.006	1.268	0.005	58900.684	1.259	0.830	0.000
100yr	POST-DEV	BASE	38.17	2.244	0.006	1.274	0.005	59149.875	1.264	0.831	0.000
100yr	POST-DEV	BASE	38.25	2.250	0.006	1.279	0.005	59399.219	1.269	0.831	0.000
100yr	POST-DEV	BASE	38.33	2.256	0.006	1.284	0.005	59648.715	1.275	0.832	0.000
100yr	POST-DEV	BASE	38.42	2.262	0.006	1.290	0.005	59898.359	1.280	0.832	0.000
100yr	POST-DEV	BASE	38.50	2.268	0.006	1.295	0.005	60148.156	1.285	0.833	0.000
100yr	POST-DEV	BASE	38.58	2.274	0.006	1.300	0.005	60398.102	1.291	0.833	0.000
100yr	POST-DEV	BASE	38.67	2.281	0.006	1.306	0.005	60648.195	1.296	0.834	0.000
100yr	POST-DEV	BASE	38.75	2.287	0.006	1.311	0.005	60898.438	1.302	0.834	0.000
100yr	POST-DEV	BASE	38.83	2.293	0.006	1.316	0.005	61148.824	1.307	0.835	0.000
100yr	POST-DEV	BASE	38.92	2.299	0.006	1.322	0.005	61399.359	1.312	0.835	0.000
100yr	POST-DEV	BASE	39.00	2.305	0.006	1.327	0.005	61650.039	1.318	0.836	0.000
100yr	POST-DEV	BASE	39.08	2.311	0.006	1.332	0.005	61900.863	1.323	0.836	0.000
100yr	POST-DEV	BASE	39.17	2.318	0.006	1.338	0.005	62151.828	1.328	0.837	0.000
100yr	POST-DEV	BASE	39.25	2.324	0.006	1.343	0.005	62402.938	1.334	0.837	0.000
100yr	POST-DEV	BASE	39.33	2.330	0.006	1.349	0.005	62654.188	1.339	0.838	0.000
100yr	POST-DEV	BASE	39.42	2.336	0.006	1.354	0.005	62905.578	1.344	0.838	0.000
100yr	POST-DEV	BASE	39.50	2.342	0.006	1.359	0.005	63157.109	1.350	0.839	0.000
100yr	POST-DEV	BASE	39.58	2.348	0.006	1.365	0.005	63408.781	1.355	0.839	0.000
100yr	POST-DEV	BASE	39.67	2.355	0.006	1.370	0.005	63660.590	1.361	0.840	0.000
100yr	POST-DEV	BASE	39.75	2.361	0.006	1.375	0.005	63912.539	1.366	0.840	0.000
100yr	POST-DEV	BASE	39.83	2.367	0.006	1.381	0.005	64164.625	1.371	0.841	0.000
100yr	POST-DEV	BASE	39.92	2.373	0.006	1.386	0.005	64416.848	1.377	0.841	0.000
100yr	POST-DEV	BASE	40.00	2.379	0.006	1.392	0.005	64669.203	1.382	0.841	0.000
100yr	POST-DEV	BASE	40.08	2.385	0.006	1.397	0.005	64921.695	1.387	0.842	0.000
100yr	POST-DEV	BASE	40.17	2.392	0.006	1.402	0.005	65174.320	1.393	0.842	0.000
100yr	POST-DEV	BASE	40.25	2.398	0.006	1.408	0.005	65427.078	1.398	0.843	0.000
100yr	POST-DEV	BASE	40.33	2.404	0.006	1.413	0.005	65679.969	1.404	0.843	0.000

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100yr	POST-DEV	BASE	40.42	2.410	0.006	1.419	0.005	65932.992	1.409	0.844	0.000
100yr	POST-DEV	BASE	40.50	2.416	0.006	1.424	0.005	66186.148	1.415	0.844	0.000
100yr	POST-DEV	BASE	40.58	2.422	0.006	1.430	0.005	66439.438	1.420	0.845	0.000
100yr	POST-DEV	BASE	40.67	2.429	0.006	1.435	0.005	66692.852	1.425	0.845	0.000
100yr	POST-DEV	BASE	40.75	2.435	0.006	1.440	0.005	66946.398	1.431	0.845	0.000
100yr	POST-DEV	BASE	40.83	2.441	0.006	1.446	0.005	67200.070	1.436	0.846	0.000
100yr	POST-DEV	BASE	40.92	2.447	0.006	1.451	0.005	67453.867	1.442	0.846	0.000
100yr	POST-DEV	BASE	41.00	2.453	0.006	1.457	0.005	67707.797	1.447	0.847	0.000
100yr	POST-DEV	BASE	41.08	2.459	0.006	1.462	0.005	67961.852	1.452	0.847	0.000
100yr	POST-DEV	BASE	41.17	2.466	0.006	1.468	0.005	68216.031	1.458	0.847	0.000
100yr	POST-DEV	BASE	41.25	2.472	0.006	1.473	0.005	68470.336	1.463	0.848	0.000
100yr	POST-DEV	BASE	41.33	2.478	0.006	1.478	0.005	68724.766	1.469	0.848	0.000
100yr	POST-DEV	BASE	41.42	2.484	0.006	1.484	0.005	68979.320	1.474	0.849	0.000
100yr	POST-DEV	BASE	41.50	2.490	0.006	1.489	0.005	69233.992	1.480	0.849	0.000
100yr	POST-DEV	BASE	41.58	2.496	0.006	1.495	0.005	69488.789	1.485	0.850	0.000
100yr	POST-DEV	BASE	41.67	2.503	0.006	1.500	0.005	69743.703	1.491	0.850	0.000
100yr	POST-DEV	BASE	41.75	2.509	0.006	1.506	0.005	69998.742	1.496	0.850	0.000
100yr	POST-DEV	BASE	41.83	2.515	0.006	1.511	0.005	70253.898	1.501	0.851	0.000
100yr	POST-DEV	BASE	41.92	2.521	0.006	1.517	0.005	70509.180	1.507	0.851	0.000
100yr	POST-DEV	BASE	42.00	2.527	0.006	1.522	0.005	70764.578	1.512	0.852	0.000
100yr	POST-DEV	BASE	42.08	2.533	0.006	1.527	0.005	71020.094	1.518	0.852	0.000
100yr	POST-DEV	BASE	42.17	2.540	0.006	1.533	0.005	71275.727	1.523	0.852	0.000
100yr	POST-DEV	BASE	42.25	2.546	0.006	1.538	0.005	71531.477	1.529	0.853	0.000
100yr	POST-DEV	BASE	42.33	2.552	0.006	1.544	0.005	71787.344	1.534	0.853	0.000
100yr	POST-DEV	BASE	42.42	2.558	0.006	1.549	0.005	72043.328	1.540	0.853	0.000
100yr	POST-DEV	BASE	42.50	2.564	0.006	1.555	0.005	72299.422	1.545	0.854	0.000
100yr	POST-DEV	BASE	42.58	2.570	0.006	1.560	0.005	72555.633	1.551	0.854	0.000
100yr	POST-DEV	BASE	42.67	2.577	0.006	1.566	0.005	72811.961	1.556	0.855	0.000
100yr	POST-DEV	BASE	42.75	2.583	0.006	1.571	0.005	73068.398	1.562	0.855	0.000
100yr	POST-DEV	BASE	42.83	2.589	0.006	1.577	0.005	73324.953	1.567	0.855	0.000
100yr	POST-DEV	BASE	42.92	2.595	0.006	1.582	0.005	73581.617	1.573	0.856	0.000
100yr	POST-DEV	BASE	43.00	2.601	0.006	1.588	0.005	73838.391	1.578	0.856	0.000
100yr	POST-DEV	BASE	43.08	2.607	0.006	1.593	0.005	74095.273	1.584	0.856	0.000
100yr	POST-DEV	BASE	43.17	2.614	0.006	1.599	0.005	74352.273	1.589	0.857	0.000
100yr	POST-DEV	BASE	43.25	2.620	0.006	1.604	0.005	74609.383	1.595	0.857	0.000
100yr	POST-DEV	BASE	43.33	2.626	0.006	1.610	0.005	74866.602	1.600	0.858	0.000
100yr	POST-DEV	BASE	43.42	2.632	0.006	1.615	0.006	75123.922	1.606	0.858	0.000
100yr	POST-DEV	BASE	43.50	2.638	0.006	1.621	0.006	75381.352	1.611	0.858	0.000
100yr	POST-DEV	BASE	43.58	2.644	0.006	1.626	0.006	75638.891	1.617	0.859	0.000
100yr	POST-DEV	BASE	43.67	2.651	0.006	1.632	0.006	75896.539	1.622	0.859	0.000
100yr	POST-DEV	BASE	43.75	2.657	0.006	1.637	0.006	76154.289	1.628	0.859	0.000
100yr	POST-DEV	BASE	43.83	2.663	0.006	1.643	0.006	76412.148	1.633	0.860	0.000
100yr	POST-DEV	BASE	43.92	2.669	0.006	1.648	0.006	76670.109	1.639	0.860	0.000
100yr	POST-DEV	BASE	44.00	2.675	0.006	1.654	0.006	76928.180	1.644	0.860	0.000
100yr	POST-DEV	BASE	44.08	2.681	0.006	1.659	0.006	77186.352	1.650	0.861	0.000
100yr	POST-DEV	BASE	44.17	2.688	0.006	1.665	0.006	77444.625	1.655	0.861	0.000
100yr	POST-DEV	BASE	44.25	2.694	0.006	1.670	0.006	77703.008	1.661	0.861	0.000
100yr	POST-DEV	BASE	44.33	2.700	0.006	1.676	0.006	77961.492	1.666	0.862	0.000
100yr	POST-DEV	BASE	44.42	2.706	0.006	1.681	0.006	78220.078	1.672	0.862	0.000
100yr	POST-DEV	BASE	44.50	2.712	0.006	1.687	0.006	78478.766	1.677	0.862	0.000
100yr	POST-DEV	BASE	44.58	2.718	0.006	1.692	0.006	78737.555	1.683	0.863	0.000
100yr	POST-DEV	BASE	44.67	2.725	0.006	1.698	0.006	78996.445	1.688	0.863	0.000
100yr	POST-DEV	BASE	44.75	2.731	0.006	1.704	0.006	79255.438	1.694	0.863	0.000
100yr	POST-DEV	BASE	44.83	2.737	0.006	1.709	0.006	79514.523	1.699	0.864	0.000
100yr	POST-DEV	BASE	44.92	2.743	0.006	1.715	0.006	79773.711	1.705	0.864	0.000
100yr	POST-DEV	BASE	45.00	2.749	0.006	1.720	0.006	80033.000	1.710	0.864	0.000
100yr	POST-DEV	BASE	45.08	2.755	0.006	1.726	0.006	80292.383	1.716	0.865	0.000
100yr	POST-DEV	BASE	45.17	2.762	0.006	1.731	0.006	80551.867	1.722	0.865	0.000
100yr	POST-DEV	BASE	45.25	2.768	0.006	1.737	0.006	80811.445	1.727	0.865	0.000
100yr	POST-DEV	BASE	45.33	2.774	0.006	1.742	0.006	81071.125	1.733	0.866	0.000
100yr	POST-DEV	BASE	45.42	2.780	0.006	1.748	0.006	81330.898	1.738	0.866	0.000

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100yr	POST-DEV	BASE	45.50	2.786	0.006	1.753	0.006	81590.766	1.744	0.866	0.000
100yr	POST-DEV	BASE	45.58	2.792	0.006	1.759	0.006	81850.727	1.749	0.867	0.000
100yr	POST-DEV	BASE	45.67	2.799	0.006	1.765	0.006	82110.781	1.755	0.867	0.000
100yr	POST-DEV	BASE	45.75	2.805	0.006	1.770	0.006	82370.930	1.760	0.867	0.000
100yr	POST-DEV	BASE	45.83	2.811	0.006	1.776	0.006	82631.172	1.766	0.868	0.000
100yr	POST-DEV	BASE	45.92	2.817	0.006	1.781	0.006	82891.508	1.772	0.868	0.000
100yr	POST-DEV	BASE	46.00	2.823	0.006	1.787	0.006	83151.938	1.777	0.868	0.000
100yr	POST-DEV	BASE	46.08	2.829	0.006	1.792	0.006	83412.461	1.783	0.869	0.000
100yr	POST-DEV	BASE	46.17	2.836	0.006	1.798	0.006	83673.078	1.788	0.869	0.000
100yr	POST-DEV	BASE	46.25	2.842	0.006	1.804	0.006	83933.789	1.794	0.869	0.000
100yr	POST-DEV	BASE	46.33	2.848	0.006	1.809	0.006	84194.586	1.799	0.869	0.000
100yr	POST-DEV	BASE	46.42	2.854	0.006	1.815	0.006	84455.477	1.805	0.870	0.000
100yr	POST-DEV	BASE	46.50	2.860	0.006	1.820	0.006	84716.453	1.811	0.870	0.000
100yr	POST-DEV	BASE	46.58	2.866	0.006	1.826	0.006	84977.523	1.816	0.870	0.000
100yr	POST-DEV	BASE	46.67	2.873	0.006	1.831	0.006	85238.680	1.822	0.871	0.000
100yr	POST-DEV	BASE	46.75	2.879	0.006	1.837	0.006	85499.930	1.827	0.871	0.000
100yr	POST-DEV	BASE	46.83	2.885	0.006	1.843	0.006	85761.266	1.833	0.871	0.000
100yr	POST-DEV	BASE	46.92	2.891	0.006	1.848	0.006	86022.688	1.838	0.872	0.000
100yr	POST-DEV	BASE	47.00	2.897	0.006	1.854	0.006	86284.203	1.844	0.872	0.000
100yr	POST-DEV	BASE	47.08	2.903	0.006	1.859	0.006	86545.805	1.850	0.872	0.000
100yr	POST-DEV	BASE	47.17	2.910	0.006	1.865	0.006	86807.492	1.855	0.872	0.000
100yr	POST-DEV	BASE	47.25	2.916	0.006	1.871	0.006	87069.266	1.861	0.873	0.000
100yr	POST-DEV	BASE	47.33	2.922	0.006	1.876	0.006	87331.125	1.866	0.873	0.000
100yr	POST-DEV	BASE	47.42	2.928	0.006	1.882	0.006	87593.070	1.872	0.873	0.000
100yr	POST-DEV	BASE	47.50	2.934	0.006	1.887	0.006	87855.102	1.878	0.874	0.000
100yr	POST-DEV	BASE	47.58	2.940	0.006	1.893	0.006	88117.219	1.883	0.874	0.000
100yr	POST-DEV	BASE	47.67	2.947	0.006	1.899	0.006	88379.414	1.889	0.874	0.000
100yr	POST-DEV	BASE	47.75	2.953	0.006	1.904	0.006	88641.695	1.894	0.874	0.000
100yr	POST-DEV	BASE	47.83	2.959	0.006	1.910	0.006	88904.063	1.900	0.875	0.000
100yr	POST-DEV	BASE	47.92	2.965	0.006	1.915	0.006	89166.508	1.906	0.875	0.000
100yr	POST-DEV	BASE	48.00	2.971	0.006	1.921	0.006	89429.055	1.911	0.875	0.000
100yr	POST-DEV	BASE	48.08	2.977	0.006	1.927	0.006	89695.750	1.917	0.903	0.000
100yr	POST-DEV	BASE	48.17	2.984	0.007	1.933	0.006	89971.891	1.923	0.938	0.000
100yr	POST-DEV	BASE	48.25	2.991	0.007	1.940	0.006	90255.914	1.929	0.955	0.000
100yr	POST-DEV	BASE	48.33	2.998	0.007	1.946	0.006	90543.883	1.935	0.965	0.000
100yr	POST-DEV	BASE	48.42	3.005	0.007	1.952	0.006	90834.086	1.941	0.970	0.000
100yr	POST-DEV	BASE	48.50	3.012	0.007	1.958	0.006	91125.555	1.948	0.973	0.000
100yr	POST-DEV	BASE	48.58	3.018	0.007	1.965	0.006	91417.711	1.954	0.975	0.000
100yr	POST-DEV	BASE	48.67	3.025	0.007	1.971	0.006	91710.148	1.960	0.975	0.000
100yr	POST-DEV	BASE	48.75	3.032	0.007	1.977	0.006	92002.695	1.966	0.975	0.000
100yr	POST-DEV	BASE	48.83	3.039	0.007	1.983	0.006	92295.336	1.973	0.976	0.000
100yr	POST-DEV	BASE	48.92	3.046	0.007	1.990	0.006	92588.078	1.979	0.976	0.000
100yr	POST-DEV	BASE	49.00	3.053	0.007	1.996	0.006	92880.914	1.985	0.976	0.000
100yr	POST-DEV	BASE	49.08	3.060	0.007	2.002	0.006	93174.695	1.991	0.982	0.000
100yr	POST-DEV	BASE	49.17	3.067	0.007	2.009	0.006	93470.547	1.998	0.990	0.000
100yr	POST-DEV	BASE	49.25	3.074	0.007	2.015	0.006	93768.148	2.004	0.994	0.000
100yr	POST-DEV	BASE	49.33	3.081	0.007	2.022	0.006	94066.672	2.010	0.996	0.000
100yr	POST-DEV	BASE	49.42	3.088	0.007	2.028	0.006	94365.742	2.017	0.998	0.000
100yr	POST-DEV	BASE	49.50	3.095	0.007	2.034	0.006	94665.156	2.023	0.999	0.000
100yr	POST-DEV	BASE	49.58	3.102	0.007	2.041	0.006	94964.797	2.030	0.999	0.000
100yr	POST-DEV	BASE	49.67	3.108	0.007	2.047	0.006	95264.570	2.036	0.999	0.000
100yr	POST-DEV	BASE	49.75	3.115	0.007	2.054	0.006	95564.445	2.042	1.000	0.000
100yr	POST-DEV	BASE	49.83	3.122	0.007	2.060	0.006	95864.414	2.049	1.000	0.000
100yr	POST-DEV	BASE	49.92	3.129	0.007	2.066	0.006	96164.477	2.055	1.000	0.000
100yr	POST-DEV	BASE	50.00	3.136	0.007	2.073	0.006	96464.727	2.062	1.001	0.000
100yr	POST-DEV	BASE	50.08	3.144	0.007	2.080	0.008	96773.516	2.068	1.057	0.000
100yr	POST-DEV	BASE	50.17	3.152	0.008	2.088	0.008	97100.156	2.075	1.120	0.000
100yr	POST-DEV	BASE	50.25	3.160	0.008	2.096	0.008	97440.758	2.082	1.150	0.000
100yr	POST-DEV	BASE	50.33	3.168	0.008	2.103	0.008	97788.352	2.090	1.167	0.000
100yr	POST-DEV	BASE	50.42	3.177	0.008	2.111	0.008	98139.883	2.097	1.177	0.000
100yr	POST-DEV	BASE	50.50	3.185	0.008	2.118	0.008	98493.625	2.105	1.182	0.000

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100yr	POST-DEV	BASE	50.58	3.193	0.008	2.126	0.008	98848.516	2.113	1.184	0.000
100yr	POST-DEV	BASE	50.67	3.201	0.008	2.134	0.008	99203.852	2.120	1.185	0.000
100yr	POST-DEV	BASE	50.75	3.210	0.008	2.141	0.008	99559.328	2.128	1.185	0.000
100yr	POST-DEV	BASE	50.83	3.218	0.008	2.149	0.008	99914.930	2.135	1.186	0.000
100yr	POST-DEV	BASE	50.92	3.226	0.008	2.156	0.008	100270.648	2.143	1.186	0.000
100yr	POST-DEV	BASE	51.00	3.234	0.008	2.164	0.008	100626.539	2.151	1.187	0.000
100yr	POST-DEV	BASE	51.08	3.243	0.008	2.172	0.008	100987.516	2.158	1.220	0.000
100yr	POST-DEV	BASE	51.17	3.252	0.009	2.181	0.008	101359.188	2.166	1.258	0.000
100yr	POST-DEV	BASE	51.25	3.261	0.009	2.189	0.008	101739.313	2.174	1.276	0.000
100yr	POST-DEV	BASE	51.33	3.270	0.009	2.197	0.008	102123.695	2.183	1.286	0.000
100yr	POST-DEV	BASE	51.42	3.279	0.009	2.206	0.008	102510.508	2.191	1.292	0.000
100yr	POST-DEV	BASE	51.50	3.288	0.009	2.214	0.008	102898.711	2.199	1.296	0.000
100yr	POST-DEV	BASE	51.58	3.297	0.009	2.222	0.008	103287.672	2.207	1.297	0.000
100yr	POST-DEV	BASE	51.67	3.306	0.009	2.230	0.008	103676.961	2.216	1.298	0.000
100yr	POST-DEV	BASE	51.75	3.315	0.009	2.239	0.008	104066.398	2.224	1.298	0.000
100yr	POST-DEV	BASE	51.83	3.324	0.009	2.247	0.008	104455.969	2.232	1.299	0.000
100yr	POST-DEV	BASE	51.92	3.333	0.009	2.255	0.008	104845.680	2.241	1.299	0.000
100yr	POST-DEV	BASE	52.00	3.342	0.009	2.264	0.008	105235.625	2.249	1.300	0.000
100yr	POST-DEV	BASE	52.08	3.351	0.009	2.275	0.011	105643.516	2.258	1.419	0.000
100yr	POST-DEV	BASE	52.17	3.363	0.012	2.286	0.011	106090.008	2.267	1.558	0.000
100yr	POST-DEV	BASE	52.25	3.374	0.012	2.296	0.011	106567.164	2.278	1.623	0.000
100yr	POST-DEV	BASE	52.33	3.386	0.012	2.307	0.011	107059.609	2.288	1.660	0.000
100yr	POST-DEV	BASE	52.42	3.398	0.012	2.318	0.011	107560.625	2.299	1.680	0.000
100yr	POST-DEV	BASE	52.50	3.409	0.012	2.329	0.011	108066.445	2.310	1.692	0.000
100yr	POST-DEV	BASE	52.58	3.421	0.012	2.340	0.011	108574.750	2.320	1.697	0.000
100yr	POST-DEV	BASE	52.67	3.433	0.012	2.351	0.011	109083.977	2.331	1.698	0.000
100yr	POST-DEV	BASE	52.75	3.445	0.012	2.362	0.011	109593.445	2.342	1.699	0.000
100yr	POST-DEV	BASE	52.83	3.456	0.012	2.373	0.011	110103.125	2.353	1.699	0.000
100yr	POST-DEV	BASE	52.92	3.468	0.012	2.384	0.011	110613.016	2.364	1.700	0.000
100yr	POST-DEV	BASE	53.00	3.480	0.012	2.394	0.011	111123.148	2.375	1.701	0.000
100yr	POST-DEV	BASE	53.08	3.492	0.012	2.408	0.013	111651.133	2.386	1.819	0.000
100yr	POST-DEV	BASE	53.17	3.506	0.014	2.421	0.013	112217.953	2.398	1.960	0.000
100yr	POST-DEV	BASE	53.25	3.520	0.014	2.435	0.013	112815.875	2.411	2.026	0.000
100yr	POST-DEV	BASE	53.33	3.535	0.014	2.448	0.013	113429.313	2.424	2.063	0.000
100yr	POST-DEV	BASE	53.42	3.549	0.014	2.462	0.013	114051.484	2.437	2.085	0.000
100yr	POST-DEV	BASE	53.50	3.564	0.014	2.475	0.013	114678.594	2.451	2.096	0.000
100yr	POST-DEV	BASE	53.58	3.578	0.014	2.489	0.013	115308.289	2.464	2.102	0.000
100yr	POST-DEV	BASE	53.67	3.593	0.014	2.502	0.013	115939.000	2.478	2.103	0.000
100yr	POST-DEV	BASE	53.75	3.607	0.014	2.516	0.013	116570.031	2.491	2.104	0.000
100yr	POST-DEV	BASE	53.83	3.622	0.014	2.529	0.013	117201.352	2.505	2.105	0.000
100yr	POST-DEV	BASE	53.92	3.636	0.014	2.543	0.014	117832.961	2.518	2.106	0.000
100yr	POST-DEV	BASE	54.00	3.651	0.014	2.556	0.014	118464.891	2.532	2.107	0.000
100yr	POST-DEV	BASE	54.08	3.665	0.014	2.572	0.016	119115.180	2.546	2.228	0.000
100yr	POST-DEV	BASE	54.17	3.682	0.017	2.588	0.016	119805.797	2.560	2.376	0.000
100yr	POST-DEV	BASE	54.25	3.700	0.017	2.605	0.016	120529.047	2.576	2.446	0.000
100yr	POST-DEV	BASE	54.33	3.717	0.017	2.621	0.016	121268.594	2.592	2.485	0.000
100yr	POST-DEV	BASE	54.42	3.734	0.017	2.637	0.016	122017.344	2.608	2.507	0.000
100yr	POST-DEV	BASE	54.50	3.751	0.017	2.653	0.016	122771.320	2.624	2.519	0.000
100yr	POST-DEV	BASE	54.58	3.769	0.017	2.669	0.016	123528.078	2.640	2.526	0.000
100yr	POST-DEV	BASE	54.67	3.786	0.017	2.686	0.016	124285.969	2.656	2.527	0.000
100yr	POST-DEV	BASE	54.75	3.803	0.017	2.702	0.016	125044.258	2.672	2.528	0.000
100yr	POST-DEV	BASE	54.83	3.820	0.017	2.718	0.016	125802.914	2.689	2.529	0.000
100yr	POST-DEV	BASE	54.92	3.838	0.017	2.734	0.016	126561.930	2.705	2.531	0.000
100yr	POST-DEV	BASE	55.00	3.855	0.017	2.751	0.016	127321.367	2.721	2.532	0.000
100yr	POST-DEV	BASE	55.08	3.872	0.017	2.769	0.019	128099.039	2.738	2.652	0.000
100yr	POST-DEV	BASE	55.17	3.892	0.020	2.788	0.019	128917.172	2.755	2.802	0.000
100yr	POST-DEV	BASE	55.25	3.912	0.020	2.807	0.019	129768.422	2.773	2.873	0.000
100yr	POST-DEV	BASE	55.33	3.932	0.020	2.826	0.019	130636.234	2.792	2.912	0.000
100yr	POST-DEV	BASE	55.42	3.953	0.020	2.845	0.019	131513.422	2.811	2.935	0.000
100yr	POST-DEV	BASE	55.50	3.973	0.020	2.864	0.019	132395.969	2.830	2.948	0.000
100yr	POST-DEV	BASE	55.58	3.993	0.020	2.883	0.019	133281.391	2.848	2.955	0.000

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100yr	POST-DEV	BASE	55.67	4.013	0.020	2.902	0.019134168.031	2.867	2.956	0.000
100yr	POST-DEV	BASE	55.75	4.033	0.020	2.921	0.019135055.141	2.886	2.958	0.000
100yr	POST-DEV	BASE	55.83	4.053	0.020	2.940	0.019135942.688	2.905	2.959	0.000
100yr	POST-DEV	BASE	55.92	4.073	0.020	2.959	0.019136830.656	2.924	2.961	0.000
100yr	POST-DEV	BASE	56.00	4.093	0.020	2.978	0.019137719.141	2.943	2.963	0.000
100yr	POST-DEV	BASE	56.08	4.113	0.020	3.000	0.022138629.266	2.963	3.105	0.000
100yr	POST-DEV	BASE	56.17	4.137	0.023	3.022	0.022139588.016	2.983	3.287	0.000
100yr	POST-DEV	BASE	56.25	4.160	0.023	3.044	0.022140586.984	3.005	3.373	0.000
100yr	POST-DEV	BASE	56.33	4.183	0.023	3.067	0.022141606.063	3.026	3.421	0.000
100yr	POST-DEV	BASE	56.42	4.207	0.023	3.089	0.022142636.516	3.048	3.449	0.000
100yr	POST-DEV	BASE	56.50	4.230	0.023	3.111	0.022143673.453	3.071	3.464	0.000
100yr	POST-DEV	BASE	56.58	4.254	0.023	3.133	0.022144713.875	3.093	3.472	0.000
100yr	POST-DEV	BASE	56.67	4.277	0.023	3.156	0.022145755.766	3.115	3.474	0.000
100yr	POST-DEV	BASE	56.75	4.301	0.023	3.178	0.022146798.203	3.137	3.476	0.000
100yr	POST-DEV	BASE	56.83	4.324	0.023	3.200	0.022147841.141	3.160	3.477	0.000
100yr	POST-DEV	BASE	56.92	4.348	0.023	3.223	0.022148884.578	3.182	3.479	0.000
100yr	POST-DEV	BASE	57.00	4.371	0.023	3.245	0.022149928.656	3.204	3.482	0.000
100yr	POST-DEV	BASE	57.08	4.395	0.023	3.271	0.026151000.109	3.227	3.661	0.000
100yr	POST-DEV	BASE	57.17	4.422	0.028	3.298	0.026152133.906	3.251	3.897	0.000
100yr	POST-DEV	BASE	57.25	4.450	0.028	3.324	0.026153319.844	3.277	4.009	0.000
100yr	POST-DEV	BASE	57.33	4.478	0.028	3.351	0.026154531.828	3.303	4.071	0.000
100yr	POST-DEV	BASE	57.42	4.506	0.028	3.377	0.027155758.500	3.329	4.107	0.000
100yr	POST-DEV	BASE	57.50	4.533	0.028	3.404	0.027156993.672	3.355	4.128	0.000
100yr	POST-DEV	BASE	57.58	4.561	0.028	3.433	0.029158249.219	3.382	4.243	0.000
100yr	POST-DEV	BASE	57.67	4.591	0.030	3.461	0.029159541.406	3.410	4.372	0.000
100yr	POST-DEV	BASE	57.75	4.622	0.030	3.490	0.029160862.234	3.438	4.434	0.000
100yr	POST-DEV	BASE	57.83	4.652	0.030	3.519	0.029162197.547	3.466	4.468	0.000
100yr	POST-DEV	BASE	57.92	4.682	0.030	3.548	0.029163541.188	3.495	4.489	0.000
100yr	POST-DEV	BASE	58.00	4.712	0.030	3.577	0.029164889.828	3.524	4.502	0.000
100yr	POST-DEV	BASE	58.08	4.742	0.030	3.609	0.032166261.297	3.553	4.641	0.000
100yr	POST-DEV	BASE	58.17	4.776	0.033	3.641	0.032167680.953	3.584	4.823	0.000
100yr	POST-DEV	BASE	58.25	4.809	0.033	3.673	0.032169140.844	3.615	4.910	0.000
100yr	POST-DEV	BASE	58.33	4.843	0.033	3.705	0.032170620.969	3.646	4.958	0.000
100yr	POST-DEV	BASE	58.42	4.876	0.033	3.737	0.032172112.609	3.678	4.986	0.000
100yr	POST-DEV	BASE	58.50	4.910	0.033	3.770	0.032173611.359	3.710	5.005	0.000
100yr	POST-DEV	BASE	58.58	4.943	0.033	3.812	0.042175185.938	3.744	5.492	0.000
100yr	POST-DEV	BASE	58.67	4.987	0.044	3.855	0.043176921.906	3.781	6.081	0.000
100yr	POST-DEV	BASE	58.75	5.032	0.044	3.897	0.043178788.125	3.821	6.360	0.000
100yr	POST-DEV	BASE	58.83	5.076	0.044	3.940	0.043180719.359	3.862	6.515	0.000
100yr	POST-DEV	BASE	58.92	5.121	0.044	3.983	0.043182687.125	3.904	6.604	0.000
100yr	POST-DEV	BASE	59.00	5.165	0.044	4.027	0.044184677.359	3.947	6.665	0.000
100yr	POST-DEV	BASE	59.08	5.211	0.045	4.093	0.066186847.938	3.993	7.806	0.000
100yr	POST-DEV	BASE	59.17	5.279	0.069	4.159	0.066189379.859	4.047	9.074	0.000
100yr	POST-DEV	BASE	59.25	5.348	0.069	4.225	0.066192192.063	4.107	9.674	0.000
100yr	POST-DEV	BASE	59.33	5.416	0.069	4.291	0.066195144.281	4.171	10.007	0.000
100yr	POST-DEV	BASE	59.42	5.485	0.069	4.358	0.066198175.047	4.235	10.198	0.000
100yr	POST-DEV	BASE	59.50	5.553	0.069	4.430	0.072201258.016	4.301	10.355	0.000
100yr	POST-DEV	BASE	59.58	5.622	0.069	4.875	0.445206982.594	4.424	27.809	0.000
100yr	POST-DEV	BASE	59.67	6.087	0.465	5.332	0.457218604.484	4.672	49.670	0.000
100yr	POST-DEV	BASE	59.75	6.556	0.469	5.790	0.458235061.875	5.024	60.046	0.000
100yr	POST-DEV	BASE	59.83	7.025	0.469	6.249	0.459253941.813	5.427	65.821	0.000
100yr	POST-DEV	BASE	59.92	7.493	0.469	6.709	0.460274187.938	5.860	69.154	0.000
100yr	POST-DEV	BASE	60.00	7.962	0.469	7.148	0.439295176.125	6.308	70.768	0.000
100yr	POST-DEV	BASE	60.08	8.420	0.458	7.258	0.110313962.813	6.710	54.477	0.000
100yr	POST-DEV	BASE	60.17	8.521	0.100	7.357	0.099327353.250	6.996	34.792	0.000
100yr	POST-DEV	BASE	60.25	8.621	0.100	7.455	0.099336398.375	7.189	25.508	0.000
100yr	POST-DEV	BASE	60.33	8.721	0.100	7.554	0.099343288.344	7.337	20.425	0.000
100yr	POST-DEV	BASE	60.42	8.821	0.100	7.653	0.099348985.063	7.458	17.553	0.000
100yr	POST-DEV	BASE	60.50	8.921	0.100	7.751	0.099354027.344	7.566	16.062	0.000
100yr	POST-DEV	BASE	60.58	9.021	0.100	7.804	0.053358440.000	7.660	13.356	0.000
100yr	POST-DEV	BASE	60.67	9.075	0.054	7.857	0.052362050.563	7.738	10.715	0.000

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100yr	POST-DEV	BASE	60.75	9.128	0.053	7.909	0.052365081.031	7.802	9.489	0.000
100yr	POST-DEV	BASE	60.83	9.181	0.053	7.961	0.052367827.031	7.861	8.818	0.000
100yr	POST-DEV	BASE	60.92	9.233	0.053	8.013	0.052370415.719	7.916	8.440	0.000
100yr	POST-DEV	BASE	61.00	9.286	0.053	8.065	0.051372916.844	7.970	8.234	0.000
100yr	POST-DEV	BASE	61.08	9.339	0.053	8.103	0.038375273.813	8.020	7.479	0.000
100yr	POST-DEV	BASE	61.17	9.377	0.038	8.141	0.038377398.781	8.066	6.688	0.000
100yr	POST-DEV	BASE	61.25	9.416	0.038	8.179	0.038379349.500	8.107	6.317	0.000
100yr	POST-DEV	BASE	61.33	9.454	0.038	8.217	0.038381214.250	8.147	6.114	0.000
100yr	POST-DEV	BASE	61.42	9.493	0.038	8.255	0.038383031.438	8.186	6.000	0.000
100yr	POST-DEV	BASE	61.50	9.531	0.038	8.293	0.038384822.625	8.224	5.941	0.000
100yr	POST-DEV	BASE	61.58	9.569	0.038	8.324	0.032386559.563	8.261	5.639	0.000
100yr	POST-DEV	BASE	61.67	9.602	0.032	8.356	0.032388196.906	8.296	5.277	0.000
100yr	POST-DEV	BASE	61.75	9.633	0.032	8.387	0.032389754.719	8.330	5.108	0.000
100yr	POST-DEV	BASE	61.83	9.665	0.032	8.419	0.032391273.406	8.362	5.016	0.000
100yr	POST-DEV	BASE	61.92	9.697	0.032	8.451	0.032392770.500	8.394	4.964	0.000
100yr	POST-DEV	BASE	62.00	9.729	0.032	8.482	0.031394255.094	8.426	4.933	0.000
100yr	POST-DEV	BASE	62.08	9.761	0.032	8.505	0.023395674.406	8.456	4.529	0.000
100yr	POST-DEV	BASE	62.17	9.784	0.023	8.528	0.023396962.219	8.484	4.056	0.000
100yr	POST-DEV	BASE	62.25	9.808	0.023	8.551	0.023398145.750	8.509	3.834	0.000
100yr	POST-DEV	BASE	62.33	9.831	0.023	8.574	0.023399277.688	8.533	3.712	0.000
100yr	POST-DEV	BASE	62.42	9.854	0.023	8.597	0.023400381.063	8.557	3.644	0.000
100yr	POST-DEV	BASE	62.50	9.878	0.023	8.620	0.023401468.781	8.580	3.608	0.000
100yr	POST-DEV	BASE	62.58	9.901	0.023	8.641	0.021402532.938	8.603	3.487	0.000
100yr	POST-DEV	BASE	62.67	9.922	0.021	8.661	0.021403557.719	8.625	3.345	0.000
100yr	POST-DEV	BASE	62.75	9.943	0.021	8.682	0.021404551.375	8.646	3.279	0.000
100yr	POST-DEV	BASE	62.83	9.963	0.021	8.702	0.021405529.750	8.667	3.243	0.000
100yr	POST-DEV	BASE	62.92	9.984	0.021	8.723	0.021406499.688	8.688	3.223	0.000
100yr	POST-DEV	BASE	63.00	10.005	0.021	8.743	0.021407465.000	8.708	3.212	0.000
100yr	POST-DEV	BASE	63.08	10.026	0.021	8.764	0.021408427.625	8.729	3.205	0.000
100yr	POST-DEV	BASE	63.17	10.047	0.021	8.785	0.021409388.719	8.749	3.202	0.000
100yr	POST-DEV	BASE	63.25	10.067	0.021	8.805	0.021410349.125	8.770	3.201	0.000
100yr	POST-DEV	BASE	63.33	10.088	0.021	8.826	0.021411309.250	8.790	3.200	0.000
100yr	POST-DEV	BASE	63.42	10.109	0.021	8.846	0.021412269.219	8.811	3.200	0.000
100yr	POST-DEV	BASE	63.50	10.129	0.021	8.867	0.021413229.125	8.831	3.200	0.000
100yr	POST-DEV	BASE	63.58	10.150	0.021	8.887	0.021414189.031	8.852	3.200	0.000
100yr	POST-DEV	BASE	63.67	10.171	0.021	8.908	0.021415148.969	8.872	3.200	0.000
100yr	POST-DEV	BASE	63.75	10.192	0.021	8.928	0.021416108.938	8.893	3.200	0.000
100yr	POST-DEV	BASE	63.83	10.212	0.021	8.949	0.021417068.938	8.914	3.200	0.000
100yr	POST-DEV	BASE	63.92	10.233	0.021	8.969	0.021418029.000	8.934	3.200	0.000
100yr	POST-DEV	BASE	64.00	10.254	0.021	8.989	0.020418988.625	8.955	3.197	0.000
100yr	POST-DEV	BASE	64.08	10.275	0.021	9.002	0.013419892.688	8.974	2.830	0.000
100yr	POST-DEV	BASE	64.17	10.287	0.012	9.014	0.012420672.094	8.991	2.367	0.000
100yr	POST-DEV	BASE	64.25	10.300	0.012	9.026	0.012421349.594	9.005	2.150	0.000
100yr	POST-DEV	BASE	64.33	10.312	0.012	9.039	0.012421976.625	9.018	2.030	0.000
100yr	POST-DEV	BASE	64.42	10.324	0.012	9.051	0.012422575.594	9.031	1.963	0.000
100yr	POST-DEV	BASE	64.50	10.337	0.012	9.063	0.012423159.344	9.044	1.928	0.000
100yr	POST-DEV	BASE	64.58	10.349	0.012	9.075	0.012423735.469	9.056	1.913	0.000
100yr	POST-DEV	BASE	64.67	10.361	0.012	9.088	0.012424309.094	9.068	1.912	0.000
100yr	POST-DEV	BASE	64.75	10.374	0.012	9.100	0.012424882.719	9.080	1.912	0.000
100yr	POST-DEV	BASE	64.83	10.386	0.012	9.112	0.012425456.344	9.093	1.912	0.000
100yr	POST-DEV	BASE	64.92	10.399	0.012	9.124	0.012426029.906	9.105	1.912	0.000
100yr	POST-DEV	BASE	65.00	10.411	0.012	9.137	0.012426603.563	9.117	1.912	0.000
100yr	POST-DEV	BASE	65.08	10.423	0.012	9.149	0.012427177.875	9.130	1.916	0.000
100yr	POST-DEV	BASE	65.17	10.436	0.012	9.161	0.012427753.500	9.142	1.922	0.000
100yr	POST-DEV	BASE	65.25	10.448	0.012	9.174	0.012428330.375	9.154	1.924	0.000
100yr	POST-DEV	BASE	65.33	10.461	0.012	9.186	0.012428907.844	9.167	1.925	0.000
100yr	POST-DEV	BASE	65.42	10.473	0.012	9.198	0.012429485.531	9.179	1.926	0.000
100yr	POST-DEV	BASE	65.50	10.486	0.012	9.211	0.012430063.500	9.191	1.927	0.000
100yr	POST-DEV	BASE	65.58	10.498	0.012	9.223	0.012430641.594	9.204	1.927	0.000
100yr	POST-DEV	BASE	65.67	10.511	0.012	9.235	0.012431219.625	9.216	1.927	0.000
100yr	POST-DEV	BASE	65.75	10.523	0.012	9.248	0.012431797.750	9.228	1.927	0.000



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100yr	POST-DEV	BASE	65.83	10.536	0.012	9.260	0.012432375.906	9.241	1.927	0.000
100yr	POST-DEV	BASE	65.92	10.548	0.012	9.273	0.012432953.969	9.253	1.927	0.000
100yr	POST-DEV	BASE	66.00	10.561	0.012	9.285	0.012433532.156	9.265	1.927	0.000
100yr	POST-DEV	BASE	66.08	10.573	0.012	9.297	0.012434110.344	9.278	1.927	0.000
100yr	POST-DEV	BASE	66.17	10.586	0.012	9.310	0.012434688.406	9.290	1.927	0.000
100yr	POST-DEV	BASE	66.25	10.598	0.012	9.322	0.012435266.563	9.302	1.927	0.000
100yr	POST-DEV	BASE	66.33	10.611	0.012	9.334	0.012435844.719	9.315	1.927	0.000
100yr	POST-DEV	BASE	66.42	10.623	0.012	9.347	0.012436422.781	9.327	1.927	0.000
100yr	POST-DEV	BASE	66.50	10.636	0.012	9.359	0.012437000.938	9.339	1.927	0.000
100yr	POST-DEV	BASE	66.58	10.648	0.012	9.371	0.012437579.125	9.352	1.927	0.000
100yr	POST-DEV	BASE	66.67	10.661	0.012	9.384	0.012438157.219	9.364	1.927	0.000
100yr	POST-DEV	BASE	66.75	10.673	0.012	9.396	0.012438735.406	9.377	1.927	0.000
100yr	POST-DEV	BASE	66.83	10.685	0.012	9.408	0.012439313.625	9.389	1.927	0.000
100yr	POST-DEV	BASE	66.92	10.698	0.012	9.421	0.012439891.750	9.401	1.927	0.000
100yr	POST-DEV	BASE	67.00	10.710	0.012	9.433	0.012440470.000	9.414	1.927	0.000
100yr	POST-DEV	BASE	67.08	10.723	0.012	9.445	0.012441048.250	9.426	1.927	0.000
100yr	POST-DEV	BASE	67.17	10.735	0.012	9.458	0.012441626.406	9.438	1.927	0.000
100yr	POST-DEV	BASE	67.25	10.748	0.012	9.470	0.012442204.688	9.451	1.928	0.000
100yr	POST-DEV	BASE	67.33	10.760	0.012	9.483	0.012442782.969	9.463	1.928	0.000
100yr	POST-DEV	BASE	67.42	10.773	0.012	9.495	0.012443361.188	9.475	1.928	0.000
100yr	POST-DEV	BASE	67.50	10.785	0.012	9.507	0.012443939.500	9.488	1.928	0.000
100yr	POST-DEV	BASE	67.58	10.798	0.012	9.520	0.012444517.813	9.500	1.928	0.000
100yr	POST-DEV	BASE	67.67	10.810	0.012	9.532	0.012445096.063	9.512	1.928	0.000
100yr	POST-DEV	BASE	67.75	10.823	0.012	9.544	0.012445674.406	9.525	1.928	0.000
100yr	POST-DEV	BASE	67.83	10.835	0.012	9.557	0.012446252.781	9.537	1.928	0.000
100yr	POST-DEV	BASE	67.92	10.848	0.012	9.569	0.012446831.063	9.550	1.928	0.000
100yr	POST-DEV	BASE	68.00	10.860	0.012	9.581	0.012447409.125	9.562	1.926	0.000
100yr	POST-DEV	BASE	68.08	10.872	0.012	9.589	0.008447956.750	9.574	1.725	0.000
100yr	POST-DEV	BASE	68.17	10.881	0.008	9.598	0.008448440.313	9.584	1.499	0.000
100yr	POST-DEV	BASE	68.25	10.889	0.008	9.606	0.008448874.031	9.593	1.392	0.000
100yr	POST-DEV	BASE	68.33	10.897	0.008	9.614	0.008449282.969	9.602	1.334	0.000
100yr	POST-DEV	BASE	68.42	10.906	0.008	9.622	0.008449678.125	9.610	1.301	0.000
100yr	POST-DEV	BASE	68.50	10.914	0.008	9.630	0.008450065.813	9.619	1.284	0.000
100yr	POST-DEV	BASE	68.58	10.922	0.008	9.638	0.008450449.813	9.627	1.276	0.000
100yr	POST-DEV	BASE	68.67	10.930	0.008	9.647	0.008450832.594	9.635	1.276	0.000
100yr	POST-DEV	BASE	68.75	10.939	0.008	9.655	0.008451215.406	9.643	1.276	0.000
100yr	POST-DEV	BASE	68.83	10.947	0.008	9.663	0.008451598.219	9.651	1.276	0.000
100yr	POST-DEV	BASE	68.92	10.955	0.008	9.671	0.008451980.969	9.660	1.276	0.000
100yr	POST-DEV	BASE	69.00	10.963	0.008	9.679	0.008452363.781	9.668	1.276	0.000
100yr	POST-DEV	BASE	69.08	10.972	0.008	9.687	0.008452746.625	9.676	1.276	0.000
100yr	POST-DEV	BASE	69.17	10.980	0.008	9.696	0.008453129.406	9.684	1.276	0.000
100yr	POST-DEV	BASE	69.25	10.988	0.008	9.704	0.008453512.250	9.692	1.276	0.000
100yr	POST-DEV	BASE	69.33	10.996	0.008	9.712	0.008453895.094	9.701	1.276	0.000
100yr	POST-DEV	BASE	69.42	11.005	0.008	9.720	0.008454277.875	9.709	1.276	0.000
100yr	POST-DEV	BASE	69.50	11.013	0.008	9.728	0.008454660.719	9.717	1.276	0.000
100yr	POST-DEV	BASE	69.58	11.021	0.008	9.737	0.008455043.594	9.725	1.276	0.000
100yr	POST-DEV	BASE	69.67	11.029	0.008	9.745	0.008455426.406	9.733	1.276	0.000
100yr	POST-DEV	BASE	69.75	11.038	0.008	9.753	0.008455809.281	9.741	1.276	0.000
100yr	POST-DEV	BASE	69.83	11.046	0.008	9.761	0.008456192.156	9.750	1.276	0.000
100yr	POST-DEV	BASE	69.92	11.054	0.008	9.769	0.008456574.969	9.758	1.276	0.000
100yr	POST-DEV	BASE	70.00	11.062	0.008	9.777	0.008456957.844	9.766	1.276	0.000
100yr	POST-DEV	BASE	70.08	11.071	0.008	9.786	0.008457341.063	9.774	1.278	0.000
100yr	POST-DEV	BASE	70.17	11.079	0.008	9.794	0.008457724.938	9.782	1.281	0.000
100yr	POST-DEV	BASE	70.25	11.087	0.008	9.802	0.008458109.438	9.791	1.282	0.000
100yr	POST-DEV	BASE	70.33	11.096	0.008	9.810	0.008458494.219	9.799	1.283	0.000
100yr	POST-DEV	BASE	70.42	11.104	0.008	9.819	0.008458879.094	9.807	1.283	0.000
100yr	POST-DEV	BASE	70.50	11.112	0.008	9.827	0.008459264.125	9.815	1.283	0.000
100yr	POST-DEV	BASE	70.58	11.121	0.008	9.835	0.008459649.219	9.824	1.284	0.000
100yr	POST-DEV	BASE	70.67	11.129	0.008	9.843	0.008460034.250	9.832	1.284	0.000
100yr	POST-DEV	BASE	70.75	11.137	0.008	9.852	0.008460419.344	9.840	1.284	0.000
100yr	POST-DEV	BASE	70.83	11.145	0.008	9.860	0.008460804.469	9.848	1.284	0.000

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100yr	POST-DEV	BASE	70.92	11.154	0.008	9.868	0.008461189.531	9.856	1.284	0.000
100yr	POST-DEV	BASE	71.00	11.162	0.008	9.876	0.008461574.656	9.865	1.284	0.000
100yr	POST-DEV	BASE	71.08	11.170	0.008	9.884	0.008461959.781	9.873	1.284	0.000
100yr	POST-DEV	BASE	71.17	11.179	0.008	9.893	0.008462344.844	9.881	1.284	0.000
100yr	POST-DEV	BASE	71.25	11.187	0.008	9.901	0.008462729.969	9.889	1.284	0.000
100yr	POST-DEV	BASE	71.33	11.195	0.008	9.909	0.008463115.125	9.898	1.284	0.000
100yr	POST-DEV	BASE	71.42	11.204	0.008	9.917	0.008463500.219	9.906	1.284	0.000
100yr	POST-DEV	BASE	71.50	11.212	0.008	9.926	0.008463885.375	9.914	1.284	0.000
100yr	POST-DEV	BASE	71.58	11.220	0.008	9.934	0.008464270.531	9.922	1.284	0.000
100yr	POST-DEV	BASE	71.67	11.228	0.008	9.942	0.008464655.625	9.931	1.284	0.000
100yr	POST-DEV	BASE	71.75	11.237	0.008	9.950	0.008465040.781	9.939	1.284	0.000
100yr	POST-DEV	BASE	71.83	11.245	0.008	9.958	0.008465425.969	9.947	1.284	0.000
100yr	POST-DEV	BASE	71.92	11.253	0.008	9.967	0.008465811.094	9.955	1.284	0.000
100yr	POST-DEV	BASE	72.00	11.262	0.008	9.975	0.008466196.094	9.963	1.283	0.000
100yr	PRE-DEV	BASE	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	0.08	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	0.17	0.004	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	0.25	0.008	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	0.33	0.013	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	0.42	0.017	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	0.50	0.021	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	0.58	0.025	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	0.67	0.029	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	0.75	0.034	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	0.83	0.038	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	0.92	0.042	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	1.00	0.046	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	1.08	0.050	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	1.17	0.055	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	1.25	0.059	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	1.33	0.063	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	1.42	0.067	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	1.50	0.071	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	1.58	0.076	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	1.67	0.080	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	1.75	0.084	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	1.83	0.088	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	1.92	0.092	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	2.00	0.097	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	2.08	0.101	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	2.17	0.105	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	2.25	0.109	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	2.33	0.113	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	2.42	0.118	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	2.50	0.122	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	2.58	0.126	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	2.67	0.130	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	2.75	0.135	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	2.83	0.139	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	2.92	0.143	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	3.00	0.147	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	3.08	0.151	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	3.17	0.156	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	3.25	0.160	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	3.33	0.164	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	3.42	0.168	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	3.50	0.172	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	3.58	0.177	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	3.67	0.181	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	3.75	0.185	0.004	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	3.83	0.189	0.004	0.000	0.000	0.000	0.000	0.000



















TIME SERIES 100 YR.TXT											
100yr	PRE-DEV	BASE	39.50	2.342	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	39.58	2.348	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	39.67	2.355	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	39.75	2.361	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	39.83	2.367	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	39.92	2.373	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	40.00	2.379	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	40.08	2.385	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	40.17	2.392	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	40.25	2.398	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	40.33	2.404	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	40.42	2.410	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	40.50	2.416	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	40.58	2.422	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	40.67	2.429	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	40.75	2.435	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	40.83	2.441	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	40.92	2.447	0.006	0.000	0.000	0.000	0.000	0.000	0.000
100yr	PRE-DEV	BASE	41.00	2.453	0.006	0.000	0.000	0.006	0.000	0.000	0.000
100yr	PRE-DEV	BASE	41.08	2.459	0.006	0.000	0.000	0.035	0.000	0.000	0.000
100yr	PRE-DEV	BASE	41.17	2.466	0.006	0.000	0.000	0.124	0.000	0.000	0.000
100yr	PRE-DEV	BASE	41.25	2.472	0.006	0.000	0.000	0.323	0.000	0.001	0.000
100yr	PRE-DEV	BASE	41.33	2.478	0.006	0.000	0.000	0.675	0.000	0.001	0.000
100yr	PRE-DEV	BASE	41.42	2.484	0.006	0.000	0.000	1.218	0.000	0.002	0.000
100yr	PRE-DEV	BASE	41.50	2.490	0.006	0.000	0.000	1.979	0.000	0.003	0.000
100yr	PRE-DEV	BASE	41.58	2.496	0.006	0.000	0.000	2.980	0.000	0.004	0.000
100yr	PRE-DEV	BASE	41.67	2.503	0.006	0.000	0.000	4.238	0.000	0.005	0.000
100yr	PRE-DEV	BASE	41.75	2.509	0.006	0.000	0.000	5.769	0.000	0.006	0.000
100yr	PRE-DEV	BASE	41.83	2.515	0.006	0.000	0.000	7.584	0.000	0.007	0.000
100yr	PRE-DEV	BASE	41.92	2.521	0.006	0.001	0.000	9.692	0.000	0.008	0.000
100yr	PRE-DEV	BASE	42.00	2.527	0.006	0.001	0.000	12.103	0.000	0.009	0.000
100yr	PRE-DEV	BASE	42.08	2.533	0.006	0.001	0.000	14.822	0.000	0.010	0.000
100yr	PRE-DEV	BASE	42.17	2.540	0.006	0.001	0.000	17.855	0.000	0.011	0.000
100yr	PRE-DEV	BASE	42.25	2.546	0.006	0.001	0.000	21.207	0.000	0.012	0.000
100yr	PRE-DEV	BASE	42.33	2.552	0.006	0.001	0.000	24.882	0.000	0.013	0.000
100yr	PRE-DEV	BASE	42.42	2.558	0.006	0.001	0.000	28.882	0.001	0.014	0.000
100yr	PRE-DEV	BASE	42.50	2.564	0.006	0.001	0.000	33.209	0.001	0.015	0.000
100yr	PRE-DEV	BASE	42.58	2.570	0.006	0.001	0.000	37.866	0.001	0.016	0.000
100yr	PRE-DEV	BASE	42.67	2.577	0.006	0.002	0.000	42.853	0.001	0.017	0.000
100yr	PRE-DEV	BASE	42.75	2.583	0.006	0.002	0.000	48.172	0.001	0.018	0.000
100yr	PRE-DEV	BASE	42.83	2.589	0.006	0.002	0.000	53.822	0.001	0.019	0.000
100yr	PRE-DEV	BASE	42.92	2.595	0.006	0.002	0.000	59.804	0.001	0.020	0.000
100yr	PRE-DEV	BASE	43.00	2.601	0.006	0.002	0.000	66.116	0.001	0.022	0.000
100yr	PRE-DEV	BASE	43.08	2.607	0.006	0.002	0.000	72.759	0.001	0.023	0.000
100yr	PRE-DEV	BASE	43.17	2.614	0.006	0.002	0.000	79.732	0.001	0.024	0.000
100yr	PRE-DEV	BASE	43.25	2.620	0.006	0.003	0.000	87.035	0.002	0.025	0.000
100yr	PRE-DEV	BASE	43.33	2.626	0.006	0.003	0.000	94.667	0.002	0.026	0.000
100yr	PRE-DEV	BASE	43.42	2.632	0.006	0.003	0.000	102.627	0.002	0.027	0.000
100yr	PRE-DEV	BASE	43.50	2.638	0.006	0.003	0.000	110.915	0.002	0.028	0.000
100yr	PRE-DEV	BASE	43.58	2.644	0.006	0.003	0.000	119.531	0.002	0.029	0.000
100yr	PRE-DEV	BASE	43.67	2.651	0.006	0.004	0.000	128.474	0.002	0.030	0.000
100yr	PRE-DEV	BASE	43.75	2.657	0.006	0.004	0.000	137.743	0.003	0.031	0.000
100yr	PRE-DEV	BASE	43.83	2.663	0.006	0.004	0.000	147.338	0.003	0.033	0.000
100yr	PRE-DEV	BASE	43.92	2.669	0.006	0.004	0.000	157.259	0.003	0.034	0.000
100yr	PRE-DEV	BASE	44.00	2.675	0.006	0.005	0.000	167.506	0.003	0.035	0.000
100yr	PRE-DEV	BASE	44.08	2.681	0.006	0.005	0.000	178.076	0.003	0.036	0.000
100yr	PRE-DEV	BASE	44.17	2.688	0.006	0.005	0.000	188.971	0.003	0.037	0.000
100yr	PRE-DEV	BASE	44.25	2.694	0.006	0.005	0.000	200.190	0.004	0.038	0.000
100yr	PRE-DEV	BASE	44.33	2.700	0.006	0.005	0.000	211.732	0.004	0.039	0.000
100yr	PRE-DEV	BASE	44.42	2.706	0.006	0.006	0.000	223.596	0.004	0.040	0.000
100yr	PRE-DEV	BASE	44.50	2.712	0.006	0.006	0.000	235.783	0.004	0.041	0.000
100yr	PRE-DEV	BASE	44.50	2.712	0.006	0.006	0.000	248.291	0.005	0.042	0.000



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100yr	PRE-DEV	BASE	44.58	2.718	0.006	0.006	0.000	261.121	0.005	0.043	0.000
100yr	PRE-DEV	BASE	44.67	2.725	0.006	0.007	0.000	274.271	0.005	0.044	0.000
100yr	PRE-DEV	BASE	44.75	2.731	0.006	0.007	0.000	287.742	0.005	0.045	0.000
100yr	PRE-DEV	BASE	44.83	2.737	0.006	0.007	0.000	301.533	0.006	0.047	0.000
100yr	PRE-DEV	BASE	44.92	2.743	0.006	0.007	0.000	315.643	0.006	0.048	0.000
100yr	PRE-DEV	BASE	45.00	2.749	0.006	0.008	0.000	330.071	0.006	0.049	0.000
100yr	PRE-DEV	BASE	45.08	2.755	0.006	0.008	0.000	344.819	0.006	0.050	0.000
100yr	PRE-DEV	BASE	45.17	2.762	0.006	0.008	0.000	359.884	0.007	0.051	0.000
100yr	PRE-DEV	BASE	45.25	2.768	0.006	0.009	0.000	375.267	0.007	0.052	0.000
100yr	PRE-DEV	BASE	45.33	2.774	0.006	0.009	0.000	390.966	0.007	0.053	0.000
100yr	PRE-DEV	BASE	45.42	2.780	0.006	0.009	0.000	406.983	0.007	0.054	0.000
100yr	PRE-DEV	BASE	45.50	2.786	0.006	0.010	0.000	423.315	0.008	0.055	0.000
100yr	PRE-DEV	BASE	45.58	2.792	0.006	0.010	0.000	439.963	0.008	0.056	0.000
100yr	PRE-DEV	BASE	45.67	2.799	0.006	0.010	0.000	456.926	0.008	0.057	0.000
100yr	PRE-DEV	BASE	45.75	2.805	0.006	0.011	0.000	474.203	0.009	0.058	0.000
100yr	PRE-DEV	BASE	45.83	2.811	0.006	0.011	0.000	491.795	0.009	0.059	0.000
100yr	PRE-DEV	BASE	45.92	2.817	0.006	0.011	0.000	509.701	0.009	0.060	0.000
100yr	PRE-DEV	BASE	46.00	2.823	0.006	0.012	0.000	527.920	0.010	0.061	0.000
100yr	PRE-DEV	BASE	46.08	2.829	0.006	0.012	0.000	546.452	0.010	0.062	0.000
100yr	PRE-DEV	BASE	46.17	2.836	0.006	0.013	0.000	565.296	0.010	0.063	0.000
100yr	PRE-DEV	BASE	46.25	2.842	0.006	0.013	0.000	584.452	0.011	0.064	0.000
100yr	PRE-DEV	BASE	46.33	2.848	0.006	0.013	0.000	603.920	0.011	0.065	0.000
100yr	PRE-DEV	BASE	46.42	2.854	0.006	0.014	0.000	623.698	0.011	0.066	0.000
100yr	PRE-DEV	BASE	46.50	2.860	0.006	0.014	0.000	643.787	0.012	0.067	0.000
100yr	PRE-DEV	BASE	46.58	2.866	0.006	0.014	0.000	664.186	0.012	0.069	0.000
100yr	PRE-DEV	BASE	46.67	2.873	0.006	0.015	0.000	684.895	0.013	0.070	0.000
100yr	PRE-DEV	BASE	46.75	2.879	0.006	0.015	0.000	705.913	0.013	0.071	0.000
100yr	PRE-DEV	BASE	46.83	2.885	0.006	0.016	0.000	727.240	0.013	0.072	0.000
100yr	PRE-DEV	BASE	46.92	2.891	0.006	0.016	0.000	748.874	0.014	0.073	0.000
100yr	PRE-DEV	BASE	47.00	2.897	0.006	0.017	0.000	770.817	0.014	0.074	0.000
100yr	PRE-DEV	BASE	47.08	2.903	0.006	0.017	0.000	793.067	0.015	0.075	0.000
100yr	PRE-DEV	BASE	47.17	2.910	0.006	0.017	0.000	815.624	0.015	0.076	0.000
100yr	PRE-DEV	BASE	47.25	2.916	0.006	0.018	0.000	838.488	0.015	0.077	0.000
100yr	PRE-DEV	BASE	47.33	2.922	0.006	0.018	0.000	861.657	0.016	0.078	0.000
100yr	PRE-DEV	BASE	47.42	2.928	0.006	0.019	0.000	885.132	0.016	0.079	0.000
100yr	PRE-DEV	BASE	47.50	2.934	0.006	0.019	0.000	908.912	0.017	0.080	0.000
100yr	PRE-DEV	BASE	47.58	2.940	0.006	0.020	0.000	932.997	0.017	0.081	0.000
100yr	PRE-DEV	BASE	47.67	2.947	0.006	0.020	0.000	957.386	0.018	0.082	0.000
100yr	PRE-DEV	BASE	47.75	2.953	0.006	0.021	0.000	982.079	0.018	0.083	0.000
100yr	PRE-DEV	BASE	47.83	2.959	0.006	0.021	0.000	1007.076	0.018	0.084	0.000
100yr	PRE-DEV	BASE	47.92	2.965	0.006	0.022	0.000	1032.375	0.019	0.085	0.000
100yr	PRE-DEV	BASE	48.00	2.971	0.006	0.022	0.001	1057.978	0.019	0.086	0.000
100yr	PRE-DEV	BASE	48.08	2.977	0.006	0.023	0.001	1083.926	0.020	0.087	0.000
100yr	PRE-DEV	BASE	48.17	2.984	0.007	0.023	0.001	1110.346	0.020	0.089	0.000
100yr	PRE-DEV	BASE	48.25	2.991	0.007	0.024	0.001	1137.422	0.021	0.092	0.000
100yr	PRE-DEV	BASE	48.33	2.998	0.007	0.025	0.001	1165.261	0.021	0.094	0.000
100yr	PRE-DEV	BASE	48.42	3.005	0.007	0.025	0.001	1193.834	0.022	0.096	0.000
100yr	PRE-DEV	BASE	48.50	3.012	0.007	0.026	0.001	1223.069	0.022	0.098	0.000
100yr	PRE-DEV	BASE	48.58	3.018	0.007	0.026	0.001	1252.898	0.023	0.100	0.000
100yr	PRE-DEV	BASE	48.67	3.025	0.007	0.027	0.001	1283.271	0.023	0.102	0.000
100yr	PRE-DEV	BASE	48.75	3.032	0.007	0.028	0.001	1314.151	0.024	0.104	0.000
100yr	PRE-DEV	BASE	48.83	3.039	0.007	0.028	0.001	1345.517	0.025	0.105	0.000
100yr	PRE-DEV	BASE	48.92	3.046	0.007	0.029	0.001	1377.349	0.025	0.107	0.000
100yr	PRE-DEV	BASE	49.00	3.053	0.007	0.029	0.001	1409.629	0.026	0.108	0.000
100yr	PRE-DEV	BASE	49.08	3.060	0.007	0.030	0.001	1442.354	0.026	0.110	0.000
100yr	PRE-DEV	BASE	49.17	3.067	0.007	0.031	0.001	1475.544	0.027	0.111	0.000
100yr	PRE-DEV	BASE	49.25	3.074	0.007	0.031	0.001	1509.233	0.028	0.113	0.000
100yr	PRE-DEV	BASE	49.33	3.081	0.007	0.032	0.001	1543.435	0.028	0.115	0.000
100yr	PRE-DEV	BASE	49.42	3.088	0.007	0.033	0.001	1578.139	0.029	0.116	0.000
100yr	PRE-DEV	BASE	49.50	3.095	0.007	0.034	0.001	1613.321	0.030	0.118	0.000
100yr	PRE-DEV	BASE	49.58	3.102	0.007	0.034	0.001	1648.958	0.030	0.120	0.000

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100yr	PRE-DEV	BASE	49.67	3.108	0.007	0.035	0.001	1685.034	0.031	0.121	0.000
100yr	PRE-DEV	BASE	49.75	3.115	0.007	0.036	0.001	1721.536	0.031	0.122	0.000
100yr	PRE-DEV	BASE	49.83	3.122	0.007	0.036	0.001	1758.453	0.032	0.124	0.000
100yr	PRE-DEV	BASE	49.92	3.129	0.007	0.037	0.001	1795.776	0.033	0.125	0.000
100yr	PRE-DEV	BASE	50.00	3.136	0.007	0.038	0.001	1833.509	0.034	0.126	0.000
100yr	PRE-DEV	BASE	50.08	3.144	0.007	0.039	0.001	1871.753	0.034	0.128	0.000
100yr	PRE-DEV	BASE	50.17	3.152	0.008	0.040	0.001	1910.824	0.035	0.132	0.000
100yr	PRE-DEV	BASE	50.25	3.160	0.008	0.040	0.001	1951.139	0.036	0.137	0.000
100yr	PRE-DEV	BASE	50.33	3.168	0.008	0.041	0.001	1992.913	0.036	0.142	0.000
100yr	PRE-DEV	BASE	50.42	3.177	0.008	0.042	0.001	2036.079	0.037	0.146	0.000
100yr	PRE-DEV	BASE	50.50	3.185	0.008	0.043	0.001	2080.461	0.038	0.150	0.000
100yr	PRE-DEV	BASE	50.58	3.193	0.008	0.044	0.001	2125.898	0.039	0.153	0.000
100yr	PRE-DEV	BASE	50.67	3.201	0.008	0.045	0.001	2172.270	0.040	0.156	0.000
100yr	PRE-DEV	BASE	50.75	3.210	0.008	0.046	0.001	2219.496	0.041	0.159	0.000
100yr	PRE-DEV	BASE	50.83	3.218	0.008	0.047	0.001	2267.517	0.041	0.161	0.000
100yr	PRE-DEV	BASE	50.92	3.226	0.008	0.048	0.001	2316.286	0.042	0.164	0.000
100yr	PRE-DEV	BASE	51.00	3.234	0.008	0.049	0.001	2365.764	0.043	0.166	0.000
100yr	PRE-DEV	BASE	51.08	3.243	0.008	0.050	0.001	2415.993	0.044	0.169	0.000
100yr	PRE-DEV	BASE	51.17	3.252	0.009	0.051	0.001	2467.152	0.045	0.172	0.000
100yr	PRE-DEV	BASE	51.25	3.261	0.009	0.052	0.001	2519.511	0.046	0.177	0.000
100yr	PRE-DEV	BASE	51.33	3.270	0.009	0.053	0.001	2573.217	0.047	0.181	0.000
100yr	PRE-DEV	BASE	51.42	3.279	0.009	0.054	0.001	2628.190	0.048	0.185	0.000
100yr	PRE-DEV	BASE	51.50	3.288	0.009	0.056	0.001	2684.295	0.049	0.189	0.000
100yr	PRE-DEV	BASE	51.58	3.297	0.009	0.057	0.001	2741.414	0.050	0.192	0.000
100yr	PRE-DEV	BASE	51.67	3.306	0.009	0.058	0.001	2799.453	0.051	0.195	0.000
100yr	PRE-DEV	BASE	51.75	3.315	0.009	0.059	0.001	2858.349	0.052	0.198	0.000
100yr	PRE-DEV	BASE	51.83	3.324	0.009	0.060	0.001	2918.057	0.053	0.200	0.000
100yr	PRE-DEV	BASE	51.92	3.333	0.009	0.061	0.001	2978.535	0.054	0.203	0.000
100yr	PRE-DEV	BASE	52.00	3.342	0.009	0.063	0.001	3039.766	0.056	0.205	0.000
100yr	PRE-DEV	BASE	52.08	3.351	0.009	0.064	0.002	3102.008	0.057	0.210	0.000
100yr	PRE-DEV	BASE	52.17	3.363	0.012	0.066	0.002	3166.104	0.058	0.218	0.000
100yr	PRE-DEV	BASE	52.25	3.374	0.012	0.067	0.002	3233.210	0.059	0.230	0.000
100yr	PRE-DEV	BASE	52.33	3.386	0.012	0.069	0.002	3303.926	0.060	0.242	0.000
100yr	PRE-DEV	BASE	52.42	3.398	0.012	0.071	0.002	3378.057	0.062	0.252	0.000
100yr	PRE-DEV	BASE	52.50	3.409	0.012	0.072	0.002	3455.117	0.063	0.261	0.000
100yr	PRE-DEV	BASE	52.58	3.421	0.012	0.074	0.002	3534.660	0.065	0.269	0.000
100yr	PRE-DEV	BASE	52.67	3.433	0.012	0.076	0.002	3616.358	0.066	0.276	0.000
100yr	PRE-DEV	BASE	52.75	3.445	0.012	0.077	0.002	3699.977	0.068	0.282	0.000
100yr	PRE-DEV	BASE	52.83	3.456	0.012	0.079	0.002	3785.362	0.069	0.287	0.000
100yr	PRE-DEV	BASE	52.92	3.468	0.012	0.081	0.002	3872.382	0.071	0.293	0.000
100yr	PRE-DEV	BASE	53.00	3.480	0.012	0.083	0.002	3960.949	0.072	0.298	0.000
100yr	PRE-DEV	BASE	53.08	3.492	0.012	0.085	0.002	4051.281	0.074	0.304	0.000
100yr	PRE-DEV	BASE	53.17	3.506	0.014	0.087	0.002	4144.295	0.076	0.316	0.000
100yr	PRE-DEV	BASE	53.25	3.520	0.014	0.089	0.002	4241.251	0.078	0.331	0.000
100yr	PRE-DEV	BASE	53.33	3.535	0.014	0.092	0.002	4342.783	0.079	0.346	0.000
100yr	PRE-DEV	BASE	53.42	3.549	0.014	0.094	0.002	4448.673	0.081	0.360	0.000
100yr	PRE-DEV	BASE	53.50	3.564	0.014	0.096	0.002	4558.347	0.083	0.371	0.000
100yr	PRE-DEV	BASE	53.58	3.578	0.014	0.099	0.002	4671.271	0.085	0.381	0.000
100yr	PRE-DEV	BASE	53.67	3.593	0.014	0.101	0.002	4787.055	0.088	0.390	0.000
100yr	PRE-DEV	BASE	53.75	3.607	0.014	0.103	0.002	4905.414	0.090	0.399	0.000
100yr	PRE-DEV	BASE	53.83	3.622	0.014	0.106	0.002	5026.153	0.092	0.406	0.000
100yr	PRE-DEV	BASE	53.92	3.636	0.014	0.108	0.002	5149.100	0.094	0.413	0.000
100yr	PRE-DEV	BASE	54.00	3.651	0.014	0.111	0.003	5274.120	0.096	0.420	0.000
100yr	PRE-DEV	BASE	54.08	3.665	0.014	0.114	0.003	5401.489	0.099	0.429	0.000
100yr	PRE-DEV	BASE	54.17	3.682	0.017	0.117	0.003	5532.235	0.101	0.443	0.000
100yr	PRE-DEV	BASE	54.25	3.700	0.017	0.120	0.003	5667.876	0.104	0.462	0.000
100yr	PRE-DEV	BASE	54.33	3.717	0.017	0.123	0.003	5809.264	0.106	0.481	0.000
100yr	PRE-DEV	BASE	54.42	3.734	0.017	0.126	0.003	5956.077	0.109	0.498	0.000
100yr	PRE-DEV	BASE	54.50	3.751	0.017	0.129	0.003	6107.632	0.112	0.513	0.000
100yr	PRE-DEV	BASE	54.58	3.769	0.017	0.133	0.003	6263.305	0.115	0.525	0.000
100yr	PRE-DEV	BASE	54.67	3.786	0.017	0.136	0.003	6422.619	0.117	0.537	0.000

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100yr	PRE-DEV	BASE	54.75	3.803	0.017	0.139	0.003	6585.248	0.120	0.547	0.000
100yr	PRE-DEV	BASE	54.83	3.820	0.017	0.143	0.003	6750.957	0.123	0.557	0.000
100yr	PRE-DEV	BASE	54.92	3.838	0.017	0.146	0.003	6919.546	0.127	0.567	0.000
100yr	PRE-DEV	BASE	55.00	3.855	0.017	0.149	0.003	7090.843	0.130	0.575	0.000
100yr	PRE-DEV	BASE	55.08	3.872	0.017	0.153	0.004	7265.147	0.133	0.587	0.000
100yr	PRE-DEV	BASE	55.17	3.892	0.020	0.157	0.004	7443.640	0.136	0.603	0.000
100yr	PRE-DEV	BASE	55.25	3.912	0.020	0.161	0.004	7628.067	0.140	0.626	0.000
100yr	PRE-DEV	BASE	55.33	3.932	0.020	0.166	0.004	7819.376	0.143	0.649	0.000
100yr	PRE-DEV	BASE	55.42	3.953	0.020	0.170	0.004	8017.212	0.147	0.670	0.000
100yr	PRE-DEV	BASE	55.50	3.973	0.020	0.174	0.004	8220.790	0.150	0.687	0.000
100yr	PRE-DEV	BASE	55.58	3.993	0.020	0.178	0.004	8429.389	0.154	0.703	0.000
100yr	PRE-DEV	BASE	55.67	4.013	0.020	0.183	0.004	8642.465	0.158	0.717	0.000
100yr	PRE-DEV	BASE	55.75	4.033	0.020	0.187	0.004	8859.630	0.162	0.730	0.000
100yr	PRE-DEV	BASE	55.83	4.053	0.020	0.191	0.004	9080.617	0.166	0.743	0.000
100yr	PRE-DEV	BASE	55.92	4.073	0.020	0.196	0.004	9305.194	0.170	0.754	0.000
100yr	PRE-DEV	BASE	56.00	4.093	0.020	0.201	0.005	9533.195	0.174	0.766	0.000
100yr	PRE-DEV	BASE	56.08	4.113	0.020	0.206	0.005	9765.002	0.179	0.780	0.000
100yr	PRE-DEV	BASE	56.17	4.137	0.023	0.211	0.005	10002.292	0.183	0.802	0.000
100yr	PRE-DEV	BASE	56.25	4.160	0.023	0.217	0.005	10247.422	0.187	0.832	0.000
100yr	PRE-DEV	BASE	56.33	4.183	0.023	0.222	0.006	10501.605	0.192	0.863	0.000
100yr	PRE-DEV	BASE	56.42	4.207	0.023	0.228	0.006	10764.495	0.197	0.890	0.000
100yr	PRE-DEV	BASE	56.50	4.230	0.023	0.233	0.006	11035.026	0.202	0.914	0.000
100yr	PRE-DEV	BASE	56.58	4.254	0.023	0.239	0.006	11312.203	0.207	0.934	0.000
100yr	PRE-DEV	BASE	56.67	4.277	0.023	0.245	0.006	11595.301	0.212	0.953	0.000
100yr	PRE-DEV	BASE	56.75	4.301	0.023	0.251	0.006	11883.783	0.217	0.970	0.000
100yr	PRE-DEV	BASE	56.83	4.324	0.023	0.256	0.006	12177.288	0.223	0.986	0.000
100yr	PRE-DEV	BASE	56.92	4.348	0.023	0.262	0.006	12475.498	0.228	1.002	0.000
100yr	PRE-DEV	BASE	57.00	4.371	0.023	0.268	0.006	12778.185	0.234	1.016	0.000
100yr	PRE-DEV	BASE	57.08	4.395	0.023	0.275	0.007	13085.958	0.239	1.036	0.000
100yr	PRE-DEV	BASE	57.17	4.422	0.028	0.283	0.007	13401.165	0.245	1.066	0.000
100yr	PRE-DEV	BASE	57.25	4.450	0.028	0.290	0.007	13727.239	0.251	1.108	0.000
100yr	PRE-DEV	BASE	57.33	4.478	0.028	0.297	0.007	14066.111	0.257	1.151	0.000
100yr	PRE-DEV	BASE	57.42	4.506	0.028	0.305	0.007	14417.190	0.264	1.189	0.000
100yr	PRE-DEV	BASE	57.50	4.533	0.028	0.313	0.008	14778.968	0.270	1.223	0.000
100yr	PRE-DEV	BASE	57.58	4.561	0.028	0.321	0.008	15150.539	0.277	1.255	0.000
100yr	PRE-DEV	BASE	57.67	4.591	0.030	0.329	0.008	15532.321	0.284	1.291	0.000
100yr	PRE-DEV	BASE	57.75	4.622	0.030	0.338	0.008	15925.688	0.291	1.332	0.000
100yr	PRE-DEV	BASE	57.83	4.652	0.030	0.346	0.009	16331.326	0.299	1.372	0.000
100yr	PRE-DEV	BASE	57.92	4.682	0.030	0.355	0.009	16748.389	0.306	1.408	0.000
100yr	PRE-DEV	BASE	58.00	4.712	0.030	0.364	0.009	17175.586	0.314	1.440	0.000
100yr	PRE-DEV	BASE	58.08	4.742	0.030	0.373	0.010	17612.549	0.322	1.473	0.000
100yr	PRE-DEV	BASE	58.17	4.776	0.033	0.383	0.010	18060.549	0.330	1.514	0.000
100yr	PRE-DEV	BASE	58.25	4.809	0.033	0.393	0.010	18522.170	0.339	1.564	0.000
100yr	PRE-DEV	BASE	58.33	4.843	0.033	0.404	0.010	18998.848	0.348	1.614	0.000
100yr	PRE-DEV	BASE	58.42	4.876	0.033	0.414	0.010	19489.652	0.357	1.658	0.000
100yr	PRE-DEV	BASE	58.50	4.910	0.033	0.424	0.011	19993.115	0.366	1.698	0.000
100yr	PRE-DEV	BASE	58.58	4.943	0.033	0.438	0.014	20510.469	0.375	1.751	0.000
100yr	PRE-DEV	BASE	58.67	4.987	0.044	0.452	0.014	21048.502	0.385	1.836	0.000
100yr	PRE-DEV	BASE	58.75	5.032	0.044	0.466	0.014	21617.568	0.395	1.958	0.000
100yr	PRE-DEV	BASE	58.83	5.076	0.044	0.481	0.014	22223.227	0.407	2.080	0.000
100yr	PRE-DEV	BASE	58.92	5.121	0.044	0.495	0.015	22863.234	0.418	2.187	0.000
100yr	PRE-DEV	BASE	59.00	5.165	0.044	0.511	0.016	23533.277	0.430	2.280	0.000
100yr	PRE-DEV	BASE	59.08	5.211	0.045	0.534	0.022	24235.379	0.443	2.400	0.000
100yr	PRE-DEV	BASE	59.17	5.279	0.069	0.557	0.024	24985.980	0.457	2.604	0.000
100yr	PRE-DEV	BASE	59.25	5.348	0.069	0.581	0.024	25809.127	0.472	2.884	0.000
100yr	PRE-DEV	BASE	59.33	5.416	0.069	0.606	0.024	26716.777	0.489	3.167	0.000
100yr	PRE-DEV	BASE	59.42	5.485	0.069	0.630	0.025	27704.012	0.507	3.415	0.000
100yr	PRE-DEV	BASE	59.50	5.553	0.069	0.679	0.049	28771.209	0.526	3.700	0.000
100yr	PRE-DEV	BASE	59.58	5.622	0.069	0.836	0.157	30017.205	0.549	4.607	0.000
100yr	PRE-DEV	BASE	59.67	6.087	0.465	1.036	0.199	31812.104	0.582	7.359	0.000
100yr	PRE-DEV	BASE	59.75	6.556	0.469	1.249	0.213	34686.781	0.635	11.805	0.000

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100yr	PRE-DEV	BASE	59.83	7.025	0.469	1.477	0.228	38976.723	0.713	16.795	0.000
100yr	PRE-DEV	BASE	59.92	7.493	0.469	1.716	0.240	44711.859	0.818	21.440	0.000
100yr	PRE-DEV	BASE	60.00	7.962	0.469	1.933	0.217	51737.914	0.946	25.401	0.000
100yr	PRE-DEV	BASE	60.08	8.420	0.458	2.018	0.085	59746.645	1.093	27.991	0.000
100yr	PRE-DEV	BASE	60.17	8.521	0.100	2.073	0.056	68124.273	1.246	27.860	0.000
100yr	PRE-DEV	BASE	60.25	8.621	0.100	2.129	0.056	76109.859	1.392	25.377	0.000
100yr	PRE-DEV	BASE	60.33	8.721	0.100	2.186	0.057	83267.328	1.523	22.339	0.000
100yr	PRE-DEV	BASE	60.42	8.821	0.100	2.243	0.057	89590.734	1.639	19.817	0.000
100yr	PRE-DEV	BASE	60.50	8.921	0.100	2.298	0.054	95258.516	1.742	17.968	0.000
100yr	PRE-DEV	BASE	60.58	9.021	0.100	2.332	0.034	100428.836	1.837	16.500	0.000
100yr	PRE-DEV	BASE	60.67	9.075	0.054	2.363	0.031	105166.969	1.924	15.087	0.000
100yr	PRE-DEV	BASE	60.75	9.128	0.053	2.393	0.031	109468.875	2.002	13.592	0.000
100yr	PRE-DEV	BASE	60.83	9.181	0.053	2.424	0.031	113334.594	2.073	12.179	0.000
100yr	PRE-DEV	BASE	60.92	9.233	0.053	2.456	0.031	116816.414	2.137	11.033	0.000
100yr	PRE-DEV	BASE	61.00	9.286	0.053	2.486	0.030	119985.508	2.195	10.094	0.000
100yr	PRE-DEV	BASE	61.08	9.339	0.053	2.509	0.023	122893.313	2.248	9.291	0.000
100yr	PRE-DEV	BASE	61.17	9.377	0.038	2.532	0.023	125564.891	2.297	8.520	0.000
100yr	PRE-DEV	BASE	61.25	9.416	0.038	2.555	0.023	128006.336	2.342	7.757	0.000
100yr	PRE-DEV	BASE	61.33	9.454	0.038	2.578	0.023	130228.859	2.382	7.060	0.000
100yr	PRE-DEV	BASE	61.42	9.493	0.038	2.601	0.023	132259.125	2.419	6.475	0.000
100yr	PRE-DEV	BASE	61.50	9.531	0.038	2.624	0.023	134124.078	2.453	5.958	0.000
100yr	PRE-DEV	BASE	61.58	9.569	0.038	2.643	0.019	135845.781	2.485	5.520	0.000
100yr	PRE-DEV	BASE	61.67	9.602	0.032	2.662	0.019	137441.578	2.514	5.119	0.000
100yr	PRE-DEV	BASE	61.75	9.633	0.032	2.682	0.019	138920.297	2.541	4.740	0.000
100yr	PRE-DEV	BASE	61.83	9.665	0.032	2.701	0.019	140293.313	2.566	4.414	0.000
100yr	PRE-DEV	BASE	61.92	9.697	0.032	2.721	0.019	141583.625	2.590	4.188	0.000
100yr	PRE-DEV	BASE	62.00	9.729	0.032	2.739	0.019	142817.969	2.612	4.041	0.000
100yr	PRE-DEV	BASE	62.08	9.761	0.032	2.754	0.015	144009.656	2.634	3.904	0.000
100yr	PRE-DEV	BASE	62.17	9.784	0.023	2.768	0.014	145155.219	2.655	3.733	0.000
100yr	PRE-DEV	BASE	62.25	9.808	0.023	2.783	0.014	146243.953	2.675	3.525	0.000
100yr	PRE-DEV	BASE	62.33	9.831	0.023	2.797	0.014	147272.078	2.694	3.329	0.000
100yr	PRE-DEV	BASE	62.42	9.854	0.023	2.811	0.014	148247.641	2.712	3.174	0.000
100yr	PRE-DEV	BASE	62.50	9.878	0.023	2.825	0.014	149182.563	2.729	3.058	0.000
100yr	PRE-DEV	BASE	62.58	9.901	0.023	2.838	0.013	150085.516	2.745	2.961	0.000
100yr	PRE-DEV	BASE	62.67	9.922	0.021	2.851	0.013	150959.703	2.761	2.867	0.000
100yr	PRE-DEV	BASE	62.75	9.943	0.021	2.864	0.013	151805.172	2.777	2.770	0.000
100yr	PRE-DEV	BASE	62.83	9.963	0.021	2.877	0.013	152622.922	2.792	2.682	0.000
100yr	PRE-DEV	BASE	62.92	9.984	0.021	2.889	0.013	153416.828	2.806	2.611	0.000
100yr	PRE-DEV	BASE	63.00	10.005	0.021	2.902	0.013	154192.031	2.821	2.557	0.000
100yr	PRE-DEV	BASE	63.08	10.026	0.021	2.915	0.013	154952.609	2.834	2.513	0.000
100yr	PRE-DEV	BASE	63.17	10.047	0.021	2.928	0.013	155701.406	2.848	2.479	0.000
100yr	PRE-DEV	BASE	63.25	10.067	0.021	2.941	0.013	156440.625	2.862	2.450	0.000
100yr	PRE-DEV	BASE	63.33	10.088	0.021	2.954	0.013	157171.969	2.875	2.426	0.000
100yr	PRE-DEV	BASE	63.42	10.109	0.021	2.967	0.013	157897.094	2.888	2.408	0.000
100yr	PRE-DEV	BASE	63.50	10.129	0.021	2.980	0.013	158617.500	2.901	2.395	0.000
100yr	PRE-DEV	BASE	63.58	10.150	0.021	2.993	0.013	159334.344	2.915	2.384	0.000
100yr	PRE-DEV	BASE	63.67	10.171	0.021	3.006	0.013	160048.422	2.928	2.376	0.000
100yr	PRE-DEV	BASE	63.75	10.192	0.021	3.019	0.013	160760.438	2.941	2.370	0.000
100yr	PRE-DEV	BASE	63.83	10.212	0.021	3.032	0.013	161470.984	2.954	2.367	0.000
100yr	PRE-DEV	BASE	63.92	10.233	0.021	3.045	0.013	162180.688	2.967	2.365	0.000
100yr	PRE-DEV	BASE	64.00	10.254	0.021	3.057	0.012	162889.875	2.980	2.363	0.000
100yr	PRE-DEV	BASE	64.08	10.275	0.021	3.065	0.008	163594.922	2.993	2.337	0.000
100yr	PRE-DEV	BASE	64.17	10.287	0.012	3.073	0.008	164284.063	3.005	2.258	0.000
100yr	PRE-DEV	BASE	64.25	10.300	0.012	3.081	0.008	164941.172	3.017	2.123	0.000
100yr	PRE-DEV	BASE	64.33	10.312	0.012	3.089	0.008	165557.313	3.028	1.985	0.000
100yr	PRE-DEV	BASE	64.42	10.324	0.012	3.097	0.008	166135.828	3.039	1.872	0.000
100yr	PRE-DEV	BASE	64.50	10.337	0.012	3.104	0.008	166684.500	3.049	1.785	0.000
100yr	PRE-DEV	BASE	64.58	10.349	0.012	3.112	0.008	167210.141	3.059	1.719	0.000
100yr	PRE-DEV	BASE	64.67	10.361	0.012	3.120	0.008	167717.781	3.068	1.666	0.000
100yr	PRE-DEV	BASE	64.75	10.374	0.012	3.128	0.008	168211.109	3.077	1.623	0.000
100yr	PRE-DEV	BASE	64.83	10.386	0.012	3.136	0.008	168692.484	3.086	1.586	0.000

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100yr	PRE-DEV	BASE	64.92	10.399	0.012	3.144	0.008169163.859	3.094	1.557	0.000
100yr	PRE-DEV	BASE	65.00	10.411	0.012	3.151	0.008169627.219	3.103	1.532	0.000
100yr	PRE-DEV	BASE	65.08	10.423	0.012	3.159	0.008170083.859	3.111	1.512	0.000
100yr	PRE-DEV	BASE	65.17	10.436	0.012	3.167	0.008170534.969	3.119	1.496	0.000
100yr	PRE-DEV	BASE	65.25	10.448	0.012	3.175	0.008170981.813	3.128	1.483	0.000
100yr	PRE-DEV	BASE	65.33	10.461	0.012	3.183	0.008171425.281	3.136	1.473	0.000
100yr	PRE-DEV	BASE	65.42	10.473	0.012	3.191	0.008171865.984	3.144	1.465	0.000
100yr	PRE-DEV	BASE	65.50	10.486	0.012	3.199	0.008172304.641	3.152	1.459	0.000
100yr	PRE-DEV	BASE	65.58	10.498	0.012	3.207	0.008172741.594	3.160	1.454	0.000
100yr	PRE-DEV	BASE	65.67	10.511	0.012	3.215	0.008173177.203	3.168	1.450	0.000
100yr	PRE-DEV	BASE	65.75	10.523	0.012	3.223	0.008173611.938	3.176	1.448	0.000
100yr	PRE-DEV	BASE	65.83	10.536	0.012	3.231	0.008174046.047	3.184	1.446	0.000
100yr	PRE-DEV	BASE	65.92	10.548	0.012	3.239	0.008174479.844	3.192	1.446	0.000
100yr	PRE-DEV	BASE	66.00	10.561	0.012	3.247	0.008174913.859	3.200	1.447	0.000
100yr	PRE-DEV	BASE	66.08	10.573	0.012	3.255	0.008175348.250	3.208	1.449	0.000
100yr	PRE-DEV	BASE	66.17	10.586	0.012	3.263	0.008175782.938	3.215	1.450	0.000
100yr	PRE-DEV	BASE	66.25	10.598	0.012	3.271	0.008176218.047	3.223	1.451	0.000
100yr	PRE-DEV	BASE	66.33	10.611	0.012	3.279	0.008176653.500	3.231	1.452	0.000
100yr	PRE-DEV	BASE	66.42	10.623	0.012	3.287	0.008177089.219	3.239	1.453	0.000
100yr	PRE-DEV	BASE	66.50	10.636	0.012	3.295	0.008177525.328	3.247	1.454	0.000
100yr	PRE-DEV	BASE	66.58	10.648	0.012	3.303	0.008177961.750	3.255	1.455	0.000
100yr	PRE-DEV	BASE	66.67	10.661	0.012	3.311	0.008178398.422	3.263	1.456	0.000
100yr	PRE-DEV	BASE	66.75	10.673	0.012	3.319	0.008178835.484	3.271	1.457	0.000
100yr	PRE-DEV	BASE	66.83	10.685	0.012	3.327	0.008179272.859	3.279	1.458	0.000
100yr	PRE-DEV	BASE	66.92	10.698	0.012	3.335	0.008179710.469	3.287	1.459	0.000
100yr	PRE-DEV	BASE	67.00	10.710	0.012	3.343	0.008180148.438	3.295	1.460	0.000
100yr	PRE-DEV	BASE	67.08	10.723	0.012	3.351	0.008180586.703	3.303	1.461	0.000
100yr	PRE-DEV	BASE	67.17	10.735	0.012	3.359	0.008181025.203	3.311	1.462	0.000
100yr	PRE-DEV	BASE	67.25	10.748	0.012	3.367	0.008181464.063	3.319	1.463	0.000
100yr	PRE-DEV	BASE	67.33	10.760	0.012	3.375	0.008181903.219	3.327	1.464	0.000
100yr	PRE-DEV	BASE	67.42	10.773	0.012	3.383	0.008182342.609	3.335	1.465	0.000
100yr	PRE-DEV	BASE	67.50	10.785	0.012	3.391	0.008182782.359	3.344	1.466	0.000
100yr	PRE-DEV	BASE	67.58	10.798	0.012	3.399	0.008183222.406	3.352	1.467	0.000
100yr	PRE-DEV	BASE	67.67	10.810	0.012	3.407	0.008183662.672	3.360	1.468	0.000
100yr	PRE-DEV	BASE	67.75	10.823	0.012	3.416	0.008184103.313	3.368	1.469	0.000
100yr	PRE-DEV	BASE	67.83	10.835	0.012	3.424	0.008184544.234	3.376	1.470	0.000
100yr	PRE-DEV	BASE	67.92	10.848	0.012	3.432	0.008184985.391	3.384	1.471	0.000
100yr	PRE-DEV	BASE	68.00	10.860	0.012	3.440	0.008185426.797	3.392	1.471	0.000
100yr	PRE-DEV	BASE	68.08	10.872	0.012	3.445	0.005185866.063	3.400	1.457	0.000
100yr	PRE-DEV	BASE	68.17	10.881	0.008	3.450	0.005186296.891	3.408	1.416	0.000
100yr	PRE-DEV	BASE	68.25	10.889	0.008	3.456	0.005186710.688	3.415	1.343	0.000
100yr	PRE-DEV	BASE	68.33	10.897	0.008	3.461	0.005187102.766	3.423	1.271	0.000
100yr	PRE-DEV	BASE	68.42	10.906	0.008	3.467	0.005187475.328	3.429	1.213	0.000
100yr	PRE-DEV	BASE	68.50	10.914	0.008	3.472	0.005187832.500	3.436	1.168	0.000
100yr	PRE-DEV	BASE	68.58	10.922	0.008	3.477	0.005188177.719	3.442	1.134	0.000
100yr	PRE-DEV	BASE	68.67	10.930	0.008	3.483	0.005188513.594	3.448	1.106	0.000
100yr	PRE-DEV	BASE	68.75	10.939	0.008	3.488	0.005188842.016	3.454	1.084	0.000
100yr	PRE-DEV	BASE	68.83	10.947	0.008	3.494	0.005189164.188	3.460	1.064	0.000
100yr	PRE-DEV	BASE	68.92	10.955	0.008	3.499	0.005189481.125	3.466	1.049	0.000
100yr	PRE-DEV	BASE	69.00	10.963	0.008	3.504	0.005189793.859	3.472	1.036	0.000
100yr	PRE-DEV	BASE	69.08	10.972	0.008	3.510	0.005190103.047	3.477	1.025	0.000
100yr	PRE-DEV	BASE	69.17	10.980	0.008	3.515	0.005190409.203	3.483	1.016	0.000
100yr	PRE-DEV	BASE	69.25	10.988	0.008	3.520	0.005190712.938	3.489	1.009	0.000
100yr	PRE-DEV	BASE	69.33	10.996	0.008	3.526	0.005191014.641	3.494	1.003	0.000
100yr	PRE-DEV	BASE	69.42	11.005	0.008	3.531	0.005191314.641	3.500	0.998	0.000
100yr	PRE-DEV	BASE	69.50	11.013	0.008	3.537	0.005191613.375	3.505	0.994	0.000
100yr	PRE-DEV	BASE	69.58	11.021	0.008	3.542	0.005191911.047	3.510	0.991	0.000
100yr	PRE-DEV	BASE	69.67	11.029	0.008	3.548	0.005192207.875	3.516	0.988	0.000
100yr	PRE-DEV	BASE	69.75	11.038	0.008	3.553	0.005192504.141	3.521	0.987	0.000
100yr	PRE-DEV	BASE	69.83	11.046	0.008	3.558	0.005192799.984	3.527	0.986	0.000
100yr	PRE-DEV	BASE	69.92	11.054	0.008	3.564	0.005193095.563	3.532	0.985	0.000

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TIME SERIES 100 YR.TXT										
100yr	PRE-DEV	BASE	70.00	11.062	0.008	3.569	0.005193391.188	3.538	0.986	0.000
100yr	PRE-DEV	BASE	70.08	11.071	0.008	3.575	0.005193686.969	3.543	0.986	0.000
100yr	PRE-DEV	BASE	70.17	11.079	0.008	3.580	0.005193982.922	3.548	0.987	0.000
100yr	PRE-DEV	BASE	70.25	11.087	0.008	3.586	0.005194279.234	3.554	0.988	0.000
100yr	PRE-DEV	BASE	70.33	11.096	0.008	3.591	0.005194575.922	3.559	0.989	0.000
100yr	PRE-DEV	BASE	70.42	11.104	0.008	3.596	0.005194872.906	3.565	0.991	0.000
100yr	PRE-DEV	BASE	70.50	11.112	0.008	3.602	0.005195170.234	3.570	0.992	0.000
100yr	PRE-DEV	BASE	70.58	11.121	0.008	3.607	0.005195467.828	3.576	0.992	0.000
100yr	PRE-DEV	BASE	70.67	11.129	0.008	3.613	0.005195765.594	3.581	0.993	0.000
100yr	PRE-DEV	BASE	70.75	11.137	0.008	3.618	0.005196063.625	3.586	0.994	0.000
100yr	PRE-DEV	BASE	70.83	11.145	0.008	3.624	0.005196361.844	3.592	0.994	0.000
100yr	PRE-DEV	BASE	70.92	11.154	0.008	3.629	0.005196660.203	3.597	0.995	0.000
100yr	PRE-DEV	BASE	71.00	11.162	0.008	3.635	0.005196958.781	3.603	0.996	0.000
100yr	PRE-DEV	BASE	71.08	11.170	0.008	3.640	0.005197257.531	3.608	0.996	0.000
100yr	PRE-DEV	BASE	71.17	11.179	0.008	3.646	0.005197556.391	3.614	0.997	0.000
100yr	PRE-DEV	BASE	71.25	11.187	0.008	3.651	0.005197855.453	3.619	0.997	0.000
100yr	PRE-DEV	BASE	71.33	11.195	0.008	3.657	0.005198154.656	3.625	0.998	0.000
100yr	PRE-DEV	BASE	71.42	11.204	0.008	3.662	0.005198453.953	3.630	0.998	0.000
100yr	PRE-DEV	BASE	71.50	11.212	0.008	3.668	0.005198753.438	3.636	0.998	0.000
100yr	PRE-DEV	BASE	71.58	11.220	0.008	3.673	0.005199053.063	3.641	0.999	0.000
100yr	PRE-DEV	BASE	71.67	11.228	0.008	3.679	0.005199352.766	3.647	0.999	0.000
100yr	PRE-DEV	BASE	71.75	11.237	0.008	3.684	0.005199652.656	3.652	1.000	0.000
100yr	PRE-DEV	BASE	71.83	11.245	0.008	3.690	0.005199952.672	3.658	1.000	0.000
100yr	PRE-DEV	BASE	71.92	11.253	0.008	3.695	0.006200252.766	3.663	1.001	0.000
100yr	PRE-DEV	BASE	72.00	11.262	0.008	3.700	0.005200552.844	3.669	1.000	0.000





POND TIME SERIES 100 YR.TXT										
100yrs	POND	BASE	4.77	74.000	79.000	38333	0.001	0.000	0.0	0.0
100yrs	POND	BASE	4.85	74.000	79.000	38333	0.004	0.000	0.0	0.0
100yrs	POND	BASE	4.93	74.000	79.000	38333	0.008	0.000	0.0	0.0
100yrs	POND	BASE	5.02	74.000	79.000	38333	0.012	0.000	0.0	0.0
100yrs	POND	BASE	5.10	74.000	79.000	38334	0.016	0.000	0.0	0.0
100yrs	POND	BASE	5.18	74.000	79.000	38335	0.021	0.000	0.0	0.0
100yrs	POND	BASE	5.27	74.001	79.000	38335	0.025	0.000	0.0	0.0
100yrs	POND	BASE	5.35	74.001	79.000	38336	0.029	0.000	0.0	0.0
100yrs	POND	BASE	5.43	74.001	79.000	38337	0.034	0.000	0.0	0.0
100yrs	POND	BASE	5.52	74.001	79.000	38339	0.038	0.000	0.0	0.0
100yrs	POND	BASE	5.60	74.002	79.000	38340	0.042	0.000	0.0	0.0
100yrs	POND	BASE	5.68	74.002	79.000	38341	0.047	0.000	0.0	0.0
100yrs	POND	BASE	5.77	74.002	79.000	38343	0.051	0.000	0.0	0.0
100yrs	POND	BASE	5.85	74.003	79.000	38345	0.055	0.000	0.0	0.0
100yrs	POND	BASE	5.93	74.003	79.000	38347	0.059	0.000	0.0	0.0
100yrs	POND	BASE	6.02	74.004	79.000	38349	0.063	0.000	0.0	0.0
100yrs	POND	BASE	6.10	74.004	79.000	38351	0.067	0.000	0.0	0.0
100yrs	POND	BASE	6.18	74.005	79.000	38353	0.071	0.000	0.0	0.0
100yrs	POND	BASE	6.27	74.005	79.000	38356	0.075	0.000	0.0	0.0
100yrs	POND	BASE	6.35	74.006	79.000	38359	0.079	0.000	0.0	0.0
100yrs	POND	BASE	6.43	74.007	79.000	38361	0.083	0.000	0.0	0.0
100yrs	POND	BASE	6.52	74.007	79.000	38364	0.087	0.000	0.0	0.0
100yrs	POND	BASE	6.60	74.008	79.000	38367	0.090	0.000	0.0	0.0
100yrs	POND	BASE	6.68	74.009	79.000	38370	0.094	0.000	0.0	0.0
100yrs	POND	BASE	6.77	74.009	79.000	38374	0.098	0.000	0.0	0.0
100yrs	POND	BASE	6.85	74.010	79.000	38377	0.101	0.000	0.0	0.0
100yrs	POND	BASE	6.93	74.011	79.000	38381	0.105	0.000	0.0	0.0
100yrs	POND	BASE	7.02	74.012	79.000	38384	0.109	0.000	0.0	0.0
100yrs	POND	BASE	7.10	74.013	79.000	38388	0.112	0.000	0.0	0.0
100yrs	POND	BASE	7.18	74.014	79.000	38392	0.116	0.000	0.0	0.0
100yrs	POND	BASE	7.27	74.014	79.000	38396	0.119	0.000	0.0	0.0
100yrs	POND	BASE	7.35	74.015	79.000	38400	0.123	0.000	0.0	0.0
100yrs	POND	BASE	7.43	74.016	79.000	38404	0.126	0.000	0.0	0.0
100yrs	POND	BASE	7.52	74.017	79.000	38409	0.130	0.000	0.0	0.0
100yrs	POND	BASE	7.60	74.018	79.000	38413	0.133	0.000	0.0	0.0
100yrs	POND	BASE	7.68	74.019	79.000	38418	0.136	0.000	0.0	0.0
100yrs	POND	BASE	7.77	74.021	79.000	38422	0.140	0.000	0.0	0.0
100yrs	POND	BASE	7.85	74.022	79.000	38427	0.143	0.000	0.0	0.0
100yrs	POND	BASE	7.93	74.023	79.000	38432	0.146	0.000	0.0	0.0
100yrs	POND	BASE	8.02	74.024	79.000	38437	0.149	0.000	0.0	0.0
100yrs	POND	BASE	8.10	74.025	79.000	38442	0.152	0.000	0.0	0.0
100yrs	POND	BASE	8.18	74.026	79.000	38447	0.156	0.000	0.0	0.0
100yrs	POND	BASE	8.27	74.028	79.000	38453	0.159	0.000	0.0	0.0
100yrs	POND	BASE	8.35	74.029	79.000	38458	0.162	0.000	0.0	0.0
100yrs	POND	BASE	8.43	74.030	79.000	38464	0.165	0.000	0.0	0.0
100yrs	POND	BASE	8.52	74.031	79.000	38469	0.168	0.000	0.0	0.0
100yrs	POND	BASE	8.60	74.033	79.000	38475	0.171	0.000	0.0	0.0
100yrs	POND	BASE	8.68	74.034	79.000	38481	0.174	0.000	0.0	0.0
100yrs	POND	BASE	8.77	74.035	79.000	38487	0.177	0.000	0.0	0.0
100yrs	POND	BASE	8.85	74.037	79.000	38493	0.180	0.000	0.0	0.0
100yrs	POND	BASE	8.93	74.038	79.000	38499	0.183	0.000	0.0	0.0
100yrs	POND	BASE	9.02	74.040	79.000	38505	0.185	0.000	0.0	0.0
100yrs	POND	BASE	9.10	74.041	79.000	38512	0.188	0.000	0.0	0.0
100yrs	POND	BASE	9.18	74.043	79.000	38518	0.191	0.000	0.0	0.0
100yrs	POND	BASE	9.27	74.044	79.000	38525	0.194	0.000	0.0	0.0
100yrs	POND	BASE	9.35	74.046	79.000	38531	0.197	0.000	0.0	0.0
100yrs	POND	BASE	9.43	74.047	79.000	38538	0.199	0.000	0.0	0.0
100yrs	POND	BASE	9.52	74.049	79.000	38545	0.202	0.000	0.0	0.0
100yrs	POND	BASE	9.60	74.050	79.000	38552	0.205	0.000	0.0	0.0
100yrs	POND	BASE	9.68	74.052	79.000	38559	0.208	0.000	0.0	0.0
100yrs	POND	BASE	9.77	74.053	79.000	38566	0.210	0.000	0.0	0.0



POND TIME SERIES: 100 YR. TXT										
100yrs	POND	BASE	9.85	74.055	79.000	38573	0.213	0.000	0.0	0.0
100yrs	POND	BASE	9.93	74.057	79.000	38580	0.215	0.000	0.1	0.0
100yrs	POND	BASE	10.02	74.058	79.000	38588	0.218	0.000	0.1	0.0
100yrs	POND	BASE	10.10	74.060	79.000	38595	0.221	0.000	0.1	0.0
100yrs	POND	BASE	10.18	74.062	79.000	38603	0.223	0.000	0.1	0.0
100yrs	POND	BASE	10.27	74.064	79.000	38610	0.226	0.000	0.1	0.0
100yrs	POND	BASE	10.35	74.065	79.000	38618	0.228	0.000	0.1	0.0
100yrs	POND	BASE	10.43	74.067	79.000	38626	0.231	0.000	0.1	0.0
100yrs	POND	BASE	10.52	74.069	79.000	38633	0.233	0.000	0.1	0.0
100yrs	POND	BASE	10.60	74.071	79.000	38641	0.235	0.000	0.1	0.0
100yrs	POND	BASE	10.68	74.073	79.000	38649	0.238	0.000	0.1	0.0
100yrs	POND	BASE	10.77	74.075	79.000	38657	0.240	0.000	0.1	0.0
100yrs	POND	BASE	10.85	74.076	79.000	38666	0.243	0.000	0.1	0.0
100yrs	POND	BASE	10.93	74.078	79.000	38674	0.245	0.000	0.1	0.0
100yrs	POND	BASE	11.02	74.080	79.000	38682	0.247	0.000	0.1	0.0
100yrs	POND	BASE	11.10	74.082	79.000	38690	0.249	0.000	0.1	0.0
100yrs	POND	BASE	11.18	74.084	79.000	38699	0.252	0.000	0.1	0.0
100yrs	POND	BASE	11.27	74.086	79.000	38707	0.254	0.000	0.1	0.0
100yrs	POND	BASE	11.35	74.088	79.000	38716	0.256	0.000	0.1	0.0
100yrs	POND	BASE	11.43	74.090	79.000	38725	0.258	0.000	0.1	0.0
100yrs	POND	BASE	11.52	74.092	79.000	38734	0.261	0.000	0.1	0.0
100yrs	POND	BASE	11.60	74.094	79.000	38742	0.263	0.000	0.1	0.0
100yrs	POND	BASE	11.68	74.096	79.000	38751	0.265	0.000	0.1	0.0
100yrs	POND	BASE	11.77	74.098	79.000	38760	0.267	0.000	0.1	0.0
100yrs	POND	BASE	11.85	74.100	79.000	38769	0.269	0.000	0.1	0.0
100yrs	POND	BASE	11.93	74.102	79.000	38778	0.271	0.000	0.1	0.0
100yrs	POND	BASE	12.02	74.104	79.000	38788	0.274	0.000	0.1	0.0
100yrs	POND	BASE	12.10	74.107	79.000	38797	0.276	0.000	0.1	0.0
100yrs	POND	BASE	12.18	74.109	79.000	38806	0.278	0.000	0.1	0.0
100yrs	POND	BASE	12.27	74.111	79.000	38816	0.280	0.000	0.1	0.0
100yrs	POND	BASE	12.35	74.113	79.000	38825	0.282	0.000	0.1	0.0
100yrs	POND	BASE	12.43	74.115	79.000	38835	0.284	0.000	0.1	0.0
100yrs	POND	BASE	12.52	74.117	79.000	38844	0.286	0.000	0.1	0.0
100yrs	POND	BASE	12.60	74.120	79.000	38854	0.288	0.000	0.1	0.0
100yrs	POND	BASE	12.68	74.122	79.000	38863	0.290	0.000	0.1	0.0
100yrs	POND	BASE	12.77	74.124	79.000	38873	0.292	0.000	0.1	0.0
100yrs	POND	BASE	12.85	74.126	79.000	38883	0.294	0.000	0.1	0.0
100yrs	POND	BASE	12.93	74.129	79.000	38893	0.296	0.000	0.1	0.0
100yrs	POND	BASE	13.02	74.131	79.000	38903	0.297	0.000	0.1	0.0
100yrs	POND	BASE	13.10	74.133	79.000	38913	0.299	0.000	0.1	0.0
100yrs	POND	BASE	13.18	74.135	79.000	38923	0.301	0.000	0.1	0.0
100yrs	POND	BASE	13.27	74.138	79.000	38933	0.303	0.000	0.1	0.0
100yrs	POND	BASE	13.35	74.140	79.000	38943	0.305	0.000	0.1	0.0
100yrs	POND	BASE	13.43	74.143	79.000	38954	0.307	0.000	0.1	0.0
100yrs	POND	BASE	13.52	74.145	79.000	38964	0.309	0.000	0.1	0.0
100yrs	POND	BASE	13.60	74.147	79.000	38974	0.310	0.000	0.1	0.0
100yrs	POND	BASE	13.68	74.150	79.000	38985	0.312	0.000	0.1	0.0
100yrs	POND	BASE	13.77	74.152	79.000	38995	0.314	0.000	0.1	0.0
100yrs	POND	BASE	13.85	74.155	79.000	39006	0.316	0.000	0.1	0.0
100yrs	POND	BASE	13.93	74.157	79.000	39016	0.317	0.000	0.1	0.0
100yrs	POND	BASE	14.02	74.159	79.000	39027	0.319	0.000	0.1	0.0
100yrs	POND	BASE	14.10	74.162	79.000	39038	0.321	0.000	0.1	0.0
100yrs	POND	BASE	14.18	74.164	79.000	39049	0.323	0.000	0.1	0.0
100yrs	POND	BASE	14.27	74.167	79.000	39059	0.324	0.000	0.1	0.0
100yrs	POND	BASE	14.35	74.169	79.000	39070	0.326	0.000	0.2	0.0
100yrs	POND	BASE	14.43	74.172	79.000	39081	0.328	0.000	0.2	0.0
100yrs	POND	BASE	14.52	74.174	79.000	39092	0.329	0.000	0.2	0.0
100yrs	POND	BASE	14.60	74.177	79.000	39103	0.331	0.000	0.2	0.0
100yrs	POND	BASE	14.68	74.179	79.000	39114	0.333	0.000	0.2	0.0
100yrs	POND	BASE	14.77	74.182	79.000	39125	0.334	0.000	0.2	0.0
100yrs	POND	BASE	14.85	74.185	79.000	39137	0.336	0.000	0.2	0.0

POND TIME SERIES 100 YR.TXT										
100yrs	POND	BASE	14.93	74.187	79.000	39148	0.337	0.000	0.2	0.0
100yrs	POND	BASE	15.02	74.190	79.000	39159	0.339	0.000	0.2	0.0
100yrs	POND	BASE	15.10	74.192	79.000	39171	0.341	0.000	0.2	0.0
100yrs	POND	BASE	15.18	74.195	79.000	39182	0.342	0.000	0.2	0.0
100yrs	POND	BASE	15.27	74.198	79.000	39193	0.344	0.000	0.2	0.0
100yrs	POND	BASE	15.35	74.200	79.000	39205	0.345	0.000	0.2	0.0
100yrs	POND	BASE	15.43	74.203	79.000	39216	0.347	0.000	0.2	0.0
100yrs	POND	BASE	15.52	74.205	79.000	39228	0.348	0.000	0.2	0.0
100yrs	POND	BASE	15.60	74.208	79.000	39240	0.350	0.000	0.2	0.0
100yrs	POND	BASE	15.68	74.211	79.000	39251	0.351	0.000	0.2	0.0
100yrs	POND	BASE	15.77	74.214	79.000	39263	0.353	0.000	0.2	0.0
100yrs	POND	BASE	15.85	74.216	79.000	39275	0.354	0.000	0.2	0.0
100yrs	POND	BASE	15.93	74.219	79.000	39287	0.356	0.000	0.2	0.0
100yrs	POND	BASE	16.02	74.222	79.000	39298	0.357	0.000	0.2	0.0
100yrs	POND	BASE	16.10	74.224	79.000	39310	0.359	0.000	0.2	0.0
100yrs	POND	BASE	16.18	74.227	79.000	39322	0.360	0.000	0.2	0.0
100yrs	POND	BASE	16.27	74.230	79.000	39334	0.361	0.000	0.2	0.0
100yrs	POND	BASE	16.35	74.233	79.000	39346	0.363	0.000	0.2	0.0
100yrs	POND	BASE	16.43	74.235	79.000	39358	0.364	0.000	0.2	0.0
100yrs	POND	BASE	16.52	74.238	79.000	39370	0.366	0.000	0.2	0.0
100yrs	POND	BASE	16.60	74.241	79.000	39383	0.367	0.000	0.2	0.0
100yrs	POND	BASE	16.68	74.244	79.000	39395	0.368	0.000	0.2	0.0
100yrs	POND	BASE	16.77	74.247	79.000	39407	0.370	0.000	0.2	0.0
100yrs	POND	BASE	16.85	74.249	79.000	39419	0.371	0.000	0.2	0.0
100yrs	POND	BASE	16.93	74.252	79.000	39432	0.372	0.000	0.2	0.0
100yrs	POND	BASE	17.02	74.255	79.000	39444	0.374	0.000	0.2	0.0
100yrs	POND	BASE	17.10	74.258	79.000	39456	0.375	0.000	0.2	0.0
100yrs	POND	BASE	17.18	74.261	79.000	39469	0.376	0.000	0.2	0.0
100yrs	POND	BASE	17.27	74.264	79.000	39481	0.378	0.000	0.2	0.0
100yrs	POND	BASE	17.35	74.267	79.000	39494	0.379	0.000	0.2	0.0
100yrs	POND	BASE	17.43	74.269	79.000	39506	0.380	0.000	0.2	0.0
100yrs	POND	BASE	17.52	74.272	79.000	39519	0.382	0.000	0.2	0.0
100yrs	POND	BASE	17.60	74.275	79.000	39532	0.383	0.000	0.2	0.0
100yrs	POND	BASE	17.68	74.278	79.000	39544	0.384	0.000	0.2	0.0
100yrs	POND	BASE	17.77	74.281	79.000	39557	0.385	0.000	0.3	0.0
100yrs	POND	BASE	17.85	74.284	79.000	39570	0.387	0.000	0.3	0.0
100yrs	POND	BASE	17.93	74.287	79.000	39583	0.388	0.000	0.3	0.0
100yrs	POND	BASE	18.02	74.290	79.000	39595	0.389	0.000	0.3	0.0
100yrs	POND	BASE	18.10	74.293	79.000	39608	0.390	0.000	0.3	0.0
100yrs	POND	BASE	18.18	74.296	79.000	39621	0.391	0.000	0.3	0.0
100yrs	POND	BASE	18.27	74.299	79.000	39634	0.393	0.000	0.3	0.0
100yrs	POND	BASE	18.35	74.302	79.000	39647	0.394	0.000	0.3	0.0
100yrs	POND	BASE	18.43	74.305	79.000	39660	0.395	0.000	0.3	0.0
100yrs	POND	BASE	18.52	74.308	79.000	39673	0.396	0.000	0.3	0.0
100yrs	POND	BASE	18.60	74.311	79.000	39686	0.397	0.000	0.3	0.0
100yrs	POND	BASE	18.68	74.314	79.000	39699	0.399	0.000	0.3	0.0
100yrs	POND	BASE	18.77	74.317	79.000	39712	0.400	0.000	0.3	0.0
100yrs	POND	BASE	18.85	74.320	79.000	39726	0.401	0.000	0.3	0.0
100yrs	POND	BASE	18.93	74.323	79.000	39739	0.402	0.000	0.3	0.0
100yrs	POND	BASE	19.02	74.326	79.000	39752	0.403	0.000	0.3	0.0
100yrs	POND	BASE	19.10	74.329	79.000	39765	0.404	0.000	0.3	0.0
100yrs	POND	BASE	19.18	74.332	79.000	39779	0.405	0.000	0.3	0.0
100yrs	POND	BASE	19.27	74.335	79.000	39792	0.406	0.000	0.3	0.0
100yrs	POND	BASE	19.35	74.338	79.000	39805	0.408	0.000	0.3	0.0
100yrs	POND	BASE	19.43	74.341	79.000	39819	0.409	0.000	0.3	0.0
100yrs	POND	BASE	19.52	74.344	79.000	39832	0.410	0.000	0.3	0.0
100yrs	POND	BASE	19.60	74.347	79.000	39845	0.411	0.000	0.3	0.0
100yrs	POND	BASE	19.68	74.350	79.000	39859	0.412	0.000	0.3	0.0
100yrs	POND	BASE	19.77	74.353	79.000	39873	0.413	0.000	0.3	0.0
100yrs	POND	BASE	19.85	74.357	79.000	39886	0.414	0.000	0.3	0.0
100yrs	POND	BASE	19.93	74.360	79.000	39900	0.415	0.000	0.3	0.0

POND TIME SERIES 100 YR.TXT										
100yrs	POND	BASE	20.02	74.363	79.000	39913	0.416	0.000	0.3	0.0
100yrs	POND	BASE	20.10	74.366	79.000	39927	0.417	0.000	0.3	0.0
100yrs	POND	BASE	20.18	74.369	79.000	39941	0.418	0.000	0.3	0.0
100yrs	POND	BASE	20.27	74.372	79.000	39954	0.419	0.000	0.3	0.0
100yrs	POND	BASE	20.35	74.375	79.000	39968	0.420	0.000	0.3	0.0
100yrs	POND	BASE	20.43	74.379	79.000	39982	0.421	0.000	0.3	0.0
100yrs	POND	BASE	20.52	74.382	79.000	39995	0.422	0.000	0.3	0.0
100yrs	POND	BASE	20.60	74.385	79.000	40009	0.423	0.000	0.3	0.0
100yrs	POND	BASE	20.68	74.388	79.000	40023	0.424	0.000	0.3	0.0
100yrs	POND	BASE	20.77	74.391	79.000	40037	0.425	0.000	0.4	0.0
100yrs	POND	BASE	20.85	74.394	79.000	40051	0.426	0.000	0.4	0.0
100yrs	POND	BASE	20.93	74.398	79.000	40065	0.427	0.000	0.4	0.0
100yrs	POND	BASE	21.02	74.401	79.000	40079	0.428	0.000	0.4	0.0
100yrs	POND	BASE	21.10	74.404	79.000	40093	0.429	0.000	0.4	0.0
100yrs	POND	BASE	21.18	74.407	79.000	40107	0.430	0.000	0.4	0.0
100yrs	POND	BASE	21.27	74.410	79.000	40121	0.431	0.000	0.4	0.0
100yrs	POND	BASE	21.35	74.414	79.000	40135	0.432	0.000	0.4	0.0
100yrs	POND	BASE	21.43	74.417	79.000	40149	0.433	0.000	0.4	0.0
100yrs	POND	BASE	21.52	74.420	79.000	40163	0.434	0.000	0.4	0.0
100yrs	POND	BASE	21.60	74.423	79.000	40177	0.435	0.000	0.4	0.0
100yrs	POND	BASE	21.68	74.427	79.000	40191	0.436	0.000	0.4	0.0
100yrs	POND	BASE	21.77	74.430	79.000	40205	0.436	0.000	0.4	0.0
100yrs	POND	BASE	21.85	74.433	79.000	40220	0.437	0.000	0.4	0.0
100yrs	POND	BASE	21.93	74.436	79.000	40234	0.438	0.000	0.4	0.0
100yrs	POND	BASE	22.02	74.440	79.000	40248	0.439	0.000	0.4	0.0
100yrs	POND	BASE	22.10	74.443	79.000	40262	0.440	0.000	0.4	0.0
100yrs	POND	BASE	22.18	74.446	79.000	40277	0.441	0.000	0.4	0.0
100yrs	POND	BASE	22.27	74.450	79.000	40291	0.442	0.000	0.4	0.0
100yrs	POND	BASE	22.35	74.453	79.000	40305	0.443	0.000	0.4	0.0
100yrs	POND	BASE	22.43	74.456	79.000	40320	0.444	0.000	0.4	0.0
100yrs	POND	BASE	22.52	74.459	79.000	40334	0.444	0.000	0.4	0.0
100yrs	POND	BASE	22.60	74.463	79.000	40348	0.445	0.000	0.4	0.0
100yrs	POND	BASE	22.68	74.466	79.000	40363	0.446	0.000	0.4	0.0
100yrs	POND	BASE	22.77	74.469	79.000	40377	0.447	0.000	0.4	0.0
100yrs	POND	BASE	22.85	74.473	79.000	40392	0.448	0.000	0.4	0.0
100yrs	POND	BASE	22.93	74.476	79.000	40406	0.449	0.000	0.4	0.0
100yrs	POND	BASE	23.02	74.479	79.000	40421	0.449	0.000	0.4	0.0
100yrs	POND	BASE	23.10	74.483	79.000	40435	0.450	0.000	0.4	0.0
100yrs	POND	BASE	23.18	74.486	79.000	40450	0.451	0.000	0.4	0.0
100yrs	POND	BASE	23.27	74.489	79.000	40465	0.452	0.000	0.4	0.0
100yrs	POND	BASE	23.35	74.493	79.000	40479	0.453	0.000	0.4	0.0
100yrs	POND	BASE	23.43	74.496	79.000	40494	0.454	0.000	0.4	0.0
100yrs	POND	BASE	23.52	74.499	79.000	40508	0.454	0.000	0.5	0.0
100yrs	POND	BASE	23.60	74.503	79.000	40523	0.455	0.000	0.5	0.0
100yrs	POND	BASE	23.68	74.506	79.000	40538	0.456	0.000	0.5	0.0
100yrs	POND	BASE	23.77	74.510	79.000	40552	0.457	0.000	0.5	0.0
100yrs	POND	BASE	23.85	74.513	79.000	40567	0.458	0.000	0.5	0.0
100yrs	POND	BASE	23.93	74.516	79.000	40582	0.458	0.000	0.5	0.0
100yrs	POND	BASE	24.02	74.520	79.000	40597	0.472	0.000	0.5	0.0
100yrs	POND	BASE	24.10	74.523	79.000	40613	0.538	0.000	0.5	0.0
100yrs	POND	BASE	24.18	74.528	79.000	40631	0.604	0.000	0.5	0.0
100yrs	POND	BASE	24.27	74.532	79.000	40651	0.637	0.000	0.5	0.0
100yrs	POND	BASE	24.35	74.537	79.000	40672	0.656	0.000	0.5	0.0
100yrs	POND	BASE	24.43	74.542	79.000	40694	0.667	0.000	0.5	0.0
100yrs	POND	BASE	24.52	74.547	79.000	40715	0.673	0.000	0.5	0.0
100yrs	POND	BASE	24.60	74.552	79.000	40737	0.677	0.000	0.5	0.0
100yrs	POND	BASE	24.68	74.557	79.000	40758	0.678	0.000	0.5	0.0
100yrs	POND	BASE	24.77	74.562	79.000	40780	0.680	0.000	0.5	0.0
100yrs	POND	BASE	24.85	74.567	79.000	40802	0.681	0.000	0.5	0.0
100yrs	POND	BASE	24.93	74.572	79.000	40824	0.683	0.000	0.5	0.0
100yrs	POND	BASE	25.02	74.577	79.000	40846	0.684	0.000	0.5	0.0

POND TIME SERIES 100 YR.TXT										
100yrs	POND	BASE	25.10	74.582	79.000	40868	0.686	0.000	0.5	0.0
100yrs	POND	BASE	25.18	74.587	79.000	40890	0.687	0.000	0.5	0.0
100yrs	POND	BASE	25.27	74.592	79.000	40912	0.689	0.000	0.5	0.0
100yrs	POND	BASE	25.35	74.597	79.000	40934	0.690	0.000	0.5	0.0
100yrs	POND	BASE	25.43	74.602	79.000	40956	0.692	0.000	0.5	0.0
100yrs	POND	BASE	25.52	74.607	79.000	40978	0.693	0.000	0.6	0.0
100yrs	POND	BASE	25.60	74.612	79.000	41000	0.695	0.000	0.6	0.0
100yrs	POND	BASE	25.68	74.617	79.000	41022	0.696	0.000	0.6	0.0
100yrs	POND	BASE	25.77	74.622	79.000	41044	0.697	0.000	0.6	0.0
100yrs	POND	BASE	25.85	74.628	79.000	41066	0.699	0.000	0.6	0.0
100yrs	POND	BASE	25.93	74.633	79.000	41089	0.700	0.000	0.6	0.0
100yrs	POND	BASE	26.02	74.638	79.000	41111	0.701	0.000	0.6	0.0
100yrs	POND	BASE	26.10	74.643	79.000	41133	0.703	0.000	0.6	0.0
100yrs	POND	BASE	26.18	74.648	79.000	41156	0.704	0.000	0.6	0.0
100yrs	POND	BASE	26.27	74.653	79.000	41178	0.705	0.000	0.6	0.0
100yrs	POND	BASE	26.35	74.658	79.000	41200	0.707	0.000	0.6	0.0
100yrs	POND	BASE	26.43	74.663	79.000	41223	0.708	0.000	0.6	0.0
100yrs	POND	BASE	26.52	74.669	79.000	41245	0.709	0.000	0.6	0.0
100yrs	POND	BASE	26.60	74.674	79.000	41268	0.710	0.000	0.6	0.0
100yrs	POND	BASE	26.68	74.679	79.000	41290	0.712	0.000	0.6	0.0
100yrs	POND	BASE	26.77	74.684	79.000	41313	0.713	0.000	0.6	0.0
100yrs	POND	BASE	26.85	74.689	79.000	41335	0.714	0.000	0.6	0.0
100yrs	POND	BASE	26.93	74.694	79.000	41358	0.715	0.000	0.6	0.0
100yrs	POND	BASE	27.02	74.700	79.000	41381	0.717	0.000	0.6	0.0
100yrs	POND	BASE	27.10	74.705	79.000	41403	0.718	0.000	0.6	0.0
100yrs	POND	BASE	27.18	74.710	79.000	41426	0.719	0.000	0.7	0.0
100yrs	POND	BASE	27.27	74.715	79.000	41449	0.720	0.000	0.7	0.0
100yrs	POND	BASE	27.35	74.721	79.000	41471	0.721	0.000	0.7	0.0
100yrs	POND	BASE	27.43	74.726	79.000	41494	0.723	0.000	0.7	0.0
100yrs	POND	BASE	27.52	74.731	79.000	41517	0.724	0.000	0.7	0.0
100yrs	POND	BASE	27.60	74.736	79.000	41540	0.725	0.000	0.7	0.0
100yrs	POND	BASE	27.68	74.741	79.000	41563	0.726	0.000	0.7	0.0
100yrs	POND	BASE	27.77	74.747	79.000	41585	0.727	0.000	0.7	0.0
100yrs	POND	BASE	27.85	74.752	79.000	41608	0.728	0.000	0.7	0.0
100yrs	POND	BASE	27.93	74.757	79.000	41631	0.730	0.000	0.7	0.0
100yrs	POND	BASE	28.02	74.762	79.000	41654	0.731	0.000	0.7	0.0
100yrs	POND	BASE	28.10	74.768	79.000	41677	0.732	0.000	0.7	0.0
100yrs	POND	BASE	28.18	74.773	79.000	41700	0.733	0.000	0.7	0.0
100yrs	POND	BASE	28.27	74.778	79.000	41723	0.734	0.000	0.7	0.0
100yrs	POND	BASE	28.35	74.784	79.000	41746	0.735	0.000	0.7	0.0
100yrs	POND	BASE	28.43	74.789	79.000	41769	0.736	0.000	0.7	0.0
100yrs	POND	BASE	28.52	74.794	79.000	41792	0.737	0.000	0.7	0.0
100yrs	POND	BASE	28.60	74.799	79.000	41815	0.738	0.000	0.7	0.0
100yrs	POND	BASE	28.68	74.805	79.000	41838	0.739	0.000	0.7	0.0
100yrs	POND	BASE	28.77	74.810	79.000	41861	0.740	0.000	0.7	0.0
100yrs	POND	BASE	28.85	74.815	79.000	41884	0.741	0.000	0.8	0.0
100yrs	POND	BASE	28.93	74.821	79.000	41907	0.742	0.000	0.8	0.0
100yrs	POND	BASE	29.02	74.826	79.000	41931	0.743	0.000	0.8	0.0
100yrs	POND	BASE	29.10	74.831	79.000	41954	0.744	0.000	0.8	0.0
100yrs	POND	BASE	29.18	74.837	79.000	41977	0.745	0.000	0.8	0.0
100yrs	POND	BASE	29.27	74.842	79.000	42000	0.746	0.000	0.8	0.0
100yrs	POND	BASE	29.35	74.847	79.000	42023	0.747	0.000	0.8	0.0
100yrs	POND	BASE	29.43	74.853	79.000	42047	0.748	0.000	0.8	0.0
100yrs	POND	BASE	29.52	74.858	79.000	42070	0.749	0.000	0.8	0.0
100yrs	POND	BASE	29.60	74.863	79.000	42093	0.750	0.000	0.8	0.0
100yrs	POND	BASE	29.68	74.869	79.000	42117	0.751	0.000	0.8	0.0
100yrs	POND	BASE	29.77	74.874	79.000	42140	0.752	0.000	0.8	0.0
100yrs	POND	BASE	29.85	74.879	79.000	42163	0.753	0.000	0.8	0.0
100yrs	POND	BASE	29.93	74.885	79.000	42187	0.754	0.000	0.8	0.0
100yrs	POND	BASE	30.02	74.890	79.000	42210	0.755	0.000	0.8	0.0
100yrs	POND	BASE	30.10	74.895	79.000	42233	0.756	0.000	0.8	0.0

POND TIME SERIES 100 YR.TXT										
100yrs	POND	BASE	30.18	74.901	79.000	42257	0.757	0.000	0.8	0.0
100yrs	POND	BASE	30.27	74.906	79.000	42280	0.758	0.000	0.8	0.0
100yrs	POND	BASE	30.35	74.912	79.000	42304	0.759	0.000	0.8	0.0
100yrs	POND	BASE	30.43	74.917	79.000	42327	0.760	0.000	0.8	0.0
100yrs	POND	BASE	30.52	74.922	79.000	42351	0.761	0.000	0.9	0.0
100yrs	POND	BASE	30.60	74.928	79.000	42374	0.762	0.000	0.9	0.0
100yrs	POND	BASE	30.68	74.933	79.000	42397	0.762	0.000	0.9	0.0
100yrs	POND	BASE	30.77	74.939	79.000	42421	0.763	0.000	0.9	0.0
100yrs	POND	BASE	30.85	74.944	79.000	42445	0.764	0.000	0.9	0.0
100yrs	POND	BASE	30.93	74.949	79.000	42468	0.765	0.000	0.9	0.0
100yrs	POND	BASE	31.02	74.955	79.000	42492	0.766	0.000	0.9	0.0
100yrs	POND	BASE	31.10	74.960	79.000	42515	0.767	0.000	0.9	0.0
100yrs	POND	BASE	31.18	74.966	79.000	42539	0.768	0.000	0.9	0.0
100yrs	POND	BASE	31.27	74.971	79.000	42562	0.768	0.000	0.9	0.0
100yrs	POND	BASE	31.35	74.976	79.000	42586	0.769	0.000	0.9	0.0
100yrs	POND	BASE	31.43	74.982	79.000	42610	0.770	0.000	0.9	0.0
100yrs	POND	BASE	31.52	74.987	79.000	42633	0.771	0.000	0.9	0.0
100yrs	POND	BASE	31.60	74.993	79.000	42657	0.772	0.000	0.9	0.0
100yrs	POND	BASE	31.68	74.998	79.000	42680	0.773	0.000	0.9	0.0
100yrs	POND	BASE	31.77	75.004	79.000	42704	0.773	0.000	0.9	0.0
100yrs	POND	BASE	31.85	75.009	79.000	42728	0.774	0.000	0.9	0.0
100yrs	POND	BASE	31.93	75.014	79.000	42751	0.775	0.000	0.9	0.0
100yrs	POND	BASE	32.02	75.020	79.000	42775	0.776	0.000	0.9	0.0
100yrs	POND	BASE	32.10	75.025	79.000	42799	0.777	0.000	1.0	0.0
100yrs	POND	BASE	32.18	75.031	79.000	42823	0.777	0.000	1.0	0.0
100yrs	POND	BASE	32.27	75.036	79.000	42846	0.778	0.000	1.0	0.0
100yrs	POND	BASE	32.35	75.042	79.000	42870	0.779	0.000	1.0	0.0
100yrs	POND	BASE	32.43	75.047	79.000	42894	0.780	0.000	1.0	0.0
100yrs	POND	BASE	32.52	75.053	79.000	42918	0.780	0.000	1.0	0.0
100yrs	POND	BASE	32.60	75.058	79.000	42941	0.781	0.000	1.0	0.0
100yrs	POND	BASE	32.68	75.063	79.000	42965	0.782	0.000	1.0	0.0
100yrs	POND	BASE	32.77	75.069	79.000	42989	0.783	0.000	1.0	0.0
100yrs	POND	BASE	32.85	75.074	79.000	43013	0.783	0.000	1.0	0.0
100yrs	POND	BASE	32.93	75.080	79.000	43037	0.784	0.000	1.0	0.0
100yrs	POND	BASE	33.02	75.085	79.000	43060	0.785	0.000	1.0	0.0
100yrs	POND	BASE	33.10	75.091	79.000	43084	0.786	0.000	1.0	0.0
100yrs	POND	BASE	33.18	75.096	79.000	43108	0.786	0.000	1.0	0.0
100yrs	POND	BASE	33.27	75.102	79.000	43132	0.787	0.000	1.0	0.0
100yrs	POND	BASE	33.35	75.107	79.000	43156	0.788	0.000	1.0	0.0
100yrs	POND	BASE	33.43	75.113	79.000	43180	0.789	0.000	1.0	0.0
100yrs	POND	BASE	33.52	75.118	79.000	43203	0.789	0.000	1.0	0.0
100yrs	POND	BASE	33.60	75.124	79.000	43227	0.790	0.000	1.1	0.0
100yrs	POND	BASE	33.68	75.129	79.000	43251	0.791	0.000	1.1	0.0
100yrs	POND	BASE	33.77	75.135	79.000	43275	0.791	0.000	1.1	0.0
100yrs	POND	BASE	33.85	75.140	79.000	43299	0.792	0.000	1.1	0.0
100yrs	POND	BASE	33.93	75.146	79.000	43323	0.793	0.000	1.1	0.0
100yrs	POND	BASE	34.02	75.151	79.000	43347	0.793	0.000	1.1	0.0
100yrs	POND	BASE	34.10	75.157	79.000	43371	0.794	0.000	1.1	0.0
100yrs	POND	BASE	34.18	75.162	79.000	43395	0.795	0.000	1.1	0.0
100yrs	POND	BASE	34.27	75.168	79.000	43419	0.795	0.000	1.1	0.0
100yrs	POND	BASE	34.35	75.173	79.000	43443	0.796	0.000	1.1	0.0
100yrs	POND	BASE	34.43	75.179	79.000	43466	0.797	0.000	1.1	0.0
100yrs	POND	BASE	34.52	75.184	79.000	43490	0.797	0.000	1.1	0.0
100yrs	POND	BASE	34.60	75.190	79.000	43514	0.798	0.000	1.1	0.0
100yrs	POND	BASE	34.68	75.195	79.000	43538	0.799	0.000	1.1	0.0
100yrs	POND	BASE	34.77	75.201	79.000	43562	0.799	0.000	1.1	0.0
100yrs	POND	BASE	34.85	75.206	79.000	43586	0.800	0.000	1.1	0.0
100yrs	POND	BASE	34.93	75.212	79.000	43610	0.801	0.000	1.1	0.0
100yrs	POND	BASE	35.02	75.217	79.000	43634	0.801	0.000	1.1	0.0
100yrs	POND	BASE	35.10	75.223	79.000	43658	0.802	0.000	1.2	0.0
100yrs	POND	BASE	35.18	75.228	79.000	43682	0.802	0.000	1.2	0.0

POND TIME SERIES 100 YR.TXT										
100yrs	POND	BASE	35.27	75.234	79.000	43706	0.803	0.000	1.2	0.0
100yrs	POND	BASE	35.35	75.239	79.000	43730	0.804	0.000	1.2	0.0
100yrs	POND	BASE	35.43	75.245	79.000	43754	0.804	0.000	1.2	0.0
100yrs	POND	BASE	35.52	75.250	79.000	43778	0.805	0.000	1.2	0.0
100yrs	POND	BASE	35.60	75.256	79.000	43802	0.805	0.000	1.2	0.0
100yrs	POND	BASE	35.68	75.261	79.000	43826	0.806	0.000	1.2	0.0
100yrs	POND	BASE	35.77	75.267	79.000	43850	0.807	0.000	1.2	0.0
100yrs	POND	BASE	35.85	75.272	79.000	43874	0.807	0.000	1.2	0.0
100yrs	POND	BASE	35.93	75.278	79.000	43899	0.808	0.000	1.2	0.0
100yrs	POND	BASE	36.02	75.283	79.000	43923	0.809	0.000	1.2	0.0
100yrs	POND	BASE	36.10	75.289	79.000	43947	0.812	0.000	1.2	0.0
100yrs	POND	BASE	36.18	75.294	79.000	43971	0.815	0.000	1.2	0.0
100yrs	POND	BASE	36.27	75.300	79.000	43995	0.817	0.000	1.2	0.0
100yrs	POND	BASE	36.35	75.305	79.000	44019	0.818	0.000	1.2	0.0
100yrs	POND	BASE	36.43	75.311	79.000	44044	0.819	0.000	1.2	0.0
100yrs	POND	BASE	36.52	75.317	79.000	44068	0.820	0.000	1.2	0.0
100yrs	POND	BASE	36.60	75.322	79.000	44092	0.821	0.000	1.3	0.0
100yrs	POND	BASE	36.68	75.328	79.000	44117	0.821	0.000	1.3	0.0
100yrs	POND	BASE	36.77	75.333	79.000	44141	0.822	0.000	1.3	0.0
100yrs	POND	BASE	36.85	75.339	79.000	44165	0.822	0.000	1.3	0.0
100yrs	POND	BASE	36.93	75.345	79.000	44190	0.823	0.000	1.3	0.0
100yrs	POND	BASE	37.02	75.350	79.000	44214	0.824	0.000	1.3	0.0
100yrs	POND	BASE	37.10	75.356	79.000	44238	0.824	0.000	1.3	0.0
100yrs	POND	BASE	37.18	75.361	79.000	44263	0.825	0.000	1.3	0.0
100yrs	POND	BASE	37.27	75.367	79.000	44287	0.825	0.000	1.3	0.0
100yrs	POND	BASE	37.35	75.373	79.000	44311	0.826	0.000	1.3	0.0
100yrs	POND	BASE	37.43	75.378	79.000	44336	0.826	0.000	1.3	0.0
100yrs	POND	BASE	37.52	75.384	79.000	44360	0.827	0.000	1.3	0.0
100yrs	POND	BASE	37.60	75.389	79.000	44384	0.827	0.000	1.3	0.0
100yrs	POND	BASE	37.68	75.395	79.000	44409	0.828	0.000	1.3	0.0
100yrs	POND	BASE	37.77	75.400	79.000	44433	0.828	0.000	1.3	0.0
100yrs	POND	BASE	37.85	75.406	79.000	44458	0.829	0.000	1.3	0.0
100yrs	POND	BASE	37.93	75.412	79.000	44482	0.829	0.000	1.3	0.0
100yrs	POND	BASE	38.02	75.417	79.000	44506	0.830	0.000	1.3	0.0
100yrs	POND	BASE	38.10	75.423	79.000	44531	0.830	0.000	1.4	0.0
100yrs	POND	BASE	38.18	75.428	79.000	44555	0.831	0.000	1.4	0.0
100yrs	POND	BASE	38.27	75.434	79.000	44579	0.831	0.000	1.4	0.0
100yrs	POND	BASE	38.35	75.440	79.000	44604	0.832	0.000	1.4	0.0
100yrs	POND	BASE	38.43	75.445	79.000	44628	0.833	0.000	1.4	0.0
100yrs	POND	BASE	38.52	75.451	79.000	44653	0.833	0.000	1.4	0.0
100yrs	POND	BASE	38.60	75.456	79.000	44677	0.833	0.000	1.4	0.0
100yrs	POND	BASE	38.68	75.462	79.000	44701	0.834	0.000	1.4	0.0
100yrs	POND	BASE	38.77	75.468	79.000	44726	0.834	0.000	1.4	0.0
100yrs	POND	BASE	38.85	75.473	79.000	44750	0.835	0.000	1.4	0.0
100yrs	POND	BASE	38.93	75.479	79.000	44774	0.835	0.000	1.4	0.0
100yrs	POND	BASE	39.02	75.484	79.000	44799	0.836	0.000	1.4	0.0
100yrs	POND	BASE	39.10	75.490	79.000	44823	0.836	0.000	1.4	0.0
100yrs	POND	BASE	39.18	75.496	79.000	44848	0.837	0.000	1.4	0.0
100yrs	POND	BASE	39.27	75.501	79.000	44872	0.837	0.000	1.4	0.0
100yrs	POND	BASE	39.35	75.507	79.000	44896	0.838	0.000	1.4	0.0
100yrs	POND	BASE	39.43	75.512	79.000	44921	0.838	0.000	1.4	0.0
100yrs	POND	BASE	39.52	75.518	79.000	44945	0.839	0.000	1.5	0.0
100yrs	POND	BASE	39.60	75.524	79.000	44970	0.839	0.000	1.5	0.0
100yrs	POND	BASE	39.68	75.529	79.000	44994	0.840	0.000	1.5	0.0
100yrs	POND	BASE	39.77	75.535	79.000	45018	0.840	0.000	1.5	0.0
100yrs	POND	BASE	39.85	75.540	79.000	45043	0.841	0.000	1.5	0.0
100yrs	POND	BASE	39.93	75.546	79.000	45067	0.841	0.000	1.5	0.0
100yrs	POND	BASE	40.02	75.552	79.000	45092	0.842	0.000	1.5	0.0
100yrs	POND	BASE	40.10	75.557	79.000	45116	0.842	0.000	1.5	0.0
100yrs	POND	BASE	40.18	75.563	79.000	45140	0.842	0.000	1.5	0.0
100yrs	POND	BASE	40.27	75.568	79.000	45165	0.843	0.000	1.5	0.0

POND TIME SERIES 100 YR.TXT										
100yrs	POND	BASE	40.35	75.574	79.000	45189	0.843	0.000	1.5	0.0
100yrs	POND	BASE	40.43	75.580	79.000	45213	0.844	0.000	1.5	0.0
100yrs	POND	BASE	40.52	75.585	79.000	45238	0.844	0.000	1.5	0.0
100yrs	POND	BASE	40.60	75.591	79.000	45262	0.845	0.000	1.5	0.0
100yrs	POND	BASE	40.68	75.596	79.000	45287	0.845	0.000	1.5	0.0
100yrs	POND	BASE	40.77	75.602	79.000	45311	0.845	0.000	1.5	0.0
100yrs	POND	BASE	40.85	75.608	79.000	45335	0.846	0.000	1.5	0.0
100yrs	POND	BASE	40.93	75.613	79.000	45360	0.846	0.000	1.5	0.0
100yrs	POND	BASE	41.02	75.619	79.000	45384	0.847	0.000	1.6	0.0
100yrs	POND	BASE	41.10	75.624	79.000	45409	0.847	0.000	1.6	0.0
100yrs	POND	BASE	41.18	75.630	79.000	45433	0.848	0.000	1.6	0.0
100yrs	POND	BASE	41.27	75.636	79.000	45457	0.848	0.000	1.6	0.0
100yrs	POND	BASE	41.35	75.641	79.000	45482	0.848	0.000	1.6	0.0
100yrs	POND	BASE	41.43	75.647	79.000	45506	0.849	0.000	1.6	0.0
100yrs	POND	BASE	41.52	75.652	79.000	45530	0.849	0.000	1.6	0.0
100yrs	POND	BASE	41.60	75.658	79.000	45555	0.850	0.000	1.6	0.0
100yrs	POND	BASE	41.68	75.664	79.000	45579	0.850	0.000	1.6	0.0
100yrs	POND	BASE	41.77	75.669	79.000	45604	0.850	0.000	1.6	0.0
100yrs	POND	BASE	41.85	75.675	79.000	45628	0.851	0.000	1.6	0.0
100yrs	POND	BASE	41.93	75.680	79.000	45652	0.851	0.000	1.6	0.0
100yrs	POND	BASE	42.02	75.686	79.000	45677	0.852	0.000	1.6	0.0
100yrs	POND	BASE	42.10	75.692	79.000	45701	0.852	0.000	1.6	0.0
100yrs	POND	BASE	42.18	75.697	79.000	45725	0.852	0.000	1.6	0.0
100yrs	POND	BASE	42.27	75.703	79.000	45750	0.853	0.000	1.6	0.0
100yrs	POND	BASE	42.35	75.708	79.000	45774	0.853	0.000	1.6	0.0
100yrs	POND	BASE	42.43	75.714	79.000	45798	0.854	0.000	1.7	0.0
100yrs	POND	BASE	42.52	75.719	79.000	45823	0.854	0.000	1.7	0.0
100yrs	POND	BASE	42.60	75.725	79.000	45847	0.854	0.000	1.7	0.0
100yrs	POND	BASE	42.68	75.731	79.000	45871	0.855	0.000	1.7	0.0
100yrs	POND	BASE	42.77	75.736	79.000	45896	0.855	0.000	1.7	0.0
100yrs	POND	BASE	42.85	75.742	79.000	45920	0.855	0.000	1.7	0.0
100yrs	POND	BASE	42.93	75.747	79.000	45945	0.856	0.000	1.7	0.0
100yrs	POND	BASE	43.02	75.753	79.000	45969	0.856	0.000	1.7	0.0
100yrs	POND	BASE	43.10	75.759	79.000	45993	0.857	0.000	1.7	0.0
100yrs	POND	BASE	43.18	75.764	79.000	46018	0.857	0.000	1.7	0.0
100yrs	POND	BASE	43.27	75.770	79.000	46042	0.857	0.000	1.7	0.0
100yrs	POND	BASE	43.35	75.775	79.000	46066	0.858	0.000	1.7	0.0
100yrs	POND	BASE	43.43	75.781	79.000	46091	0.858	0.000	1.7	0.0
100yrs	POND	BASE	43.52	75.787	79.000	46115	0.858	0.000	1.7	0.0
100yrs	POND	BASE	43.60	75.792	79.000	46139	0.859	0.000	1.7	0.0
100yrs	POND	BASE	43.68	75.798	79.000	46163	0.859	0.000	1.7	0.0
100yrs	POND	BASE	43.77	75.803	79.000	46188	0.859	0.000	1.7	0.0
100yrs	POND	BASE	43.85	75.809	79.000	46212	0.860	0.000	1.8	0.0
100yrs	POND	BASE	43.93	75.814	79.000	46236	0.860	0.000	1.8	0.0
100yrs	POND	BASE	44.02	75.820	79.000	46261	0.860	0.000	1.8	0.0
100yrs	POND	BASE	44.10	75.826	79.000	46285	0.861	0.000	1.8	0.0
100yrs	POND	BASE	44.18	75.831	79.000	46309	0.861	0.000	1.8	0.0
100yrs	POND	BASE	44.27	75.837	79.000	46334	0.862	0.000	1.8	0.0
100yrs	POND	BASE	44.35	75.842	79.000	46358	0.862	0.000	1.8	0.0
100yrs	POND	BASE	44.43	75.848	79.000	46382	0.862	0.000	1.8	0.0
100yrs	POND	BASE	44.52	75.853	79.000	46407	0.863	0.000	1.8	0.0
100yrs	POND	BASE	44.60	75.859	79.000	46431	0.863	0.000	1.8	0.0
100yrs	POND	BASE	44.68	75.865	79.000	46455	0.863	0.000	1.8	0.0
100yrs	POND	BASE	44.77	75.870	79.000	46479	0.864	0.000	1.8	0.0
100yrs	POND	BASE	44.85	75.876	79.000	46504	0.864	0.000	1.8	0.0
100yrs	POND	BASE	44.93	75.881	79.000	46528	0.864	0.000	1.8	0.0
100yrs	POND	BASE	45.02	75.887	79.000	46552	0.865	0.000	1.8	0.0
100yrs	POND	BASE	45.10	75.892	79.000	46576	0.865	0.000	1.8	0.0
100yrs	POND	BASE	45.18	75.898	79.000	46601	0.865	0.000	1.9	0.0
100yrs	POND	BASE	45.27	75.904	79.000	46625	0.865	0.000	1.9	0.0
100yrs	POND	BASE	45.35	75.909	79.000	46649	0.866	0.000	1.9	0.0



POND TIME SERIES 100 YR.TXT										
100yrs	POND	BASE	45.43	75.915	79.000	46674	0.866	0.000	1.9	0.0
100yrs	POND	BASE	45.52	75.920	79.000	46698	0.866	0.000	1.9	0.0
100yrs	POND	BASE	45.60	75.926	79.000	46722	0.867	0.000	1.9	0.0
100yrs	POND	BASE	45.68	75.931	79.000	46746	0.867	0.000	1.9	0.0
100yrs	POND	BASE	45.77	75.937	79.000	46770	0.867	0.000	1.9	0.0
100yrs	POND	BASE	45.85	75.943	79.000	46795	0.868	0.000	1.9	0.0
100yrs	POND	BASE	45.93	75.948	79.000	46819	0.868	0.000	1.9	0.0
100yrs	POND	BASE	46.02	75.954	79.000	46843	0.868	0.000	1.9	0.0
100yrs	POND	BASE	46.10	75.959	79.000	46867	0.869	0.000	1.9	0.0
100yrs	POND	BASE	46.18	75.965	79.000	46892	0.869	0.000	1.9	0.0
100yrs	POND	BASE	46.27	75.970	79.000	46916	0.869	0.000	1.9	0.0
100yrs	POND	BASE	46.35	75.976	79.000	46940	0.870	0.000	1.9	0.0
100yrs	POND	BASE	46.43	75.982	79.000	46964	0.870	0.000	1.9	0.0
100yrs	POND	BASE	46.52	75.987	79.000	46988	0.870	0.000	1.9	0.0
100yrs	POND	BASE	46.60	75.993	79.000	47013	0.870	0.000	2.0	0.0
100yrs	POND	BASE	46.68	75.998	79.000	47037	0.871	0.000	2.0	0.0
100yrs	POND	BASE	46.77	76.004	79.000	47063	0.871	0.000	2.0	0.0
100yrs	POND	BASE	46.85	76.009	79.000	47089	0.871	0.000	2.0	0.0
100yrs	POND	BASE	46.93	76.015	79.000	47116	0.872	0.000	2.0	0.0
100yrs	POND	BASE	47.02	76.020	79.000	47142	0.872	0.000	2.0	0.0
100yrs	POND	BASE	47.10	76.026	79.000	47169	0.872	0.001	2.0	0.0
100yrs	POND	BASE	47.18	76.031	79.000	47196	0.872	0.002	2.0	0.0
100yrs	POND	BASE	47.27	76.037	79.000	47222	0.873	0.003	2.0	0.0
100yrs	POND	BASE	47.35	76.043	79.000	47249	0.873	0.004	2.0	0.0
100yrs	POND	BASE	47.43	76.048	79.000	47275	0.873	0.005	2.0	0.0
100yrs	POND	BASE	47.52	76.054	79.000	47301	0.874	0.007	2.0	0.0
100yrs	POND	BASE	47.60	76.059	79.000	47328	0.874	0.008	2.0	0.0
100yrs	POND	BASE	47.68	76.065	79.000	47354	0.874	0.010	2.0	0.0
100yrs	POND	BASE	47.77	76.070	79.000	47380	0.874	0.012	2.0	0.0
100yrs	POND	BASE	47.85	76.075	79.000	47406	0.875	0.015	2.0	0.0
100yrs	POND	BASE	47.93	76.081	79.000	47432	0.875	0.017	2.0	0.0
100yrs	POND	BASE	48.02	76.086	79.000	47458	0.881	0.020	2.1	0.0
100yrs	POND	BASE	48.10	76.092	79.000	47485	0.910	0.022	2.1	0.0
100yrs	POND	BASE	48.18	76.098	79.000	47512	0.942	0.025	2.1	0.0
100yrs	POND	BASE	48.27	76.103	79.000	47540	0.957	0.029	2.1	0.0
100yrs	POND	BASE	48.35	76.109	79.000	47568	0.966	0.032	2.1	0.0
100yrs	POND	BASE	48.43	76.115	79.000	47596	0.971	0.036	2.1	0.0
100yrs	POND	BASE	48.52	76.121	79.000	47625	0.973	0.040	2.1	0.0
100yrs	POND	BASE	48.60	76.127	79.000	47653	0.975	0.044	2.1	0.0
100yrs	POND	BASE	48.68	76.133	79.000	47681	0.975	0.048	2.1	0.0
100yrs	POND	BASE	48.77	76.139	79.000	47709	0.975	0.053	2.1	0.0
100yrs	POND	BASE	48.85	76.144	79.000	47736	0.976	0.057	2.1	0.0
100yrs	POND	BASE	48.93	76.150	79.000	47764	0.976	0.062	2.1	0.0
100yrs	POND	BASE	49.02	76.156	79.000	47791	0.977	0.067	2.1	0.0
100yrs	POND	BASE	49.10	76.162	79.000	47819	0.984	0.072	2.1	0.0
100yrs	POND	BASE	49.18	76.167	79.000	47846	0.991	0.077	2.1	0.0
100yrs	POND	BASE	49.27	76.173	79.000	47874	0.994	0.082	2.2	0.0
100yrs	POND	BASE	49.35	76.179	79.000	47901	0.996	0.088	2.2	0.0
100yrs	POND	BASE	49.43	76.184	79.000	47928	0.998	0.093	2.2	0.0
100yrs	POND	BASE	49.52	76.190	79.000	47955	0.999	0.099	2.2	0.0
100yrs	POND	BASE	49.60	76.196	79.000	47982	0.999	0.106	2.2	0.0
100yrs	POND	BASE	49.68	76.201	79.000	48009	0.999	0.115	2.2	0.0
100yrs	POND	BASE	49.77	76.207	79.000	48035	1.000	0.126	2.2	0.0
100yrs	POND	BASE	49.85	76.212	79.000	48061	1.000	0.137	2.2	0.0
100yrs	POND	BASE	49.93	76.217	79.000	48087	1.001	0.149	2.2	0.0
100yrs	POND	BASE	50.02	76.223	79.000	48112	1.012	0.161	2.2	0.0
100yrs	POND	BASE	50.10	76.228	79.000	48138	1.070	0.175	2.2	0.0
100yrs	POND	BASE	50.18	76.234	79.000	48166	1.126	0.190	2.2	0.0
100yrs	POND	BASE	50.27	76.240	79.000	48194	1.154	0.207	2.2	0.0
100yrs	POND	BASE	50.35	76.246	79.000	48222	1.169	0.225	2.2	0.0
100yrs	POND	BASE	50.43	76.252	79.000	48250	1.178	0.245	2.3	0.0



POND TIME SERIES 100 YR.TXT										
100yrs	POND	BASE	50.52	76.257	79.000	48278	1.182	0.264	2.3	0.0
100yrs	POND	BASE	50.60	76.263	79.000	48305	1.184	0.285	2.3	0.0
100yrs	POND	BASE	50.68	76.268	79.000	48331	1.185	0.306	2.3	0.0
100yrs	POND	BASE	50.77	76.274	79.000	48357	1.185	0.326	2.3	0.0
100yrs	POND	BASE	50.85	76.279	79.000	48382	1.186	0.348	2.3	0.0
100yrs	POND	BASE	50.93	76.284	79.000	48407	1.186	0.370	2.3	0.0
100yrs	POND	BASE	51.02	76.289	79.000	48431	1.193	0.392	2.3	0.0
100yrs	POND	BASE	51.10	76.294	79.000	48455	1.227	0.415	2.3	0.0
100yrs	POND	BASE	51.18	76.299	79.000	48479	1.262	0.438	2.3	0.0
100yrs	POND	BASE	51.27	76.304	79.000	48504	1.278	0.463	2.3	0.0
100yrs	POND	BASE	51.35	76.309	79.000	48528	1.288	0.488	2.3	0.0
100yrs	POND	BASE	51.43	76.314	79.000	48551	1.293	0.512	2.4	0.1
100yrs	POND	BASE	51.52	76.319	79.000	48574	1.296	0.537	2.4	0.1
100yrs	POND	BASE	51.60	76.324	79.000	48596	1.297	0.562	2.4	0.1
100yrs	POND	BASE	51.68	76.328	79.000	48617	1.298	0.587	2.4	0.1
100yrs	POND	BASE	51.77	76.333	79.000	48638	1.298	0.611	2.4	0.1
100yrs	POND	BASE	51.85	76.337	79.000	48658	1.299	0.635	2.4	0.1
100yrs	POND	BASE	51.93	76.341	79.000	48677	1.299	0.658	2.4	0.1
100yrs	POND	BASE	52.02	76.345	79.000	48696	1.323	0.681	2.4	0.1
100yrs	POND	BASE	52.10	76.349	79.000	48717	1.446	0.707	2.4	0.1
100yrs	POND	BASE	52.18	76.354	79.000	48740	1.571	0.737	2.4	0.1
100yrs	POND	BASE	52.27	76.359	79.000	48765	1.630	0.770	2.4	0.1
100yrs	POND	BASE	52.35	76.364	79.000	48790	1.664	0.804	2.5	0.1
100yrs	POND	BASE	52.43	76.370	79.000	48816	1.683	0.838	2.5	0.1
100yrs	POND	BASE	52.52	76.375	79.000	48840	1.693	0.873	2.5	0.1
100yrs	POND	BASE	52.60	76.380	79.000	48864	1.697	0.907	2.5	0.1
100yrs	POND	BASE	52.68	76.384	79.000	48887	1.698	0.940	2.5	0.1
100yrs	POND	BASE	52.77	76.389	79.000	48909	1.699	0.972	2.5	0.1
100yrs	POND	BASE	52.85	76.393	79.000	48930	1.699	1.003	2.5	0.1
100yrs	POND	BASE	52.93	76.398	79.000	48950	1.700	1.033	2.5	0.1
100yrs	POND	BASE	53.02	76.402	79.000	48969	1.724	1.063	2.6	0.2
100yrs	POND	BASE	53.10	76.406	79.000	48990	1.846	1.095	2.6	0.2
100yrs	POND	BASE	53.18	76.411	79.000	49013	1.973	1.132	2.6	0.2
100yrs	POND	BASE	53.27	76.416	79.000	49038	2.034	1.173	2.6	0.2
100yrs	POND	BASE	53.35	76.421	79.000	49064	2.067	1.214	2.6	0.2
100yrs	POND	BASE	53.43	76.426	79.000	49088	2.087	1.254	2.6	0.2
100yrs	POND	BASE	53.52	76.432	79.000	49112	2.097	1.295	2.6	0.2
100yrs	POND	BASE	53.60	76.436	79.000	49135	2.102	1.334	2.6	0.2
100yrs	POND	BASE	53.68	76.441	79.000	49157	2.103	1.371	2.7	0.2
100yrs	POND	BASE	53.77	76.445	79.000	49178	2.104	1.408	2.7	0.2
100yrs	POND	BASE	53.85	76.449	79.000	49198	2.105	1.443	2.7	0.2
100yrs	POND	BASE	53.93	76.453	79.000	49217	2.106	1.476	2.7	0.2
100yrs	POND	BASE	54.02	76.457	79.000	49235	2.131	1.509	2.7	0.3
100yrs	POND	BASE	54.10	76.461	79.000	49255	2.257	1.544	2.7	0.3
100yrs	POND	BASE	54.18	76.466	79.000	49277	2.390	1.585	2.8	0.3
100yrs	POND	BASE	54.27	76.471	79.000	49301	2.453	1.629	2.8	0.3
100yrs	POND	BASE	54.35	76.476	79.000	49325	2.489	1.674	2.8	0.3
100yrs	POND	BASE	54.43	76.481	79.000	49348	2.509	1.718	2.8	0.3
100yrs	POND	BASE	54.52	76.485	79.000	49371	2.521	1.762	2.8	0.3
100yrs	POND	BASE	54.60	76.490	79.000	49393	2.526	1.803	2.8	0.3
100yrs	POND	BASE	54.68	76.494	79.000	49413	2.527	1.843	2.9	0.4
100yrs	POND	BASE	54.77	76.498	79.000	49433	2.528	1.881	2.9	0.4
100yrs	POND	BASE	54.85	76.502	79.000	49451	2.530	1.917	2.9	0.4
100yrs	POND	BASE	54.93	76.506	79.000	49468	2.531	1.952	2.9	0.4
100yrs	POND	BASE	55.02	76.509	79.000	49485	2.556	1.985	2.9	0.4
100yrs	POND	BASE	55.10	76.513	79.000	49503	2.681	2.021	2.9	0.4
100yrs	POND	BASE	55.18	76.517	79.000	49524	2.816	2.063	3.0	0.4
100yrs	POND	BASE	55.27	76.522	79.000	49546	2.881	2.109	3.0	0.4
100yrs	POND	BASE	55.35	76.527	79.000	49568	2.917	2.154	3.0	0.5
100yrs	POND	BASE	55.43	76.531	79.000	49590	2.938	2.200	3.0	0.5
100yrs	POND	BASE	55.52	76.536	79.000	49611	2.949	2.244	3.0	0.5

POND TIME SERIES 100 YR.TXT										
100yrs	POND	BASE	55.60	76.540	79.000	49631	2.955	2.286	3.1	0.5
100yrs	POND	BASE	55.68	76.544	79.000	49650	2.957	2.326	3.1	0.5
100yrs	POND	BASE	55.77	76.547	79.000	49668	2.958	2.364	3.1	0.5
100yrs	POND	BASE	55.85	76.551	79.000	49684	2.959	2.400	3.1	0.6
100yrs	POND	BASE	55.93	76.554	79.000	49700	2.961	2.433	3.1	0.6
100yrs	POND	BASE	56.02	76.557	79.000	49715	2.990	2.466	3.2	0.6
100yrs	POND	BASE	56.10	76.561	79.000	49732	3.140	2.502	3.2	0.6
100yrs	POND	BASE	56.18	76.565	79.000	49752	3.304	2.546	3.2	0.6
100yrs	POND	BASE	56.27	76.570	79.000	49775	3.382	2.596	3.2	0.6
100yrs	POND	BASE	56.35	76.574	79.000	49798	3.426	2.646	3.3	0.7
100yrs	POND	BASE	56.43	76.579	79.000	49820	3.452	2.695	3.3	0.7
100yrs	POND	BASE	56.52	76.584	79.000	49841	3.466	2.743	3.3	0.7
100yrs	POND	BASE	56.60	76.588	79.000	49862	3.472	2.788	3.3	0.7
100yrs	POND	BASE	56.68	76.592	79.000	49881	3.474	2.831	3.4	0.7
100yrs	POND	BASE	56.77	76.596	79.000	49899	3.476	2.872	3.4	0.7
100yrs	POND	BASE	56.85	76.599	79.000	49916	3.478	2.910	3.4	0.8
100yrs	POND	BASE	56.93	76.602	79.000	49932	3.479	2.946	3.4	0.8
100yrs	POND	BASE	57.02	76.606	79.000	49947	3.517	2.980	3.4	0.8
100yrs	POND	BASE	57.10	76.609	79.000	49964	3.707	3.021	3.5	0.8
100yrs	POND	BASE	57.18	76.614	79.000	49987	3.919	3.072	3.5	0.9
100yrs	POND	BASE	57.27	76.619	79.000	50012	4.021	3.130	3.5	0.9
100yrs	POND	BASE	57.35	76.625	79.000	50038	4.078	3.188	3.6	0.9
100yrs	POND	BASE	57.43	76.630	79.000	50063	4.111	3.246	3.6	0.9
100yrs	POND	BASE	57.52	76.635	79.000	50087	4.150	3.303	3.6	0.9
100yrs	POND	BASE	57.60	76.640	79.000	50113	4.268	3.361	3.6	1.0
100yrs	POND	BASE	57.68	76.646	79.000	50140	4.384	3.425	3.7	1.0
100yrs	POND	BASE	57.77	76.652	79.000	50167	4.440	3.488	3.7	1.0
100yrs	POND	BASE	57.85	76.657	79.000	50194	4.473	3.548	3.7	1.0
100yrs	POND	BASE	57.93	76.663	79.000	50220	4.492	3.605	3.8	1.1
100yrs	POND	BASE	58.02	76.668	79.000	50245	4.529	3.663	3.8	1.1
100yrs	POND	BASE	58.10	76.673	79.000	50271	4.677	3.729	3.8	1.1
100yrs	POND	BASE	58.18	76.679	79.000	50300	4.840	3.802	3.9	1.1
100yrs	POND	BASE	58.27	76.686	79.000	50330	4.919	3.879	3.9	1.2
100yrs	POND	BASE	58.35	76.692	79.000	50359	4.963	3.955	3.9	1.2
100yrs	POND	BASE	58.43	76.698	79.000	50387	4.990	4.028	4.0	1.2
100yrs	POND	BASE	58.52	76.703	79.000	50414	5.100	4.098	4.0	1.2
100yrs	POND	BASE	58.60	76.710	79.000	50449	5.607	4.188	4.0	1.3
100yrs	POND	BASE	58.68	76.720	79.000	50496	6.136	4.311	4.1	1.3
100yrs	POND	BASE	58.77	76.732	79.000	50550	6.390	4.454	4.1	1.3
100yrs	POND	BASE	58.85	76.743	79.000	50605	6.532	4.600	4.2	1.4
100yrs	POND	BASE	58.93	76.754	79.000	50659	6.616	4.744	4.2	1.4
100yrs	POND	BASE	59.02	76.765	79.000	50712	6.887	4.885	4.2	1.4
100yrs	POND	BASE	59.10	76.780	79.000	50783	8.053	5.074	4.3	1.5
100yrs	POND	BASE	59.18	76.801	79.000	50882	9.191	5.337	4.4	1.5
100yrs	POND	BASE	59.27	76.824	79.000	50995	9.739	5.618	4.4	1.5
100yrs	POND	BASE	59.35	76.849	79.000	51112	10.044	5.905	4.5	1.6
100yrs	POND	BASE	59.43	76.873	79.000	51228	10.229	6.181	4.6	1.6
100yrs	POND	BASE	59.51	76.897	79.000	51341	13.061	6.450	4.6	1.7
100yrs	POND	BASE	59.58	76.965	79.000	51668	27.926	7.136	4.8	1.7
100yrs	POND	BASE	59.67	77.144	79.000	52654	49.808	9.225	5.0	1.8
100yrs	POND	BASE	59.75	77.393	79.000	54060	60.052	11.154	5.4	1.8
100yrs	POND	BASE	59.83	77.675	79.000	55659	65.870	12.898	5.8	1.9
100yrs	POND	BASE	59.92	77.960	79.000	57274	69.172	14.446	6.3	2.0
100yrs	POND	BASE	60.00	78.243	79.000	58768	70.643	15.831	6.8	2.1
100yrs	POND	BASE	60.08	78.466	79.000	61066	54.397	20.062	7.2	2.2
100yrs	POND	BASE	60.17	78.577	79.000	62090	34.686	23.309	7.5	2.4
100yrs	POND	BASE	60.25	78.607	79.000	62348	25.416	24.267	7.7	2.5
100yrs	POND	BASE	60.34	78.600	79.000	62288	20.308	24.040	7.9	2.7
100yrs	POND	BASE	60.42	78.577	79.000	62093	17.543	23.320	8.0	2.9
100yrs	POND	BASE	60.50	78.547	79.000	61830	15.977	22.379	8.1	3.0
100yrs	POND	BASE	60.59	78.511	79.000	61513	13.210	21.301	8.2	3.2

POND TIME SERIES 100 YR.TXT										
100yrs	POND	BASE	60.67	78.466	79.000	61068	10.617	20.066	8.3	3.3
100yrs	POND	BASE	60.75	78.423	79.000	60617	9.488	18.963	8.4	3.5
100yrs	POND	BASE	60.84	78.376	79.000	60123	8.809	17.875	8.5	3.6
100yrs	POND	BASE	60.92	78.331	79.000	59651	8.430	16.973	8.5	3.7
100yrs	POND	BASE	61.01	78.288	79.000	59202	8.179	16.277	8.6	3.8
100yrs	POND	BASE	61.09	78.245	79.000	58780	7.402	15.841	8.6	3.9
100yrs	POND	BASE	61.17	78.204	79.000	58565	6.681	15.648	8.7	4.0
100yrs	POND	BASE	61.25	78.156	79.000	58316	6.309	15.421	8.7	4.2
100yrs	POND	BASE	61.34	78.108	79.000	58065	6.107	15.188	8.8	4.3
100yrs	POND	BASE	61.42	78.060	79.000	57815	5.995	14.952	8.8	4.4
100yrs	POND	BASE	61.50	78.018	79.000	57593	5.937	14.739	8.8	4.5
100yrs	POND	BASE	61.59	77.971	79.000	57333	5.626	14.499	8.9	4.6
100yrs	POND	BASE	61.67	77.923	79.000	57061	5.267	14.251	8.9	4.7
100yrs	POND	BASE	61.76	77.874	79.000	56787	5.101	13.998	9.0	4.8
100yrs	POND	BASE	61.83	77.831	79.000	56543	5.016	13.767	9.0	4.9
100yrs	POND	BASE	61.92	77.784	79.000	56276	4.963	13.511	9.0	5.0
100yrs	POND	BASE	62.00	77.738	79.000	56015	4.911	13.255	9.1	5.0
100yrs	POND	BASE	62.09	77.692	79.000	55752	4.492	12.993	9.1	5.1
100yrs	POND	BASE	62.18	77.644	79.000	55483	4.034	12.718	9.1	5.2
100yrs	POND	BASE	62.25	77.601	79.000	55238	3.831	12.463	9.1	5.3
100yrs	POND	BASE	62.34	77.553	79.000	54968	3.709	12.175	9.2	5.4
100yrs	POND	BASE	62.42	77.506	79.000	54703	3.641	11.886	9.2	5.5
100yrs	POND	BASE	62.51	77.460	79.000	54444	3.596	11.596	9.2	5.6
100yrs	POND	BASE	62.58	77.420	79.000	54215	3.484	11.335	9.2	5.6
100yrs	POND	BASE	62.67	77.376	79.000	53965	3.342	11.041	9.3	5.7
100yrs	POND	BASE	62.76	77.333	79.000	53720	3.277	10.746	9.3	5.8
100yrs	POND	BASE	62.84	77.290	79.000	53481	3.241	10.450	9.3	5.9
100yrs	POND	BASE	62.92	77.254	79.000	53273	3.223	10.186	9.3	5.9
100yrs	POND	BASE	63.00	77.214	79.000	53050	3.212	9.893	9.4	6.0
100yrs	POND	BASE	63.09	77.176	79.000	52835	3.205	9.603	9.4	6.1
100yrs	POND	BASE	63.17	77.140	79.000	52630	3.202	9.170	9.4	6.1
100yrs	POND	BASE	63.25	77.110	79.000	52458	3.201	8.778	9.4	6.2
100yrs	POND	BASE	63.34	77.078	79.000	52279	3.200	8.371	9.5	6.3
100yrs	POND	BASE	63.42	77.049	79.000	52113	3.200	7.992	9.5	6.3
100yrs	POND	BASE	63.51	77.021	79.000	51958	3.200	7.638	9.5	6.4
100yrs	POND	BASE	63.59	76.996	79.000	51818	3.200	7.367	9.5	6.4
100yrs	POND	BASE	63.67	76.974	79.000	51710	3.200	7.217	9.5	6.5
100yrs	POND	BASE	63.76	76.950	79.000	51598	3.200	7.003	9.6	6.5
100yrs	POND	BASE	63.84	76.928	79.000	51492	3.200	6.784	9.6	6.6
100yrs	POND	BASE	63.93	76.907	79.000	51393	3.200	6.565	9.6	6.6
100yrs	POND	BASE	64.00	76.890	79.000	51311	3.192	6.377	9.6	6.7
100yrs	POND	BASE	64.09	76.869	79.000	51208	2.767	6.134	9.6	6.7
100yrs	POND	BASE	64.17	76.849	79.000	51114	2.346	5.909	9.7	6.7
100yrs	POND	BASE	64.25	76.829	79.000	51017	2.143	5.673	9.7	6.8
100yrs	POND	BASE	64.33	76.809	79.000	50923	2.029	5.441	9.7	6.8
100yrs	POND	BASE	64.43	76.787	79.000	50818	1.959	5.168	9.7	6.9
100yrs	POND	BASE	64.51	76.770	79.000	50733	1.927	4.942	9.7	6.9
100yrs	POND	BASE	64.59	76.753	79.000	50654	1.913	4.728	9.7	6.9
100yrs	POND	BASE	64.67	76.738	79.000	50579	1.912	4.532	9.7	7.0
100yrs	POND	BASE	64.76	76.721	79.000	50499	1.912	4.320	9.8	7.0
100yrs	POND	BASE	64.85	76.707	79.000	50430	1.912	4.139	9.8	7.0
100yrs	POND	BASE	64.93	76.694	79.000	50369	1.912	3.980	9.8	7.0
100yrs	POND	BASE	65.01	76.682	79.000	50312	1.913	3.833	9.8	7.1
100yrs	POND	BASE	65.10	76.671	79.000	50259	1.917	3.697	9.8	7.1
100yrs	POND	BASE	65.18	76.660	79.000	50209	1.922	3.581	9.8	7.1
100yrs	POND	BASE	65.26	76.651	79.000	50163	1.924	3.479	9.8	7.1
100yrs	POND	BASE	65.35	76.642	79.000	50120	1.926	3.379	9.9	7.2
100yrs	POND	BASE	65.43	76.633	79.000	50079	1.926	3.285	9.9	7.2
100yrs	POND	BASE	65.51	76.625	79.000	50042	1.927	3.198	9.9	7.2
100yrs	POND	BASE	65.60	76.618	79.000	50006	1.927	3.117	9.9	7.2
100yrs	POND	BASE	65.68	76.611	79.000	49973	1.927	3.041	9.9	7.3

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POND TIME SERIES 100 YR.TXT										
100yrs	POND	BASE	65.76	76.605	79.000	49942	1.927	2.969	9.9	7.3
100yrs	POND	BASE	65.85	76.599	79.000	49913	1.927	2.903	9.9	7.3
100yrs	POND	BASE	65.93	76.593	79.000	49885	1.927	2.842	9.9	7.3
100yrs	POND	BASE	66.01	76.587	79.000	49860	1.927	2.784	10.0	7.3
100yrs	POND	BASE	66.10	76.582	79.000	49836	1.927	2.731	10.0	7.4
100yrs	POND	BASE	66.18	76.578	79.000	49813	1.927	2.681	10.0	7.4
100yrs	POND	BASE	66.26	76.573	79.000	49792	1.927	2.634	10.0	7.4
100yrs	POND	BASE	66.35	76.569	79.000	49772	1.927	2.590	10.0	7.4
100yrs	POND	BASE	66.43	76.565	79.000	49754	1.927	2.549	10.0	7.4
100yrs	POND	BASE	66.51	76.562	79.000	49736	1.927	2.511	10.0	7.4
100yrs	POND	BASE	66.60	76.558	79.000	49720	1.927	2.476	10.1	7.5
100yrs	POND	BASE	66.68	76.555	79.000	49704	1.927	2.442	10.1	7.5
100yrs	POND	BASE	66.76	76.552	79.000	49690	1.927	2.411	10.1	7.5
100yrs	POND	BASE	66.85	76.549	79.000	49676	1.927	2.382	10.1	7.5
100yrs	POND	BASE	66.93	76.547	79.000	49663	1.927	2.355	10.1	7.5
100yrs	POND	BASE	67.01	76.544	79.000	49651	1.927	2.329	10.1	7.5
100yrs	POND	BASE	67.10	76.542	79.000	49640	1.927	2.305	10.1	7.6
100yrs	POND	BASE	67.18	76.539	79.000	49629	1.927	2.282	10.1	7.6
100yrs	POND	BASE	67.26	76.537	79.000	49619	1.928	2.261	10.2	7.6
100yrs	POND	BASE	67.35	76.535	79.000	49610	1.928	2.242	10.2	7.6
100yrs	POND	BASE	67.43	76.534	79.000	49601	1.928	2.223	10.2	7.6
100yrs	POND	BASE	67.51	76.532	79.000	49593	1.928	2.206	10.2	7.6
100yrs	POND	BASE	67.60	76.530	79.000	49585	1.928	2.189	10.2	7.7
100yrs	POND	BASE	67.68	76.529	79.000	49578	1.928	2.174	10.2	7.7
100yrs	POND	BASE	67.76	76.527	79.000	49571	1.928	2.160	10.2	7.7
100yrs	POND	BASE	67.85	76.526	79.000	49564	1.928	2.146	10.3	7.7
100yrs	POND	BASE	67.93	76.524	79.000	49558	1.927	2.133	10.3	7.7
100yrs	POND	BASE	68.01	76.523	79.000	49552	1.890	2.121	10.3	7.7
100yrs	POND	BASE	68.10	76.521	79.000	49543	1.685	2.102	10.3	7.7
100yrs	POND	BASE	68.18	76.518	79.000	49528	1.480	2.072	10.3	7.8
100yrs	POND	BASE	68.26	76.514	79.000	49509	1.382	2.035	10.3	7.8
100yrs	POND	BASE	68.35	76.510	79.000	49490	1.328	1.996	10.3	7.8
100yrs	POND	BASE	68.43	76.506	79.000	49471	1.298	1.957	10.3	7.8
100yrs	POND	BASE	68.51	76.502	79.000	49452	1.282	1.919	10.3	7.8
100yrs	POND	BASE	68.60	76.499	79.000	49434	1.276	1.883	10.4	7.8
100yrs	POND	BASE	68.68	76.495	79.000	49417	1.276	1.849	10.4	7.8
100yrs	POND	BASE	68.76	76.492	79.000	49400	1.276	1.818	10.4	7.9
100yrs	POND	BASE	68.85	76.488	79.000	49385	1.276	1.788	10.4	7.9
100yrs	POND	BASE	68.93	76.485	79.000	49370	1.276	1.760	10.4	7.9
100yrs	POND	BASE	69.01	76.482	79.000	49357	1.276	1.734	10.4	7.9
100yrs	POND	BASE	69.10	76.480	79.000	49344	1.276	1.709	10.4	7.9
100yrs	POND	BASE	69.18	76.477	79.000	49331	1.276	1.686	10.4	7.9
100yrs	POND	BASE	69.26	76.475	79.000	49320	1.276	1.664	10.4	7.9
100yrs	POND	BASE	69.35	76.472	79.000	49309	1.276	1.643	10.4	7.9
100yrs	POND	BASE	69.43	76.470	79.000	49298	1.276	1.624	10.4	7.9
100yrs	POND	BASE	69.51	76.468	79.000	49288	1.276	1.606	10.4	8.0
100yrs	POND	BASE	69.60	76.466	79.000	49279	1.276	1.588	10.5	8.0
100yrs	POND	BASE	69.68	76.464	79.000	49270	1.276	1.572	10.5	8.0
100yrs	POND	BASE	69.76	76.463	79.000	49262	1.276	1.557	10.5	8.0
100yrs	POND	BASE	69.85	76.461	79.000	49254	1.276	1.542	10.5	8.0
100yrs	POND	BASE	69.93	76.459	79.000	49246	1.276	1.528	10.5	8.0
100yrs	POND	BASE	70.01	76.458	79.000	49239	1.277	1.515	10.5	8.0
100yrs	POND	BASE	70.10	76.456	79.000	49232	1.279	1.503	10.5	8.0
100yrs	POND	BASE	70.18	76.455	79.000	49226	1.281	1.492	10.5	8.0
100yrs	POND	BASE	70.26	76.454	79.000	49220	1.282	1.481	10.5	8.1
100yrs	POND	BASE	70.35	76.453	79.000	49214	1.283	1.471	10.5	8.1
100yrs	POND	BASE	70.43	76.452	79.000	49209	1.283	1.461	10.5	8.1
100yrs	POND	BASE	70.51	76.451	79.000	49204	1.284	1.452	10.6	8.1
100yrs	POND	BASE	70.60	76.450	79.000	49199	1.284	1.444	10.6	8.1
100yrs	POND	BASE	70.68	76.449	79.000	49194	1.284	1.436	10.6	8.1
100yrs	POND	BASE	70.76	76.448	79.000	49190	1.284	1.428	10.6	8.1

POND TIME SERIES 100 YR.TXT										
100yrs	POND	BASE	70.85	76.447	79.000	49186	1.284	1.421	10.6	8.1
100yrs	POND	BASE	70.93	76.446	79.000	49182	1.284	1.414	10.6	8.1
100yrs	POND	BASE	71.01	76.445	79.000	49178	1.284	1.407	10.6	8.1
100yrs	POND	BASE	71.10	76.444	79.000	49175	1.284	1.401	10.6	8.2
100yrs	POND	BASE	71.18	76.444	79.000	49171	1.284	1.395	10.6	8.2
100yrs	POND	BASE	71.26	76.443	79.000	49168	1.284	1.390	10.6	8.2
100yrs	POND	BASE	71.35	76.442	79.000	49165	1.284	1.385	10.6	8.2
100yrs	POND	BASE	71.43	76.442	79.000	49162	1.284	1.380	10.6	8.2
100yrs	POND	BASE	71.51	76.441	79.000	49159	1.284	1.375	10.7	8.2
100yrs	POND	BASE	71.60	76.441	79.000	49157	1.284	1.370	10.7	8.2
100yrs	POND	BASE	71.68	76.440	79.000	49154	1.284	1.366	10.7	8.2
100yrs	POND	BASE	71.76	76.440	79.000	49152	1.284	1.362	10.7	8.2
100yrs	POND	BASE	71.85	76.439	79.000	49150	1.284	1.358	10.7	8.2
100yrs	POND	BASE	71.93	76.439	79.000	49148	1.284	1.354	10.7	8.2
100yrs	POND	BASE	72.01	76.438	79.000	49142	0.000	1.345	10.7	8.2
100yrs	POND	BASE	72.10	76.430	79.000	49103	0.000	1.279	10.7	8.3
100yrs	POND	BASE	72.18	76.422	79.000	49067	0.000	1.219	10.7	8.3
100yrs	POND	BASE	72.26	76.415	79.000	49032	0.000	1.162	10.7	8.3
100yrs	POND	BASE	72.35	76.408	79.000	48998	0.000	1.109	10.7	8.3
100yrs	POND	BASE	72.43	76.401	79.000	48967	0.000	1.059	10.7	8.3
100yrs	POND	BASE	72.51	76.395	79.000	48936	0.000	1.012	10.7	8.3
100yrs	POND	BASE	72.60	76.389	79.000	48907	0.000	0.969	10.7	8.3
100yrs	POND	BASE	72.68	76.383	79.000	48879	0.000	0.928	10.7	8.3
100yrs	POND	BASE	72.76	76.377	79.000	48852	0.000	0.890	10.7	8.3
100yrs	POND	BASE	72.85	76.372	79.000	48826	0.000	0.853	10.7	8.3
100yrs	POND	BASE	72.93	76.367	79.000	48802	0.000	0.819	10.7	8.3
100yrs	POND	BASE	73.01	76.362	79.000	48778	0.000	0.787	10.7	8.3
100yrs	POND	BASE	73.10	76.357	79.000	48755	0.000	0.757	10.7	8.3
100yrs	POND	BASE	73.18	76.352	79.000	48733	0.000	0.728	10.7	8.4
100yrs	POND	BASE	73.26	76.348	79.000	48712	0.000	0.702	10.7	8.4
100yrs	POND	BASE	73.35	76.344	79.000	48692	0.000	0.676	10.7	8.4
100yrs	POND	BASE	73.43	76.340	79.000	48672	0.000	0.652	10.7	8.4
100yrs	POND	BASE	73.51	76.336	79.000	48653	0.000	0.629	10.7	8.4
100yrs	POND	BASE	73.60	76.332	79.000	48635	0.000	0.607	10.7	8.4
100yrs	POND	BASE	73.68	76.328	79.000	48617	0.000	0.586	10.7	8.4
100yrs	POND	BASE	73.76	76.325	79.000	48600	0.000	0.567	10.7	8.4
100yrs	POND	BASE	73.85	76.321	79.000	48584	0.000	0.548	10.7	8.4
100yrs	POND	BASE	73.93	76.318	79.000	48568	0.000	0.530	10.7	8.4
100yrs	POND	BASE	74.01	76.315	79.000	48552	0.000	0.514	10.7	8.4
100yrs	POND	BASE	74.10	76.311	79.000	48537	0.000	0.498	10.7	8.4
100yrs	POND	BASE	74.18	76.308	79.000	48523	0.000	0.483	10.7	8.4
100yrs	POND	BASE	74.26	76.305	79.000	48509	0.000	0.468	10.7	8.4
100yrs	POND	BASE	74.35	76.303	79.000	48495	0.000	0.454	10.7	8.4
100yrs	POND	BASE	74.43	76.300	79.000	48482	0.000	0.441	10.7	8.4
100yrs	POND	BASE	74.51	76.297	79.000	48469	0.000	0.428	10.7	8.4
100yrs	POND	BASE	74.60	76.295	79.000	48456	0.000	0.416	10.7	8.4
100yrs	POND	BASE	74.68	76.292	79.000	48444	0.000	0.404	10.7	8.4
100yrs	POND	BASE	74.76	76.290	79.000	48432	0.000	0.393	10.7	8.4
100yrs	POND	BASE	74.85	76.287	79.000	48421	0.000	0.382	10.7	8.4
100yrs	POND	BASE	74.93	76.285	79.000	48409	0.000	0.372	10.7	8.4
100yrs	POND	BASE	75.01	76.283	79.000	48399	0.000	0.362	10.7	8.4
100yrs	POND	BASE	75.10	76.280	79.000	48388	0.000	0.353	10.7	8.4
100yrs	POND	BASE	75.18	76.278	79.000	48378	0.000	0.344	10.7	8.4
100yrs	POND	BASE	75.26	76.276	79.000	48367	0.000	0.335	10.7	8.4
100yrs	POND	BASE	75.35	76.274	79.000	48358	0.000	0.327	10.7	8.4
100yrs	POND	BASE	75.43	76.272	79.000	48348	0.000	0.319	10.7	8.4
100yrs	POND	BASE	75.51	76.270	79.000	48339	0.000	0.311	10.7	8.4
100yrs	POND	BASE	75.60	76.268	79.000	48329	0.000	0.304	10.7	8.4
100yrs	POND	BASE	75.68	76.266	79.000	48320	0.000	0.297	10.7	8.4
100yrs	POND	BASE	75.76	76.264	79.000	48312	0.000	0.290	10.7	8.5
100yrs	POND	BASE	75.85	76.263	79.000	48303	0.000	0.284	10.7	8.5

			POND TIME SERIES 100				YR.TXT			
100yrs	POND	BASE	75.93	76.261	79.000	48295	0.000	0.277	10.7	8.5
100yrs	POND	BASE	76.01	76.259	79.000	48287	0.000	0.271	10.7	8.5
100yrs	POND	BASE	76.10	76.258	79.000	48279	0.000	0.265	10.7	8.5
100yrs	POND	BASE	76.18	76.256	79.000	48271	0.000	0.259	10.7	8.5
100yrs	POND	BASE	76.26	76.254	79.000	48263	0.000	0.254	10.7	8.5
100yrs	POND	BASE	76.35	76.253	79.000	48256	0.000	0.249	10.7	8.5
100yrs	POND	BASE	76.43	76.251	79.000	48248	0.000	0.243	10.7	8.5
100yrs	POND	BASE	76.51	76.250	79.000	48241	0.000	0.238	10.7	8.5
100yrs	POND	BASE	76.60	76.248	79.000	48234	0.000	0.233	10.7	8.5
100yrs	POND	BASE	76.68	76.247	79.000	48227	0.000	0.229	10.7	8.5
100yrs	POND	BASE	76.76	76.245	79.000	48221	0.000	0.224	10.7	8.5
100yrs	POND	BASE	76.85	76.244	79.000	48214	0.000	0.220	10.7	8.5
100yrs	POND	BASE	76.93	76.243	79.000	48207	0.000	0.216	10.7	8.5
100yrs	POND	BASE	77.01	76.241	79.000	48201	0.000	0.211	10.7	8.5
100yrs	POND	BASE	77.10	76.240	79.000	48195	0.000	0.208	10.7	8.5
100yrs	POND	BASE	77.18	76.239	79.000	48189	0.000	0.204	10.7	8.5
100yrs	POND	BASE	77.26	76.237	79.000	48183	0.000	0.200	10.7	8.5
100yrs	POND	BASE	77.35	76.236	79.000	48177	0.000	0.196	10.7	8.5
100yrs	POND	BASE	77.43	76.235	79.000	48171	0.000	0.193	10.7	8.5
100yrs	POND	BASE	77.51	76.234	79.000	48165	0.000	0.190	10.7	8.5
100yrs	POND	BASE	77.60	76.233	79.000	48160	0.000	0.186	10.7	8.5
100yrs	POND	BASE	77.68	76.231	79.000	48154	0.000	0.183	10.7	8.5
100yrs	POND	BASE	77.76	76.230	79.000	48149	0.000	0.180	10.7	8.5
100yrs	POND	BASE	77.85	76.229	79.000	48143	0.000	0.178	10.7	8.5
100yrs	POND	BASE	77.93	76.228	79.000	48138	0.000	0.175	10.7	8.5
100yrs	POND	BASE	78.01	76.227	79.000	48133	0.000	0.172	10.7	8.5
100yrs	POND	BASE	78.10	76.226	79.000	48128	0.000	0.169	10.7	8.5
100yrs	POND	BASE	78.18	76.225	79.000	48123	0.000	0.167	10.7	8.5
100yrs	POND	BASE	78.26	76.224	79.000	48118	0.000	0.164	10.7	8.5
100yrs	POND	BASE	78.35	76.223	79.000	48113	0.000	0.162	10.7	8.5
100yrs	POND	BASE	78.43	76.222	79.000	48108	0.000	0.159	10.7	8.5
100yrs	POND	BASE	78.51	76.221	79.000	48103	0.000	0.157	10.7	8.5
100yrs	POND	BASE	78.60	76.220	79.000	48099	0.000	0.155	10.7	8.5
100yrs	POND	BASE	78.68	76.219	79.000	48094	0.000	0.152	10.7	8.5
100yrs	POND	BASE	78.76	76.218	79.000	48090	0.000	0.150	10.7	8.5
100yrs	POND	BASE	78.85	76.217	79.000	48085	0.000	0.148	10.7	8.5
100yrs	POND	BASE	78.93	76.216	79.000	48081	0.000	0.146	10.7	8.5
100yrs	POND	BASE	79.01	76.215	79.000	48076	0.000	0.144	10.7	8.5
100yrs	POND	BASE	79.10	76.214	79.000	48072	0.000	0.142	10.7	8.5
100yrs	POND	BASE	79.18	76.214	79.000	48068	0.000	0.140	10.7	8.5
100yrs	POND	BASE	79.26	76.213	79.000	48064	0.000	0.138	10.7	8.5
100yrs	POND	BASE	79.35	76.212	79.000	48060	0.000	0.136	10.7	8.5
100yrs	POND	BASE	79.43	76.211	79.000	48056	0.000	0.135	10.7	8.5
100yrs	POND	BASE	79.51	76.210	79.000	48052	0.000	0.133	10.7	8.5
100yrs	POND	BASE	79.60	76.209	79.000	48048	0.000	0.131	10.7	8.5
100yrs	POND	BASE	79.68	76.208	79.000	48044	0.000	0.129	10.7	8.5
100yrs	POND	BASE	79.76	76.208	79.000	48040	0.000	0.128	10.7	8.5
100yrs	POND	BASE	79.85	76.207	79.000	48036	0.000	0.126	10.7	8.5
100yrs	POND	BASE	79.93	76.206	79.000	48032	0.000	0.125	10.7	8.5
100yrs	POND	BASE	80.01	76.205	79.000	48029	0.000	0.123	10.7	8.5
100yrs	POND	BASE	80.10	76.205	79.000	48025	0.000	0.122	10.7	8.5
100yrs	POND	BASE	80.18	76.204	79.000	48021	0.000	0.120	10.7	8.5
100yrs	POND	BASE	80.26	76.203	79.000	48018	0.000	0.119	10.7	8.5
100yrs	POND	BASE	80.35	76.202	79.000	48014	0.000	0.117	10.7	8.5
100yrs	POND	BASE	80.43	76.202	79.000	48011	0.000	0.116	10.7	8.5
100yrs	POND	BASE	80.51	76.201	79.000	48007	0.000	0.115	10.7	8.5
100yrs	POND	BASE	80.60	76.200	79.000	48004	0.000	0.114	10.7	8.5
100yrs	POND	BASE	80.68	76.199	79.000	48000	0.000	0.112	10.7	8.5
100yrs	POND	BASE	80.76	76.199	79.000	47997	0.000	0.111	10.7	8.5
100yrs	POND	BASE	80.85	76.198	79.000	47994	0.000	0.110	10.7	8.5
100yrs	POND	BASE	80.93	76.197	79.000	47990	0.000	0.109	10.7	8.5

POND TIME SERIES 100 YR.TXT										
100yrs	POND	BASE	81.01	76.197	79.000	47987	0.000	0.108	10.7	8.5
100yrs	POND	BASE	81.10	76.196	79.000	47984	0.000	0.107	10.7	8.5
100yrs	POND	BASE	81.18	76.195	79.000	47981	0.000	0.106	10.7	8.5
100yrs	POND	BASE	81.26	76.195	79.000	47978	0.000	0.105	10.7	8.5
100yrs	POND	BASE	81.35	76.194	79.000	47975	0.000	0.104	10.7	8.5
100yrs	POND	BASE	81.43	76.193	79.000	47971	0.000	0.103	10.7	8.5
100yrs	POND	BASE	81.51	76.193	79.000	47968	0.000	0.102	10.7	8.5
100yrs	POND	BASE	81.60	76.192	79.000	47965	0.000	0.101	10.7	8.5
100yrs	POND	BASE	81.68	76.191	79.000	47962	0.000	0.100	10.7	8.5
100yrs	POND	BASE	81.76	76.191	79.000	47959	0.000	0.100	10.7	8.5
100yrs	POND	BASE	81.85	76.190	79.000	47956	0.000	0.099	10.7	8.5
100yrs	POND	BASE	81.93	76.190	79.000	47953	0.000	0.098	10.7	8.5
100yrs	POND	BASE	82.01	76.189	79.000	47950	0.000	0.098	10.7	8.5
100yrs	POND	BASE	82.10	76.188	79.000	47948	0.000	0.097	10.7	8.5
100yrs	POND	BASE	82.18	76.188	79.000	47945	0.000	0.096	10.7	8.5
100yrs	POND	BASE	82.26	76.187	79.000	47942	0.000	0.096	10.7	8.5
100yrs	POND	BASE	82.35	76.187	79.000	47939	0.000	0.095	10.7	8.5
100yrs	POND	BASE	82.43	76.186	79.000	47936	0.000	0.095	10.7	8.5
100yrs	POND	BASE	82.51	76.185	79.000	47933	0.000	0.094	10.7	8.5
100yrs	POND	BASE	82.60	76.185	79.000	47930	0.000	0.094	10.7	8.5
100yrs	POND	BASE	82.68	76.184	79.000	47928	0.000	0.093	10.7	8.5
100yrs	POND	BASE	82.76	76.184	79.000	47925	0.000	0.092	10.7	8.5
100yrs	POND	BASE	82.85	76.183	79.000	47922	0.000	0.092	10.7	8.5
100yrs	POND	BASE	82.93	76.183	79.000	47919	0.000	0.091	10.7	8.5
100yrs	POND	BASE	83.01	76.182	79.000	47917	0.000	0.091	10.7	8.5
100yrs	POND	BASE	83.10	76.181	79.000	47914	0.000	0.090	10.7	8.5
100yrs	POND	BASE	83.18	76.181	79.000	47911	0.000	0.090	10.7	8.5
100yrs	POND	BASE	83.26	76.180	79.000	47908	0.000	0.089	10.7	8.5
100yrs	POND	BASE	83.35	76.180	79.000	47906	0.000	0.088	10.7	8.5
100yrs	POND	BASE	83.43	76.179	79.000	47903	0.000	0.088	10.7	8.5
100yrs	POND	BASE	83.51	76.179	79.000	47901	0.000	0.087	10.7	8.5
100yrs	POND	BASE	83.60	76.178	79.000	47898	0.000	0.087	10.7	8.5
100yrs	POND	BASE	83.68	76.177	79.000	47895	0.000	0.086	10.7	8.5
100yrs	POND	BASE	83.76	76.177	79.000	47893	0.000	0.086	10.7	8.5
100yrs	POND	BASE	83.85	76.176	79.000	47890	0.000	0.085	10.7	8.5
100yrs	POND	BASE	83.93	76.176	79.000	47888	0.000	0.085	10.7	8.5
100yrs	POND	BASE	84.01	76.175	79.000	47885	0.000	0.084	10.7	8.6
100yrs	POND	BASE	84.10	76.175	79.000	47883	0.000	0.084	10.7	8.6
100yrs	POND	BASE	84.18	76.174	79.000	47880	0.000	0.083	10.7	8.6
100yrs	POND	BASE	84.26	76.174	79.000	47878	0.000	0.083	10.7	8.6
100yrs	POND	BASE	84.35	76.173	79.000	47875	0.000	0.082	10.7	8.6
100yrs	POND	BASE	84.43	76.173	79.000	47873	0.000	0.082	10.7	8.6
100yrs	POND	BASE	84.51	76.172	79.000	47870	0.000	0.081	10.7	8.6
100yrs	POND	BASE	84.60	76.172	79.000	47868	0.000	0.081	10.7	8.6
100yrs	POND	BASE	84.68	76.171	79.000	47865	0.000	0.080	10.7	8.6
100yrs	POND	BASE	84.76	76.171	79.000	47863	0.000	0.080	10.7	8.6
100yrs	POND	BASE	84.85	76.170	79.000	47860	0.000	0.079	10.7	8.6
100yrs	POND	BASE	84.93	76.170	79.000	47858	0.000	0.079	10.7	8.6
100yrs	POND	BASE	85.01	76.169	79.000	47856	0.000	0.079	10.7	8.6
100yrs	POND	BASE	85.10	76.169	79.000	47853	0.000	0.078	10.7	8.6
100yrs	POND	BASE	85.18	76.168	79.000	47851	0.000	0.078	10.7	8.6
100yrs	POND	BASE	85.26	76.168	79.000	47849	0.000	0.077	10.7	8.6
100yrs	POND	BASE	85.35	76.167	79.000	47846	0.000	0.077	10.7	8.6
100yrs	POND	BASE	85.43	76.167	79.000	47844	0.000	0.076	10.7	8.6
100yrs	POND	BASE	85.51	76.166	79.000	47842	0.000	0.076	10.7	8.6
100yrs	POND	BASE	85.60	76.166	79.000	47840	0.000	0.075	10.7	8.6
100yrs	POND	BASE	85.68	76.165	79.000	47837	0.000	0.075	10.7	8.6
100yrs	POND	BASE	85.76	76.165	79.000	47835	0.000	0.075	10.7	8.6
100yrs	POND	BASE	85.85	76.164	79.000	47833	0.000	0.074	10.7	8.6
100yrs	POND	BASE	85.93	76.164	79.000	47831	0.000	0.074	10.7	8.6
100yrs	POND	BASE	86.01	76.164	79.000	47828	0.000	0.073	10.7	8.6



		POND TIME SERIES 100 YR.TXT								
100yrs	POND	BASE	86.10	76.163	79.000	47826	0.000	0.073	10.7	8.6
100yrs	POND	BASE	86.18	76.163	79.000	47824	0.000	0.073	10.7	8.6
100yrs	POND	BASE	86.26	76.162	79.000	47822	0.000	0.072	10.7	8.6
100yrs	POND	BASE	86.35	76.162	79.000	47820	0.000	0.072	10.7	8.6
100yrs	POND	BASE	86.43	76.161	79.000	47817	0.000	0.071	10.7	8.6
100yrs	POND	BASE	86.51	76.161	79.000	47815	0.000	0.071	10.7	8.6
100yrs	POND	BASE	86.60	76.160	79.000	47813	0.000	0.071	10.7	8.6
100yrs	POND	BASE	86.68	76.160	79.000	47811	0.000	0.070	10.7	8.6
100yrs	POND	BASE	86.76	76.159	79.000	47809	0.000	0.070	10.7	8.6
100yrs	POND	BASE	86.85	76.159	79.000	47807	0.000	0.069	10.7	8.6
100yrs	POND	BASE	86.93	76.159	79.000	47805	0.000	0.069	10.7	8.6
100yrs	POND	BASE	87.01	76.158	79.000	47803	0.000	0.069	10.7	8.6
100yrs	POND	BASE	87.10	76.158	79.000	47801	0.000	0.068	10.7	8.6
100yrs	POND	BASE	87.18	76.157	79.000	47799	0.000	0.068	10.7	8.6
100yrs	POND	BASE	87.26	76.157	79.000	47797	0.000	0.067	10.7	8.6
100yrs	POND	BASE	87.35	76.156	79.000	47795	0.000	0.067	10.7	8.6
100yrs	POND	BASE	87.43	76.156	79.000	47793	0.000	0.067	10.7	8.6
100yrs	POND	BASE	87.51	76.156	79.000	47791	0.000	0.066	10.7	8.6
100yrs	POND	BASE	87.60	76.155	79.000	47789	0.000	0.066	10.7	8.6
100yrs	POND	BASE	87.68	76.155	79.000	47787	0.000	0.066	10.7	8.6
100yrs	POND	BASE	87.76	76.154	79.000	47785	0.000	0.065	10.7	8.6
100yrs	POND	BASE	87.85	76.154	79.000	47783	0.000	0.065	10.7	8.6
100yrs	POND	BASE	87.93	76.154	79.000	47781	0.000	0.065	10.7	8.6
100yrs	POND	BASE	88.01	76.153	79.000	47779	0.000	0.064	10.7	8.6
100yrs	POND	BASE	88.10	76.153	79.000	47777	0.000	0.064	10.7	8.6
100yrs	POND	BASE	88.18	76.152	79.000	47775	0.000	0.064	10.7	8.6
100yrs	POND	BASE	88.26	76.152	79.000	47773	0.000	0.063	10.7	8.6
100yrs	POND	BASE	88.35	76.152	79.000	47771	0.000	0.063	10.7	8.6
100yrs	POND	BASE	88.43	76.151	79.000	47769	0.000	0.063	10.7	8.6
100yrs	POND	BASE	88.51	76.151	79.000	47767	0.000	0.062	10.7	8.6
100yrs	POND	BASE	88.60	76.150	79.000	47765	0.000	0.062	10.7	8.6
100yrs	POND	BASE	88.68	76.150	79.000	47764	0.000	0.062	10.7	8.6
100yrs	POND	BASE	88.76	76.150	79.000	47762	0.000	0.061	10.7	8.6
100yrs	POND	BASE	88.85	76.149	79.000	47760	0.000	0.061	10.7	8.6
100yrs	POND	BASE	88.93	76.149	79.000	47758	0.000	0.061	10.7	8.6
100yrs	POND	BASE	89.01	76.148	79.000	47756	0.000	0.060	10.7	8.6
100yrs	POND	BASE	89.10	76.148	79.000	47754	0.000	0.060	10.7	8.6
100yrs	POND	BASE	89.18	76.148	79.000	47753	0.000	0.060	10.7	8.6
100yrs	POND	BASE	89.26	76.147	79.000	47751	0.000	0.059	10.7	8.6
100yrs	POND	BASE	89.35	76.147	79.000	47749	0.000	0.059	10.7	8.6
100yrs	POND	BASE	89.43	76.147	79.000	47747	0.000	0.059	10.7	8.6
100yrs	POND	BASE	89.51	76.146	79.000	47746	0.000	0.059	10.7	8.6
100yrs	POND	BASE	89.60	76.146	79.000	47744	0.000	0.058	10.7	8.6
100yrs	POND	BASE	89.68	76.146	79.000	47742	0.000	0.058	10.7	8.6
100yrs	POND	BASE	89.76	76.145	79.000	47740	0.000	0.058	10.7	8.6
100yrs	POND	BASE	89.85	76.145	79.000	47739	0.000	0.057	10.7	8.6
100yrs	POND	BASE	89.93	76.144	79.000	47737	0.000	0.057	10.7	8.6
100yrs	POND	BASE	90.01	76.144	79.000	47735	0.000	0.057	10.7	8.6
100yrs	POND	BASE	90.10	76.144	79.000	47733	0.000	0.057	10.7	8.6
100yrs	POND	BASE	90.18	76.143	79.000	47732	0.000	0.056	10.7	8.6
100yrs	POND	BASE	90.26	76.143	79.000	47730	0.000	0.056	10.7	8.6
100yrs	POND	BASE	90.35	76.143	79.000	47728	0.000	0.056	10.7	8.6
100yrs	POND	BASE	90.43	76.142	79.000	47727	0.000	0.055	10.7	8.6
100yrs	POND	BASE	90.51	76.142	79.000	47725	0.000	0.055	10.7	8.6
100yrs	POND	BASE	90.60	76.142	79.000	47723	0.000	0.055	10.7	8.6
100yrs	POND	BASE	90.68	76.141	79.000	47722	0.000	0.055	10.7	8.6
100yrs	POND	BASE	90.76	76.141	79.000	47720	0.000	0.054	10.7	8.6
100yrs	POND	BASE	90.85	76.141	79.000	47718	0.000	0.054	10.7	8.6
100yrs	POND	BASE	90.93	76.140	79.000	47717	0.000	0.054	10.7	8.6
100yrs	POND	BASE	91.01	76.140	79.000	47715	0.000	0.054	10.7	8.6
100yrs	POND	BASE	91.10	76.140	79.000	47714	0.000	0.053	10.7	8.6



POND TIME SERIES 100 YR.TXT										
100yrs	POND	BASE	91.18	76.139	79.000	47712	0.000	0.053	10.7	8.6
100yrs	POND	BASE	91.26	76.139	79.000	47710	0.000	0.053	10.7	8.6
100yrs	POND	BASE	91.35	76.139	79.000	47709	0.000	0.053	10.7	8.6
100yrs	POND	BASE	91.43	76.138	79.000	47707	0.000	0.052	10.7	8.6
100yrs	POND	BASE	91.51	76.138	79.000	47706	0.000	0.052	10.7	8.6
100yrs	POND	BASE	91.60	76.138	79.000	47704	0.000	0.052	10.7	8.6
100yrs	POND	BASE	91.68	76.137	79.000	47702	0.000	0.052	10.7	8.6
100yrs	POND	BASE	91.76	76.137	79.000	47701	0.000	0.051	10.7	8.6
100yrs	POND	BASE	91.85	76.137	79.000	47699	0.000	0.051	10.7	8.6
100yrs	POND	BASE	91.93	76.136	79.000	47698	0.000	0.051	10.7	8.6
100yrs	POND	BASE	92.01	76.136	79.000	47696	0.000	0.051	10.7	8.6
100yrs	POND	BASE	92.10	76.136	79.000	47695	0.000	0.050	10.7	8.6
100yrs	POND	BASE	92.18	76.135	79.000	47693	0.000	0.050	10.7	8.6
100yrs	POND	BASE	92.26	76.135	79.000	47692	0.000	0.050	10.7	8.6
100yrs	POND	BASE	92.35	76.135	79.000	47690	0.000	0.050	10.7	8.6
100yrs	POND	BASE	92.43	76.134	79.000	47689	0.000	0.049	10.7	8.6
100yrs	POND	BASE	92.51	76.134	79.000	47687	0.000	0.049	10.7	8.6
100yrs	POND	BASE	92.60	76.134	79.000	47686	0.000	0.049	10.7	8.6
100yrs	POND	BASE	92.68	76.133	79.000	47684	0.000	0.049	10.7	8.6
100yrs	POND	BASE	92.76	76.133	79.000	47683	0.000	0.048	10.7	8.6
100yrs	POND	BASE	92.85	76.133	79.000	47681	0.000	0.048	10.7	8.6
100yrs	POND	BASE	92.93	76.133	79.000	47680	0.000	0.048	10.7	8.6
100yrs	POND	BASE	93.01	76.132	79.000	47679	0.000	0.048	10.7	8.6
100yrs	POND	BASE	93.10	76.132	79.000	47677	0.000	0.048	10.7	8.6
100yrs	POND	BASE	93.18	76.132	79.000	47676	0.000	0.047	10.7	8.6
100yrs	POND	BASE	93.26	76.131	79.000	47674	0.000	0.047	10.7	8.6
100yrs	POND	BASE	93.35	76.131	79.000	47673	0.000	0.047	10.7	8.6
100yrs	POND	BASE	93.43	76.131	79.000	47671	0.000	0.047	10.7	8.6
100yrs	POND	BASE	93.51	76.130	79.000	47670	0.000	0.046	10.7	8.6
100yrs	POND	BASE	93.60	76.130	79.000	47669	0.000	0.046	10.7	8.6
100yrs	POND	BASE	93.68	76.130	79.000	47667	0.000	0.046	10.7	8.6
100yrs	POND	BASE	93.76	76.130	79.000	47666	0.000	0.046	10.7	8.6
100yrs	POND	BASE	93.85	76.129	79.000	47664	0.000	0.046	10.7	8.6
100yrs	POND	BASE	93.93	76.129	79.000	47663	0.000	0.045	10.7	8.6
100yrs	POND	BASE	94.01	76.129	79.000	47662	0.000	0.045	10.7	8.6
100yrs	POND	BASE	94.10	76.128	79.000	47660	0.000	0.045	10.7	8.6
100yrs	POND	BASE	94.18	76.128	79.000	47659	0.000	0.045	10.7	8.6
100yrs	POND	BASE	94.26	76.128	79.000	47658	0.000	0.045	10.7	8.6
100yrs	POND	BASE	94.35	76.128	79.000	47656	0.000	0.044	10.7	8.6
100yrs	POND	BASE	94.43	76.127	79.000	47655	0.000	0.044	10.7	8.6
100yrs	POND	BASE	94.51	76.127	79.000	47654	0.000	0.044	10.7	8.6
100yrs	POND	BASE	94.60	76.127	79.000	47652	0.000	0.044	10.7	8.6
100yrs	POND	BASE	94.68	76.127	79.000	47651	0.000	0.044	10.7	8.6
100yrs	POND	BASE	94.76	76.126	79.000	47650	0.000	0.043	10.7	8.6
100yrs	POND	BASE	94.85	76.126	79.000	47648	0.000	0.043	10.7	8.6
100yrs	POND	BASE	94.93	76.126	79.000	47647	0.000	0.043	10.7	8.6
100yrs	POND	BASE	95.01	76.125	79.000	47646	0.000	0.043	10.7	8.6
100yrs	POND	BASE	95.10	76.125	79.000	47644	0.000	0.043	10.7	8.6
100yrs	POND	BASE	95.18	76.125	79.000	47643	0.000	0.042	10.7	8.6
100yrs	POND	BASE	95.26	76.125	79.000	47642	0.000	0.042	10.7	8.6
100yrs	POND	BASE	95.35	76.124	79.000	47641	0.000	0.042	10.7	8.6
100yrs	POND	BASE	95.43	76.124	79.000	47639	0.000	0.042	10.7	8.6
100yrs	POND	BASE	95.51	76.124	79.000	47638	0.000	0.042	10.7	8.6
100yrs	POND	BASE	95.60	76.124	79.000	47637	0.000	0.042	10.7	8.6
100yrs	POND	BASE	95.68	76.123	79.000	47636	0.000	0.041	10.7	8.6
100yrs	POND	BASE	95.76	76.123	79.000	47634	0.000	0.041	10.7	8.6
100yrs	POND	BASE	95.85	76.123	79.000	47633	0.000	0.041	10.7	8.6
100yrs	POND	BASE	95.93	76.123	79.000	47632	0.000	0.041	10.7	8.6
100yrs	POND	BASE	96.01	76.122	79.000	47631	0.000	0.041	10.7	8.6
100yrs	POND	BASE	96.10	76.122	79.000	47629	0.000	0.040	10.7	8.6
100yrs	POND	BASE	96.18	76.122	79.000	47628	0.000	0.040	10.7	8.6

POND TIME SERIES 100 YR.TXT										
100yrs	POND	BASE	96.26	76.121	79.000	47627	0.000	0.040	10.7	8.6
100yrs	POND	BASE	96.35	76.121	79.000	47626	0.000	0.040	10.7	8.6
100yrs	POND	BASE	96.43	76.121	79.000	47625	0.000	0.040	10.7	8.6
100yrs	POND	BASE	96.51	76.121	79.000	47623	0.000	0.040	10.7	8.6
100yrs	POND	BASE	96.60	76.120	79.000	47622	0.000	0.039	10.7	8.6
100yrs	POND	BASE	96.68	76.120	79.000	47621	0.000	0.039	10.7	8.6
100yrs	POND	BASE	96.76	76.120	79.000	47620	0.000	0.039	10.7	8.6
100yrs	POND	BASE	96.85	76.120	79.000	47619	0.000	0.039	10.7	8.6
100yrs	POND	BASE	96.93	76.120	79.000	47617	0.000	0.039	10.7	8.6
100yrs	POND	BASE	97.01	76.119	79.000	47616	0.000	0.039	10.7	8.6
100yrs	POND	BASE	97.10	76.119	79.000	47615	0.000	0.038	10.7	8.6
100yrs	POND	BASE	97.18	76.119	79.000	47614	0.000	0.038	10.7	8.6
100yrs	POND	BASE	97.26	76.119	79.000	47613	0.000	0.038	10.7	8.6
100yrs	POND	BASE	97.35	76.118	79.000	47612	0.000	0.038	10.7	8.6
100yrs	POND	BASE	97.43	76.118	79.000	47610	0.000	0.038	10.7	8.6
100yrs	POND	BASE	97.51	76.118	79.000	47609	0.000	0.038	10.7	8.6
100yrs	POND	BASE	97.60	76.118	79.000	47608	0.000	0.038	10.7	8.6
100yrs	POND	BASE	97.68	76.117	79.000	47607	0.000	0.037	10.7	8.6
100yrs	POND	BASE	97.76	76.117	79.000	47606	0.000	0.037	10.7	8.6
100yrs	POND	BASE	97.85	76.117	79.000	47605	0.000	0.037	10.7	8.6
100yrs	POND	BASE	97.93	76.117	79.000	47604	0.000	0.037	10.7	8.6
100yrs	POND	BASE	98.01	76.116	79.000	47603	0.000	0.037	10.7	8.6
100yrs	POND	BASE	98.10	76.116	79.000	47602	0.000	0.037	10.7	8.6
100yrs	POND	BASE	98.18	76.116	79.000	47600	0.000	0.036	10.7	8.6
100yrs	POND	BASE	98.26	76.116	79.000	47599	0.000	0.036	10.7	8.6
100yrs	POND	BASE	98.35	76.115	79.000	47598	0.000	0.036	10.7	8.6
100yrs	POND	BASE	98.43	76.115	79.000	47597	0.000	0.036	10.7	8.6
100yrs	POND	BASE	98.51	76.115	79.000	47596	0.000	0.036	10.7	8.6
100yrs	POND	BASE	98.60	76.115	79.000	47595	0.000	0.036	10.7	8.6
100yrs	POND	BASE	98.68	76.115	79.000	47594	0.000	0.036	10.7	8.6
100yrs	POND	BASE	98.76	76.114	79.000	47593	0.000	0.035	10.7	8.6
100yrs	POND	BASE	98.85	76.114	79.000	47592	0.000	0.035	10.7	8.6
100yrs	POND	BASE	98.93	76.114	79.000	47591	0.000	0.035	10.7	8.6
100yrs	POND	BASE	99.01	76.114	79.000	47590	0.000	0.035	10.7	8.6
100yrs	POND	BASE	99.10	76.113	79.000	47589	0.000	0.035	10.7	8.6
100yrs	POND	BASE	99.18	76.113	79.000	47587	0.000	0.035	10.7	8.6
100yrs	POND	BASE	99.26	76.113	79.000	47586	0.000	0.035	10.7	8.6
100yrs	POND	BASE	99.35	76.113	79.000	47585	0.000	0.034	10.7	8.6
100yrs	POND	BASE	99.43	76.113	79.000	47584	0.000	0.034	10.7	8.6
100yrs	POND	BASE	99.51	76.112	79.000	47583	0.000	0.034	10.7	8.6
100yrs	POND	BASE	99.60	76.112	79.000	47582	0.000	0.034	10.7	8.6
100yrs	POND	BASE	99.68	76.112	79.000	47581	0.000	0.034	10.7	8.6
100yrs	POND	BASE	99.76	76.112	79.000	47580	0.000	0.034	10.7	8.6
100yrs	POND	BASE	99.85	76.112	79.000	47579	0.000	0.034	10.7	8.6
100yrs	POND	BASE	99.93	76.111	79.000	47578	0.000	0.034	10.7	8.6
100yrs	POND	BASE	100.01	76.111	79.000	47577	0.000	0.033	10.7	8.6



**BLACK & VEATCH**

Owner: Florida Municipal Power Agency  
Plant: Cane Island Power Park Unit 4  
Project No. 147651  
File No. 52.5406.1101.04  
Title: Hydrologic Analysis

Prepared by: A. L. Morgan  
Date: 3/20/08  
Verified by: J.M. Stanek  
Date: 3/26/08  
Page No. F1 of 38  
Calc Rev: 0

## **APPENDIX F**

### **Supporting ICPR Files**

Simulation	Time hrs	Inflow volume ft3	Outflow Volume ft3	MASS BALANCE 25 YR 100 YR		Error %
				change in Sys Storage ft3	Difference ft3	
100yrs	0.00	0.0	0.0	0.0	0.0	0.00
100yrs	0.08	0.0	0.0	0.0	0.0	0.00
100yrs	0.18	0.0	0.0	0.0	0.0	0.00
100yrs	0.26	0.0	0.0	0.0	0.0	0.00
100yrs	0.34	0.0	0.0	0.0	0.0	0.00
100yrs	0.42	0.0	0.0	0.0	0.0	0.00
100yrs	0.50	0.0	0.0	0.0	0.0	0.00
100yrs	0.60	0.0	0.0	0.0	0.0	0.00
100yrs	0.68	0.0	0.0	0.0	0.0	0.00
100yrs	0.77	0.0	0.0	0.0	0.0	0.00
100yrs	0.85	0.0	0.0	0.0	0.0	0.00
100yrs	0.93	0.0	0.0	0.0	0.0	0.00
100yrs	1.02	0.0	0.0	0.0	0.0	0.00
100yrs	1.10	0.0	0.0	0.0	0.0	0.00
100yrs	1.18	0.0	0.0	0.0	0.0	0.00
100yrs	1.27	0.0	0.0	0.0	0.0	0.00
100yrs	1.35	0.0	0.0	0.0	0.0	0.00
100yrs	1.43	0.0	0.0	0.0	0.0	0.00
100yrs	1.52	0.0	0.0	0.0	0.0	0.00
100yrs	1.60	0.0	0.0	0.0	0.0	0.00
100yrs	1.68	0.0	0.0	0.0	0.0	0.00
100yrs	1.77	0.6	0.0	0.6	-0.0	-0.00
100yrs	1.85	5.1	0.0	5.1	-0.0	-0.00
100yrs	1.93	16.7	0.0	16.7	-0.0	-0.00
100yrs	2.02	37.6	0.0	37.6	-0.0	-0.00
100yrs	2.10	69.1	0.0	69.1	-0.0	-0.00
100yrs	2.18	112.4	0.0	112.4	-0.0	-0.00
100yrs	2.27	167.7	0.0	167.7	-0.0	-0.00
100yrs	2.35	234.6	0.0	234.6	-0.0	-0.00
100yrs	2.43	312.8	0.0	312.8	-0.0	-0.00
100yrs	2.52	402.0	0.0	402.0	-0.0	-0.00
100yrs	2.60	501.7	0.0	501.7	-0.0	-0.00
100yrs	2.68	611.6	0.0	611.6	-0.0	-0.00
100yrs	2.77	731.5	0.0	731.5	-0.0	-0.00
100yrs	2.85	861.1	0.0	861.1	-0.0	-0.00
100yrs	2.93	1000.0	0.0	1000.0	-0.0	-0.00
100yrs	3.02	1148.0	0.0	1148.0	-0.0	-0.00
100yrs	3.10	1307.5	0.0	1307.5	-0.0	-0.00
100yrs	3.18	1481.1	0.0	1481.1	0.0	0.00
100yrs	3.27	1667.5	0.0	1667.5	0.0	0.00
100yrs	3.35	1865.0	0.0	1865.0	0.0	0.00
100yrs	3.43	2072.7	0.0	2072.7	0.0	0.00
100yrs	3.52	2289.9	0.0	2289.9	0.0	0.00
100yrs	3.60	2516.1	0.0	2516.1	0.0	0.00
100yrs	3.68	2750.8	0.0	2750.8	0.0	0.00
100yrs	3.77	2993.8	0.0	2993.8	0.0	0.00
100yrs	3.85	3244.8	0.0	3244.8	0.0	0.00
100yrs	3.93	3503.6	0.0	3503.6	0.0	0.00
100yrs	4.02	3770.3	0.0	3770.3	0.0	0.00
100yrs	4.10	4051.4	0.0	4051.4	0.0	0.00
100yrs	4.18	4352.0	0.0	4352.0	0.0	0.00
100yrs	4.27	4668.8	0.0	4668.8	0.0	0.00
100yrs	4.35	4997.8	0.0	4997.8	0.0	0.00
100yrs	4.43	5337.2	0.0	5337.2	0.0	0.00
100yrs	4.52	5685.8	0.0	5685.8	0.0	0.00
100yrs	4.60	6042.7	0.0	6042.7	-0.0	-0.00
100yrs	4.68	6407.4	0.0	6407.4	0.0	0.00
100yrs	4.77	6779.4	0.0	6779.4	0.0	0.00
100yrs	4.85	7158.6	0.0	7158.6	0.0	0.00
100yrs	4.93	7544.7	0.0	7544.7	-0.0	-0.00
100yrs	5.02	7937.7	0.0	7937.7	-0.0	-0.00
100yrs	5.10	8342.1	0.0	8342.1	-0.0	-0.00

100yrs	5.18	8761.0	0.0	MASS BALANCE 25 YR 100 YR	8761.0	-0.0	-0.00
100yrs	5.27	9192.1	0.0		9192.1	-0.0	-0.00
100yrs	5.35	9632.5	0.0		9632.5	-0.0	-0.00
100yrs	5.43	10080.9	0.0		10080.9	-0.0	-0.00
100yrs	5.52	10536.5	0.0		10536.5	-0.0	-0.00
100yrs	5.60	10998.7	0.0		10998.7	-0.0	-0.00
100yrs	5.68	11467.0	0.0		11467.0	-0.0	-0.00
100yrs	5.77	11941.2	0.0		11941.2	-0.0	-0.00
100yrs	5.85	12421.1	0.0		12421.1	-0.0	-0.00
100yrs	5.93	12906.6	0.0		12906.6	-0.0	-0.00
100yrs	6.02	13398.1	0.0		13398.1	-0.0	-0.00
100yrs	6.10	13911.5	0.0		13911.5	-0.0	-0.00
100yrs	6.18	14458.3	0.0		14458.3	-0.0	-0.00
100yrs	6.27	15030.1	0.0		15030.1	-0.0	-0.00
100yrs	6.35	15617.9	0.0		15617.9	-0.0	-0.00
100yrs	6.43	16217.2	0.0		16217.2	-0.0	-0.00
100yrs	6.52	16825.6	0.0		16825.6	-0.0	-0.00
100yrs	6.60	17441.3	0.0		17441.3	-0.0	-0.00
100yrs	6.68	18063.3	0.0		18063.3	-0.0	-0.00
100yrs	6.77	18690.9	0.0		18690.9	-0.0	-0.00
100yrs	6.85	19324.1	0.0		19324.1	-0.0	-0.00
100yrs	6.93	19962.6	0.0		19962.6	-0.0	-0.00
100yrs	7.02	20607.0	0.0		20607.0	-0.0	-0.00
100yrs	7.10	21275.2	0.0		21275.2	-0.0	-0.00
100yrs	7.18	21980.2	0.0		21980.2	-0.0	-0.00
100yrs	7.27	22712.7	0.0		22712.7	-0.0	-0.00
100yrs	7.35	23462.0	0.0		23462.0	-0.0	-0.00
100yrs	7.43	24223.3	0.0		24223.3	-0.0	-0.00
100yrs	7.52	24993.6	0.0		24993.6	-0.0	-0.00
100yrs	7.60	25771.0	0.0		25771.0	-0.0	-0.00
100yrs	7.68	26554.3	0.0		26554.3	-0.0	-0.00
100yrs	7.77	27342.8	0.0		27342.8	-0.0	-0.00
100yrs	7.85	28136.4	0.0		28136.4	-0.0	-0.00
100yrs	7.93	28935.0	0.0		28935.0	-0.0	-0.00
100yrs	8.02	29739.5	0.0		29739.5	-0.0	-0.00
100yrs	8.10	30575.4	0.0		30575.4	-0.0	-0.00
100yrs	8.18	31460.9	0.0		31460.9	-0.0	-0.00
100yrs	8.27	32382.5	0.0		32382.5	-0.0	-0.00
100yrs	8.35	33325.1	0.0		33325.1	-0.0	-0.00
100yrs	8.43	34281.9	0.0		34281.9	-0.0	-0.00
100yrs	8.52	35249.7	0.0		35249.7	-0.0	-0.00
100yrs	8.60	36253.0	0.0		36253.0	-0.0	-0.00
100yrs	8.68	37223.1	0.0		37223.1	-0.0	-0.00
100yrs	8.76	38271.0	0.0		38271.0	-0.0	-0.00
100yrs	8.84	39340.5	0.0		39340.5	-0.0	-0.00
100yrs	8.93	40606.4	0.0		40606.4	-0.0	-0.00
100yrs	9.01	41702.8	0.0		41702.8	-0.0	-0.00
100yrs	9.09	42818.7	0.0		42818.7	-0.0	-0.00
100yrs	9.17	43962.4	0.0		43962.4	-0.0	-0.00
100yrs	9.26	45324.5	0.0		45324.5	-0.0	-0.00
100yrs	9.34	46506.4	0.0		46506.4	-0.0	-0.00
100yrs	9.42	47697.9	0.0		47697.9	-0.0	-0.00
100yrs	9.50	48897.3	0.0		48897.3	-0.0	-0.00
100yrs	9.60	50347.7	0.0		50347.7	-0.0	-0.00
100yrs	9.68	51670.2	0.0		51670.2	-0.0	-0.00
100yrs	9.75	52954.6	0.0		52954.6	-0.0	-0.00
100yrs	9.84	54456.0	0.0		54456.0	-0.0	-0.00
100yrs	9.92	55980.2	0.0		55980.2	-0.0	-0.00
100yrs	10.01	57520.9	0.0		57520.9	-0.0	-0.00
100yrs	10.09	59139.4	0.0		59139.4	-0.0	-0.00
100yrs	10.17	60760.7	0.0		60760.7	-0.0	-0.00
100yrs	10.26	62616.5	0.0		62616.5	-0.0	-0.00
100yrs	10.34	64530.0	0.0		64530.0	-0.0	-0.00
100yrs	10.42	66282.6	0.0		66282.6	-0.0	-0.00
100yrs	10.50	68252.5	0.0		68252.5	-0.0	-0.00
100yrs	10.59	70329.1	0.0		70329.1	-0.0	-0.00

				MASS BALANCE 25 YR 100 YR		
100yrs	10.67	72414.9	0.0	72414.9	-0.0	-0.00
100yrs	10.76	74930.5	0.0	74930.5	0.0	0.00
100yrs	10.84	77331.0	0.0	77331.0	0.0	0.00
100yrs	10.92	79777.0	0.0	79777.0	0.0	0.00
100yrs	11.00	82252.5	0.0	82252.5	-0.0	-0.00
100yrs	11.08	84770.3	0.0	84770.3	-0.0	-0.00
100yrs	11.17	87567.1	0.0	87567.1	-0.0	-0.00
100yrs	11.25	90203.6	0.0	90203.6	-0.0	-0.00
100yrs	11.34	93216.7	0.0	93216.7	-0.0	-0.00
100yrs	11.42	97107.9	5.5	97102.4	-0.0	-0.00
100yrs	11.50	101747.4	73.9	101673.5	-0.0	-0.00
100yrs	11.58	108709.2	321.8	108387.3	-0.0	-0.00
100yrs	11.67	120036.3	1032.2	119004.1	-0.0	-0.00
100yrs	11.75	135256.6	2629.8	132626.8	-0.0	-0.00
100yrs	11.83	153831.8	5150.8	148680.9	-0.0	-0.00
100yrs	11.92	177896.8	8565.4	169331.4	-0.0	-0.00
100yrs	12.00	205898.1	12699.5	193198.6	-0.0	-0.00
100yrs	12.08	233150.9	18609.9	214541.0	-0.0	-0.00
100yrs	12.17	255229.3	26047.3	229182.0	-0.0	-0.00
100yrs	12.25	273206.6	34305.5	238901.1	-0.0	-0.00
100yrs	12.33	287777.5	42878.0	244899.5	-0.0	-0.00
100yrs	12.42	299186.1	52006.4	247179.7	-0.0	-0.00
100yrs	12.50	307513.0	60778.5	246734.5	-0.0	-0.00
100yrs	12.58	314180.1	69438.1	244742.0	-0.0	-0.00
100yrs	12.67	319866.1	78679.9	241186.2	-0.0	-0.00
100yrs	12.75	324012.2	86611.1	237401.1	-0.0	-0.00
100yrs	12.84	328094.3	95283.5	232810.8	-0.0	-0.00
100yrs	12.92	331484.8	103161.3	228323.5	-0.0	-0.00
100yrs	13.00	334613.1	110773.9	223839.2	-0.0	-0.00
100yrs	13.08	337535.8	118107.1	219428.6	-0.0	-0.00
100yrs	13.17	340407.2	125601.9	214805.3	-0.0	-0.00
100yrs	13.25	342940.1	132300.5	210639.6	-0.0	-0.00
100yrs	13.33	345397.1	138662.6	206734.5	-0.0	-0.00
100yrs	13.42	347814.8	144616.1	203198.7	-0.0	-0.00
100yrs	13.50	350371.5	150474.2	199897.3	-0.0	-0.00
100yrs	13.59	352678.2	155578.8	197099.4	-0.0	-0.00
100yrs	13.67	354818.7	160374.7	194444.0	-0.0	-0.00
100yrs	13.76	356960.1	165213.4	191746.7	-0.0	-0.00
100yrs	13.84	358902.4	169559.4	189343.0	-0.0	-0.00
100yrs	13.92	360809.9	173813.5	186996.4	-0.0	-0.00
100yrs	14.00	362698.0	178005.6	184692.4	-0.0	-0.00
100yrs	14.09	364658.4	182408.4	182250.1	-0.0	-0.00
100yrs	14.17	366408.6	186470.1	179938.4	-0.0	-0.00
100yrs	14.25	368094.9	190466.4	177628.5	-0.0	-0.00
100yrs	14.33	369749.1	194396.3	175352.8	-0.0	-0.00
100yrs	14.42	371494.2	198515.0	172979.3	-0.0	-0.00
100yrs	14.50	373120.0	202307.7	170812.2	-0.0	-0.00
100yrs	14.59	374701.4	206034.1	168667.2	-0.0	-0.00
100yrs	14.67	376199.9	209692.8	166507.1	-0.0	-0.00
100yrs	14.75	377727.2	213518.4	164208.8	-0.0	-0.00
100yrs	14.84	379126.3	217032.0	162094.3	-0.0	-0.00
100yrs	14.92	380507.9	220474.7	160033.1	-0.0	-0.00
100yrs	15.00	381948.1	224013.9	157934.2	-0.0	-0.00
100yrs	15.09	383301.4	227312.7	155988.7	-0.0	-0.00
100yrs	15.17	384626.0	230541.2	154084.8	-0.0	-0.00
100yrs	15.25	385929.0	233699.1	152229.8	-0.0	-0.00
100yrs	15.34	387328.5	237041.0	150287.5	-0.0	-0.00
100yrs	15.42	388614.4	240053.2	148561.2	-0.0	-0.00
100yrs	15.50	389896.8	242996.6	146900.2	-0.0	-0.00
100yrs	15.58	391151.4	245871.7	145279.7	-0.0	-0.00
100yrs	15.67	392350.8	248677.6	143673.2	-0.0	-0.00
100yrs	15.76	393601.3	251613.5	141987.8	-0.0	-0.00
100yrs	15.84	394757.0	254262.4	140494.5	-0.0	-0.00
100yrs	15.92	395923.8	256854.0	139069.8	-0.0	-0.00
100yrs	16.00	396968.1	259096.1	137872.0	-0.0	-0.00
100yrs	16.09	398139.7	261551.6	136588.1	-0.0	-0.00

				MASS BALANCE	25 YR	100 YR	
100yrs	16.17	399251.9	263852.2	135399.7	-0.0	-0.0	-0.00
100yrs	16.26	400341.8	266071.5	134270.3	-0.0	-0.0	-0.00
100yrs	16.33	401286.3	267977.8	133308.5	-0.0	-0.0	-0.00
100yrs	16.42	402359.9	270100.6	132259.3	-0.0	-0.0	-0.00
100yrs	16.50	403429.7	272160.6	131269.2	-0.0	-0.0	-0.00
100yrs	16.60	404548.1	274278.1	130270.1	-0.0	-0.0	-0.00
100yrs	16.68	405506.6	276086.7	129419.8	-0.0	-0.0	-0.00
100yrs	16.76	406445.6	277839.0	128606.6	-0.0	-0.0	-0.00
100yrs	16.84	407374.6	279536.4	127838.2	-0.0	-0.0	-0.00
100yrs	16.93	408451.5	281451.5	127000.0	-0.0	-0.0	-0.00
100yrs	17.01	409371.4	283039.5	126331.8	-0.0	-0.0	-0.00
100yrs	17.09	410328.1	284647.3	125680.8	-0.0	-0.0	-0.00
100yrs	17.18	411284.2	286212.8	125071.4	-0.0	-0.0	-0.00
100yrs	17.26	412240.2	287736.0	124504.2	-0.0	-0.0	-0.00
100yrs	17.34	413196.2	289219.8	123976.4	-0.0	-0.0	-0.00
100yrs	17.43	414152.3	290667.0	123485.3	-0.0	-0.0	-0.00
100yrs	17.51	415107.5	292079.7	123027.8	-0.0	-0.0	-0.00
100yrs	17.59	416032.6	293459.3	122573.3	-0.0	-0.0	-0.00
100yrs	17.68	416900.9	294804.8	122096.1	-0.0	-0.0	-0.00
100yrs	17.76	417727.0	296114.9	121612.1	-0.0	-0.0	-0.00
100yrs	17.84	418531.9	297389.9	121142.0	-0.0	-0.0	-0.00
100yrs	17.93	419325.1	298631.2	120693.9	-0.0	-0.0	-0.00
100yrs	18.01	420112.2	299840.5	120271.6	-0.0	-0.0	-0.00
100yrs	18.09	420911.4	301020.1	119891.3	-0.0	-0.0	-0.00
100yrs	18.18	421738.4	302173.6	119564.8	-0.0	-0.0	-0.00
100yrs	18.26	422586.6	303305.0	119281.5	-0.0	-0.0	-0.00
100yrs	18.34	423445.3	304417.0	119028.3	-0.0	-0.0	-0.00
100yrs	18.43	424310.0	305511.5	118798.4	-0.0	-0.0	-0.00
100yrs	18.51	425177.0	306590.1	118587.0	-0.0	-0.0	-0.00
100yrs	18.59	426015.3	307653.2	118362.1	-0.0	-0.0	-0.00
100yrs	18.68	426796.9	308698.9	118098.0	-0.0	-0.0	-0.00
100yrs	18.76	427536.2	309724.7	117811.5	-0.0	-0.0	-0.00
100yrs	18.84	428254.2	310730.1	117524.1	-0.0	-0.0	-0.00
100yrs	18.93	428960.4	311715.3	117245.1	-0.0	-0.0	-0.00
100yrs	19.01	429660.5	312681.3	116979.1	-0.0	-0.0	-0.00
100yrs	19.09	430372.7	313629.5	116743.2	-0.0	-0.0	-0.00
100yrs	19.18	431112.8	314562.5	116550.4	-0.0	-0.0	-0.00
100yrs	19.26	431874.2	315483.1	116391.1	-0.0	-0.0	-0.00
100yrs	19.34	432646.2	316393.4	116252.8	-0.0	-0.0	-0.00
100yrs	19.43	433424.1	317294.6	116129.6	-0.0	-0.0	-0.00
100yrs	19.51	434204.9	318187.6	116017.3	-0.0	-0.0	-0.00
100yrs	19.59	434972.1	319072.9	115899.2	-0.0	-0.0	-0.00
100yrs	19.68	435711.3	319949.5	115761.8	-0.0	-0.0	-0.00
100yrs	19.76	436429.3	320816.2	115613.1	-0.0	-0.0	-0.00
100yrs	19.84	437136.7	321672.8	115463.9	-0.0	-0.0	-0.00
100yrs	19.93	437838.3	322519.3	115318.9	-0.0	-0.0	-0.00
100yrs	20.01	438536.3	323356.2	115180.1	-0.0	-0.0	-0.00
100yrs	20.09	439217.4	324183.6	115033.8	-0.0	-0.0	-0.00
100yrs	20.18	439869.5	325000.6	114868.9	-0.0	-0.0	-0.00
100yrs	20.26	440500.2	325806.1	114694.1	-0.0	-0.0	-0.00
100yrs	20.34	441120.4	326600.0	114520.4	-0.0	-0.0	-0.00
100yrs	20.43	441734.7	327382.5	114352.3	-0.0	-0.0	-0.00
100yrs	20.51	442345.8	328154.0	114191.8	-0.0	-0.0	-0.00
100yrs	20.59	442955.5	328915.3	114040.2	-0.0	-0.0	-0.00
100yrs	20.68	443564.7	329666.9	113897.8	-0.0	-0.0	-0.00
100yrs	20.76	444174.0	330409.5	113764.6	-0.0	-0.0	-0.00
100yrs	20.84	444783.4	331143.6	113639.8	-0.0	-0.0	-0.00
100yrs	20.93	445392.8	331869.9	113522.9	-0.0	-0.0	-0.00
100yrs	21.01	446002.3	332588.9	113413.4	-0.0	-0.0	-0.00
100yrs	21.09	446611.7	333301.0	113310.7	-0.0	-0.0	-0.00
100yrs	21.18	447221.2	334006.7	113214.5	-0.0	-0.0	-0.00
100yrs	21.26	447830.7	334706.4	113124.3	-0.0	-0.0	-0.00
100yrs	21.34	448440.2	335400.6	113039.7	-0.0	-0.0	-0.00
100yrs	21.43	449049.7	336089.5	112960.3	-0.0	-0.0	-0.00
100yrs	21.51	449659.3	336773.4	112885.8	-0.0	-0.0	-0.00
100yrs	21.59	450268.7	337452.9	112815.9	-0.0	-0.0	-0.00

				MASS BALANCE 25 YR 100 YR	
100yrs	21.68	450878.2	338128.0	112750.2	-0.0
100yrs	21.76	451487.5	338799.1	112688.4	-0.0
100yrs	21.84	452096.8	339466.4	112630.4	-0.0
100yrs	21.93	452706.2	340130.2	112576.0	-0.0
100yrs	22.01	453315.5	340790.6	112524.9	-0.0
100yrs	22.09	453924.9	341448.0	112476.9	-0.0
100yrs	22.18	454534.4	342102.4	112431.9	-0.0
100yrs	22.26	455143.9	342754.2	112389.8	-0.0
100yrs	22.34	455753.6	343403.3	112350.2	-0.0
100yrs	22.43	456363.2	344050.1	112313.1	-0.0
100yrs	22.51	456972.5	344694.6	112277.9	-0.0
100yrs	22.59	457566.8	345336.8	112230.0	-0.0
100yrs	22.68	458132.7	345975.3	112157.5	-0.0
100yrs	22.76	458677.7	346608.7	112069.0	-0.0
100yrs	22.84	459212.1	347236.6	111975.6	-0.0
100yrs	22.93	459740.7	347858.7	111882.1	-0.0
100yrs	23.01	460266.1	348475.1	111791.0	-0.0
100yrs	23.09	460789.7	349086.1	111703.6	-0.0
100yrs	23.18	461312.2	349691.9	111620.4	-0.0
100yrs	23.26	461834.4	350292.7	111541.7	-0.0
100yrs	23.34	462356.3	350888.9	111467.4	-0.0
100yrs	23.43	462878.1	351480.7	111397.3	-0.0
100yrs	23.51	463399.5	352068.5	111331.0	-0.0
100yrs	23.59	463905.8	352652.1	111253.7	-0.0
100yrs	23.68	464383.9	353230.4	111153.5	-0.0
100yrs	23.76	464841.1	353802.3	111038.7	-0.0
100yrs	23.84	465287.7	354367.3	110920.4	-0.0
100yrs	23.93	465728.5	354925.3	110803.2	-0.0
100yrs	24.01	466121.5	355476.4	110645.2	-0.0
100yrs	24.09	466121.5	356007.4	110114.2	-0.0
100yrs	24.18	466121.5	356508.8	109612.7	-0.0
100yrs	24.26	466121.5	356982.9	109138.7	-0.0
100yrs	24.34	466121.5	357431.6	108689.9	-0.0
100yrs	24.43	466121.5	357856.9	108264.6	-0.0
100yrs	24.51	466121.5	358260.5	107861.1	-0.0
100yrs	24.59	466121.5	358643.8	107477.8	-0.0
100yrs	24.68	466121.5	359008.2	107113.3	-0.0
100yrs	24.76	466121.5	359355.1	106766.5	-0.0
100yrs	24.84	466121.5	359685.6	106436.0	0.0
100yrs	24.93	466121.5	360000.8	106120.7	0.0
100yrs	25.01	466121.5	360301.7	105819.8	0.0
100yrs	25.09	466121.5	360589.2	105532.3	0.0
100yrs	25.18	466121.5	360864.1	105257.4	-0.0
100yrs	25.26	466121.5	361127.2	104994.3	-0.0
100yrs	25.34	466121.5	361379.2	104742.3	0.0
100yrs	25.43	466121.5	361620.7	104500.8	0.0
100yrs	25.51	466121.5	361852.5	104269.1	-0.0
100yrs	25.59	466121.5	362075.0	104046.6	0.0
100yrs	25.68	466121.5	362288.8	103832.8	-0.0
100yrs	25.76	466121.5	362494.3	103627.3	-0.0
100yrs	25.84	466121.5	362692.0	103429.5	-0.0
100yrs	25.93	466121.5	362882.3	103239.2	-0.0
100yrs	26.01	466121.5	363065.6	103055.9	-0.0
100yrs	26.09	466121.5	363242.3	102879.3	-0.0
100yrs	26.18	466121.5	363412.6	102708.9	-0.0
100yrs	26.26	466121.5	363577.0	102544.6	-0.0
100yrs	26.34	466121.5	363735.7	102385.9	-0.0
100yrs	26.43	466121.5	363889.0	102232.5	-0.0
100yrs	26.51	466121.5	364037.3	102084.3	-0.0
100yrs	26.59	466121.5	364180.7	101940.9	-0.0
100yrs	26.68	466121.5	364319.4	101802.1	-0.0
100yrs	26.76	466121.5	364453.7	101667.9	-0.0
100yrs	26.84	466121.5	364583.7	101537.8	-0.0
100yrs	26.93	466121.5	364709.7	101411.8	-0.0
100yrs	27.01	466121.5	364831.8	101289.7	-0.0
100yrs	27.09	466121.5	364950.2	101171.3	-0.0



				MASS BALANCE 25 YR 100 YR		
100yrs	27.18	466121.5	365065.1	101056.5	-0.0	-0.00
100yrs	27.26	466121.5	365176.5	100945.0	-0.0	-0.00
100yrs	27.34	466121.5	365284.7	100836.9	-0.0	-0.00
100yrs	27.43	466121.5	365389.7	100731.8	-0.0	-0.00
100yrs	27.51	466121.5	365491.8	100629.7	-0.0	-0.00
100yrs	27.59	466121.5	365591.0	100530.5	-0.0	-0.00
100yrs	27.68	466121.5	365687.5	100434.0	-0.0	-0.00
100yrs	27.76	466121.5	365781.4	100340.1	-0.0	-0.00
100yrs	27.84	466121.5	365872.8	100248.8	-0.0	-0.00
100yrs	27.93	466121.5	365961.8	100159.8	-0.0	-0.00
100yrs	28.01	466121.5	366048.4	100073.1	-0.0	-0.00
100yrs	28.09	466121.5	366132.8	99988.7	-0.0	-0.00
100yrs	28.18	466121.5	366215.1	99906.5	-0.0	-0.00
100yrs	28.26	466121.5	366295.3	99826.3	-0.0	-0.00
100yrs	28.34	466121.5	366373.4	99748.1	-0.0	-0.00
100yrs	28.43	466121.5	366449.6	99671.9	-0.0	-0.00
100yrs	28.51	466121.5	366524.0	99597.5	-0.0	-0.00
100yrs	28.59	466121.5	366596.5	99525.0	-0.0	-0.00
100yrs	28.68	466121.5	366667.3	99454.2	-0.0	-0.00
100yrs	28.76	466121.5	366736.4	99385.1	-0.0	-0.00
100yrs	28.84	466121.5	366803.9	99317.6	-0.0	-0.00
100yrs	28.93	466121.5	366869.8	99251.8	-0.0	-0.00
100yrs	29.01	466121.5	366934.2	99187.4	-0.0	-0.00
100yrs	29.09	466121.5	366997.0	99124.5	-0.0	-0.00
100yrs	29.18	466121.5	367058.5	99063.0	-0.0	-0.00
100yrs	29.26	466121.5	367118.6	99002.9	-0.0	-0.00
100yrs	29.34	466121.5	367177.3	98944.2	-0.0	-0.00
100yrs	29.43	466121.5	367234.8	98886.7	-0.0	-0.00
100yrs	29.51	466121.5	367291.0	98830.5	-0.0	-0.00
100yrs	29.59	466121.5	367346.0	98775.5	-0.0	-0.00
100yrs	29.68	466121.5	367399.9	98721.7	-0.0	-0.00
100yrs	29.76	466121.5	367452.6	98669.0	-0.0	-0.00
100yrs	29.84	466121.5	367504.2	98617.4	-0.0	-0.00
100yrs	29.93	466121.5	367554.7	98566.8	-0.0	-0.00
100yrs	30.01	466121.5	367604.2	98517.3	-0.0	-0.00
100yrs	30.09	466121.5	367652.7	98468.8	-0.0	-0.00
100yrs	30.18	466121.5	367700.3	98421.3	-0.0	-0.00
100yrs	30.26	466121.5	367746.9	98374.7	-0.0	-0.00
100yrs	30.34	466121.5	367792.6	98328.9	-0.0	-0.00
100yrs	30.43	466121.5	367837.5	98284.1	-0.0	-0.00
100yrs	30.51	466121.5	367881.5	98240.1	-0.0	-0.00
100yrs	30.59	466121.5	367924.6	98196.9	-0.0	-0.00
100yrs	30.68	466121.5	367967.0	98154.5	-0.0	-0.00
100yrs	30.76	466121.5	368008.6	98113.0	-0.0	-0.00
100yrs	30.84	466121.5	368049.4	98072.1	-0.0	-0.00
100yrs	30.93	466121.5	368089.5	98032.1	-0.0	-0.00
100yrs	31.01	466121.5	368128.8	97992.7	-0.0	-0.00
100yrs	31.09	466121.5	368167.5	97954.1	-0.0	-0.00
100yrs	31.18	466121.5	368205.4	97916.1	-0.0	-0.00
100yrs	31.26	466121.5	368242.7	97878.9	-0.0	-0.00
100yrs	31.34	466121.5	368279.3	97842.3	-0.0	-0.00
100yrs	31.43	466121.5	368315.2	97806.3	-0.0	-0.00
100yrs	31.51	466121.5	368350.6	97771.0	-0.0	-0.00
100yrs	31.59	466121.5	368385.3	97736.2	-0.0	-0.00
100yrs	31.68	466121.5	368419.4	97702.1	-0.0	-0.00
100yrs	31.76	466121.5	368453.0	97668.6	-0.0	-0.00
100yrs	31.84	466121.5	368486.0	97635.6	-0.0	-0.00
100yrs	31.93	466121.5	368518.4	97603.2	-0.0	-0.00
100yrs	32.01	466121.5	368550.3	97571.3	-0.0	-0.00
100yrs	32.09	466121.5	368581.6	97539.9	-0.0	-0.00
100yrs	32.18	466121.5	368612.4	97509.1	-0.0	-0.00
100yrs	32.26	466121.5	368642.8	97478.8	-0.0	-0.00
100yrs	32.34	466121.5	368672.6	97448.9	-0.0	-0.00
100yrs	32.43	466121.5	368701.9	97419.6	-0.0	-0.00
100yrs	32.51	466121.5	368730.8	97390.7	-0.0	-0.00
100yrs	32.59	466121.5	368759.2	97362.3	-0.0	-0.00

				MASS	BALANCE	25 YR	100 YR	
100yrs	32.68	466121.5	368787.2		97334.3	-0.0		-0.00
100yrs	32.76	466121.5	368814.8		97306.8	-0.0		-0.00
100yrs	32.84	466121.5	368841.9		97279.7	-0.0		-0.00
100yrs	32.93	466121.5	368868.6		97253.0	-0.0		-0.00
100yrs	33.01	466121.5	368894.8		97226.7	-0.0		-0.00
100yrs	33.09	466121.5	368920.7		97200.8	-0.0		-0.00
100yrs	33.18	466121.5	368946.2		97175.4	-0.0		-0.00
100yrs	33.26	466121.5	368971.3		97150.3	-0.0		-0.00
100yrs	33.34	466121.5	368996.0		97125.6	-0.0		-0.00
100yrs	33.43	466121.5	369020.3		97101.2	-0.0		-0.00
100yrs	33.51	466121.5	369044.3		97077.2	-0.0		-0.00
100yrs	33.59	466121.5	369068.0		97053.6	-0.0		-0.00
100yrs	33.68	466121.5	369091.2		97030.3	-0.0		-0.00
100yrs	33.76	466121.5	369114.2		97007.3	-0.0		-0.00
100yrs	33.84	466121.5	369136.8		96984.7	-0.0		-0.00
100yrs	33.93	466121.5	369159.1		96962.4	-0.0		-0.00
100yrs	34.01	466121.5	369181.1		96940.5	-0.0		-0.00
100yrs	34.09	466121.5	369202.7		96918.8	-0.0		-0.00
100yrs	34.18	466121.5	369224.1		96897.5	-0.0		-0.00
100yrs	34.26	466121.5	369245.1		96876.4	-0.0		-0.00
100yrs	34.34	466121.5	369265.9		96855.6	-0.0		-0.00
100yrs	34.43	466121.5	369286.4		96835.2	-0.0		-0.00
100yrs	34.51	466121.5	369306.6		96815.0	-0.0		-0.00
100yrs	34.59	466121.5	369326.5		96795.1	-0.0		-0.00
100yrs	34.68	466121.5	369346.1		96775.4	-0.0		-0.00
100yrs	34.76	466121.5	369365.5		96756.0	-0.0		-0.00
100yrs	34.84	466121.5	369384.6		96736.9	-0.0		-0.00
100yrs	34.93	466121.5	369403.5		96718.0	-0.0		-0.00
100yrs	35.01	466121.5	369422.1		96699.4	-0.0		-0.00
100yrs	35.09	466121.5	369440.5		96681.1	-0.0		-0.00
100yrs	35.18	466121.5	369458.6		96662.9	-0.0		-0.00
100yrs	35.26	466121.5	369476.5		96645.0	-0.0		-0.00
100yrs	35.34	466121.5	369494.2		96627.4	-0.0		-0.00
100yrs	35.43	466121.5	369511.6		96609.9	-0.0		-0.00
100yrs	35.51	466121.5	369528.8		96592.7	-0.0		-0.00
100yrs	35.59	466121.5	369545.8		96575.7	-0.0		-0.00
100yrs	35.68	466121.5	369562.6		96558.9	-0.0		-0.00
100yrs	35.76	466121.5	369579.2		96542.4	-0.0		-0.00
100yrs	35.84	466121.5	369595.6		96526.0	-0.0		-0.00
100yrs	35.93	466121.5	369611.7		96509.8	-0.0		-0.00
100yrs	36.01	466121.5	369627.7		96493.8	-0.0		-0.00
100yrs	36.09	466121.5	369643.5		96478.1	-0.0		-0.00
100yrs	36.18	466121.5	369659.1		96462.5	-0.0		-0.00
100yrs	36.26	466121.5	369674.5		96447.0	-0.0		-0.00
100yrs	36.34	466121.5	369689.7		96431.8	-0.0		-0.00
100yrs	36.43	466121.5	369704.8		96416.8	-0.0		-0.00
100yrs	36.51	466121.5	369719.7		96401.9	-0.0		-0.00
100yrs	36.59	466121.5	369734.4		96387.2	-0.0		-0.00
100yrs	36.68	466121.5	369748.9		96372.6	-0.0		-0.00
100yrs	36.76	466121.5	369763.3		96358.2	-0.0		-0.00
100yrs	36.84	466121.5	369777.6		96344.0	-0.0		-0.00
100yrs	36.93	466121.5	369791.6		96329.9	-0.0		-0.00
100yrs	37.01	466121.5	369805.6		96316.0	-0.0		-0.00
100yrs	37.09	466121.5	369819.4		96302.2	-0.0		-0.00
100yrs	37.18	466121.5	369833.0		96288.6	-0.0		-0.00
100yrs	37.26	466121.5	369846.5		96275.1	-0.0		-0.00
100yrs	37.34	466121.5	369859.8		96261.7	-0.0		-0.00
100yrs	37.43	466121.5	369873.0		96248.5	-0.0		-0.00
100yrs	37.51	466121.5	369886.1		96235.5	-0.0		-0.00
100yrs	37.59	466121.5	369899.0		96222.6	-0.0		-0.00
100yrs	37.68	466121.5	369911.8		96209.8	-0.0		-0.00
100yrs	37.76	466121.5	369924.4		96197.1	-0.0		-0.00
100yrs	37.84	466121.5	369936.9		96184.6	-0.0		-0.00
100yrs	37.93	466121.5	369949.3		96172.2	-0.0		-0.00
100yrs	38.01	466121.5	369961.6		96159.9	-0.0		-0.00
100yrs	38.09	466121.5	369973.7		96147.8	-0.0		-0.00

				MASS BALANCE 25 YR 100 YR		
100yrs	38.18	466121.5	369985.7	96135.8	-0.0	-0.00
100yrs	38.26	466121.5	369997.6	96123.9	-0.0	-0.00
100yrs	38.34	466121.5	370009.4	96112.2	-0.0	-0.00
100yrs	38.43	466121.5	370021.0	96100.5	-0.0	-0.00
100yrs	38.51	466121.5	370032.6	96089.0	-0.0	-0.00
100yrs	38.59	466121.5	370044.0	96077.6	-0.0	-0.00
100yrs	38.68	466121.5	370055.3	96066.3	-0.0	-0.00
100yrs	38.76	466121.5	370066.5	96055.1	-0.0	-0.00
100yrs	38.84	466121.5	370077.5	96044.0	-0.0	-0.00
100yrs	38.93	466121.5	370088.5	96033.1	-0.0	-0.00
100yrs	39.01	466121.5	370099.3	96022.2	-0.0	-0.00
100yrs	39.09	466121.5	370110.1	96011.5	-0.0	-0.00
100yrs	39.18	466121.5	370120.7	96000.8	-0.0	-0.00
100yrs	39.26	466121.5	370131.3	95990.3	-0.0	-0.00
100yrs	39.34	466121.5	370141.7	95979.9	-0.0	-0.00
100yrs	39.43	466121.5	370152.0	95969.5	-0.0	-0.00
100yrs	39.51	466121.5	370162.2	95959.3	-0.0	-0.00
100yrs	39.59	466121.5	370172.4	95949.2	-0.0	-0.00
100yrs	39.68	466121.5	370182.4	95939.1	-0.0	-0.00
100yrs	39.76	466121.5	370192.3	95929.2	-0.0	-0.00
100yrs	39.84	466121.5	370202.2	95919.4	-0.0	-0.00
100yrs	39.93	466121.5	370211.9	95909.6	-0.0	-0.00
100yrs	40.01	466121.5	370221.6	95899.9	-0.0	-0.00
100yrs	40.09	466121.5	370231.2	95890.4	-0.0	-0.00
100yrs	40.18	466121.5	370240.6	95880.9	-0.0	-0.00
100yrs	40.26	466121.5	370250.0	95871.5	-0.0	-0.00
100yrs	40.34	466121.5	370259.3	95862.2	-0.0	-0.00
100yrs	40.43	466121.5	370268.5	95853.0	-0.0	-0.00
100yrs	40.51	466121.5	370277.7	95843.9	-0.0	-0.00
100yrs	40.59	466121.5	370286.7	95834.8	-0.0	-0.00
100yrs	40.68	466121.5	370295.7	95825.9	-0.0	-0.00
100yrs	40.76	466121.5	370304.5	95817.0	-0.0	-0.00
100yrs	40.84	466121.5	370313.3	95808.2	-0.0	-0.00
100yrs	40.93	466121.5	370322.0	95799.5	-0.0	-0.00
100yrs	41.01	466121.5	370330.7	95790.9	-0.0	-0.00
100yrs	41.09	466121.5	370339.2	95782.3	-0.0	-0.00
100yrs	41.18	466121.5	370347.7	95773.8	-0.0	-0.00
100yrs	41.26	466121.5	370356.1	95765.4	-0.0	-0.00
100yrs	41.34	466121.5	370364.5	95757.1	-0.0	-0.00
100yrs	41.43	466121.5	370372.7	95748.8	-0.0	-0.00
100yrs	41.51	466121.5	370380.9	95740.6	-0.0	-0.00
100yrs	41.59	466121.5	370389.0	95732.5	-0.0	-0.00
100yrs	41.68	466121.5	370397.1	95724.5	-0.0	-0.00
100yrs	41.76	466121.5	370405.0	95716.5	-0.0	-0.00
100yrs	41.84	466121.5	370413.0	95708.6	-0.0	-0.00
100yrs	41.93	466121.5	370420.8	95700.8	-0.0	-0.00
100yrs	42.01	466121.5	370428.6	95693.0	-0.0	-0.00
100yrs	42.09	466121.5	370436.3	95685.3	-0.0	-0.00
100yrs	42.18	466121.5	370443.9	95677.7	-0.0	-0.00
100yrs	42.26	466121.5	370451.5	95670.1	-0.0	-0.00
100yrs	42.34	466121.5	370459.0	95662.6	-0.0	-0.00
100yrs	42.43	466121.5	370466.4	95655.1	-0.0	-0.00
100yrs	42.51	466121.5	370473.8	95647.8	-0.0	-0.00
100yrs	42.59	466121.5	370481.1	95640.5	-0.0	-0.00
100yrs	42.68	466121.5	370488.3	95633.2	-0.0	-0.00
100yrs	42.76	466121.5	370495.5	95626.0	-0.0	-0.00
100yrs	42.84	466121.5	370502.6	95618.9	-0.0	-0.00
100yrs	42.93	466121.5	370509.7	95611.8	-0.0	-0.00
100yrs	43.01	466121.5	370516.7	95604.8	-0.0	-0.00
100yrs	43.09	466121.5	370523.7	95597.9	-0.0	-0.00
100yrs	43.18	466121.5	370530.6	95591.0	-0.0	-0.00
100yrs	43.26	466121.5	370537.4	95584.1	-0.0	-0.00
100yrs	43.34	466121.5	370544.2	95577.4	-0.0	-0.00
100yrs	43.43	466121.5	370550.9	95570.6	-0.0	-0.00
100yrs	43.51	466121.5	370557.6	95564.0	-0.0	-0.00
100yrs	43.59	466121.5	370564.2	95557.4	-0.0	-0.00

				MASS	BALANCE	25 YR	100 YR	YR
100yrs	43.68	466121.5	370570.7	95550.8				-0.00
100yrs	43.76	466121.5	370577.2	95544.3				-0.00
100yrs	43.84	466121.5	370583.7	95537.9				-0.00
100yrs	43.93	466121.5	370590.1	95531.5				-0.00
100yrs	44.01	466121.5	370596.4	95525.1				-0.00
100yrs	44.09	466121.5	370602.7	95518.8				-0.00
100yrs	44.18	466121.5	370609.0	95512.6				-0.00
100yrs	44.26	466121.5	370615.2	95506.4				-0.00
100yrs	44.34	466121.5	370621.3	95500.2				-0.00
100yrs	44.43	466121.5	370627.4	95494.1				-0.00
100yrs	44.51	466121.5	370633.5	95488.1				-0.00
100yrs	44.59	466121.5	370639.5	95482.1				-0.00
100yrs	44.68	466121.5	370645.4	95476.1				-0.00
100yrs	44.76	466121.5	370651.3	95470.2				-0.00
100yrs	44.84	466121.5	370657.2	95464.4				-0.00
100yrs	44.93	466121.5	370663.0	95458.6				-0.00
100yrs	45.01	466121.5	370668.7	95452.8				-0.00
100yrs	45.09	466121.5	370674.5	95447.1				-0.00
100yrs	45.18	466121.5	370680.1	95441.4				-0.00
100yrs	45.26	466121.5	370685.8	95435.8				-0.00
100yrs	45.34	466121.5	370691.3	95430.2				-0.00
100yrs	45.43	466121.5	370696.9	95424.7				-0.00
100yrs	45.51	466121.5	370702.4	95419.2				-0.00
100yrs	45.59	466121.5	370707.8	95413.7				-0.00
100yrs	45.68	466121.5	370713.3	95408.3				-0.00
100yrs	45.76	466121.5	370718.6	95402.9				-0.00
100yrs	45.84	466121.5	370724.0	95397.6				-0.00
100yrs	45.93	466121.5	370729.3	95392.3				-0.00
100yrs	46.01	466121.5	370734.5	95387.0				-0.00
100yrs	46.09	466121.5	370739.7	95381.8				-0.00
100yrs	46.18	466121.5	370744.9	95376.6				-0.00
100yrs	46.26	466121.5	370750.0	95371.5				-0.00
100yrs	46.34	466121.5	370755.1	95366.4				-0.00
100yrs	46.43	466121.5	370760.2	95361.4				-0.00
100yrs	46.51	466121.5	370765.2	95356.3				-0.00
100yrs	46.59	466121.5	370770.2	95351.4				-0.00
100yrs	46.68	466121.5	370775.1	95346.4				-0.00
100yrs	46.76	466121.5	370780.0	95341.5				-0.00
100yrs	46.84	466121.5	370784.9	95336.6				-0.00
100yrs	46.93	466121.5	370789.7	95331.8				-0.00
100yrs	47.01	466121.5	370794.5	95327.0				-0.00
100yrs	47.09	466121.5	370799.3	95322.2				-0.00
100yrs	47.18	466121.5	370804.0	95317.5				-0.00
100yrs	47.26	466121.5	370808.7	95312.8				-0.00
100yrs	47.34	466121.5	370813.4	95308.2				-0.00
100yrs	47.43	466121.5	370818.0	95303.5				-0.00
100yrs	47.51	466121.5	370822.6	95298.9				-0.00
100yrs	47.59	466121.5	370827.2	95294.4				-0.00
100yrs	47.68	466121.5	370831.7	95289.9				-0.00
100yrs	47.76	466121.5	370836.2	95285.4				-0.00
100yrs	47.84	466121.5	370840.6	95280.9				-0.00
100yrs	47.93	466121.5	370845.1	95276.5				-0.00
100yrs	48.01	466121.5	370849.5	95272.1				-0.00
100yrs	48.09	466121.5	370853.8	95267.7				-0.00
100yrs	48.18	466121.5	370858.1	95263.4				-0.00
100yrs	48.26	466121.5	370862.4	95259.1				-0.00
100yrs	48.34	466121.5	370866.7	95254.8				-0.00
100yrs	48.43	466121.5	370871.0	95250.6				-0.00
100yrs	48.51	466121.5	370875.2	95246.4				-0.00
100yrs	48.59	466121.5	370879.4	95242.2				-0.00
100yrs	48.68	466121.5	370883.5	95238.0				-0.00
100yrs	48.76	466121.5	370887.6	95233.9				-0.00
100yrs	48.84	466121.5	370891.7	95229.8				-0.00
100yrs	48.93	466121.5	370895.8	95225.8				-0.00
100yrs	49.01	466121.5	370899.8	95221.7				-0.00
100yrs	49.09	466121.5	370903.8	95217.7				-0.00

			MASS	BALANCE	25 YR	100 YR	
100yrs	49.18	466121.5	370907.8	95213.7	-0.0	-0.0	-0.00
100yrs	49.26	466121.5	370911.8	95209.8	-0.0	-0.0	-0.00
100yrs	49.34	466121.5	370915.7	95205.9	-0.0	-0.0	-0.00
100yrs	49.43	466121.5	370919.6	95202.0	-0.0	-0.0	-0.00
100yrs	49.51	466121.5	370923.5	95198.1	-0.0	-0.0	-0.00
100yrs	49.59	466121.5	370927.3	95194.2	-0.0	-0.0	-0.00
100yrs	49.68	466121.5	370931.1	95190.4	-0.0	-0.0	-0.00
100yrs	49.76	466121.5	370934.9	95186.6	-0.0	-0.0	-0.00
100yrs	49.84	466121.5	370938.7	95182.9	-0.0	-0.0	-0.00
100yrs	49.93	466121.5	370942.4	95179.1	-0.0	-0.0	-0.00
100yrs	50.01	466121.5	370946.1	95175.4	-0.0	-0.0	-0.00
100yrs	50.09	466121.5	370949.8	95171.7	-0.0	-0.0	-0.00
100yrs	50.18	466121.5	370953.5	95168.0	-0.0	-0.0	-0.00
100yrs	50.26	466121.5	370957.1	95164.4	-0.0	-0.0	-0.00
100yrs	50.34	466121.5	370960.8	95160.8	-0.0	-0.0	-0.00
100yrs	50.43	466121.5	370964.3	95157.2	-0.0	-0.0	-0.00
100yrs	50.51	466121.5	370967.9	95153.6	-0.0	-0.0	-0.00
100yrs	50.59	466121.5	370971.5	95150.1	-0.0	-0.0	-0.00
100yrs	50.68	466121.5	370975.0	95146.6	-0.0	-0.0	-0.00
100yrs	50.76	466121.5	370978.5	95143.1	-0.0	-0.0	-0.00
100yrs	50.84	466121.5	370982.0	95139.6	-0.0	-0.0	-0.00
100yrs	50.93	466121.5	370985.4	95136.1	-0.0	-0.0	-0.00
100yrs	51.01	466121.5	370988.8	95132.7	-0.0	-0.0	-0.00
100yrs	51.09	466121.5	370992.2	95129.3	-0.0	-0.0	-0.00
100yrs	51.18	466121.5	370995.6	95125.9	-0.0	-0.0	-0.00
100yrs	51.26	466121.5	370999.0	95122.6	-0.0	-0.0	-0.00
100yrs	51.34	466121.5	371002.3	95119.2	-0.0	-0.0	-0.00
100yrs	51.43	466121.5	371005.6	95115.9	-0.0	-0.0	-0.00
100yrs	51.51	466121.5	371008.9	95112.6	-0.0	-0.0	-0.00
100yrs	51.59	466121.5	371012.2	95109.3	-0.0	-0.0	-0.00
100yrs	51.68	466121.5	371015.5	95106.1	-0.0	-0.0	-0.00
100yrs	51.76	466121.5	371018.7	95102.9	-0.0	-0.0	-0.00
100yrs	51.84	466121.5	371021.9	95099.6	-0.0	-0.0	-0.00
100yrs	51.93	466121.5	371025.1	95096.5	-0.0	-0.0	-0.00
100yrs	52.01	466121.5	371028.3	95093.3	-0.0	-0.0	-0.00
100yrs	52.09	466121.5	371031.4	95090.1	-0.0	-0.0	-0.00
100yrs	52.18	466121.5	371034.5	95087.0	-0.0	-0.0	-0.00
100yrs	52.26	466121.5	371037.6	95083.9	-0.0	-0.0	-0.00
100yrs	52.34	466121.5	371040.7	95080.8	-0.0	-0.0	-0.00
100yrs	52.43	466121.5	371043.8	95077.7	-0.0	-0.0	-0.00
100yrs	52.51	466121.5	371046.9	95074.7	-0.0	-0.0	-0.00
100yrs	52.59	466121.5	371049.9	95071.7	-0.0	-0.0	-0.00
100yrs	52.68	466121.5	371052.9	95068.6	-0.0	-0.0	-0.00
100yrs	52.76	466121.5	371055.9	95065.7	-0.0	-0.0	-0.00
100yrs	52.84	466121.5	371058.9	95062.7	-0.0	-0.0	-0.00
100yrs	52.93	466121.5	371061.8	95059.7	-0.0	-0.0	-0.00
100yrs	53.01	466121.5	371064.8	95056.8	-0.0	-0.0	-0.00
100yrs	53.09	466121.5	371067.7	95053.9	-0.0	-0.0	-0.00
100yrs	53.18	466121.5	371070.6	95051.0	-0.0	-0.0	-0.00
100yrs	53.26	466121.5	371073.5	95048.1	-0.0	-0.0	-0.00
100yrs	53.34	466121.5	371076.3	95045.2	-0.0	-0.0	-0.00
100yrs	53.43	466121.5	371079.2	95042.4	-0.0	-0.0	-0.00
100yrs	53.51	466121.5	371082.0	95039.6	-0.0	-0.0	-0.00
100yrs	53.59	466121.5	371084.8	95036.7	-0.0	-0.0	-0.00
100yrs	53.68	466121.5	371087.6	95034.0	-0.0	-0.0	-0.00
100yrs	53.76	466121.5	371090.4	95031.2	-0.0	-0.0	-0.00
100yrs	53.84	466121.5	371093.1	95028.4	-0.0	-0.0	-0.00
100yrs	53.93	466121.5	371095.9	95025.7	-0.0	-0.0	-0.00
100yrs	54.01	466121.5	371098.6	95022.9	-0.0	-0.0	-0.00
100yrs	54.09	466121.5	371101.3	95020.2	-0.0	-0.0	-0.00
100yrs	54.18	466121.5	371104.0	95017.5	-0.0	-0.0	-0.00
100yrs	54.26	466121.5	371106.7	95014.9	-0.0	-0.0	-0.00
100yrs	54.34	466121.5	371109.3	95012.2	-0.0	-0.0	-0.00
100yrs	54.43	466121.5	371112.0	95009.6	-0.0	-0.0	-0.00
100yrs	54.51	466121.5	371114.6	95006.9	-0.0	-0.0	-0.00
100yrs	54.59	466121.5	371117.2	95004.3	-0.0	-0.0	-0.00

				MASS BALANCE 25 YR 100 YR	
100yrs	54.68	466121.5	371119.8	95001.7	-0.0
100yrs	54.76	466121.5	371122.4	94999.2	-0.0
100yrs	54.84	466121.5	371125.0	94996.6	-0.0
100yrs	54.93	466121.5	371127.5	94994.0	-0.0
100yrs	55.01	466121.5	371130.0	94991.5	-0.0
100yrs	55.09	466121.5	371132.6	94989.0	-0.0
100yrs	55.18	466121.5	371135.1	94986.5	-0.0
100yrs	55.26	466121.5	371137.5	94984.0	-0.0
100yrs	55.34	466121.5	371140.0	94981.5	-0.0
100yrs	55.43	466121.5	371142.5	94979.1	-0.0
100yrs	55.51	466121.5	371144.9	94976.6	-0.0
100yrs	55.59	466121.5	371147.4	94974.2	-0.0
100yrs	55.68	466121.5	371149.8	94971.8	-0.0
100yrs	55.76	466121.5	371152.2	94969.4	-0.0
100yrs	55.84	466121.5	371154.6	94967.0	-0.0
100yrs	55.93	466121.5	371156.9	94964.6	-0.0
100yrs	56.01	466121.5	371159.3	94962.2	-0.0
100yrs	56.09	466121.5	371161.6	94959.9	-0.0
100yrs	56.18	466121.5	371164.0	94957.6	-0.0
100yrs	56.26	466121.5	371166.3	94955.2	-0.0
100yrs	56.34	466121.5	371168.6	94952.9	-0.0
100yrs	56.43	466121.5	371170.9	94950.6	-0.0
100yrs	56.51	466121.5	371173.2	94948.4	-0.0
100yrs	56.59	466121.5	371175.4	94946.1	-0.0
100yrs	56.68	466121.5	371177.7	94943.8	-0.0
100yrs	56.76	466121.5	371179.9	94941.6	-0.0
100yrs	56.84	466121.5	371182.2	94939.4	-0.0
100yrs	56.93	466121.5	371184.4	94937.2	-0.0
100yrs	57.01	466121.5	371186.6	94935.0	-0.0
100yrs	57.09	466121.5	371188.8	94932.8	-0.0
100yrs	57.18	466121.5	371190.9	94930.6	-0.0
100yrs	57.26	466121.5	371193.1	94928.4	-0.0
100yrs	57.34	466121.5	371195.3	94926.3	-0.0
100yrs	57.43	466121.5	371197.4	94924.1	-0.0
100yrs	57.51	466121.5	371199.5	94922.0	-0.0
100yrs	57.59	466121.5	371201.7	94919.9	-0.0
100yrs	57.68	466121.5	371203.8	94917.8	-0.0
100yrs	57.76	466121.5	371205.9	94915.7	-0.0
100yrs	57.84	466121.5	371207.9	94913.6	-0.0
100yrs	57.93	466121.5	371210.0	94911.5	-0.0
100yrs	58.01	466121.5	371212.1	94909.5	-0.0
100yrs	58.09	466121.5	371214.1	94907.4	-0.0
100yrs	58.18	466121.5	371216.1	94905.4	-0.0
100yrs	58.26	466121.5	371218.2	94903.4	-0.0
100yrs	58.34	466121.5	371220.2	94901.4	-0.0
100yrs	58.43	466121.5	371222.2	94899.4	-0.0
100yrs	58.51	466121.5	371224.2	94897.4	-0.0
100yrs	58.59	466121.5	371226.2	94895.4	-0.0
100yrs	58.68	466121.5	371228.1	94893.4	-0.0
100yrs	58.76	466121.5	371230.1	94891.5	-0.0
100yrs	58.84	466121.5	371232.0	94889.5	-0.0
100yrs	58.93	466121.5	371234.0	94887.6	-0.0
100yrs	59.01	466121.5	371235.9	94885.7	-0.0
100yrs	59.09	466121.5	371237.8	94883.7	-0.0
100yrs	59.18	466121.5	371239.7	94881.8	-0.0
100yrs	59.26	466121.5	371241.6	94879.9	-0.0
100yrs	59.34	466121.5	371243.5	94878.1	-0.0
100yrs	59.43	466121.5	371245.4	94876.2	-0.0
100yrs	59.51	466121.5	371247.2	94874.3	-0.0
100yrs	59.59	466121.5	371249.1	94872.5	-0.0
100yrs	59.68	466121.5	371250.9	94870.6	-0.0
100yrs	59.76	466121.5	371252.8	94868.8	-0.0
100yrs	59.84	466121.5	371254.6	94867.0	-0.0
100yrs	59.93	466121.5	371256.4	94865.1	-0.0
100yrs	60.01	466121.5	371258.2	94863.3	-0.0
100yrs	60.09	466121.5	371260.0	94861.5	-0.0

				MASS BALANCE	25 YR	100 YR	
100yrs	60.18	466121.5	371261.8	94859.8	-0.0	-0.00	-0.00
100yrs	60.26	466121.5	371263.6	94858.0	-0.0	-0.00	-0.00
100yrs	60.34	466121.5	371265.3	94856.2	-0.0	-0.00	-0.00
100yrs	60.43	466121.5	371267.1	94854.4	-0.0	-0.00	-0.00
100yrs	60.51	466121.5	371268.8	94852.7	-0.0	-0.00	-0.00
100yrs	60.59	466121.5	371270.6	94851.0	-0.0	-0.00	-0.00
100yrs	60.68	466121.5	371272.3	94849.2	-0.0	-0.00	-0.00
100yrs	60.76	466121.5	371274.0	94847.5	-0.0	-0.00	-0.00
100yrs	60.84	466121.5	371275.7	94845.8	-0.0	-0.00	-0.00
100yrs	60.93	466121.5	371277.4	94844.1	-0.0	-0.00	-0.00
100yrs	61.01	466121.5	371279.1	94842.4	-0.0	-0.00	-0.00
100yrs	61.09	466121.5	371280.8	94840.7	-0.0	-0.00	-0.00
100yrs	61.18	466121.5	371282.5	94839.0	-0.0	-0.00	-0.00
100yrs	61.26	466121.5	371284.2	94837.4	-0.0	-0.00	-0.00
100yrs	61.34	466121.5	371285.8	94835.7	-0.0	-0.00	-0.00
100yrs	61.43	466121.5	371287.5	94834.1	-0.0	-0.00	-0.00
100yrs	61.51	466121.5	371289.1	94832.4	-0.0	-0.00	-0.00
100yrs	61.59	466121.5	371290.8	94830.8	-0.0	-0.00	-0.00
100yrs	61.68	466121.5	371292.4	94829.2	-0.0	-0.00	-0.00
100yrs	61.76	466121.5	371294.0	94827.5	-0.0	-0.00	-0.00
100yrs	61.84	466121.5	371295.6	94825.9	-0.0	-0.00	-0.00
100yrs	61.93	466121.5	371297.2	94824.3	-0.0	-0.00	-0.00
100yrs	62.01	466121.5	371298.8	94822.7	-0.0	-0.00	-0.00
100yrs	62.09	466121.5	371300.4	94821.1	-0.0	-0.00	-0.00
100yrs	62.18	466121.5	371302.0	94819.6	-0.0	-0.00	-0.00
100yrs	62.26	466121.5	371303.5	94818.0	-0.0	-0.00	-0.00
100yrs	62.34	466121.5	371305.1	94816.4	-0.0	-0.00	-0.00
100yrs	62.43	466121.5	371306.7	94814.9	-0.0	-0.00	-0.00
100yrs	62.51	466121.5	371308.2	94813.3	-0.0	-0.00	-0.00
100yrs	62.59	466121.5	371309.7	94811.8	-0.0	-0.00	-0.00
100yrs	62.68	466121.5	371311.3	94810.3	-0.0	-0.00	-0.00
100yrs	62.76	466121.5	371312.8	94808.8	-0.0	-0.00	-0.00
100yrs	62.84	466121.5	371314.3	94807.2	-0.0	-0.00	-0.00
100yrs	62.93	466121.5	371315.8	94805.7	-0.0	-0.00	-0.00
100yrs	63.01	466121.5	371317.3	94804.2	-0.0	-0.00	-0.00
100yrs	63.09	466121.5	371318.8	94802.7	-0.0	-0.00	-0.00
100yrs	63.18	466121.5	371320.3	94801.3	-0.0	-0.00	-0.00
100yrs	63.26	466121.5	371321.8	94799.8	-0.0	-0.00	-0.00
100yrs	63.34	466121.5	371323.2	94798.3	-0.0	-0.00	-0.00
100yrs	63.43	466121.5	371324.7	94796.9	-0.0	-0.00	-0.00
100yrs	63.51	466121.5	371326.1	94795.4	-0.0	-0.00	-0.00
100yrs	63.59	466121.5	371327.6	94794.0	-0.0	-0.00	-0.00
100yrs	63.68	466121.5	371329.0	94792.5	-0.0	-0.00	-0.00
100yrs	63.76	466121.5	371330.5	94791.1	-0.0	-0.00	-0.00
100yrs	63.84	466121.5	371331.9	94789.7	-0.0	-0.00	-0.00
100yrs	63.93	466121.5	371333.3	94788.2	-0.0	-0.00	-0.00
100yrs	64.01	466121.5	371334.7	94786.8	-0.0	-0.00	-0.00
100yrs	64.09	466121.5	371336.1	94785.4	-0.0	-0.00	-0.00
100yrs	64.18	466121.5	371337.5	94784.0	-0.0	-0.00	-0.00
100yrs	64.26	466121.5	371338.9	94782.6	-0.0	-0.00	-0.00
100yrs	64.34	466121.5	371340.3	94781.2	-0.0	-0.00	-0.00
100yrs	64.43	466121.5	371341.7	94779.9	-0.0	-0.00	-0.00
100yrs	64.51	466121.5	371343.0	94778.5	-0.0	-0.00	-0.00
100yrs	64.59	466121.5	371344.4	94777.1	-0.0	-0.00	-0.00
100yrs	64.68	466121.5	371345.8	94775.8	-0.0	-0.00	-0.00
100yrs	64.76	466121.5	371347.1	94774.4	-0.0	-0.00	-0.00
100yrs	64.84	466121.5	371348.5	94773.1	-0.0	-0.00	-0.00
100yrs	64.93	466121.5	371349.8	94771.7	-0.0	-0.00	-0.00
100yrs	65.01	466121.5	371351.1	94770.4	-0.0	-0.00	-0.00
100yrs	65.09	466121.5	371352.5	94769.1	-0.0	-0.00	-0.00
100yrs	65.18	466121.5	371353.8	94767.8	-0.0	-0.00	-0.00
100yrs	65.26	466121.5	371355.1	94766.4	-0.0	-0.00	-0.00
100yrs	65.34	466121.5	371356.4	94765.1	-0.0	-0.00	-0.00
100yrs	65.43	466121.5	371357.7	94763.8	-0.0	-0.00	-0.00
100yrs	65.51	466121.5	371359.0	94762.5	-0.0	-0.00	-0.00
100yrs	65.59	466121.5	371360.3	94761.3	-0.0	-0.00	-0.00

				MASS BALANCE 25 YR 100 YR		
100yrs	65.68	466121.5	371361.6	94760.0	-0.0	-0.00
100yrs	65.76	466121.5	371362.8	94758.7	-0.0	-0.00
100yrs	65.84	466121.5	371364.1	94757.4	-0.0	-0.00
100yrs	65.93	466121.5	371365.4	94756.2	-0.0	-0.00
100yrs	66.01	466121.5	371366.6	94754.9	-0.0	-0.00
100yrs	66.09	466121.5	371367.9	94753.7	-0.0	-0.00
100yrs	66.18	466121.5	371369.1	94752.4	-0.0	-0.00
100yrs	66.26	466121.5	371370.4	94751.2	-0.0	-0.00
100yrs	66.34	466121.5	371371.6	94749.9	-0.0	-0.00
100yrs	66.43	466121.5	371372.8	94748.7	-0.0	-0.00
100yrs	66.51	466121.5	371374.1	94747.5	-0.0	-0.00
100yrs	66.59	466121.5	371375.3	94746.3	-0.0	-0.00
100yrs	66.68	466121.5	371376.5	94745.0	-0.0	-0.00
100yrs	66.76	466121.5	371377.7	94743.8	-0.0	-0.00
100yrs	66.84	466121.5	371378.9	94742.6	-0.0	-0.00
100yrs	66.93	466121.5	371380.1	94741.4	-0.0	-0.00
100yrs	67.01	466121.5	371381.3	94740.3	-0.0	-0.00
100yrs	67.09	466121.5	371382.5	94739.1	-0.0	-0.00
100yrs	67.18	466121.5	371383.6	94737.9	-0.0	-0.00
100yrs	67.26	466121.5	371384.8	94736.7	-0.0	-0.00
100yrs	67.34	466121.5	371386.0	94735.6	-0.0	-0.00
100yrs	67.43	466121.5	371387.2	94734.4	-0.0	-0.00
100yrs	67.51	466121.5	371388.3	94733.2	-0.0	-0.00
100yrs	67.59	466121.5	371389.5	94732.1	-0.0	-0.00
100yrs	67.68	466121.5	371390.6	94730.9	-0.0	-0.00
100yrs	67.76	466121.5	371391.7	94729.8	-0.0	-0.00
100yrs	67.84	466121.5	371392.9	94728.7	-0.0	-0.00
100yrs	67.93	466121.5	371394.0	94727.5	-0.0	-0.00
100yrs	68.01	466121.5	371395.1	94726.4	-0.0	-0.00
100yrs	68.09	466121.5	371396.3	94725.3	-0.0	-0.00
100yrs	68.18	466121.5	371397.4	94724.2	-0.0	-0.00
100yrs	68.26	466121.5	371398.5	94723.1	-0.0	-0.00
100yrs	68.34	466121.5	371399.6	94721.9	-0.0	-0.00
100yrs	68.43	466121.5	371400.7	94720.8	-0.0	-0.00
100yrs	68.51	466121.5	371401.8	94719.8	-0.0	-0.00
100yrs	68.59	466121.5	371402.9	94718.7	-0.0	-0.00
100yrs	68.68	466121.5	371404.0	94717.6	-0.0	-0.00
100yrs	68.76	466121.5	371405.0	94716.5	-0.0	-0.00
100yrs	68.84	466121.5	371406.1	94715.4	-0.0	-0.00
100yrs	68.93	466121.5	371407.2	94714.3	-0.0	-0.00
100yrs	69.01	466121.5	371408.3	94713.3	-0.0	-0.00
100yrs	69.09	466121.5	371409.3	94712.2	-0.0	-0.00
100yrs	69.18	466121.5	371410.4	94711.2	-0.0	-0.00
100yrs	69.26	466121.5	371411.4	94710.1	-0.0	-0.00
100yrs	69.34	466121.5	371412.5	94709.1	-0.0	-0.00
100yrs	69.43	466121.5	371413.5	94708.0	-0.0	-0.00
100yrs	69.51	466121.5	371414.6	94707.0	-0.0	-0.00
100yrs	69.59	466121.5	371415.6	94705.9	-0.0	-0.00
100yrs	69.68	466121.5	371416.6	94704.9	-0.0	-0.00
100yrs	69.76	466121.5	371417.7	94703.9	-0.0	-0.00
100yrs	69.84	466121.5	371418.7	94702.9	-0.0	-0.00
100yrs	69.93	466121.5	371419.7	94701.9	-0.0	-0.00
100yrs	70.01	466121.5	371420.7	94700.8	-0.0	-0.00
100yrs	70.09	466121.5	371421.7	94699.8	-0.0	-0.00
100yrs	70.18	466121.5	371422.7	94698.8	-0.0	-0.00
100yrs	70.26	466121.5	371423.7	94697.8	-0.0	-0.00
100yrs	70.34	466121.5	371424.7	94696.8	-0.0	-0.00
100yrs	70.43	466121.5	371425.7	94695.9	-0.0	-0.00
100yrs	70.51	466121.5	371426.7	94694.9	-0.0	-0.00
100yrs	70.59	466121.5	371427.7	94693.9	-0.0	-0.00
100yrs	70.68	466121.5	371428.6	94692.9	-0.0	-0.00
100yrs	70.76	466121.5	371429.6	94691.9	-0.0	-0.00
100yrs	70.84	466121.5	371430.6	94691.0	-0.0	-0.00
100yrs	70.93	466121.5	371431.5	94690.0	-0.0	-0.00
100yrs	71.01	466121.5	371432.5	94689.0	-0.0	-0.00
100yrs	71.09	466121.5	371433.5	94688.1	-0.0	-0.00



				MASS	BALANCE	25	YR	100	YR	
100yrs	71.18	466121.5	371434.4	94687.1	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	71.26	466121.5	371435.4	94686.2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	71.34	466121.5	371436.3	94685.2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	71.43	466121.5	371437.2	94684.3	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	71.51	466121.5	371438.2	94683.4	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	71.59	466121.5	371439.1	94682.4	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	71.68	466121.5	371440.0	94681.5	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	71.76	466121.5	371441.0	94680.6	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	71.84	466121.5	371441.9	94679.7	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	71.93	466121.5	371442.8	94678.7	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	72.01	466121.5	371443.7	94677.8	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	72.09	466121.5	371444.6	94676.9	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	72.18	466121.5	371445.5	94676.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	72.26	466121.5	371446.4	94675.1	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	72.34	466121.5	371447.3	94674.2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	72.43	466121.5	371448.2	94673.3	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	72.51	466121.5	371449.1	94672.4	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	72.59	466121.5	371450.0	94671.6	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	72.68	466121.5	371450.9	94670.7	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	72.76	466121.5	371451.8	94669.8	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	72.84	466121.5	371452.6	94668.9	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	72.93	466121.5	371453.5	94668.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	73.01	466121.5	371454.4	94667.2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	73.09	466121.5	371455.2	94666.3	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	73.18	466121.5	371456.1	94665.5	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	73.26	466121.5	371456.9	94664.6	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	73.34	466121.5	371457.8	94663.7	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	73.43	466121.5	371458.7	94662.9	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	73.51	466121.5	371459.5	94662.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	73.59	466121.5	371460.3	94661.2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	73.68	466121.5	371461.2	94660.4	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	73.76	466121.5	371462.0	94659.5	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	73.84	466121.5	371462.9	94658.7	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	73.93	466121.5	371463.7	94657.9	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	74.01	466121.5	371464.5	94657.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	74.09	466121.5	371465.3	94656.2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	74.18	466121.5	371466.1	94655.4	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	74.26	466121.5	371467.0	94654.6	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	74.34	466121.5	371467.8	94653.8	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	74.43	466121.5	371468.6	94653.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	74.51	466121.5	371469.4	94652.2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	74.59	466121.5	371470.2	94651.3	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	74.68	466121.5	371471.0	94650.5	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	74.76	466121.5	371471.8	94649.8	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	74.84	466121.5	371472.6	94649.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	74.93	466121.5	371473.4	94648.2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	75.01	466121.5	371474.2	94647.4	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	75.09	466121.5	371474.9	94646.6	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	75.18	466121.5	371475.7	94645.8	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	75.26	466121.5	371476.5	94645.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	75.34	466121.5	371477.3	94644.3	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	75.43	466121.5	371478.0	94643.5	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	75.51	466121.5	371478.8	94642.7	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	75.59	466121.5	371479.6	94642.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	75.68	466121.5	371480.3	94641.2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	75.76	466121.5	371481.1	94640.4	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	75.84	466121.5	371481.9	94639.7	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	75.93	466121.5	371482.6	94638.9	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	76.01	466121.5	371483.4	94638.2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	76.09	466121.5	371484.1	94637.4	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	76.18	466121.5	371484.9	94636.7	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	76.26	466121.5	371485.6	94635.9	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	76.34	466121.5	371486.3	94635.2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	76.43	466121.5	371487.1	94634.5	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	76.51	466121.5	371487.8	94633.7	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00
100yrs	76.59	466121.5	371488.5	94633.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.00

			MASS	BALANCE	25 YR	100 YR	
100yrs	76.68	466121.5	371489.3	94632.3	-0.0	-0.0	-0.00
100yrs	76.76	466121.5	371490.0	94631.6	-0.0	-0.0	-0.00
100yrs	76.84	466121.5	371490.7	94630.8	-0.0	-0.0	-0.00
100yrs	76.93	466121.5	371491.4	94630.1	-0.0	-0.0	-0.00
100yrs	77.01	466121.5	371492.1	94629.4	-0.0	-0.0	-0.00
100yrs	77.09	466121.5	371492.9	94628.7	-0.0	-0.0	-0.00
100yrs	77.18	466121.5	371493.6	94628.0	-0.0	-0.0	-0.00
100yrs	77.26	466121.5	371494.3	94627.3	-0.0	-0.0	-0.00
100yrs	77.34	466121.5	371495.0	94626.6	-0.0	-0.0	-0.00
100yrs	77.43	466121.5	371495.7	94625.9	-0.0	-0.0	-0.00
100yrs	77.51	466121.5	371496.4	94625.2	-0.0	-0.0	-0.00
100yrs	77.59	466121.5	371497.1	94624.5	-0.0	-0.0	-0.00
100yrs	77.68	466121.5	371497.8	94623.8	-0.0	-0.0	-0.00
100yrs	77.76	466121.5	371498.5	94623.1	-0.0	-0.0	-0.00
100yrs	77.84	466121.5	371499.1	94622.4	-0.0	-0.0	-0.00
100yrs	77.93	466121.5	371499.8	94621.7	-0.0	-0.0	-0.00
100yrs	78.01	466121.5	371500.5	94621.0	-0.0	-0.0	-0.00
100yrs	78.09	466121.5	371501.2	94620.3	-0.0	-0.0	-0.00
100yrs	78.18	466121.5	371501.9	94619.7	-0.0	-0.0	-0.00
100yrs	78.26	466121.5	371502.6	94619.0	-0.0	-0.0	-0.00
100yrs	78.34	466121.5	371503.2	94618.3	-0.0	-0.0	-0.00
100yrs	78.43	466121.5	371503.9	94617.6	-0.0	-0.0	-0.00
100yrs	78.51	466121.5	371504.6	94617.0	-0.0	-0.0	-0.00
100yrs	78.59	466121.5	371505.2	94616.3	-0.0	-0.0	-0.00
100yrs	78.68	466121.5	371505.9	94615.7	-0.0	-0.0	-0.00
100yrs	78.76	466121.5	371506.6	94615.0	-0.0	-0.0	-0.00
100yrs	78.84	466121.5	371507.2	94614.3	-0.0	-0.0	-0.00
100yrs	78.93	466121.5	371507.9	94613.7	-0.0	-0.0	-0.00
100yrs	79.01	466121.5	371508.5	94613.0	-0.0	-0.0	-0.00
100yrs	79.09	466121.5	371509.2	94612.4	-0.0	-0.0	-0.00
100yrs	79.18	466121.5	371509.8	94611.7	-0.0	-0.0	-0.00
100yrs	79.26	466121.5	371510.5	94611.1	-0.0	-0.0	-0.00
100yrs	79.34	466121.5	371511.1	94610.4	-0.0	-0.0	-0.00
100yrs	79.43	466121.5	371511.7	94609.8	-0.0	-0.0	-0.00
100yrs	79.51	466121.5	371512.4	94609.2	-0.0	-0.0	-0.00
100yrs	79.59	466121.5	371513.0	94608.5	-0.0	-0.0	-0.00
100yrs	79.68	466121.5	371513.7	94607.9	-0.0	-0.0	-0.00
100yrs	79.76	466121.5	371514.3	94607.3	-0.0	-0.0	-0.00
100yrs	79.84	466121.5	371514.9	94606.6	-0.0	-0.0	-0.00
100yrs	79.93	466121.5	371515.5	94606.0	-0.0	-0.0	-0.00
100yrs	80.01	466121.5	371516.2	94605.4	-0.0	-0.0	-0.00
100yrs	80.09	466121.5	371516.8	94604.8	-0.0	-0.0	-0.00
100yrs	80.18	466121.5	371517.4	94604.1	-0.0	-0.0	-0.00
100yrs	80.26	466121.5	371518.0	94603.5	-0.0	-0.0	-0.00
100yrs	80.34	466121.5	371518.6	94602.9	-0.0	-0.0	-0.00
100yrs	80.43	466121.5	371519.3	94602.3	-0.0	-0.0	-0.00
100yrs	80.51	466121.5	371519.9	94601.7	-0.0	-0.0	-0.00
100yrs	80.59	466121.5	371520.5	94601.1	-0.0	-0.0	-0.00
100yrs	80.68	466121.5	371521.1	94600.5	-0.0	-0.0	-0.00
100yrs	80.76	466121.5	371521.7	94599.9	-0.0	-0.0	-0.00
100yrs	80.84	466121.5	371522.3	94599.3	-0.0	-0.0	-0.00
100yrs	80.93	466121.5	371522.9	94598.7	-0.0	-0.0	-0.00
100yrs	81.01	466121.5	371523.5	94598.1	-0.0	-0.0	-0.00
100yrs	81.09	466121.5	371524.1	94597.5	-0.0	-0.0	-0.00
100yrs	81.18	466121.5	371524.7	94596.9	-0.0	-0.0	-0.00
100yrs	81.26	466121.5	371525.3	94596.3	-0.0	-0.0	-0.00
100yrs	81.34	466121.5	371525.9	94595.7	-0.0	-0.0	-0.00
100yrs	81.43	466121.5	371526.4	94595.1	-0.0	-0.0	-0.00
100yrs	81.51	466121.5	371527.0	94594.5	-0.0	-0.0	-0.00
100yrs	81.59	466121.5	371527.6	94593.9	-0.0	-0.0	-0.00
100yrs	81.68	466121.5	371528.2	94593.3	-0.0	-0.0	-0.00
100yrs	81.76	466121.5	371528.8	94592.8	-0.0	-0.0	-0.00
100yrs	81.84	466121.5	371529.4	94592.2	-0.0	-0.0	-0.00
100yrs	81.93	466121.5	371529.9	94591.6	-0.0	-0.0	-0.00
100yrs	82.01	466121.5	371530.5	94591.0	-0.0	-0.0	-0.00
100yrs	82.09	466121.5	371531.1	94590.5	-0.0	-0.0	-0.00

			MASS	BALANCE	25 YR	100 YR	YR	
100yrs	82.18	466121.5	371531.6	94589.9	-0.0	-0.0	-0.00	
100yrs	82.26	466121.5	371532.2	94589.3	-0.0	-0.0	-0.00	
100yrs	82.34	466121.5	371532.8	94588.8	-0.0	-0.0	-0.00	
100yrs	82.43	466121.5	371533.3	94588.2	-0.0	-0.0	-0.00	
100yrs	82.51	466121.5	371533.9	94587.7	-0.0	-0.0	-0.00	
100yrs	82.59	466121.5	371534.4	94587.1	-0.0	-0.0	-0.00	
100yrs	82.68	466121.5	371535.0	94586.5	-0.0	-0.0	-0.00	
100yrs	82.76	466121.5	371535.6	94586.0	-0.0	-0.0	-0.00	
100yrs	82.84	466121.5	371536.1	94585.4	-0.0	-0.0	-0.00	
100yrs	82.93	466121.5	371536.7	94584.9	-0.0	-0.0	-0.00	
100yrs	83.01	466121.5	371537.2	94584.3	-0.0	-0.0	-0.00	
100yrs	83.09	466121.5	371537.8	94583.8	-0.0	-0.0	-0.00	
100yrs	83.18	466121.5	371538.3	94583.2	-0.0	-0.0	-0.00	
100yrs	83.26	466121.5	371538.8	94582.7	-0.0	-0.0	-0.00	
100yrs	83.34	466121.5	371539.4	94582.2	-0.0	-0.0	-0.00	
100yrs	83.43	466121.5	371539.9	94581.6	-0.0	-0.0	-0.00	
100yrs	83.51	466121.5	371540.5	94581.1	-0.0	-0.0	-0.00	
100yrs	83.59	466121.5	371541.0	94580.5	-0.0	-0.0	-0.00	
100yrs	83.68	466121.5	371541.5	94580.0	-0.0	-0.0	-0.00	
100yrs	83.76	466121.5	371542.1	94579.5	-0.0	-0.0	-0.00	
100yrs	83.84	466121.5	371542.6	94579.0	-0.0	-0.0	-0.00	
100yrs	83.93	466121.5	371543.1	94578.4	-0.0	-0.0	-0.00	
100yrs	84.01	466121.5	371543.6	94577.9	-0.0	-0.0	-0.00	
100yrs	84.09	466121.5	371544.2	94577.4	-0.0	-0.0	-0.00	
100yrs	84.18	466121.5	371544.7	94576.9	-0.0	-0.0	-0.00	
100yrs	84.26	466121.5	371545.2	94576.3	-0.0	-0.0	-0.00	
100yrs	84.34	466121.5	371545.7	94575.8	-0.0	-0.0	-0.00	
100yrs	84.43	466121.5	371546.2	94575.3	-0.0	-0.0	-0.00	
100yrs	84.51	466121.5	371546.8	94574.8	-0.0	-0.0	-0.00	
100yrs	84.59	466121.5	371547.3	94574.3	-0.0	-0.0	-0.00	
100yrs	84.68	466121.5	371547.8	94573.8	-0.0	-0.0	-0.00	
100yrs	84.76	466121.5	371548.3	94573.2	-0.0	-0.0	-0.00	
100yrs	84.84	466121.5	371548.8	94572.7	-0.0	-0.0	-0.00	
100yrs	84.93	466121.5	371549.3	94572.2	-0.0	-0.0	-0.00	
100yrs	85.01	466121.5	371549.8	94571.7	-0.0	-0.0	-0.00	
100yrs	85.09	466121.5	371550.3	94571.2	-0.0	-0.0	-0.00	
100yrs	85.18	466121.5	371550.8	94570.7	-0.0	-0.0	-0.00	
100yrs	85.26	466121.5	371551.3	94570.2	-0.0	-0.0	-0.00	
100yrs	85.34	466121.5	371551.8	94569.7	-0.0	-0.0	-0.00	
100yrs	85.43	466121.5	371552.3	94569.2	-0.0	-0.0	-0.00	
100yrs	85.51	466121.5	371552.8	94568.7	-0.0	-0.0	-0.00	
100yrs	85.59	466121.5	371553.3	94568.2	-0.0	-0.0	-0.00	
100yrs	85.68	466121.5	371553.8	94567.7	-0.0	-0.0	-0.00	
100yrs	85.76	466121.5	371554.3	94567.3	-0.0	-0.0	-0.00	
100yrs	85.84	466121.5	371554.8	94566.8	-0.0	-0.0	-0.00	
100yrs	85.93	466121.5	371555.3	94566.3	-0.0	-0.0	-0.00	
100yrs	86.01	466121.5	371555.7	94565.8	-0.0	-0.0	-0.00	
100yrs	86.09	466121.5	371556.2	94565.3	-0.0	-0.0	-0.00	
100yrs	86.18	466121.5	371556.7	94564.8	-0.0	-0.0	-0.00	
100yrs	86.26	466121.5	371557.2	94564.4	-0.0	-0.0	-0.00	
100yrs	86.34	466121.5	371557.7	94563.9	-0.0	-0.0	-0.00	
100yrs	86.43	466121.5	371558.1	94563.4	-0.0	-0.0	-0.00	
100yrs	86.51	466121.5	371558.6	94562.9	-0.0	-0.0	-0.00	
100yrs	86.59	466121.5	371559.1	94562.5	-0.0	-0.0	-0.00	
100yrs	86.68	466121.5	371559.6	94562.0	-0.0	-0.0	-0.00	
100yrs	86.76	466121.5	371560.0	94561.5	-0.0	-0.0	-0.00	
100yrs	86.84	466121.5	371560.5	94561.0	-0.0	-0.0	-0.00	
100yrs	86.93	466121.5	371561.0	94560.6	-0.0	-0.0	-0.00	
100yrs	87.01	466121.5	371561.4	94560.1	-0.0	-0.0	-0.00	
100yrs	87.09	466121.5	371561.9	94559.6	-0.0	-0.0	-0.00	
100yrs	87.18	466121.5	371562.4	94559.2	-0.0	-0.0	-0.00	
100yrs	87.26	466121.5	371562.8	94558.7	-0.0	-0.0	-0.00	
100yrs	87.34	466121.5	371563.3	94558.3	-0.0	-0.0	-0.00	
100yrs	87.43	466121.5	371563.7	94557.8	-0.0	-0.0	-0.00	
100yrs	87.51	466121.5	371564.2	94557.3	-0.0	-0.0	-0.00	
100yrs	87.59	466121.5	371564.7	94556.9	-0.0	-0.0	-0.00	

100yrs	87.68	466121.5	371565.1	MASS	94556.4	25	YR	100	YR	-0.00
100yrs	87.76	466121.5	371565.6		94556.0					-0.00
100yrs	87.84	466121.5	371566.0		94555.5					-0.00
100yrs	87.93	466121.5	371566.5		94555.1					-0.00
100yrs	88.01	466121.5	371566.9		94554.6					-0.00
100yrs	88.09	466121.5	371567.3		94554.2					-0.00
100yrs	88.18	466121.5	371567.8		94553.7					-0.00
100yrs	88.26	466121.5	371568.2		94553.3					-0.00
100yrs	88.34	466121.5	371568.7		94552.9					-0.00
100yrs	88.43	466121.5	371569.1		94552.4					-0.00
100yrs	88.51	466121.5	371569.6		94552.0					-0.00
100yrs	88.59	466121.5	371570.0		94551.5					-0.00
100yrs	88.68	466121.5	371570.4		94551.1					-0.00
100yrs	88.76	466121.5	371570.9		94550.7					-0.00
100yrs	88.84	466121.5	371571.3		94550.2					-0.00
100yrs	88.93	466121.5	371571.7		94549.8					-0.00
100yrs	89.01	466121.5	371572.2		94549.4					-0.00
100yrs	89.09	466121.5	371572.6		94549.0					-0.00
100yrs	89.18	466121.5	371573.0		94548.5					-0.00
100yrs	89.26	466121.5	371573.4		94548.1					-0.00
100yrs	89.34	466121.5	371573.9		94547.7					-0.00
100yrs	89.43	466121.5	371574.3		94547.3					-0.00
100yrs	89.51	466121.5	371574.7		94546.8					-0.00
100yrs	89.59	466121.5	371575.1		94546.4					-0.00
100yrs	89.68	466121.5	371575.6		94546.0					-0.00
100yrs	89.76	466121.5	371576.0		94545.6					-0.00
100yrs	89.84	466121.5	371576.4		94545.2					-0.00
100yrs	89.93	466121.5	371576.8		94544.7					-0.00
100yrs	90.01	466121.5	371577.2		94544.3					-0.00
100yrs	90.09	466121.5	371577.6		94543.9					-0.00
100yrs	90.18	466121.5	371578.0		94543.5					-0.00
100yrs	90.26	466121.5	371578.5		94543.1					-0.00
100yrs	90.34	466121.5	371578.9		94542.7					-0.00
100yrs	90.43	466121.5	371579.3		94542.3					-0.00
100yrs	90.51	466121.5	371579.7		94541.9					-0.00
100yrs	90.59	466121.5	371580.1		94541.5					-0.00
100yrs	90.68	466121.5	371580.5		94541.1					-0.00
100yrs	90.76	466121.5	371580.9		94540.7					-0.00
100yrs	90.84	466121.5	371581.3		94540.3					-0.00
100yrs	90.93	466121.5	371581.7		94539.9					-0.00
100yrs	91.01	466121.5	371582.1		94539.5					-0.00
100yrs	91.09	466121.5	371582.5		94539.1					-0.00
100yrs	91.18	466121.5	371582.9		94538.7					-0.00
100yrs	91.26	466121.5	371583.3		94538.3					-0.00
100yrs	91.34	466121.5	371583.7		94537.9					-0.00
100yrs	91.43	466121.5	371584.1		94537.5					-0.00
100yrs	91.51	466121.5	371584.5		94537.1					-0.00
100yrs	91.59	466121.5	371584.8		94536.7					-0.00
100yrs	91.68	466121.5	371585.2		94536.3					-0.00
100yrs	91.76	466121.5	371585.6		94535.9					-0.00
100yrs	91.84	466121.5	371586.0		94535.5					-0.00
100yrs	91.93	466121.5	371586.4		94535.1					-0.00
100yrs	92.01	466121.5	371586.8		94534.8					-0.00
100yrs	92.09	466121.5	371587.2		94534.4					-0.00
100yrs	92.18	466121.5	371587.5		94534.0					-0.00
100yrs	92.26	466121.5	371587.9		94533.6					-0.00
100yrs	92.34	466121.5	371588.3		94533.2					-0.00
100yrs	92.43	466121.5	371588.7		94532.9					-0.00
100yrs	92.51	466121.5	371589.1		94532.5					-0.00
100yrs	92.59	466121.5	371589.4		94532.1					-0.00
100yrs	92.68	466121.5	371589.8		94531.7					-0.00
100yrs	92.76	466121.5	371590.2		94531.4					-0.00
100yrs	92.84	466121.5	371590.6		94531.0					-0.00
100yrs	92.93	466121.5	371590.9		94530.6					-0.00
100yrs	93.01	466121.5	371591.3		94530.2					-0.00
100yrs	93.09	466121.5	371591.7		94529.9					-0.00

				MASS	BALANCE	25 YR	100 YR	
100yrs	93.18	466121.5	371592.0		94529.5		-0.0	-0.00
100yrs	93.26	466121.5	371592.4		94529.1		-0.0	-0.00
100yrs	93.34	466121.5	371592.8		94528.8		-0.0	-0.00
100yrs	93.43	466121.5	371593.1		94528.4		-0.0	-0.00
100yrs	93.51	466121.5	371593.5		94528.0		-0.0	-0.00
100yrs	93.59	466121.5	371593.9		94527.7		-0.0	-0.00
100yrs	93.68	466121.5	371594.2		94527.3		-0.0	-0.00
100yrs	93.76	466121.5	371594.6		94527.0		-0.0	-0.00
100yrs	93.84	466121.5	371594.9		94526.6		-0.0	-0.00
100yrs	93.93	466121.5	371595.3		94526.2		-0.0	-0.00
100yrs	94.01	466121.5	371595.7		94525.9		-0.0	-0.00
100yrs	94.09	466121.5	371596.0		94525.5		-0.0	-0.00
100yrs	94.18	466121.5	371596.4		94525.2		-0.0	-0.00
100yrs	94.26	466121.5	371596.7		94524.8		-0.0	-0.00
100yrs	94.34	466121.5	371597.1		94524.5		-0.0	-0.00
100yrs	94.43	466121.5	371597.4		94524.1		-0.0	-0.00
100yrs	94.51	466121.5	371597.8		94523.8		-0.0	-0.00
100yrs	94.59	466121.5	371598.1		94523.4		-0.0	-0.00
100yrs	94.68	466121.5	371598.5		94523.1		-0.0	-0.00
100yrs	94.76	466121.5	371598.8		94522.7		-0.0	-0.00
100yrs	94.84	466121.5	371599.2		94522.4		-0.0	-0.00
100yrs	94.93	466121.5	371599.5		94522.0		-0.0	-0.00
100yrs	95.01	466121.5	371599.9		94521.7		-0.0	-0.00
100yrs	95.09	466121.5	371600.2		94521.3		-0.0	-0.00
100yrs	95.18	466121.5	371600.6		94521.0		-0.0	-0.00
100yrs	95.26	466121.5	371600.9		94520.6		-0.0	-0.00
100yrs	95.34	466121.5	371601.2		94520.3		-0.0	-0.00
100yrs	95.43	466121.5	371601.6		94520.0		-0.0	-0.00
100yrs	95.51	466121.5	371601.9		94519.6		-0.0	-0.00
100yrs	95.59	466121.5	371602.2		94519.3		-0.0	-0.00
100yrs	95.68	466121.5	371602.6		94519.0		-0.0	-0.00
100yrs	95.76	466121.5	371602.9		94518.6		-0.0	-0.00
100yrs	95.84	466121.5	371603.3		94518.3		-0.0	-0.00
100yrs	95.93	466121.5	371603.6		94518.0		-0.0	-0.00
100yrs	96.01	466121.5	371603.9		94517.6		-0.0	-0.00
100yrs	96.09	466121.5	371604.3		94517.3		-0.0	-0.00
100yrs	96.18	466121.5	371604.6		94517.0		-0.0	-0.00
100yrs	96.26	466121.5	371604.9		94516.6		-0.0	-0.00
100yrs	96.34	466121.5	371605.2		94516.3		-0.0	-0.00
100yrs	96.43	466121.5	371605.6		94516.0		-0.0	-0.00
100yrs	96.51	466121.5	371605.9		94515.6		-0.0	-0.00
100yrs	96.59	466121.5	371606.2		94515.3		-0.0	-0.00
100yrs	96.68	466121.5	371606.6		94515.0		-0.0	-0.00
100yrs	96.76	466121.5	371606.9		94514.7		-0.0	-0.00
100yrs	96.84	466121.5	371607.2		94514.3		-0.0	-0.00
100yrs	96.93	466121.5	371607.5		94514.0		-0.0	-0.00
100yrs	97.01	466121.5	371607.8		94513.7		-0.0	-0.00
100yrs	97.09	466121.5	371608.2		94513.4		-0.0	-0.00
100yrs	97.18	466121.5	371608.5		94513.1		-0.0	-0.00
100yrs	97.26	466121.5	371608.8		94512.7		-0.0	-0.00
100yrs	97.34	466121.5	371609.1		94512.4		-0.0	-0.00
100yrs	97.43	466121.5	371609.4		94512.1		-0.0	-0.00
100yrs	97.51	466121.5	371609.8		94511.8		-0.0	-0.00
100yrs	97.59	466121.5	371610.1		94511.5		-0.0	-0.00
100yrs	97.68	466121.5	371610.4		94511.2		-0.0	-0.00
100yrs	97.76	466121.5	371610.7		94510.8		-0.0	-0.00
100yrs	97.84	466121.5	371611.0		94510.5		-0.0	-0.00
100yrs	97.93	466121.5	371611.3		94510.2		-0.0	-0.00
100yrs	98.01	466121.5	371611.6		94509.9		-0.0	-0.00
100yrs	98.09	466121.5	371611.9		94509.6		-0.0	-0.00
100yrs	98.18	466121.5	371612.2		94509.3		-0.0	-0.00
100yrs	98.26	466121.5	371612.6		94509.0		-0.0	-0.00
100yrs	98.34	466121.5	371612.9		94508.7		-0.0	-0.00
100yrs	98.43	466121.5	371613.2		94508.4		-0.0	-0.00
100yrs	98.51	466121.5	371613.5		94508.1		-0.0	-0.00
100yrs	98.59	466121.5	371613.8		94507.8		-0.0	-0.00

			MASS	BALANCE 25 YR	100 YR	
100yrs	98.68	466121.5	371614.1	94507.5	-0.0	-0.00
100yrs	98.76	466121.5	371614.4	94507.2	-0.0	-0.00
100yrs	98.84	466121.5	371614.7	94506.9	-0.0	-0.00
100yrs	98.93	466121.5	371615.0	94506.6	-0.0	-0.00
100yrs	99.01	466121.5	371615.3	94506.3	-0.0	-0.00
100yrs	99.09	466121.5	371615.6	94506.0	-0.0	-0.00
100yrs	99.18	466121.5	371615.9	94505.7	-0.0	-0.00
100yrs	99.26	466121.5	371616.2	94505.4	-0.0	-0.00
100yrs	99.34	466121.5	371616.5	94505.1	-0.0	-0.00
100yrs	99.43	466121.5	371616.8	94504.8	-0.0	-0.00
100yrs	99.51	466121.5	371617.1	94504.5	-0.0	-0.00
100yrs	99.59	466121.5	371617.4	94504.2	-0.0	-0.00
100yrs	99.68	466121.5	371617.7	94503.9	-0.0	-0.00
100yrs	99.76	466121.5	371618.0	94503.6	-0.0	-0.00
100yrs	99.84	466121.5	371618.2	94503.3	-0.0	-0.00
100yrs	99.93	466121.5	371618.5	94503.0	-0.0	-0.00
100yrs	100.00	466121.5	371618.8	94502.8	-0.0	-0.00
25yrs	0.00	0.0	0.0	0.0	0.0	0.00
25yrs	0.08	0.0	0.0	0.0	0.0	0.00
25yrs	0.18	0.0	0.0	0.0	0.0	0.00
25yrs	0.26	0.0	0.0	0.0	0.0	0.00
25yrs	0.34	0.0	0.0	0.0	0.0	0.00
25yrs	0.42	0.0	0.0	0.0	0.0	0.00
25yrs	0.50	0.0	0.0	0.0	0.0	0.00
25yrs	0.60	0.0	0.0	0.0	0.0	0.00
25yrs	0.68	0.0	0.0	0.0	0.0	0.00
25yrs	0.77	0.0	0.0	0.0	0.0	0.00
25yrs	0.85	0.0	0.0	0.0	0.0	0.00
25yrs	0.93	0.0	0.0	0.0	0.0	0.00
25yrs	1.02	0.0	0.0	0.0	0.0	0.00
25yrs	1.10	0.0	0.0	0.0	0.0	0.00
25yrs	1.18	0.0	0.0	0.0	0.0	0.00
25yrs	1.27	0.0	0.0	0.0	0.0	0.00
25yrs	1.35	0.0	0.0	0.0	0.0	0.00
25yrs	1.43	0.0	0.0	0.0	0.0	0.00
25yrs	1.52	0.0	0.0	0.0	0.0	0.00
25yrs	1.60	0.0	0.0	0.0	0.0	0.00
25yrs	1.68	0.0	0.0	0.0	0.0	0.00
25yrs	1.77	0.0	0.0	0.0	0.0	0.00
25yrs	1.85	0.0	0.0	0.0	0.0	0.00
25yrs	1.93	0.0	0.0	0.0	0.0	0.00
25yrs	2.02	0.0	0.0	0.0	0.0	0.00
25yrs	2.10	0.0	0.0	0.0	0.0	0.00
25yrs	2.18	0.0	0.0	0.0	0.0	0.00
25yrs	2.27	0.0	0.0	0.0	0.0	0.00
25yrs	2.35	0.0	0.0	0.0	0.0	0.00
25yrs	2.43	0.0	0.0	0.0	0.0	0.00
25yrs	2.52	0.0	0.0	0.0	0.0	0.00
25yrs	2.60	0.0	0.0	0.0	0.0	0.00
25yrs	2.68	0.0	0.0	0.0	0.0	0.00
25yrs	2.77	0.0	0.0	0.0	0.0	0.00
25yrs	2.85	0.0	0.0	0.0	0.0	0.00
25yrs	2.93	0.0	0.0	0.0	0.0	0.00
25yrs	3.02	0.0	0.0	0.0	0.0	0.00
25yrs	3.10	0.0	0.0	0.0	0.0	0.00
25yrs	3.18	0.0	0.0	0.0	0.0	0.00
25yrs	3.27	0.0	0.0	0.0	0.0	0.00
25yrs	3.35	0.0	0.0	0.0	0.0	0.00
25yrs	3.43	0.0	0.0	0.0	0.0	0.00
25yrs	3.52	0.0	0.0	0.0	0.0	0.00
25yrs	3.60	0.0	0.0	0.0	0.0	0.00
25yrs	3.68	0.0	0.0	0.0	0.0	0.00
25yrs	3.77	0.0	0.0	0.0	0.0	0.00
25yrs	3.85	0.0	0.0	0.0	0.0	0.00
25yrs	3.93	0.0	0.0	0.0	0.0	0.00
25yrs	4.02	0.0	0.0	0.0	0.0	0.00

				MASS BALANCE	25 YR	100 YR	
25yrs	4.10	0.0	0.0	0.0	0.0	0.0	0.00
25yrs	4.18	0.0	0.0	0.0	0.0	0.0	0.00
25yrs	4.27	0.0	0.0	0.0	0.0	0.0	0.00
25yrs	4.35	0.0	0.0	0.0	0.0	0.0	0.00
25yrs	4.43	0.0	0.0	0.0	0.0	0.0	0.00
25yrs	4.52	0.0	0.0	0.0	0.0	0.0	0.00
25yrs	4.60	0.0	0.0	0.0	0.0	0.0	0.00
25yrs	4.68	0.0	0.0	0.0	0.0	0.0	0.00
25yrs	4.77	0.0	0.0	0.0	0.0	0.0	0.00
25yrs	4.85	0.0	0.0	0.0	0.0	0.0	0.00
25yrs	4.93	0.0	0.0	0.0	0.0	0.0	0.00
25yrs	5.02	0.0	0.0	0.0	0.0	0.0	0.00
25yrs	5.10	0.0	0.0	0.0	0.0	-0.0	-0.03
25yrs	5.18	0.1	0.0	0.0	0.1	-0.0	-0.00
25yrs	5.27	0.5	0.0	0.0	0.5	-0.0	-0.00
25yrs	5.35	1.7	0.0	0.0	1.7	-0.0	-0.00
25yrs	5.43	3.8	0.0	0.0	3.8	-0.0	-0.00
25yrs	5.52	6.9	0.0	0.0	6.9	-0.0	-0.00
25yrs	5.60	11.2	0.0	0.0	11.2	-0.0	-0.00
25yrs	5.68	16.5	0.0	0.0	16.5	-0.0	-0.00
25yrs	5.77	23.0	0.0	0.0	23.0	-0.0	-0.00
25yrs	5.85	30.6	0.0	0.0	30.6	-0.0	-0.00
25yrs	5.93	39.2	0.0	0.0	39.2	0.0	0.00
25yrs	6.02	49.0	0.0	0.0	49.0	0.0	0.00
25yrs	6.10	59.8	0.0	0.0	59.8	-0.0	-0.00
25yrs	6.18	71.7	0.0	0.0	71.7	-0.0	-0.00
25yrs	6.27	84.7	0.0	0.0	84.7	0.0	0.00
25yrs	6.35	98.7	0.0	0.0	98.7	0.0	0.00
25yrs	6.43	113.7	0.0	0.0	113.7	0.0	0.00
25yrs	6.52	129.8	0.0	0.0	129.8	0.0	0.00
25yrs	6.60	146.9	0.0	0.0	146.9	0.0	0.00
25yrs	6.68	165.0	0.0	0.0	165.0	0.0	0.00
25yrs	6.77	184.0	0.0	0.0	184.0	0.0	0.00
25yrs	6.85	204.1	0.0	0.0	204.1	0.0	0.00
25yrs	6.93	225.2	0.0	0.0	225.2	0.0	0.00
25yrs	7.02	247.2	0.0	0.0	247.2	0.0	0.00
25yrs	7.10	270.2	0.0	0.0	270.2	0.0	0.00
25yrs	7.18	294.1	0.0	0.0	294.1	0.0	0.00
25yrs	7.27	319.0	0.0	0.0	319.0	0.0	0.00
25yrs	7.35	344.8	0.0	0.0	344.8	0.0	0.00
25yrs	7.43	371.5	0.0	0.0	371.5	0.0	0.00
25yrs	7.52	399.2	0.0	0.0	399.2	0.0	0.00
25yrs	7.60	427.8	0.0	0.0	427.8	0.0	0.00
25yrs	7.68	457.3	0.0	0.0	457.3	0.0	0.00
25yrs	7.77	487.6	0.0	0.0	487.6	0.0	0.00
25yrs	7.85	518.9	0.0	0.0	518.9	0.0	0.00
25yrs	7.93	551.0	0.0	0.0	551.0	0.0	0.00
25yrs	8.02	584.0	0.0	0.0	584.0	0.0	0.00
25yrs	8.10	617.9	0.0	0.0	617.9	0.0	0.00
25yrs	8.18	652.6	0.0	0.0	652.6	0.0	0.00
25yrs	8.27	688.2	0.0	0.0	688.2	0.0	0.00
25yrs	8.35	724.6	0.0	0.0	724.6	0.0	0.00
25yrs	8.43	761.8	0.0	0.0	761.8	0.0	0.00
25yrs	8.52	799.9	0.0	0.0	799.9	0.0	0.00
25yrs	8.60	838.8	0.0	0.0	838.8	0.0	0.00
25yrs	8.68	878.5	0.0	0.0	878.5	0.0	0.00
25yrs	8.77	919.0	0.0	0.0	919.0	0.0	0.00
25yrs	8.85	960.3	0.0	0.0	960.3	0.0	0.00
25yrs	8.93	1002.4	0.0	0.0	1002.4	0.0	0.00
25yrs	9.02	1045.3	0.0	0.0	1045.3	0.0	0.00
25yrs	9.10	1088.9	0.0	0.0	1088.9	0.0	0.00
25yrs	9.18	1133.4	0.0	0.0	1133.4	0.0	0.00
25yrs	9.27	1178.5	0.0	0.0	1178.5	0.0	0.00
25yrs	9.35	1224.5	0.0	0.0	1224.5	0.0	0.00
25yrs	9.43	1271.2	0.0	0.0	1271.2	0.0	0.00
25yrs	9.52	1318.6	0.0	0.0	1318.6	0.0	0.00

				MASS BALANCE	25 YR	100 YR	
25yrs	9.60	1366.8	0.0	1366.8	0.0	0.00	0.00
25yrs	9.68	1415.7	0.0	1415.7	0.0	0.00	0.00
25yrs	9.77	1465.4	0.0	1465.4	0.0	0.00	0.00
25yrs	9.85	1515.7	0.0	1515.7	-0.0	-0.00	0.00
25yrs	9.93	1566.8	0.0	1566.8	0.0	0.00	-0.00
25yrs	10.02	1618.6	0.0	1618.6	-0.0	-0.00	0.00
25yrs	10.10	1671.1	0.0	1671.1	-0.0	-0.00	0.00
25yrs	10.18	1724.3	0.0	1724.3	-0.0	-0.00	0.00
25yrs	10.27	1778.2	0.0	1778.2	-0.0	-0.00	0.00
25yrs	10.35	1832.7	0.0	1832.7	-0.0	-0.00	0.00
25yrs	10.43	1888.0	0.0	1888.0	-0.0	-0.00	0.00
25yrs	10.52	1943.9	0.0	1943.9	-0.0	-0.00	0.00
25yrs	10.60	2000.5	0.0	2000.5	-0.0	-0.00	0.00
25yrs	10.68	2057.7	0.0	2057.7	-0.0	-0.00	0.00
25yrs	10.77	2115.6	0.0	2115.6	-0.0	-0.00	0.00
25yrs	10.85	2174.2	0.0	2174.2	-0.0	-0.00	0.00
25yrs	10.93	2233.4	0.0	2233.4	0.0	0.00	0.00
25yrs	11.02	2293.3	0.0	2293.3	0.0	0.00	0.00
25yrs	11.10	2353.8	0.0	2353.8	-0.0	-0.00	0.00
25yrs	11.18	2414.9	0.0	2414.9	0.0	0.00	0.00
25yrs	11.27	2476.6	0.0	2476.6	0.0	0.00	0.00
25yrs	11.35	2539.0	0.0	2539.0	-0.0	-0.00	0.00
25yrs	11.43	2602.0	0.0	2602.0	-0.0	-0.00	0.00
25yrs	11.52	2665.6	0.0	2665.6	0.0	0.00	0.00
25yrs	11.60	2729.8	0.0	2729.8	0.0	0.00	0.00
25yrs	11.68	2794.6	0.0	2794.6	0.0	0.00	0.00
25yrs	11.77	2860.0	0.0	2860.0	0.0	0.00	0.00
25yrs	11.85	2926.0	0.0	2926.0	0.0	0.00	0.00
25yrs	11.93	2992.6	0.0	2992.6	0.0	0.00	0.00
25yrs	12.02	3059.8	0.0	3059.8	0.0	0.00	0.00
25yrs	12.10	3127.6	0.0	3127.6	0.0	0.00	0.00
25yrs	12.18	3195.9	0.0	3195.9	0.0	0.00	0.00
25yrs	12.27	3264.8	0.0	3264.8	0.0	0.00	0.00
25yrs	12.35	3334.3	0.0	3334.3	0.0	0.00	0.00
25yrs	12.43	3404.3	0.0	3404.3	0.0	0.00	0.00
25yrs	12.52	3474.9	0.0	3474.9	0.0	0.00	0.00
25yrs	12.60	3546.0	0.0	3546.0	0.0	0.00	0.00
25yrs	12.68	3617.7	0.0	3617.7	0.0	0.00	0.00
25yrs	12.77	3690.0	0.0	3690.0	0.0	0.00	0.00
25yrs	12.85	3762.8	0.0	3762.8	0.0	0.00	0.00
25yrs	12.93	3836.1	0.0	3836.1	0.0	0.00	0.00
25yrs	13.02	3909.9	0.0	3909.9	0.0	0.00	0.00
25yrs	13.10	3984.3	0.0	3984.3	0.0	0.00	0.00
25yrs	13.18	4059.2	0.0	4059.2	0.0	0.00	0.00
25yrs	13.27	4134.6	0.0	4134.6	0.0	0.00	0.00
25yrs	13.35	4210.6	0.0	4210.6	0.0	0.00	0.00
25yrs	13.43	4287.1	0.0	4287.1	0.0	0.00	0.00
25yrs	13.52	4364.0	0.0	4364.0	0.0	0.00	0.00
25yrs	13.60	4441.5	0.0	4441.5	-0.0	-0.00	0.00
25yrs	13.68	4519.5	0.0	4519.5	0.0	0.00	0.00
25yrs	13.77	4597.9	0.0	4597.9	0.0	0.00	0.00
25yrs	13.85	4676.9	0.0	4676.9	0.0	0.00	0.00
25yrs	13.93	4756.4	0.0	4756.4	0.0	0.00	0.00
25yrs	14.02	4836.3	0.0	4836.3	0.0	0.00	0.00
25yrs	14.10	4916.8	0.0	4916.8	0.0	0.00	0.00
25yrs	14.18	4997.7	0.0	4997.7	0.0	0.00	0.00
25yrs	14.27	5079.1	0.0	5079.1	0.0	0.00	0.00
25yrs	14.35	5160.9	0.0	5160.9	0.0	0.00	0.00
25yrs	14.43	5243.3	0.0	5243.3	0.0	0.00	0.00
25yrs	14.52	5326.1	0.0	5326.1	0.0	0.00	0.00
25yrs	14.60	5409.3	0.0	5409.3	0.0	0.00	0.00
25yrs	14.68	5493.1	0.0	5493.1	0.0	0.00	0.00
25yrs	14.77	5577.2	0.0	5577.2	0.0	0.00	0.00
25yrs	14.85	5661.9	0.0	5661.9	0.0	0.00	0.00
25yrs	14.93	5747.0	0.0	5747.0	0.0	0.00	0.00
25yrs	15.02	5832.5	0.0	5832.5	0.0	0.00	0.00



				MASS BALANCE 25 YR 100 YR		
25yrs	15.10	5918.5	0.0	5918.5	0.0	0.00
25yrs	15.18	6004.9	0.0	6004.9	0.0	0.00
25yrs	15.27	6091.8	0.0	6091.8	0.0	0.00
25yrs	15.35	6179.0	0.0	6179.0	0.0	0.00
25yrs	15.43	6266.8	0.0	6266.8	0.0	0.00
25yrs	15.52	6354.9	0.0	6354.9	0.0	0.00
25yrs	15.60	6443.5	0.0	6443.5	0.0	0.00
25yrs	15.68	6532.5	0.0	6532.5	0.0	0.00
25yrs	15.77	6621.9	0.0	6621.9	0.0	0.00
25yrs	15.85	6711.8	0.0	6711.8	0.0	0.00
25yrs	15.93	6802.0	0.0	6802.0	0.0	0.00
25yrs	16.02	6892.7	0.0	6892.7	0.0	0.00
25yrs	16.10	6983.7	0.0	6983.7	0.0	0.00
25yrs	16.18	7075.2	0.0	7075.2	0.0	0.00
25yrs	16.27	7167.1	0.0	7167.1	0.0	0.00
25yrs	16.35	7259.4	0.0	7259.4	0.0	0.00
25yrs	16.43	7352.1	0.0	7352.1	0.0	0.00
25yrs	16.52	7445.1	0.0	7445.1	0.0	0.00
25yrs	16.60	7538.6	0.0	7538.6	0.0	0.00
25yrs	16.68	7632.4	0.0	7632.4	0.0	0.00
25yrs	16.77	7726.7	0.0	7726.7	0.0	0.00
25yrs	16.85	7821.3	0.0	7821.3	0.0	0.00
25yrs	16.93	7916.3	0.0	7916.3	0.0	0.00
25yrs	17.02	8011.7	0.0	8011.7	0.0	0.00
25yrs	17.10	8107.4	0.0	8107.4	0.0	0.00
25yrs	17.18	8203.6	0.0	8203.6	0.0	0.00
25yrs	17.27	8300.1	0.0	8300.1	0.0	0.00
25yrs	17.35	8397.0	0.0	8397.0	0.0	0.00
25yrs	17.43	8494.2	0.0	8494.2	0.0	0.00
25yrs	17.52	8591.8	0.0	8591.8	-0.0	-0.00
25yrs	17.60	8689.8	0.0	8689.8	0.0	0.00
25yrs	17.68	8788.1	0.0	8788.1	0.0	0.00
25yrs	17.77	8886.8	0.0	8886.8	0.0	0.00
25yrs	17.85	8985.8	0.0	8985.8	0.0	0.00
25yrs	17.93	9085.2	0.0	9085.2	-0.0	-0.00
25yrs	18.02	9184.9	0.0	9184.9	-0.0	-0.00
25yrs	18.10	9285.0	0.0	9285.0	-0.0	-0.00
25yrs	18.18	9385.4	0.0	9385.4	-0.0	-0.00
25yrs	18.27	9486.2	0.0	9486.2	-0.0	-0.00
25yrs	18.35	9587.3	0.0	9587.3	-0.0	-0.00
25yrs	18.43	9688.8	0.0	9688.8	-0.0	-0.00
25yrs	18.52	9790.6	0.0	9790.6	-0.0	-0.00
25yrs	18.60	9892.7	0.0	9892.7	-0.0	-0.00
25yrs	18.68	9995.2	0.0	9995.2	-0.0	-0.00
25yrs	18.77	10097.9	0.0	10097.9	-0.0	-0.00
25yrs	18.85	10201.1	0.0	10201.1	-0.0	-0.00
25yrs	18.93	10304.5	0.0	10304.5	-0.0	-0.00
25yrs	19.02	10408.3	0.0	10408.3	-0.0	-0.00
25yrs	19.10	10512.3	0.0	10512.3	-0.0	-0.00
25yrs	19.18	10616.7	0.0	10616.7	-0.0	-0.00
25yrs	19.27	10721.5	0.0	10721.5	-0.0	-0.00
25yrs	19.35	10826.5	0.0	10826.5	-0.0	-0.00
25yrs	19.43	10931.8	0.0	10931.8	-0.0	-0.00
25yrs	19.52	11037.5	0.0	11037.5	-0.0	-0.00
25yrs	19.60	11143.5	0.0	11143.5	-0.0	-0.00
25yrs	19.68	11249.8	0.0	11249.8	-0.0	-0.00
25yrs	19.77	11356.3	0.0	11356.3	-0.0	-0.00
25yrs	19.85	11463.2	0.0	11463.2	-0.0	-0.00
25yrs	19.93	11570.4	0.0	11570.4	-0.0	-0.00
25yrs	20.02	11677.9	0.0	11677.9	-0.0	-0.00
25yrs	20.10	11785.7	0.0	11785.7	-0.0	-0.00
25yrs	20.18	11893.8	0.0	11893.8	-0.0	-0.00
25yrs	20.27	12002.2	0.0	12002.2	-0.0	-0.00
25yrs	20.35	12110.8	0.0	12110.8	-0.0	-0.00
25yrs	20.43	12219.8	0.0	12219.8	-0.0	-0.00
25yrs	20.52	12329.1	0.0	12329.1	-0.0	-0.00

			MASS	BALANCE	25 YR	100 YR	
25yrs	20.60	12438.6	0.0	12438.6	-0.0	-0.0	-0.00
25yrs	20.68	12548.4	0.0	12548.4	-0.0	-0.0	-0.00
25yrs	20.77	12658.5	0.0	12658.5	-0.0	-0.0	-0.00
25yrs	20.85	12768.9	0.0	12768.9	-0.0	-0.0	-0.00
25yrs	20.93	12879.6	0.0	12879.6	-0.0	-0.0	-0.00
25yrs	21.02	12990.6	0.0	12990.6	-0.0	-0.0	-0.00
25yrs	21.10	13101.8	0.0	13101.8	-0.0	-0.0	-0.00
25yrs	21.18	13213.3	0.0	13213.3	-0.0	-0.0	-0.00
25yrs	21.27	13325.1	0.0	13325.1	-0.0	-0.0	-0.00
25yrs	21.35	13437.1	0.0	13437.1	-0.0	-0.0	-0.00
25yrs	21.43	13549.4	0.0	13549.4	-0.0	-0.0	-0.00
25yrs	21.52	13662.0	0.0	13662.0	-0.0	-0.0	-0.00
25yrs	21.60	13774.9	0.0	13774.9	-0.0	-0.0	-0.00
25yrs	21.68	13888.0	0.0	13888.0	-0.0	-0.0	-0.00
25yrs	21.77	14001.4	0.0	14001.4	-0.0	-0.0	-0.00
25yrs	21.85	14115.0	0.0	14115.0	-0.0	-0.0	-0.00
25yrs	21.93	14229.0	0.0	14229.0	-0.0	-0.0	-0.00
25yrs	22.02	14343.1	0.0	14343.1	-0.0	-0.0	-0.00
25yrs	22.10	14457.6	0.0	14457.6	-0.0	-0.0	-0.00
25yrs	22.18	14572.2	0.0	14572.2	-0.0	-0.0	-0.00
25yrs	22.27	14687.2	0.0	14687.2	-0.0	-0.0	-0.00
25yrs	22.35	14802.4	0.0	14802.4	-0.0	-0.0	-0.00
25yrs	22.43	14917.8	0.0	14917.8	-0.0	-0.0	-0.00
25yrs	22.52	15033.5	0.0	15033.5	-0.0	-0.0	-0.00
25yrs	22.60	15149.4	0.0	15149.4	-0.0	-0.0	-0.00
25yrs	22.68	15265.6	0.0	15265.6	-0.0	-0.0	-0.00
25yrs	22.77	15382.1	0.0	15382.1	-0.0	-0.0	-0.00
25yrs	22.85	15498.7	0.0	15498.7	-0.0	-0.0	-0.00
25yrs	22.93	15615.7	0.0	15615.7	-0.0	-0.0	-0.00
25yrs	23.02	15732.8	0.0	15732.8	-0.0	-0.0	-0.00
25yrs	23.10	15850.2	0.0	15850.2	-0.0	-0.0	-0.00
25yrs	23.18	15967.9	0.0	15967.9	-0.0	-0.0	-0.00
25yrs	23.27	16085.8	0.0	16085.8	-0.0	-0.0	-0.00
25yrs	23.35	16203.9	0.0	16203.9	-0.0	-0.0	-0.00
25yrs	23.43	16322.2	0.0	16322.2	-0.0	-0.0	-0.00
25yrs	23.52	16440.8	0.0	16440.8	-0.0	-0.0	-0.00
25yrs	23.60	16559.7	0.0	16559.7	-0.0	-0.0	-0.00
25yrs	23.68	16678.7	0.0	16678.7	-0.0	-0.0	-0.00
25yrs	23.77	16798.0	0.0	16798.0	-0.0	-0.0	-0.00
25yrs	23.85	16917.5	0.0	16917.5	-0.0	-0.0	-0.00
25yrs	23.93	17037.2	0.0	17037.2	-0.0	-0.0	-0.00
25yrs	24.02	17157.6	0.0	17157.6	-0.0	-0.0	-0.00
25yrs	24.10	17289.5	0.0	17289.5	-0.0	-0.0	-0.00
25yrs	24.18	17439.8	0.0	17439.8	-0.0	-0.0	-0.00
25yrs	24.27	17602.6	0.0	17602.6	-0.0	-0.0	-0.00
25yrs	24.35	17772.0	0.0	17772.0	-0.0	-0.0	-0.00
25yrs	24.43	17945.2	0.0	17945.2	-0.0	-0.0	-0.00
25yrs	24.52	18120.8	0.0	18120.8	-0.0	-0.0	-0.00
25yrs	24.60	18297.7	0.0	18297.7	-0.0	-0.0	-0.00
25yrs	24.68	18475.2	0.0	18475.2	-0.0	-0.0	-0.00
25yrs	24.77	18653.2	0.0	18653.2	-0.0	-0.0	-0.00
25yrs	24.85	18831.7	0.0	18831.7	-0.0	-0.0	-0.00
25yrs	24.93	19010.6	0.0	19010.6	-0.0	-0.0	-0.00
25yrs	25.02	19189.9	0.0	19189.9	-0.0	-0.0	-0.00
25yrs	25.10	19369.7	0.0	19369.7	-0.0	-0.0	-0.00
25yrs	25.18	19549.9	0.0	19549.9	-0.0	-0.0	-0.00
25yrs	25.27	19730.5	0.0	19730.5	-0.0	-0.0	-0.00
25yrs	25.35	19911.5	0.0	19911.5	-0.0	-0.0	-0.00
25yrs	25.43	20092.9	0.0	20092.9	-0.0	-0.0	-0.00
25yrs	25.52	20274.8	0.0	20274.8	-0.0	-0.0	-0.00
25yrs	25.60	20457.1	0.0	20457.1	-0.0	-0.0	-0.00
25yrs	25.68	20639.8	0.0	20639.8	-0.0	-0.0	-0.00
25yrs	25.77	20822.9	0.0	20822.9	-0.0	-0.0	-0.00
25yrs	25.85	21006.3	0.0	21006.3	-0.0	-0.0	-0.00
25yrs	25.93	21190.2	0.0	21190.2	-0.0	-0.0	-0.00
25yrs	26.02	21374.5	0.0	21374.5	-0.0	-0.0	-0.00

				MASS	BALANCE	25 YR	100 YR	YR	
25yrs	26.10	21559.2	0.0	21559.2	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	26.18	21744.3	0.0	21744.3	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	26.27	21929.7	0.0	21929.7	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	26.35	22115.6	0.0	22115.6	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	26.43	22301.8	0.0	22301.8	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	26.52	22488.4	0.0	22488.4	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	26.60	22675.3	0.0	22675.3	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	26.68	22862.7	0.0	22862.7	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	26.77	23050.4	0.0	23050.4	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	26.85	23238.5	0.0	23238.5	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	26.93	23426.9	0.0	23426.9	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	27.02	23615.7	0.0	23615.7	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	27.10	23804.9	0.0	23804.9	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	27.18	23994.4	0.0	23994.4	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	27.27	24184.3	0.0	24184.3	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	27.35	24374.5	0.0	24374.5	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	27.43	24565.1	0.0	24565.1	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	27.52	24756.0	0.0	24756.0	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	27.60	24947.2	0.0	24947.2	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	27.68	25138.8	0.0	25138.8	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	27.77	25330.8	0.0	25330.8	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	27.85	25523.0	0.0	25523.0	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	27.93	25715.6	0.0	25715.6	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	28.02	25908.6	0.0	25908.6	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	28.10	26101.8	0.0	26101.8	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	28.18	26295.4	0.0	26295.4	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	28.27	26489.3	0.0	26489.3	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	28.35	26683.6	0.0	26683.6	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	28.43	26878.1	0.0	26878.1	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	28.52	27073.0	0.0	27073.0	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	28.60	27268.2	0.0	27268.2	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	28.68	27463.7	0.0	27463.7	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	28.77	27659.5	0.0	27659.5	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	28.85	27855.6	0.0	27855.6	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	28.93	28052.0	0.0	28052.0	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	29.02	28248.7	0.0	28248.7	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	29.10	28445.7	0.0	28445.7	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	29.18	28643.1	0.0	28643.1	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	29.27	28840.7	0.0	28840.7	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	29.35	29038.6	0.0	29038.6	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	29.43	29236.8	0.0	29236.8	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	29.52	29435.3	0.0	29435.3	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	29.60	29634.1	0.0	29634.1	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	29.68	29833.1	0.0	29833.1	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	29.77	30032.5	0.0	30032.5	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	29.85	30232.1	0.0	30232.1	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	29.93	30432.1	0.0	30432.1	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	30.02	30632.3	0.0	30632.3	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	30.10	30832.7	0.0	30832.7	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	30.18	31033.5	0.0	31033.5	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	30.27	31234.5	0.0	31234.5	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	30.35	31435.8	0.0	31435.8	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	30.43	31637.4	0.0	31637.4	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	30.52	31839.2	0.0	31839.2	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	30.60	32041.3	0.0	32041.3	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	30.68	32243.7	0.0	32243.7	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	30.77	32446.3	0.0	32446.3	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	30.85	32649.2	0.0	32649.2	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	30.93	32852.3	0.0	32852.3	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	31.02	33055.7	0.0	33055.7	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	31.10	33259.4	0.0	33259.4	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	31.18	33463.3	0.0	33463.3	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	31.27	33667.4	0.0	33667.4	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	31.35	33871.8	0.0	33871.8	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	31.43	34076.5	0.0	34076.5	-0.0	-0.0	-0.0	-0.0	-0.00
25yrs	31.52	34281.4	0.0	34281.4	-0.0	-0.0	-0.0	-0.0	-0.00

				MASS BALANCE	25 YR	100 YR	
25yrs	31.60	34486.6	0.0	34486.6	-0.0	-0.00	
25yrs	31.68	34692.0	0.0	34692.0	-0.0	-0.00	
25yrs	31.77	34897.6	0.0	34897.6	-0.0	-0.00	
25yrs	31.85	35103.5	0.0	35103.5	-0.0	-0.00	
25yrs	31.93	35309.6	0.0	35309.6	-0.0	-0.00	
25yrs	32.02	35516.0	0.0	35516.0	-0.0	-0.00	
25yrs	32.10	35722.5	0.0	35722.5	-0.0	-0.00	
25yrs	32.18	35929.4	0.0	35929.4	-0.0	-0.00	
25yrs	32.27	36136.4	0.0	36136.4	-0.0	-0.00	
25yrs	32.35	36343.7	0.0	36343.7	-0.0	-0.00	
25yrs	32.43	36551.2	0.0	36551.2	-0.0	-0.00	
25yrs	32.52	36759.0	0.0	36759.0	-0.0	-0.00	
25yrs	32.60	36967.0	0.0	36967.0	-0.0	-0.00	
25yrs	32.68	37175.2	0.0	37175.2	-0.0	-0.00	
25yrs	32.77	37383.6	0.0	37383.6	-0.0	-0.00	
25yrs	32.85	37592.2	0.0	37592.2	-0.0	-0.00	
25yrs	32.93	37801.1	0.0	37801.1	-0.0	-0.00	
25yrs	33.02	38010.2	0.0	38010.2	-0.0	-0.00	
25yrs	33.10	38219.5	0.0	38219.5	-0.0	-0.00	
25yrs	33.18	38429.0	0.0	38429.0	-0.0	-0.00	
25yrs	33.27	38638.8	0.0	38638.8	-0.0	-0.00	
25yrs	33.35	38848.7	0.0	38848.7	-0.0	-0.00	
25yrs	33.43	39058.9	0.0	39058.9	-0.0	-0.00	
25yrs	33.52	39269.3	0.0	39269.3	-0.0	-0.00	
25yrs	33.60	39479.8	0.0	39479.8	-0.0	-0.00	
25yrs	33.68	39690.6	0.0	39690.6	-0.0	-0.00	
25yrs	33.77	39901.7	0.0	39901.7	-0.0	-0.00	
25yrs	33.85	40112.9	0.0	40112.9	-0.0	-0.00	
25yrs	33.93	40324.3	0.0	40324.3	-0.0	-0.00	
25yrs	34.02	40535.9	0.0	40535.9	-0.0	-0.00	
25yrs	34.10	40747.7	0.0	40747.7	-0.0	-0.00	
25yrs	34.18	40959.7	0.0	40959.7	-0.0	-0.00	
25yrs	34.27	41172.0	0.0	41172.0	-0.0	-0.00	
25yrs	34.35	41384.4	0.0	41384.4	-0.0	-0.00	
25yrs	34.43	41597.0	0.0	41597.0	-0.0	-0.00	
25yrs	34.52	41809.8	0.0	41809.8	-0.0	-0.00	
25yrs	34.60	42022.9	0.0	42022.9	-0.0	-0.00	
25yrs	34.68	42236.1	0.0	42236.1	-0.0	-0.00	
25yrs	34.77	42449.5	0.0	42449.5	-0.0	-0.00	
25yrs	34.85	42663.1	0.0	42663.1	-0.0	-0.00	
25yrs	34.93	42876.8	0.0	42876.8	-0.0	-0.00	
25yrs	35.02	43090.8	0.0	43090.8	-0.0	-0.00	
25yrs	35.10	43305.0	0.0	43305.0	-0.0	-0.00	
25yrs	35.18	43519.3	0.0	43519.3	-0.0	-0.00	
25yrs	35.27	43733.8	0.0	43733.8	-0.0	-0.00	
25yrs	35.35	43948.6	0.0	43948.6	-0.0	-0.00	
25yrs	35.43	44163.5	0.0	44163.5	-0.0	-0.00	
25yrs	35.52	44378.6	0.0	44378.6	-0.0	-0.00	
25yrs	35.60	44593.8	0.0	44593.8	-0.0	-0.00	
25yrs	35.68	44809.3	0.0	44809.3	-0.0	-0.00	
25yrs	35.77	45024.9	0.0	45024.9	-0.0	-0.00	
25yrs	35.85	45240.7	0.0	45240.7	-0.0	-0.00	
25yrs	35.93	45456.7	0.0	45456.7	-0.0	-0.00	
25yrs	36.02	45672.9	0.0	45672.9	-0.0	-0.00	
25yrs	36.10	45889.6	0.0	45889.6	-0.0	-0.00	
25yrs	36.18	46107.3	0.0	46107.3	-0.0	-0.00	
25yrs	36.27	46325.7	0.0	46325.7	-0.0	-0.00	
25yrs	36.35	46544.5	0.0	46544.5	-0.0	-0.00	
25yrs	36.43	46763.7	0.0	46763.7	-0.0	-0.00	
25yrs	36.52	46983.1	0.0	46983.1	-0.0	-0.00	
25yrs	36.60	47202.7	0.0	47202.7	-0.0	-0.00	
25yrs	36.68	47422.4	0.0	47422.4	-0.0	-0.00	
25yrs	36.77	47642.4	0.0	47642.4	-0.0	-0.00	
25yrs	36.85	47862.5	0.0	47862.5	-0.0	-0.00	
25yrs	36.93	48082.8	0.0	48082.8	0.0	0.00	
25yrs	37.02	48303.2	0.0	48303.2	0.0	0.00	

				MASS	BALANCE	25 YR	100 YR	
25yrs	37.10	48523.8	0.0	48523.8	0.0	0.0	0.00	
25yrs	37.18	48744.6	0.0	48744.6	0.0	0.0	0.00	
25yrs	37.27	48965.6	0.0	48965.6	-0.0	-0.0	-0.00	
25yrs	37.35	49186.7	0.0	49186.7	-0.0	-0.0	-0.00	
25yrs	37.43	49408.0	0.0	49408.0	0.0	0.0	0.00	
25yrs	37.52	49629.4	0.0	49629.4	0.0	0.0	0.00	
25yrs	37.60	49851.0	0.0	49851.0	0.0	0.0	0.00	
25yrs	37.68	50072.7	0.0	50072.7	-0.0	-0.0	-0.00	
25yrs	37.77	50294.7	0.0	50294.7	0.0	0.0	0.00	
25yrs	37.85	50516.7	0.0	50516.7	-0.0	-0.0	-0.00	
25yrs	37.93	50739.0	0.0	50739.0	-0.0	-0.0	-0.00	
25yrs	38.02	50961.4	0.0	50961.4	-0.0	-0.0	-0.00	
25yrs	38.10	51183.9	0.0	51183.9	-0.0	-0.0	-0.00	
25yrs	38.18	51406.6	0.0	51406.6	-0.0	-0.0	-0.00	
25yrs	38.27	51629.5	0.0	51629.5	-0.0	-0.0	-0.00	
25yrs	38.35	51852.5	0.0	51852.5	-0.0	-0.0	-0.00	
25yrs	38.43	52075.6	0.0	52075.6	0.0	0.0	0.00	
25yrs	38.52	52298.9	0.0	52298.9	-0.0	-0.0	-0.00	
25yrs	38.60	52522.4	0.0	52522.4	0.0	0.0	0.00	
25yrs	38.68	52746.0	0.0	52746.0	0.0	0.0	0.00	
25yrs	38.77	52969.8	0.0	52969.8	0.0	0.0	0.00	
25yrs	38.85	53193.7	0.0	53193.7	-0.0	-0.0	-0.00	
25yrs	38.93	53417.7	0.0	53417.7	0.0	0.0	0.00	
25yrs	39.02	53641.9	0.0	53641.9	0.0	0.0	0.00	
25yrs	39.10	53866.3	0.0	53866.3	0.0	0.0	0.00	
25yrs	39.18	54090.7	0.0	54090.7	0.0	0.0	0.00	
25yrs	39.27	54315.4	0.0	54315.4	0.0	0.0	0.00	
25yrs	39.35	54540.2	0.0	54540.2	0.0	0.0	0.00	
25yrs	39.43	54765.1	0.0	54765.1	0.0	0.0	0.00	
25yrs	39.52	54990.1	0.0	54990.1	0.0	0.0	0.00	
25yrs	39.60	55215.3	0.0	55215.3	0.0	0.0	0.00	
25yrs	39.68	55440.7	0.0	55440.7	0.0	0.0	0.00	
25yrs	39.77	55666.2	0.0	55666.2	0.0	0.0	0.00	
25yrs	39.85	55891.8	0.0	55891.8	0.0	0.0	0.00	
25yrs	39.93	56117.5	0.0	56117.5	0.0	0.0	0.00	
25yrs	40.02	56343.4	0.0	56343.4	0.0	0.0	0.00	
25yrs	40.10	56569.5	0.0	56569.5	0.0	0.0	0.00	
25yrs	40.18	56795.6	0.0	56795.6	0.0	0.0	0.00	
25yrs	40.27	57021.9	0.0	57021.9	0.0	0.0	0.00	
25yrs	40.35	57248.3	0.0	57248.3	0.0	0.0	0.00	
25yrs	40.43	57474.9	0.0	57474.9	0.0	0.0	0.00	
25yrs	40.52	57701.6	0.0	57701.6	0.0	0.0	0.00	
25yrs	40.60	57928.4	0.0	57928.4	0.0	0.0	0.00	
25yrs	40.68	58155.4	0.0	58155.4	0.0	0.0	0.00	
25yrs	40.77	58382.5	0.0	58382.5	0.0	0.0	0.00	
25yrs	40.85	58609.7	0.0	58609.7	0.0	0.0	0.00	
25yrs	40.93	58837.1	0.0	58837.1	0.0	0.0	0.00	
25yrs	41.02	59064.6	0.0	59064.6	0.0	0.0	0.00	
25yrs	41.10	59292.2	0.0	59292.2	0.0	0.0	0.00	
25yrs	41.18	59519.9	0.0	59519.9	0.0	0.0	0.00	
25yrs	41.27	59747.8	0.0	59747.8	0.0	0.0	0.00	
25yrs	41.35	59975.7	0.0	59975.7	0.0	0.0	0.00	
25yrs	41.43	60203.8	0.0	60203.8	0.0	0.0	0.00	
25yrs	41.52	60432.1	0.0	60432.1	0.0	0.0	0.00	
25yrs	41.60	60660.4	0.0	60660.4	0.0	0.0	0.00	
25yrs	41.68	60888.9	0.0	60888.9	0.0	0.0	0.00	
25yrs	41.77	61117.5	0.0	61117.5	0.0	0.0	0.00	
25yrs	41.85	61346.3	0.0	61346.3	0.0	0.0	0.00	
25yrs	41.93	61575.1	0.0	61575.1	0.0	0.0	0.00	
25yrs	42.02	61804.1	0.0	61804.1	0.0	0.0	0.00	
25yrs	42.10	62033.2	0.0	62033.2	0.0	0.0	0.00	
25yrs	42.18	62262.4	0.0	62262.4	0.0	0.0	0.00	
25yrs	42.27	62491.7	0.0	62491.7	0.0	0.0	0.00	
25yrs	42.35	62721.1	0.0	62721.1	0.0	0.0	0.00	
25yrs	42.43	62950.7	0.0	62950.7	0.0	0.0	0.00	
25yrs	42.52	63180.4	0.0	63180.4	0.0	0.0	0.00	

			MASS	BALANCE	25 YR	100 YR	
25yrs	42.60	63410.2	0.0	63410.2	0.0	0.00	0.00
25yrs	42.68	63640.1	0.0	63640.1	0.0	0.00	0.00
25yrs	42.77	63870.1	0.0	63870.1	0.0	0.00	0.00
25yrs	42.85	64100.2	0.0	64100.2	0.0	0.00	0.00
25yrs	42.93	64330.5	0.0	64330.5	0.0	0.00	0.00
25yrs	43.02	64560.9	0.0	64560.9	0.0	0.00	0.00
25yrs	43.10	64791.3	0.0	64791.3	0.0	0.00	0.00
25yrs	43.18	65021.9	0.0	65021.9	0.0	0.00	0.00
25yrs	43.27	65252.6	0.0	65252.6	0.0	0.00	0.00
25yrs	43.35	65483.4	0.0	65483.4	0.0	0.00	0.00
25yrs	43.43	65714.4	0.0	65714.4	0.0	0.00	0.00
25yrs	43.52	65945.4	0.0	65945.4	0.0	0.00	0.00
25yrs	43.60	66176.5	0.0	66176.5	0.0	0.00	0.00
25yrs	43.68	66407.8	0.0	66407.8	0.0	0.00	0.00
25yrs	43.77	66639.1	0.0	66639.1	0.0	0.00	0.00
25yrs	43.85	66870.6	0.0	66870.6	0.0	0.00	0.00
25yrs	43.93	67102.2	0.0	67102.2	0.0	0.00	0.00
25yrs	44.02	67333.9	0.0	67333.9	0.0	0.00	0.00
25yrs	44.10	67565.7	0.0	67565.7	0.0	0.00	0.00
25yrs	44.18	67797.6	0.0	67797.6	0.0	0.00	0.00
25yrs	44.27	68029.5	0.0	68029.5	0.0	0.00	0.00
25yrs	44.35	68261.6	0.0	68261.6	0.0	0.00	0.00
25yrs	44.43	68493.9	0.0	68493.9	0.0	0.00	0.00
25yrs	44.52	68726.2	0.0	68726.2	0.0	0.00	0.00
25yrs	44.60	68958.6	0.0	68958.6	0.0	0.00	0.00
25yrs	44.68	69191.1	0.0	69191.1	0.0	0.00	0.00
25yrs	44.77	69423.7	0.0	69423.7	0.0	0.00	0.00
25yrs	44.85	69656.4	0.0	69656.4	0.0	0.00	0.00
25yrs	44.93	69889.2	0.0	69889.2	0.0	0.00	0.00
25yrs	45.02	70122.2	0.0	70122.2	0.0	0.00	0.00
25yrs	45.10	70355.2	0.0	70355.2	-0.0	-0.00	-0.00
25yrs	45.18	70588.3	0.0	70588.3	-0.0	-0.00	-0.00
25yrs	45.27	70821.5	0.0	70821.5	0.0	0.00	0.00
25yrs	45.35	71054.8	0.0	71054.8	-0.0	-0.00	-0.00
25yrs	45.43	71288.2	0.0	71288.2	0.0	0.00	0.00
25yrs	45.52	71521.8	0.0	71521.8	0.0	0.00	0.00
25yrs	45.60	71755.4	0.0	71755.4	0.0	0.00	0.00
25yrs	45.68	71989.1	0.0	71989.1	-0.0	-0.00	-0.00
25yrs	45.77	72222.9	0.0	72222.9	0.0	0.00	0.00
25yrs	45.85	72456.8	0.0	72456.8	0.0	0.00	0.00
25yrs	45.93	72690.8	0.0	72690.8	-0.0	-0.00	-0.00
25yrs	46.02	72924.8	0.0	72924.8	-0.0	-0.00	-0.00
25yrs	46.10	73159.0	0.0	73159.0	-0.0	-0.00	-0.00
25yrs	46.18	73393.3	0.0	73393.3	-0.0	-0.00	-0.00
25yrs	46.27	73627.7	0.0	73627.7	-0.0	-0.00	-0.00
25yrs	46.35	73862.1	0.0	73862.1	-0.0	-0.00	-0.00
25yrs	46.43	74096.7	0.0	74096.7	-0.0	-0.00	-0.00
25yrs	46.52	74331.3	0.0	74331.3	-0.0	-0.00	-0.00
25yrs	46.60	74566.1	0.0	74566.1	-0.0	-0.00	-0.00
25yrs	46.68	74800.9	0.0	74800.9	-0.0	-0.00	-0.00
25yrs	46.77	75035.8	0.0	75035.8	-0.0	-0.00	-0.00
25yrs	46.85	75270.8	0.0	75270.8	-0.0	-0.00	-0.00
25yrs	46.93	75505.9	0.0	75505.9	-0.0	-0.00	-0.00
25yrs	47.02	75741.1	0.0	75741.1	0.0	0.00	0.00
25yrs	47.10	75976.4	0.0	75976.4	0.0	0.00	0.00
25yrs	47.18	76211.7	0.0	76211.7	0.0	0.00	0.00
25yrs	47.27	76447.2	0.0	76447.2	0.0	0.00	0.00
25yrs	47.35	76682.7	0.0	76682.7	0.0	0.00	0.00
25yrs	47.43	76918.4	0.0	76918.4	0.0	0.00	0.00
25yrs	47.52	77154.1	0.0	77154.1	0.0	0.00	0.00
25yrs	47.60	77389.9	0.0	77389.9	0.0	0.00	0.00
25yrs	47.68	77625.8	0.0	77625.8	0.0	0.00	0.00
25yrs	47.77	77861.8	0.0	77861.8	0.0	0.00	0.00
25yrs	47.85	78097.8	0.0	78097.8	0.0	0.00	0.00
25yrs	47.93	78334.0	0.0	78334.0	-0.0	-0.00	-0.00
25yrs	48.02	78570.4	0.0	78570.4	0.0	0.00	0.00

				MASS	BALANCE	25 YR	100 YR	
25yrs	48.10	78811.8	0.0		78811.8		0.0	0.00
25yrs	48.18	79062.1	0.0		79062.1		0.0	0.00
25yrs	48.27	79318.5	0.0		79318.5		0.0	0.00
25yrs	48.35	79578.1	0.0		79578.1		0.0	0.00
25yrs	48.43	79839.6	0.0		79839.6		0.0	0.00
25yrs	48.52	80102.1	0.0		80102.1		0.0	0.00
25yrs	48.60	80365.1	0.0		80365.1		0.0	0.00
25yrs	48.68	80628.3	0.0		80628.3		0.0	0.00
25yrs	48.77	80891.7	0.0		80891.7		0.0	0.00
25yrs	48.85	81155.1	0.0		81155.1		-0.0	-0.00
25yrs	48.93	81418.7	0.0		81418.7		0.0	0.00
25yrs	49.02	81682.3	0.0		81682.3		0.0	0.00
25yrs	49.10	81947.1	0.0		81947.1		0.0	0.00
25yrs	49.18	82213.9	0.0		82213.9		-0.0	-0.00
25yrs	49.27	82482.0	0.0		82482.0		-0.0	-0.00
25yrs	49.35	82751.0	0.0		82751.0		-0.0	-0.00
25yrs	49.43	83020.3	0.0		83020.3		-0.0	-0.00
25yrs	49.52	83290.0	0.0		83290.0		-0.0	-0.00
25yrs	49.60	83559.9	0.0		83559.9		-0.0	-0.00
25yrs	49.68	83829.8	0.0		83829.8		-0.0	-0.00
25yrs	49.77	84099.9	0.0		84099.9		-0.0	-0.00
25yrs	49.85	84370.1	0.0		84370.1		-0.0	-0.00
25yrs	49.93	84640.4	0.0		84640.4		-0.0	-0.00
25yrs	50.02	84911.2	0.0		84911.2		-0.0	-0.00
25yrs	50.10	85192.3	0.0		85192.3		-0.0	-0.00
25yrs	50.18	85489.7	0.0		85489.7		-0.0	-0.00
25yrs	50.27	85798.1	0.0		85798.1		-0.0	-0.00
25yrs	50.35	86112.0	0.0		86112.0		-0.0	-0.00
25yrs	50.43	86429.2	0.0		86429.2		-0.0	-0.00
25yrs	50.52	86748.2	0.0		86748.2		-0.0	-0.00
25yrs	50.60	87068.1	0.0		87068.1		-0.0	-0.00
25yrs	50.68	87388.3	0.0		87388.3		-0.0	-0.00
25yrs	50.77	87708.7	0.0		87708.7		-0.0	-0.00
25yrs	50.85	88029.1	0.0		88029.1		-0.0	-0.00
25yrs	50.93	88349.8	0.0		88349.8		-0.0	-0.00
25yrs	51.02	88670.7	0.0		88670.7		-0.0	-0.00
25yrs	51.10	88997.8	0.0		88997.8		-0.0	-0.00
25yrs	51.18	89334.7	0.0		89334.7		-0.0	-0.00
25yrs	51.27	89678.3	0.0		89678.3		-0.0	-0.00
25yrs	51.35	90025.3	0.0		90025.3		-0.0	-0.00
25yrs	51.43	90374.3	0.0		90374.3		-0.0	-0.00
25yrs	51.52	90724.5	0.0		90724.5		-0.0	-0.00
25yrs	51.60	91075.2	0.0		91075.2		-0.0	-0.00
25yrs	51.68	91426.2	0.0		91426.2		-0.0	-0.00
25yrs	51.77	91777.4	0.0		91777.4		-0.0	-0.00
25yrs	51.85	92128.7	0.0		92128.7		-0.0	-0.00
25yrs	51.93	92480.1	0.0		92480.1		-0.0	-0.00
25yrs	52.02	92832.5	0.0		92832.5		-0.0	-0.00
25yrs	52.10	93206.7	0.0		93206.7		-0.0	-0.00
25yrs	52.18	93616.3	0.0		93616.3		-0.0	-0.00
25yrs	52.27	94050.0	0.0		94050.0		-0.0	-0.00
25yrs	52.35	94496.0	0.0		94496.0		-0.0	-0.00
25yrs	52.43	94949.0	0.9		94948.1		-0.0	-0.00
25yrs	52.52	95405.9	4.2		95401.7		-0.0	-0.00
25yrs	52.60	95864.7	10.8		95853.9		-0.0	-0.00
25yrs	52.68	96324.2	21.5		96302.6		-0.0	-0.00
25yrs	52.77	96783.9	37.0		96746.8		-0.0	-0.00
25yrs	52.85	97243.8	58.3		97185.5		-0.0	-0.00
25yrs	52.93	97704.0	86.1		97617.9		-0.0	-0.00
25yrs	53.02	98165.0	121.0		98044.0		-0.0	-0.00
25yrs	53.10	98647.8	163.7		98484.1		-0.0	-0.00
25yrs	53.18	99166.5	215.4		98951.0		-0.0	-0.00
25yrs	53.27	99709.5	277.5		99432.0		-0.0	-0.00
25yrs	53.35	100265.1	351.1		99914.0		-0.0	-0.00
25yrs	53.43	100827.8	436.8		100391.0		-0.0	-0.00
25yrs	53.52	101394.5	535.3		100859.2		-0.0	-0.00

				MASS BALANCE 25 YR 100 YR		
25yrs	53.60	101963.3	647.3	101316.1	-0.0	-0.00
25yrs	53.68	102532.8	773.0	101759.8	-0.0	-0.00
25yrs	53.77	103102.7	912.8	102189.9	-0.0	-0.00
25yrs	53.85	103672.8	1066.8	102606.0	-0.0	-0.00
25yrs	53.93	104243.3	1235.1	103008.2	-0.0	-0.00
25yrs	54.02	104814.7	1417.8	103396.9	-0.0	-0.00
25yrs	54.10	105408.6	1615.2	103793.4	-0.0	-0.00
25yrs	54.18	106039.8	1828.4	104211.3	-0.0	-0.00
25yrs	54.27	106696.6	2058.7	104637.9	-0.0	-0.00
25yrs	54.35	107366.7	2306.6	105060.1	-0.0	-0.00
25yrs	54.43	108044.3	2572.5	105471.7	-0.0	-0.00
25yrs	54.52	108726.1	2856.4	105869.7	-0.0	-0.00
25yrs	54.60	109410.2	3158.0	106252.2	-0.0	-0.00
25yrs	54.68	110095.1	3477.0	106618.1	-0.0	-0.00
25yrs	54.77	110780.5	3813.1	106967.4	-0.0	-0.00
25yrs	54.85	111466.2	4165.8	107300.4	-0.0	-0.00
25yrs	54.93	112152.3	4534.6	107617.7	-0.0	-0.00
25yrs	55.02	112839.4	4919.1	107920.3	-0.0	-0.00
25yrs	55.10	113548.9	5319.2	108229.7	-0.0	-0.00
25yrs	55.18	114296.0	5735.8	108560.2	-0.0	-0.00
25yrs	55.27	115069.2	6170.3	108898.9	-0.0	-0.00
25yrs	55.35	115855.9	6622.9	109233.0	-0.0	-0.00
25yrs	55.43	116650.2	7093.5	109556.7	-0.0	-0.00
25yrs	55.52	117448.9	7581.9	109867.0	-0.0	-0.00
25yrs	55.60	118250.0	8087.3	110162.6	-0.0	-0.00
25yrs	55.68	119052.0	8609.2	110442.7	-0.0	-0.00
25yrs	55.77	119854.4	9146.9	110707.5	-0.0	-0.00
25yrs	55.85	120657.3	9699.7	110957.7	-0.0	-0.00
25yrs	55.93	121460.6	10266.8	111193.9	-0.0	-0.00
25yrs	56.02	122265.3	10847.6	111417.7	-0.0	-0.00
25yrs	56.10	123096.4	11442.0	111654.4	-0.0	-0.00
25yrs	56.18	123973.1	12051.6	111921.5	-0.0	-0.00
25yrs	56.27	124881.4	12678.0	112203.3	-0.0	-0.00
25yrs	56.35	125806.0	13321.9	112484.1	-0.0	-0.00
25yrs	56.43	126740.0	13983.1	112756.9	-0.0	-0.00
25yrs	56.52	127679.3	14661.1	113018.1	-0.0	-0.00
25yrs	56.60	128621.4	15355.3	113266.0	-0.0	-0.00
25yrs	56.68	129564.6	16065.0	113499.6	-0.0	-0.00
25yrs	56.77	130508.4	16789.3	113719.0	-0.0	-0.00
25yrs	56.85	131452.7	17527.5	113925.2	-0.0	-0.00
25yrs	56.93	132397.5	18278.7	114118.8	-0.0	-0.00
25yrs	57.02	133343.9	19042.3	114301.6	-0.0	-0.00
25yrs	57.10	134324.0	19818.3	114505.7	-0.0	-0.00
25yrs	57.18	135362.6	20609.2	114753.4	-0.0	-0.00
25yrs	57.27	136442.3	21417.4	115024.9	-0.0	-0.00
25yrs	57.35	137543.2	22244.1	115299.1	-0.0	-0.00
25yrs	57.43	138656.1	23089.2	115567.0	-0.0	-0.00
25yrs	57.52	139776.6	23952.2	115824.5	-0.0	-0.00
25yrs	57.60	140920.3	24832.8	116087.4	-0.0	-0.00
25yrs	57.68	142097.5	25732.0	116365.4	0.0	0.00
25yrs	57.77	143297.4	26650.8	116646.6	0.0	0.00
25yrs	57.85	144509.1	27588.9	116920.2	0.0	0.00
25yrs	57.93	145727.8	28545.9	117181.9	0.0	0.00
25yrs	58.02	146951.4	29520.9	117430.5	0.0	0.00
25yrs	58.10	148202.1	30513.5	117688.6	0.0	0.00
25yrs	58.18	149498.0	31525.1	117972.9	0.0	0.00
25yrs	58.27	150825.8	32557.6	118268.2	0.0	0.00
25yrs	58.35	152170.0	33611.2	118558.9	0.0	0.00
25yrs	58.43	153523.9	34685.4	118838.5	-0.0	-0.00
25yrs	58.52	154886.3	35779.4	119106.8	-0.0	-0.00
25yrs	58.60	156340.4	36894.4	119446.0	-0.0	-0.00
25yrs	58.68	157944.3	38037.8	119906.5	0.0	0.00
25yrs	58.77	159650.9	39217.4	120433.5	0.0	0.00
25yrs	58.85	161410.4	40436.4	120974.0	0.0	0.00
25yrs	58.93	163199.9	41694.8	121505.2	0.0	0.00
25yrs	59.02	165014.4	42991.4	122023.0	0.0	0.00



				MASS BALANCE 25 YR 100 YR		
25yrs	59.10	167044.9	44330.2	122714.7	0.0	0.00
25yrs	59.18	169406.1	45728.8	123677.3	0.0	0.00
25yrs	59.27	171988.5	47202.8	124785.7	0.0	0.00
25yrs	59.35	174684.7	48757.6	125927.1	0.0	0.00
25yrs	59.43	177445.6	50390.4	127055.2	0.0	0.00
25yrs	59.51	180197.9	52035.0	128162.9	0.0	0.00
25yrs	59.59	185188.6	53669.9	131518.8	0.0	0.00
25yrs	59.67	195658.5	55829.7	139828.8	0.0	0.00
25yrs	59.75	210667.1	58710.6	151956.4	0.0	0.00
25yrs	59.83	227790.6	62110.1	165680.6	0.0	0.00
25yrs	59.92	246146.5	65978.5	180168.0	0.0	0.00
25yrs	60.00	265175.1	70307.2	194867.9	0.0	0.00
25yrs	60.08	282196.3	75819.7	206376.6	0.0	0.00
25yrs	60.17	294450.1	82420.4	212029.7	0.0	0.00
25yrs	60.25	302634.2	89219.6	213414.5	-0.0	-0.00
25yrs	60.33	308969.8	96155.9	212813.9	-0.0	-0.00
25yrs	60.42	314258.2	103076.4	211181.9	0.0	0.00
25yrs	60.51	318936.5	109836.5	209100.1	0.0	0.00
25yrs	60.59	322992.8	116390.1	206602.7	0.0	0.00
25yrs	60.67	325989.9	122015.9	203974.0	0.0	0.00
25yrs	60.76	328914.0	128092.5	200821.5	0.0	0.00
25yrs	60.84	331360.6	133310.4	198050.2	0.0	0.00
25yrs	60.92	333673.4	138210.5	195462.9	0.0	0.00
25yrs	61.00	335910.8	142851.1	193059.7	0.0	0.00
25yrs	61.08	338017.9	147288.2	190729.7	0.0	0.00
25yrs	61.17	340070.1	151939.9	188130.3	0.0	0.00
25yrs	61.25	341810.6	156159.8	185650.8	0.0	0.00
25yrs	61.34	343477.8	160312.6	183165.2	0.0	0.00
25yrs	61.42	345104.1	164397.3	180706.8	0.0	0.00
25yrs	61.50	346707.9	168413.5	178294.3	0.0	0.00
25yrs	61.59	348389.5	172686.7	175702.8	0.0	0.00
25yrs	61.67	349849.9	176557.6	173292.3	0.0	0.00
25yrs	61.75	351243.0	180356.0	170887.0	0.0	0.00
25yrs	61.83	352602.4	184080.8	168521.6	0.0	0.00
25yrs	61.92	353942.9	187731.7	166211.3	0.0	0.00
25yrs	62.01	355382.7	191603.6	163779.1	0.0	0.00
25yrs	62.09	356647.4	195100.5	161546.9	0.0	0.00
25yrs	62.17	357795.5	198520.7	159274.8	0.0	0.00
25yrs	62.25	358854.0	201860.8	156993.1	0.0	0.00
25yrs	62.34	359950.5	205387.1	154563.4	0.0	0.00
25yrs	62.42	360937.4	208556.2	152381.2	0.0	0.00
25yrs	62.50	361911.0	211642.8	150268.2	0.0	0.00
25yrs	62.59	362862.8	214647.0	148215.8	0.0	0.00
25yrs	62.67	363779.8	217568.3	146211.5	0.0	0.00
25yrs	62.76	364743.1	220638.8	144104.3	0.0	0.00
25yrs	62.84	365618.7	223371.0	142247.7	0.0	0.00
25yrs	62.92	366487.1	225973.9	140513.3	0.0	0.00
25yrs	63.00	367351.6	228454.1	138897.6	0.0	0.00
25yrs	63.09	368249.7	230915.7	137334.0	0.0	0.00
25yrs	63.17	369146.3	233261.6	135884.8	0.0	0.00
25yrs	63.26	370042.4	235502.0	134540.4	0.0	0.00
25yrs	63.34	370848.6	237467.7	133380.9	0.0	0.00
25yrs	63.42	371721.9	239535.9	132186.0	0.0	0.00
25yrs	63.50	372617.5	241584.2	131033.3	0.0	0.00
25yrs	63.59	373513.1	243556.1	129957.0	0.0	0.00
25yrs	63.67	374408.8	245455.3	128953.5	0.0	0.00
25yrs	63.76	375276.5	247227.3	128049.2	0.0	0.00
25yrs	63.84	376116.3	248883.0	127233.3	0.0	0.00
25yrs	63.92	376956.1	250482.5	126473.6	0.0	0.00
25yrs	64.01	377934.4	252285.2	125649.2	0.0	0.00
25yrs	64.09	378745.3	253842.8	124902.5	0.0	0.00
25yrs	64.18	379440.8	255345.0	124095.8	0.0	0.00
25yrs	64.26	380051.1	256788.0	123263.1	0.0	0.00
25yrs	64.34	380618.5	258170.8	122447.8	0.0	0.00
25yrs	64.43	381162.2	259494.9	121667.4	0.0	0.00
25yrs	64.51	381693.0	260763.2	120929.9	0.0	0.00

				MASS BALANCE	25 YR	100 YR	
25yrs	64.59	382217.5	261978.9	120238.6	0.0	0.00	0.00
25yrs	64.68	382740.3	263145.6	119594.7	0.0	0.00	0.00
25yrs	64.76	383262.9	264267.0	118995.9	0.0	0.00	0.00
25yrs	64.84	383785.6	265346.7	118439.0	0.0	0.00	0.00
25yrs	64.93	384308.4	266387.4	117921.0	0.0	0.00	0.00
25yrs	65.01	384831.1	267392.4	117438.7	0.0	0.00	0.00
25yrs	65.09	385354.6	268364.4	116990.2	0.0	0.00	0.00
25yrs	65.18	385879.3	269305.9	116573.4	0.0	0.00	0.00
25yrs	65.26	386405.1	270219.3	116185.8	0.0	0.00	0.00
25yrs	65.34	386931.3	271106.7	115824.6	0.0	0.00	0.00
25yrs	65.43	387457.8	271970.1	115487.8	0.0	0.00	0.00
25yrs	65.51	387984.5	272811.3	115173.3	0.0	0.00	0.00
25yrs	65.59	388511.3	273631.8	114879.4	0.0	0.00	0.00
25yrs	65.68	389038.1	274433.3	114604.8	0.0	0.00	0.00
25yrs	65.76	389564.9	275217.0	114347.9	0.0	0.00	0.00
25yrs	65.84	390091.8	275984.2	114107.5	0.0	0.00	0.00
25yrs	65.93	390618.6	276736.2	113882.5	0.0	0.00	0.00
25yrs	66.01	391145.5	277473.8	113671.7	0.0	0.00	0.00
25yrs	66.09	391672.3	278198.2	113474.2	0.0	0.00	0.00
25yrs	66.18	392199.2	278910.2	113289.0	0.0	0.00	0.00
25yrs	66.26	392726.0	279610.7	113115.4	0.0	0.00	0.00
25yrs	66.34	393252.9	280300.4	112952.5	0.0	0.00	0.00
25yrs	66.43	393779.7	280980.0	112799.7	0.0	0.00	0.00
25yrs	66.51	394306.6	281650.3	112656.3	0.0	0.00	0.00
25yrs	66.59	394833.5	282311.9	112521.6	0.0	0.00	0.00
25yrs	66.68	395360.4	282965.3	112395.1	0.0	0.00	0.00
25yrs	66.76	395887.3	283611.0	112276.3	0.0	0.00	0.00
25yrs	66.84	396414.2	284249.5	112164.7	0.0	0.00	0.00
25yrs	66.93	396941.1	284881.4	112059.7	0.0	0.00	0.00
25yrs	67.01	397468.1	285506.9	111961.1	0.0	0.00	0.00
25yrs	67.09	397995.0	286126.6	111868.4	0.0	0.00	0.00
25yrs	67.18	398522.0	286740.8	111781.2	0.0	0.00	0.00
25yrs	67.26	399049.0	287349.8	111699.2	0.0	0.00	0.00
25yrs	67.34	399576.0	287954.0	111622.0	0.0	0.00	0.00
25yrs	67.43	400103.0	288553.6	111549.4	0.0	0.00	0.00
25yrs	67.51	400630.0	289148.9	111481.1	0.0	0.00	0.00
25yrs	67.59	401157.1	289740.2	111416.8	0.0	0.00	0.00
25yrs	67.68	401684.1	290327.8	111356.3	0.0	0.00	0.00
25yrs	67.76	402211.2	290911.8	111299.4	0.0	0.00	0.00
25yrs	67.84	402738.3	291492.5	111245.7	0.0	0.00	0.00
25yrs	67.93	403265.3	292070.1	111195.2	0.0	0.00	0.00
25yrs	68.01	403791.4	292644.8	111146.6	0.0	0.00	0.00
25yrs	68.09	404283.6	293216.0	111067.6	0.0	0.00	0.00
25yrs	68.18	404717.1	293781.1	110936.0	0.0	0.00	0.00
25yrs	68.26	405108.9	294337.4	110771.5	0.0	0.00	0.00
25yrs	68.34	405479.7	294883.7	110596.0	0.0	0.00	0.00
25yrs	68.43	405838.8	295419.8	110419.0	0.0	0.00	0.00
25yrs	68.51	406191.6	295945.7	110245.9	0.0	0.00	0.00
25yrs	68.59	406541.3	296461.8	110079.5	0.0	0.00	0.00
25yrs	68.68	406890.2	296968.7	109921.5	0.0	0.00	0.00
25yrs	68.76	407239.1	297466.8	109772.2	0.0	0.00	0.00
25yrs	68.84	407587.9	297956.8	109631.1	0.0	0.00	0.00
25yrs	68.93	407936.8	298439.1	109497.8	0.0	0.00	0.00
25yrs	69.01	408285.7	298914.1	109371.6	0.0	0.00	0.00
25yrs	69.09	408634.6	299382.4	109252.2	0.0	0.00	0.00
25yrs	69.18	408983.5	299844.3	109139.3	0.0	0.00	0.00
25yrs	69.26	409332.4	300300.1	109032.4	0.0	0.00	0.00
25yrs	69.34	409681.4	300750.3	108931.1	0.0	0.00	0.00
25yrs	69.43	410030.3	301195.1	108835.2	0.0	0.00	0.00
25yrs	69.51	410379.2	301634.9	108744.3	0.0	0.00	0.00
25yrs	69.59	410728.1	302069.9	108658.2	0.0	0.00	0.00
25yrs	69.68	411077.1	302500.4	108576.6	0.0	0.00	0.00
25yrs	69.76	411426.0	302926.8	108499.2	0.0	0.00	0.00
25yrs	69.84	411775.0	303349.1	108425.9	0.0	0.00	0.00
25yrs	69.93	412123.9	303767.7	108356.3	0.0	0.00	0.00
25yrs	70.01	412472.9	304182.7	108290.2	0.0	0.00	0.00

				MASS BALANCE 25 YR 100 YR		
25yrs	70.09	412822.2	304594.3	108227.9	0.0	0.00
25yrs	70.18	413172.2	305002.8	108169.5	0.0	0.00
25yrs	70.26	413522.7	305408.3	108114.4	0.0	0.00
25yrs	70.34	413873.4	305811.0	108062.4	0.0	0.00
25yrs	70.43	414224.3	306211.1	108013.2	0.0	0.00
25yrs	70.51	414575.2	306608.7	107966.5	0.0	0.00
25yrs	70.59	414926.2	307004.0	107922.2	0.0	0.00
25yrs	70.68	415277.2	307397.0	107880.1	0.0	0.00
25yrs	70.76	415628.2	307788.0	107840.2	0.0	0.00
25yrs	70.84	415979.2	308176.9	107802.2	0.0	0.00
25yrs	70.93	416330.2	308564.0	107766.2	0.0	0.00
25yrs	71.01	416681.2	308949.2	107732.0	0.0	0.00
25yrs	71.09	417032.2	309332.8	107699.4	0.0	0.00
25yrs	71.18	417383.2	309714.7	107668.5	0.0	0.00
25yrs	71.26	417734.2	310095.1	107639.1	0.0	0.00
25yrs	71.34	418085.3	310474.0	107611.2	0.0	0.00
25yrs	71.43	418436.3	310851.6	107584.7	0.0	0.00
25yrs	71.51	418787.3	311227.9	107559.5	0.0	0.00
25yrs	71.59	419138.4	311602.9	107535.5	0.0	0.00
25yrs	71.68	419489.4	311976.7	107512.7	0.0	0.00
25yrs	71.76	419840.5	312349.4	107491.0	0.0	0.00
25yrs	71.84	420191.5	312721.1	107470.4	0.0	0.00
25yrs	71.93	420542.6	313091.7	107450.9	0.0	0.00
25yrs	72.01	420858.4	313461.3	107397.1	0.0	0.00
25yrs	72.09	420858.4	313820.6	107307.8	0.0	0.00
25yrs	72.18	420858.4	314162.7	106695.7	0.0	0.00
25yrs	72.26	420858.4	314488.8	106369.6	0.0	0.00
25yrs	72.34	420858.4	314799.8	106058.6	0.0	0.00
25yrs	72.43	420858.4	315096.8	105761.6	0.0	0.00
25yrs	72.51	420858.4	315380.6	105477.8	0.0	0.00
25yrs	72.59	420858.4	315652.1	105206.3	0.0	0.00
25yrs	72.68	420858.4	315912.0	104946.4	0.0	0.00
25yrs	72.76	420858.4	316160.9	104697.5	0.0	0.00
25yrs	72.84	420858.4	316399.6	104458.8	0.0	0.00
25yrs	72.93	420858.4	316628.6	104229.8	0.0	0.00
25yrs	73.01	420858.4	316848.6	104009.8	0.0	0.00
25yrs	73.09	420858.4	317060.0	103798.4	0.0	0.00
25yrs	73.18	420858.4	317263.2	103595.2	0.0	0.00
25yrs	73.26	420858.4	317458.8	103399.6	0.0	0.00
25yrs	73.34	420858.4	317647.1	103211.3	0.0	0.00
25yrs	73.43	420858.4	317828.5	103029.9	0.0	0.00
25yrs	73.51	420858.4	318003.3	102855.1	0.0	0.00
25yrs	73.59	420858.4	318171.9	102686.5	0.0	0.00
25yrs	73.68	420858.4	318334.6	102523.8	0.0	0.00
25yrs	73.76	420858.4	318491.8	102366.6	0.0	0.00
25yrs	73.84	420858.4	318643.6	102214.8	0.0	0.00
25yrs	73.93	420858.4	318790.5	102067.9	0.0	0.00
25yrs	74.01	420858.4	318932.5	101925.9	0.0	0.00
25yrs	74.09	420858.4	319070.0	101788.5	0.0	0.00
25yrs	74.18	420858.4	319203.0	101655.4	0.0	0.00
25yrs	74.26	420858.4	319331.9	101526.5	0.0	0.00
25yrs	74.34	420858.4	319456.7	101401.7	0.0	0.00
25yrs	74.43	420858.4	319577.8	101280.6	0.0	0.00
25yrs	74.51	420858.4	319695.1	101163.3	0.0	0.00
25yrs	74.59	420858.4	319809.0	101049.4	0.0	0.00
25yrs	74.68	420858.4	319919.5	100938.9	0.0	0.00
25yrs	74.76	420858.4	320026.8	100831.6	0.0	0.00
25yrs	74.84	420858.4	320131.0	100727.4	0.0	0.00
25yrs	74.93	420858.4	320232.2	100626.2	0.0	0.00
25yrs	75.01	420858.4	320330.6	100527.8	0.0	0.00
25yrs	75.09	420858.4	320426.4	100432.0	0.0	0.00
25yrs	75.18	420858.4	320519.5	100338.9	0.0	0.00
25yrs	75.26	420858.4	320610.2	100248.2	0.0	0.00
25yrs	75.34	420858.4	320698.5	100159.9	0.0	0.00
25yrs	75.43	420858.4	320784.5	100073.9	0.0	0.00
25yrs	75.51	420858.4	320868.3	99990.1	0.0	0.00

				MASS BALANCE 25 YR 100 YR		
25yrs	75.59	420858.4	320950.0	99908.4	0.0	0.00
25yrs	75.68	420858.4	321029.6	99828.8	0.0	0.00
25yrs	75.76	420858.4	321107.2	99751.2	0.0	0.00
25yrs	75.84	420858.4	321182.9	99675.5	0.0	0.00
25yrs	75.93	420858.4	321256.7	99601.7	0.0	0.00
25yrs	76.01	420858.4	321328.7	99529.7	0.0	0.00
25yrs	76.09	420858.4	321399.0	99459.4	0.0	0.00
25yrs	76.18	420858.4	321467.7	99390.7	0.0	0.00
25yrs	76.26	420858.4	321534.7	99323.7	0.0	0.00
25yrs	76.34	420858.4	321600.1	99258.3	0.0	0.00
25yrs	76.43	420858.4	321664.1	99194.3	0.0	0.00
25yrs	76.51	420858.4	321726.5	99131.9	0.0	0.00
25yrs	76.59	420858.4	321787.6	99070.8	0.0	0.00
25yrs	76.68	420858.4	321847.3	99011.1	0.0	0.00
25yrs	76.76	420858.4	321905.7	98952.7	0.0	0.00
25yrs	76.84	420858.4	321962.8	98895.6	0.0	0.00
25yrs	76.93	420858.4	322018.7	98839.7	0.0	0.00
25yrs	77.01	420858.4	322073.3	98785.1	0.0	0.00
25yrs	77.09	420858.4	322126.8	98731.6	0.0	0.00
25yrs	77.18	420858.4	322179.2	98679.2	0.0	0.00
25yrs	77.26	420858.4	322230.5	98627.9	0.0	0.00
25yrs	77.34	420858.4	322280.8	98577.7	0.0	0.00
25yrs	77.43	420858.4	322330.0	98528.4	0.0	0.00
25yrs	77.51	420858.4	322378.2	98480.2	0.0	0.00
25yrs	77.59	420858.4	322425.5	98432.9	0.0	0.00
25yrs	77.68	420858.4	322471.8	98386.6	0.0	0.00
25yrs	77.76	420858.4	322517.3	98341.1	0.0	0.00
25yrs	77.84	420858.4	322561.9	98296.5	0.0	0.00
25yrs	77.93	420858.4	322605.7	98252.7	0.0	0.00
25yrs	78.01	420858.4	322648.6	98209.8	0.0	0.00
25yrs	78.09	420858.4	322690.8	98167.6	0.0	0.00
25yrs	78.18	420858.4	322732.1	98126.3	0.0	0.00
25yrs	78.26	420858.4	322772.7	98085.7	0.0	0.00
25yrs	78.34	420858.4	322812.6	98045.8	0.0	0.00
25yrs	78.43	420858.4	322851.7	98006.7	0.0	0.00
25yrs	78.51	420858.4	322890.2	97968.2	0.0	0.00
25yrs	78.59	420858.4	322927.9	97930.5	0.0	0.00
25yrs	78.68	420858.4	322965.0	97893.4	0.0	0.00
25yrs	78.76	420858.4	323001.4	97857.0	0.0	0.00
25yrs	78.84	420858.4	323037.2	97821.2	0.0	0.00
25yrs	78.93	420858.4	323072.4	97786.0	0.0	0.00
25yrs	79.01	420858.4	323106.9	97751.5	0.0	0.00
25yrs	79.09	420858.4	323140.9	97717.5	0.0	0.00
25yrs	79.18	420858.4	323174.3	97684.1	0.0	0.00
25yrs	79.26	420858.4	323207.1	97651.3	0.0	0.00
25yrs	79.34	420858.4	323239.3	97619.1	0.0	0.00
25yrs	79.43	420858.4	323271.1	97587.3	0.0	0.00
25yrs	79.51	420858.4	323302.3	97556.1	0.0	0.00
25yrs	79.59	420858.4	323333.0	97525.4	0.0	0.00
25yrs	79.68	420858.4	323363.1	97495.3	0.0	0.00
25yrs	79.76	420858.4	323392.8	97465.6	0.0	0.00
25yrs	79.84	420858.4	323422.1	97436.3	0.0	0.00
25yrs	79.93	420858.4	323450.8	97407.6	0.0	0.00
25yrs	80.01	420858.4	323479.1	97379.3	0.0	0.00
25yrs	80.09	420858.4	323507.0	97351.5	0.0	0.00
25yrs	80.18	420858.4	323534.4	97324.0	0.0	0.00
25yrs	80.26	420858.4	323561.3	97297.1	0.0	0.00
25yrs	80.34	420858.4	323587.9	97270.5	0.0	0.00
25yrs	80.43	420858.4	323614.1	97244.3	0.0	0.00
25yrs	80.51	420858.4	323639.8	97218.6	0.0	0.00
25yrs	80.59	420858.4	323665.2	97193.2	0.0	0.00
25yrs	80.68	420858.4	323690.2	97168.2	0.0	0.00
25yrs	80.76	420858.4	323714.8	97143.6	0.0	0.00
25yrs	80.84	420858.4	323739.0	97119.4	0.0	0.00
25yrs	80.93	420858.4	323762.9	97095.5	0.0	0.00
25yrs	81.01	420858.4	323786.5	97071.9	0.0	0.00

				MASS BALANCE 25 YR 100 YR	
25yrs	81.09	420858.4	323809.7	97048.7	0.0
25yrs	81.18	420858.4	323832.5	97025.9	0.0
25yrs	81.26	420858.4	323855.0	97003.4	0.0
25yrs	81.34	420858.4	323877.2	96981.2	0.0
25yrs	81.43	420858.4	323899.1	96959.3	0.0
25yrs	81.51	420858.4	323920.7	96937.7	0.0
25yrs	81.59	420858.4	323942.0	96916.4	0.0
25yrs	81.68	420858.4	323962.9	96895.5	0.0
25yrs	81.76	420858.4	323983.6	96874.8	0.0
25yrs	81.84	420858.4	324004.0	96854.4	0.0
25yrs	81.93	420858.4	324024.1	96834.3	0.0
25yrs	82.01	420858.4	324043.9	96814.5	0.0
25yrs	82.09	420858.4	324063.5	96794.9	0.0
25yrs	82.18	420858.4	324082.8	96775.6	0.0
25yrs	82.26	420858.4	324101.9	96756.5	0.0
25yrs	82.34	420858.4	324120.7	96737.7	0.0
25yrs	82.43	420858.4	324139.2	96719.2	0.0
25yrs	82.51	420858.4	324157.5	96700.9	0.0
25yrs	82.59	420858.4	324175.6	96682.8	0.0
25yrs	82.68	420858.4	324193.4	96665.0	0.0
25yrs	82.76	420858.4	324211.0	96647.4	0.0
25yrs	82.84	420858.4	324228.4	96630.0	0.0
25yrs	82.93	420858.4	324245.5	96612.9	0.0
25yrs	83.01	420858.4	324262.5	96595.9	0.0
25yrs	83.09	420858.4	324279.2	96579.2	0.0
25yrs	83.18	420858.4	324295.7	96562.7	0.0
25yrs	83.26	420858.4	324312.0	96546.4	0.0
25yrs	83.34	420858.4	324328.1	96530.3	0.0
25yrs	83.43	420858.4	324344.1	96514.3	0.0
25yrs	83.51	420858.4	324359.8	96498.6	0.0
25yrs	83.59	420858.4	324375.3	96483.1	0.0
25yrs	83.68	420858.4	324390.7	96467.7	0.0
25yrs	83.76	420858.4	324405.9	96452.5	0.0
25yrs	83.84	420858.4	324420.9	96437.5	0.0
25yrs	83.93	420858.4	324435.7	96422.7	0.0
25yrs	84.01	420858.4	324450.4	96408.0	0.0
25yrs	84.09	420858.4	324464.9	96393.5	0.0
25yrs	84.18	420858.4	324479.2	96379.2	0.0
25yrs	84.26	420858.4	324493.4	96365.0	0.0
25yrs	84.34	420858.4	324507.5	96350.9	0.0
25yrs	84.43	420858.4	324521.4	96337.0	0.0
25yrs	84.51	420858.4	324535.1	96323.3	0.0
25yrs	84.59	420858.4	324548.7	96309.7	0.0
25yrs	84.68	420858.4	324562.1	96296.3	0.0
25yrs	84.76	420858.4	324575.4	96283.0	0.0
25yrs	84.84	420858.4	324588.6	96269.8	0.0
25yrs	84.93	420858.4	324601.6	96256.8	0.0
25yrs	85.01	420858.4	324614.5	96243.9	0.0
25yrs	85.09	420858.4	324627.2	96231.2	0.0
25yrs	85.18	420858.4	324639.8	96218.6	0.0
25yrs	85.26	420858.4	324652.3	96206.1	0.0
25yrs	85.34	420858.4	324664.7	96193.7	0.0
25yrs	85.43	420858.4	324676.9	96181.5	0.0
25yrs	85.51	420858.4	324689.0	96169.4	0.0
25yrs	85.59	420858.4	324701.0	96157.4	0.0
25yrs	85.68	420858.4	324712.8	96145.6	0.0
25yrs	85.76	420858.4	324724.6	96133.8	0.0
25yrs	85.84	420858.4	324736.2	96122.2	0.0
25yrs	85.93	420858.4	324747.7	96110.7	0.0
25yrs	86.01	420858.4	324759.0	96099.4	0.0
25yrs	86.09	420858.4	324770.3	96088.1	0.0
25yrs	86.18	420858.4	324781.5	96077.0	0.0
25yrs	86.26	420858.4	324792.5	96065.9	0.0
25yrs	86.34	420858.4	324803.4	96055.0	0.0
25yrs	86.43	420858.4	324814.2	96044.2	0.0
25yrs	86.51	420858.4	324825.0	96033.4	0.0

			MASS BALANCE	25 YR	100 YR	
25yrs	86.59	420858.4	324835.6	96022.8	0.0	0.00
25yrs	86.68	420858.4	324846.1	96012.3	0.0	0.00
25yrs	86.76	420858.4	324856.5	96001.9	0.0	0.00
25yrs	86.84	420858.4	324866.8	95991.6	0.0	0.00
25yrs	86.93	420858.4	324877.0	95981.4	0.0	0.00
25yrs	87.01	420858.4	324887.1	95971.3	0.0	0.00
25yrs	87.09	420858.4	324897.1	95961.3	0.0	0.00
25yrs	87.18	420858.4	324907.0	95951.4	0.0	0.00
25yrs	87.26	420858.4	324916.8	95941.6	0.0	0.00
25yrs	87.34	420858.4	324926.5	95931.9	0.0	0.00
25yrs	87.43	420858.4	324936.2	95922.2	0.0	0.00
25yrs	87.51	420858.4	324945.7	95912.7	0.0	0.00
25yrs	87.59	420858.4	324955.2	95903.3	0.0	0.00
25yrs	87.68	420858.4	324964.5	95893.9	0.0	0.00
25yrs	87.76	420858.4	324973.8	95884.6	0.0	0.00
25yrs	87.84	420858.4	324983.0	95875.4	0.0	0.00
25yrs	87.93	420858.4	324992.1	95866.3	0.0	0.00
25yrs	88.01	420858.4	325001.1	95857.3	0.0	0.00
25yrs	88.09	420858.4	325010.0	95848.4	0.0	0.00
25yrs	88.18	420858.4	325018.9	95839.5	0.0	0.00
25yrs	88.26	420858.4	325027.7	95830.7	0.0	0.00
25yrs	88.34	420858.4	325036.4	95822.1	0.0	0.00
25yrs	88.43	420858.4	325045.0	95813.4	0.0	0.00
25yrs	88.51	420858.4	325053.5	95804.9	0.0	0.00
25yrs	88.59	420858.4	325062.0	95796.4	0.0	0.00
25yrs	88.68	420858.4	325070.4	95788.0	0.0	0.00
25yrs	88.76	420858.4	325078.7	95779.7	0.0	0.00
25yrs	88.84	420858.4	325086.9	95771.5	0.0	0.00
25yrs	88.93	420858.4	325095.1	95763.3	0.0	0.00
25yrs	89.01	420858.4	325103.2	95755.2	0.0	0.00
25yrs	89.09	420858.4	325111.2	95747.2	0.0	0.00
25yrs	89.18	420858.4	325119.1	95739.3	0.0	0.00
25yrs	89.26	420858.4	325127.0	95731.4	0.0	0.00
25yrs	89.34	420858.4	325134.8	95723.6	0.0	0.00
25yrs	89.43	420858.4	325142.6	95715.8	0.0	0.00
25yrs	89.51	420858.4	325150.3	95708.1	0.0	0.00
25yrs	89.59	420858.4	325157.9	95700.5	0.0	0.00
25yrs	89.68	420858.4	325165.4	95693.0	0.0	0.00
25yrs	89.76	420858.4	325172.9	95685.5	0.0	0.00
25yrs	89.84	420858.4	325180.3	95678.1	0.0	0.00
25yrs	89.93	420858.4	325187.7	95670.7	0.0	0.00
25yrs	90.01	420858.4	325195.0	95663.4	0.0	0.00
25yrs	90.09	420858.4	325202.2	95656.2	0.0	0.00
25yrs	90.18	420858.4	325209.4	95649.0	0.0	0.00
25yrs	90.26	420858.4	325216.5	95641.9	0.0	0.00
25yrs	90.34	420858.4	325223.6	95634.8	0.0	0.00
25yrs	90.43	420858.4	325230.5	95627.9	0.0	0.00
25yrs	90.51	420858.4	325237.5	95620.9	0.0	0.00
25yrs	90.59	420858.4	325244.4	95614.0	0.0	0.00
25yrs	90.68	420858.4	325251.2	95607.2	0.0	0.00
25yrs	90.76	420858.4	325257.9	95600.5	0.0	0.00
25yrs	90.84	420858.4	325264.6	95593.8	0.0	0.00
25yrs	90.93	420858.4	325271.3	95587.1	0.0	0.00
25yrs	91.01	420858.4	325277.9	95580.5	0.0	0.00
25yrs	91.09	420858.4	325284.4	95574.0	0.0	0.00
25yrs	91.18	420858.4	325290.9	95567.5	0.0	0.00
25yrs	91.26	420858.4	325297.4	95561.0	0.0	0.00
25yrs	91.34	420858.4	325303.7	95554.7	0.0	0.00
25yrs	91.43	420858.4	325310.1	95548.3	0.0	0.00
25yrs	91.51	420858.4	325316.3	95542.1	0.0	0.00
25yrs	91.59	420858.4	325322.6	95535.8	0.0	0.00
25yrs	91.68	420858.4	325328.8	95529.6	0.0	0.00
25yrs	91.76	420858.4	325334.9	95523.5	0.0	0.00
25yrs	91.84	420858.4	325341.0	95517.4	0.0	0.00
25yrs	91.93	420858.4	325347.0	95511.4	0.0	0.00
25yrs	92.01	420858.4	325353.0	95505.4	0.0	0.00

				MASS BALANCE	25 YR	100 YR	
25yrs	92.09	420858.4	325358.9	95499.5	0.0	0.00	
25yrs	92.18	420858.4	325364.8	95493.6	0.0	0.00	
25yrs	92.26	420858.4	325370.7	95487.7	0.0	0.00	
25yrs	92.34	420858.4	325376.5	95482.0	0.0	0.00	
25yrs	92.43	420858.4	325382.2	95476.2	0.0	0.00	
25yrs	92.51	420858.4	325387.9	95470.5	0.0	0.00	
25yrs	92.59	420858.4	325393.6	95464.8	0.0	0.00	
25yrs	92.68	420858.4	325399.2	95459.2	0.0	0.00	
25yrs	92.76	420858.4	325404.8	95453.6	0.0	0.00	
25yrs	92.84	420858.4	325410.3	95448.1	0.0	0.00	
25yrs	92.93	420858.4	325415.8	95442.6	0.0	0.00	
25yrs	93.01	420858.4	325421.2	95437.2	0.0	0.00	
25yrs	93.09	420858.4	325426.6	95431.8	0.0	0.00	
25yrs	93.18	420858.4	325432.0	95426.4	0.0	0.00	
25yrs	93.26	420858.4	325437.3	95421.1	0.0	0.00	
25yrs	93.34	420858.4	325442.6	95415.8	0.0	0.00	
25yrs	93.43	420858.4	325447.8	95410.6	0.0	0.00	
25yrs	93.51	420858.4	325453.0	95405.4	0.0	0.00	
25yrs	93.59	420858.4	325458.2	95400.2	0.0	0.00	
25yrs	93.68	420858.4	325463.3	95395.1	0.0	0.00	
25yrs	93.76	420858.4	325468.4	95390.0	0.0	0.00	
25yrs	93.84	420858.4	325473.5	95385.0	0.0	0.00	
25yrs	93.93	420858.4	325478.5	95379.9	0.0	0.00	
25yrs	94.01	420858.4	325483.4	95375.0	0.0	0.00	
25yrs	94.09	420858.4	325488.4	95370.0	0.0	0.00	
25yrs	94.18	420858.4	325493.3	95365.1	0.0	0.00	
25yrs	94.26	420858.4	325498.1	95360.3	0.0	0.00	
25yrs	94.34	420858.4	325502.9	95355.5	0.0	0.00	
25yrs	94.43	420858.4	325507.7	95350.7	0.0	0.00	
25yrs	94.51	420858.4	325512.5	95345.9	0.0	0.00	
25yrs	94.59	420858.4	325517.2	95341.2	0.0	0.00	
25yrs	94.68	420858.4	325521.9	95336.5	0.0	0.00	
25yrs	94.76	420858.4	325526.5	95331.9	0.0	0.00	
25yrs	94.84	420858.4	325531.1	95327.3	0.0	0.00	
25yrs	94.93	420858.4	325535.7	95322.7	0.0	0.00	
25yrs	95.01	420858.4	325540.3	95318.1	0.0	0.00	
25yrs	95.09	420858.4	325544.8	95313.6	0.0	0.00	
25yrs	95.18	420858.4	325549.3	95309.1	0.0	0.00	
25yrs	95.26	420858.4	325553.7	95304.7	0.0	0.00	
25yrs	95.34	420858.4	325558.1	95300.3	0.0	0.00	
25yrs	95.43	420858.4	325562.5	95295.9	0.0	0.00	
25yrs	95.51	420858.4	325566.9	95291.5	0.0	0.00	
25yrs	95.59	420858.4	325571.2	95287.2	0.0	0.00	
25yrs	95.68	420858.4	325575.5	95282.9	0.0	0.00	
25yrs	95.76	420858.4	325579.8	95278.6	0.0	0.00	
25yrs	95.84	420858.4	325584.0	95274.4	0.0	0.00	
25yrs	95.93	420858.4	325588.2	95270.2	0.0	0.00	
25yrs	96.01	420858.4	325592.4	95266.0	0.0	0.00	
25yrs	96.09	420858.4	325596.5	95261.9	0.0	0.00	
25yrs	96.18	420858.4	325600.6	95257.8	0.0	0.00	
25yrs	96.26	420858.4	325604.7	95253.7	0.0	0.00	
25yrs	96.34	420858.4	325608.8	95249.6	0.0	0.00	
25yrs	96.43	420858.4	325612.8	95245.6	0.0	0.00	
25yrs	96.51	420858.4	325616.8	95241.6	0.0	0.00	
25yrs	96.59	420858.4	325620.8	95237.6	0.0	0.00	
25yrs	96.68	420858.4	325624.7	95233.7	0.0	0.00	
25yrs	96.76	420858.4	325628.6	95229.8	0.0	0.00	
25yrs	96.84	420858.4	325632.5	95225.9	0.0	0.00	
25yrs	96.93	420858.4	325636.4	95222.0	0.0	0.00	
25yrs	97.01	420858.4	325640.2	95218.2	0.0	0.00	
25yrs	97.09	420858.4	325644.0	95214.4	0.0	0.00	
25yrs	97.18	420858.4	325647.8	95210.6	0.0	0.00	
25yrs	97.26	420858.4	325651.6	95206.8	0.0	0.00	
25yrs	97.34	420858.4	325655.3	95203.1	0.0	0.00	
25yrs	97.43	420858.4	325659.0	95199.4	0.0	0.00	
25yrs	97.51	420858.4	325662.7	95195.7	0.0	0.00	

				MASS	BALANCE	25 YR	100 YR	
25yrs	97.59	420858.4	325666.4	95192.0	0.0	0.00		
25yrs	97.68	420858.4	325670.0	95188.4	0.0	0.00		
25yrs	97.76	420858.4	325673.6	95184.8	0.0	0.00		
25yrs	97.84	420858.4	325677.2	95181.2	0.0	0.00		
25yrs	97.93	420858.4	325680.8	95177.6	0.0	0.00		
25yrs	98.01	420858.4	325684.3	95174.1	0.0	0.00		
25yrs	98.09	420858.4	325687.8	95170.6	0.0	0.00		
25yrs	98.18	420858.4	325691.3	95167.1	0.0	0.00		
25yrs	98.26	420858.4	325694.8	95163.6	0.0	0.00		
25yrs	98.34	420858.4	325698.2	95160.2	0.0	0.00		
25yrs	98.43	420858.4	325701.6	95156.8	0.0	0.00		
25yrs	98.51	420858.4	325705.0	95153.4	0.0	0.00		
25yrs	98.59	420858.4	325708.4	95150.0	0.0	0.00		
25yrs	98.68	420858.4	325711.8	95146.6	0.0	0.00		
25yrs	98.76	420858.4	325715.1	95143.3	0.0	0.00		
25yrs	98.84	420858.4	325718.4	95140.0	0.0	0.00		
25yrs	98.93	420858.4	325721.7	95136.7	0.0	0.00		
25yrs	99.01	420858.4	325725.0	95133.4	0.0	0.00		
25yrs	99.09	420858.4	325728.2	95130.2	0.0	0.00		
25yrs	99.18	420858.4	325731.4	95127.0	0.0	0.00		
25yrs	99.26	420858.4	325734.6	95123.8	0.0	0.00		
25yrs	99.34	420858.4	325737.8	95120.6	0.0	0.00		
25yrs	99.43	420858.4	325741.0	95117.4	0.0	0.00		
25yrs	99.51	420858.4	325744.1	95114.3	0.0	0.00		
25yrs	99.59	420858.4	325747.3	95111.1	0.0	0.00		
25yrs	99.68	420858.4	325750.4	95108.0	0.0	0.00		
25yrs	99.76	420858.4	325753.4	95105.0	0.0	0.00		
25yrs	99.84	420858.4	325756.5	95101.9	0.0	0.00		
25yrs	99.93	420858.4	325759.6	95098.8	0.0	0.00		
25yrs	100.00	420858.4	325762.0	95096.4	0.0	0.00		



**10.5.2 Application for Consumptive Uses of Water**

Ground water withdrawals associated with operation of Unit 4 will be required for process/service water and emergency cooling water use. One new process service water well and four new emergency cooling water wells are requested to provide this water. These withdrawals and use will be reviewed through completion and review of SFWMD Application Form 0645-W01. This application is included herein.

# SOUTH FLORIDA WATER MANAGEMENT DISTRICT

## WATER USE PERMIT APPLICATION FORM (RC-1A, RC-1W, RC-1G) For all water uses EXCEPT dewatering for mining or construction

General and Specific Authority, Chapter 373, State Statutes, 40E-20 Florida Administrative Code  
and Basis of Review, Vol III, South Florida Water Management District.

### A. GENERAL INFORMATION

1. *Name of Owner, Responsible Entity, etc.*

Name: FMPA/KUA

Project Name: Cane Island Power Park - Unit 4

Address:

City: County: State: FL ZIP:

Phone: Cell Phone: Fax: E-mail:

2. *Proof of Ownership is required, in the form of a Deed, tax certificate, lease, or Articles of Incorporation*

ATTACH Proof of Ownership to this Form **See Attachment A**

3. *Name of Engineer, Contractor or Other.*

Name: Ken Weiss, P.E.

Firm: Black & Veatch

Address: 10751 Deerwood Park Blvd, Suite 130

City: Jacksonville County: Duval State: FL ZIP: 32256

Phone: 904-997-7117 Cell Phone: Fax: 904-641-7860

4. *If the above person(s) filling out this form will sign this Application on behalf of the owner, a letter of authorization signed by the owner, stating they are acting on behalf of the owner, must be submitted. **Not Applicable***

ATTACH Letter of Authorization to this form

5. *Is this a New Permit*  *Renewal/Modification/Expired*  **Permit No.: PA 98-38**

6. *Amount of water applied for. See Attachment C gallons per day*

7. *Has a Surface Water Management Permit or Environmental Resource Permit from the District been issued for this Project? **SWM / ERP Permit No.: No***  
*or has a Surface Water Management Permit or Environmental Resource Permit from the District been applied for? **SWM / ERP Application No.: No***

8. *A fee of \$3650 is required to process this Application. See Chapter 40E-1.607, F.A.C. for fee schedule.*

ATTACH Application fee to this Form **Not Applicable**

9. *Please Identify any District Staff member you have discussed this Application with: **None***

### B. LOCATION OF THE PROPERTY

1. *General Location of the Property/Project*

County: Osceola City: Intercession City

Sections 29&32

Township (s) 25 Range (s) 28 (or Land Grant Name)

2. *It will be necessary to submit two drawings to be used as exhibits for this Permit.*

a. **Location Map**, (8¹/₂ x 11), showing location of the project in relation to major roads.

b. **Site Map**, (8¹/₂ x 11) locating project in relation to adjacent streets, canals and water bodies, and showing property boundaries, buildings, on-site lakes/ponds and the location of pumps and wells.

ATTACH Location Map and Site Map to this Form **See Attachment D and E**

[sfwmd.gov](http://sfwmd.gov)

C. WATER SOURCE and WATER USE TYPE

Please indicate the source of water.

See Attachment F

Groundwater from an underground aquifer:

Aquifer Name (if known): Floridan

ATTACH  
Table A for Wells  
to this form

Surface water: Not Applicable

Onsite Lake/Pond  Onsite Ditch/Canal

Adjacent Lake/Open Water, Name:

Adjacent Canal, Name:

ATTACH  
Table B for Pumps  
to this Form

Type of water use (Please check at least one)

Agricultural Irrigation

Landscape Irrigation

Golf Course Irrigation

Public Water Supply

Industrial/Commercial

Aquaculture

Aquifer Storage/Recovery (ASR)  Other (Please describe):

D. IRRIGATION WATER USE Not Applicable

1. Is this permit for irrigation?  Landscape  Golf  Agriculture - Crop type:  
What is the Total Project Acreage: Irrigated Acreage:

ATTACH Table D for Crop Information to this Form

2. Applications for golf or landscape irrigation in excess of 500,000 gallons per day require a water conservation plan as explained in Section 2.3.1 of the Basis of Review.

ATTACH, if needed, a water conservation plan for golf or landscape irrigation

E. PUBLIC WATER SUPPLY WATER USE Not Applicable

1. Is this permit for Public Water Supply?

Maximum gallons per month needed: Average gallons per day:

Permit Duration requested: Years

2. A map of the service area for the utility, (8 1/2 x 11) showing boundaries of service, water treatment plants, storage facilities, the location of all production and monitor wells is required.

ATTACH Location Map and Service Area Map to this Form

3. For public water supplies using more than 100,000 gallons per day, applicants must meet criteria and identify the demand for each use/component including number, type and size of service connections; past pumpage, projected population data, future expected pumpage, water treatment method and losses and other specific data as identified in Section 2.1 and 2.6 of the Basis of Review. Tables F (past water use), Table G (projected water use) and Table I (treatment method and losses) must be submitted.

ATTACH water supply demand computations and Tables F, G and I to this Form

4. For public water supplies using more than 100,000 gallons per day, other necessary information requirements may include if applicable: explanations of per-capita greater than 200 GPD, water supply system interconnections, water received from or distributed to other entities, and aquifer storage and recovery. Please submit Tables H (for per capita use greater than 200 GPD), Table J (ASR), Table K (interconnections), and Table E (water received from or distributed to other entities) if necessary.

ATTACH, if needed, Tables H, J, K and E to this Form

5. Applications for public water supply in excess of 500,000 gallons per day require a water conservation plan as explained in Section 2.6.1 of the Basis of Review.

ATTACH, if needed, a water conservation plan for public water supply to this Form

**F. INDUSTRIAL, COMMERCIAL AND OTHER WATER USES**

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1. *Is this permit for Industrial/Commercial?* **Nature of the Business:** Electric Generation

**Maximum gallons per month needed:** See Attachment C

**Average gallons per day needed:** 134,000 gpd

2. *Industrial/commercial applicants using more than 100,000 gallons per day must provide information on the water balance for the operation, including all sources of water and losses of water for processes, personal/sanitary needs, treatment losses and unaccounted uses. A flow chart for the water balance should be submitted.*

ATTACH water balance and flow chart to this Form **See Attachment B**

3. *For uses other than Irrigation, Public Water Supply, Industrial or Commercial, but excluding mining/dewatering (Air conditioning, pool heating, mitigation, etc.):* **Not applicable**

**Describe Water Needs:**

**Maximum gallons per month needed:**

**Average gallons per day needed:**

ATTACH a written explanation and calculations used to determine the amount of water you need

4. *Applications for industrial, commercial and other water uses in excess of 500,000 gallons per day require a water conservation plan as explained in Section 2.4.1 of the Basis of Review.*

ATTACH, if needed, a water conservation plan for industrial, commercial or other water supply **See Attachment B**

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**G. ADDITIONAL REQUIREMENTS IF YOU ARE USING MORE THAN 100,000 GALLONS PER DAY**

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1. *The withdrawal of water must not cause harm to sensitive areas, wetlands or saline water intrusion. It may be necessary to supply modeling to address impacts of the water use.*

ATTACH, if needed, modeling or documentation on environmental impacts to this Form **See Attachment B**

2. *All applicants withdrawing water in proximity to saline surface or ground water, or withdrawing saline water that may come in contact with fresh surface or ground water, are required to develop a saline water monitoring program as described in Section 4.2 of the Basis of Review.*

ATTACH, if needed, a saline water monitoring program **Not Applicable**

3. *Except for Public Water Supply, reclaimed water must be used when readily available, unless it is not environmentally, technically or economically feasible to do so, as explained in Section 3.2.3 of the Basis of Review.*

ATTACH, if needed, an evaluation of the feasibility of using reclaimed water and a letter from your local utility regarding their availability of reclaimed water to this Form **See Attachment C**

4. *An aerial photograph of the entire project site is required.*

ATTACH an aerial photograph **See Attachment G**

5. *Section 4.1 of the Basis of Review requires all wells and pumps be equipped with a calibrated meter or other acceptable water use accounting method.*

ATTACH calibration reports of the water use accounting method for each well and pump **See Attachment H**

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**H. ATTACHMENTS**

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Please make sure you have included the following attachments with your Application:

- Proof of Ownership
- Letter of Authorization (where required)
- Location Map
- Site Map
- Table A for Wells
- Table B for pumps
- Application Fee

For **Irrigation water use**, also make sure you have included the following attachments:

- Table D for crop information
- Water conservation plan (if needed)

For **Public Water Supply water use of more than 100,000 gallons per day**, also make sure you have included the following attachments:

- Table F for past water use
- Table G for projected water use
- Table H for projected water use greater than 200 gpcd (if needed)
- Water conservation plan (if needed)
- Service Area Map
- Table I for treatment method and losses
- Table J for ASR well operations (if needed)
- Table K for interconnections (if needed)
- Table E for water received from or delivered to other entities (if needed)

For **Industrial water use of more than 100,000 gallons per day**, also make sure you have included the following attachments:

- Water balance and flow chart
- Water conservation plan (if needed)

For **Commercial or other water use that is not irrigation, public water supply, or industrial**, also make sure you have included the following attachments:

- Explanation of how you determined the amount of water you need
- Water conservation plan (if needed)

Attachments for additional special requirements

- Saline Water Monitoring Plan
- Feasibility evaluation of reclaimed water use
- Aerial Photograph
- Letter from reclaimed water utility
- Modeling or documentation of impacts of water use
- Reports of calibration of water use accounting method for wells and pumps

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**I. CERTIFICATION**

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I hereby certify that, to the best of my knowledge, the total project acreage listed above is owned or controlled by me and encompasses the project referenced in this permit application. In addition, I agree to provide entry to the project site for South Florida Water Management inspectors with proper identification or documents as required by law for the purpose of making analyses of the site. Further, I agree to provide entry to the project site for such inspectors to monitor permitted work if a permit is granted. If I do not use the water for which this permit is issued within two years the permit may be revoked. If this application is not complete within 240 days, it may be denied pursuant to Rule 40E-1.603, Florida Administrative Code.

Print: Name of Owner or Authorized Agent                      Title

_____  
Signature:

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## **Additional Information in Support of Basis of Review for Cane Island Power Park Unit 4 Industrial Water Use Request**

To receive an individual water consumptive use permit, the applicants (Florida Municipal Power Agency [FMPA] and Kissimmee Utility Authority [KUA]) must demonstrate that the proposed water use is a reasonable-beneficial use of water, that the use will not interfere with any presently existing legal use, and is consistent with the public interest (Section 373.223, F.S.). In order to demonstrate that a water use is reasonable-beneficial, KUA must show a "need" for the water.

The rules of the South Florida Water Management District, *Basis of Review for Water Use Permit Applications within the South Florida Water Management District*, amended February 13, 2008, write that the demonstration of "need" requires consideration of 1) legal control over the project site and 2) compatibility of the proposed water use with the land use at the project site.

KUA requests groundwater withdrawals from the Upper Floridan Aquifer to support operations at the Cane Island Power Park (CIPP) power plant, Unit 4. KUA believes that the following discussion demonstrates that the groundwater quantity requested is needed, and is a reasonable-beneficial use of groundwater

### **Demonstration of Need**

#### **Legal Control Over Project Site**

See Attachment A, Warranty Deed.

#### **Legal Control Over Withdrawal Facilities**

There are six existing wells at the CIPP that currently provide water to Units 1 through 3. KUA proposes five new groundwater wells to the Upper Floridan Aquifer to provide groundwater for use with the addition of Unit 4. Withdrawal facilities for Unit 4 will consist of a metered groundwater pump at each of the five proposed groundwater wells. All withdrawal facilities and groundwater wells are located on the CIPP property. Except for one well and its associated well house, the withdrawal facilities and the groundwater wells will be located within the fenced confines of the CIPP property. The withdrawal facilities at each groundwater well will be secured with locks and will only be accessible by KUA or FMPA employees working at the CIPP. The withdrawal facilities and groundwater will be utilized solely by CIPP for the useful life of the CIPP. KUA and FMPA will prohibit the use of the withdrawal facilities by any other entity unless legally transferred.

#### **Compatible Land Use**

The CIPP occupies 1,027 acres of land in Section 29, as well as a portion of Section 32, Township 25 South, Range 28 East, in Osceola County. Unit 4 will be a new unit located

to the north of Unit 3. Approximately 164 acres have been permitted for power development and support facilities at the CIPP.

The CIPP was zoned for agricultural use prior to purchase by KUA. The entire property was approved for industrial use in 1993 by the Osceola Board of Commissioners, and KUA was issued a 30 year Conditional Use Permit (CU/SDP 92-86) authorizing power plant construction and operation on the property. The permit expires in 2023, however, use of the property in an industrial capacity is consistent with the current elements of the Osceola County Comprehensive Plan.

Osceola County future land use maps indicate no change in the anticipated zoning pattern for the CIPP site or the adjacent land area in the future, confirming that the CIPP site will continue to be compatible with the predominant land use in the immediate project vicinity. Because the land surrounding the site is not developed, the construction of Unit 4 will not create any negative visual impacts or disturb any residential areas

**Demonstration of Demand**

**Groundwater Allocation Request**

Listed below are the quantities of groundwater withdrawals authorized for CIPP Units 1 through 3. Also listed are the quantities of groundwater withdrawals required to support normal operation and backup cooling tower makeup operation of CIPP Unit 4. The two listings are totaled; revised withdrawal authorization numbers requested are presented.

<b>Operating Conditions as Noted Below</b>	<b>Number of Days per Year</b>	<b>Unit 1 through 3 Daily Flow, MGD</b>	<b>Unit 4 Daily Flow, MGD</b>	<b>New Total Daily Flow, MGD</b>
<b>Process Flows</b>				
1	323.25	0.22	0.134	0.354
2	12	0.55	0.134	0.684
3	30	0.78	0.134	0.914
<b>Emergency Cooling Flows</b>				
4	30	2.865	2.786	5.651

Operating Conditions:

1. Operation of all units on natural gas.
2. Operation of Units 1 and 2 on fuel oil and Units 3 and 4 on natural gas.
3. Operation of Units 1, 2 and 3 on fuel oil and Unit 4 on natural gas.

The revised total annual water withdrawal requested is calculated as follows (note maximum annual withdrawal will occur in a leap year):

$$\text{Total maximum annual withdrawal} = 0.354 \times 324 + 0.684 \times 12 + 0.914 \times 30 + 5.651 \times 30 = \underline{\underline{319.8 \text{ MGY}}}$$

## CIPP and Industrial Groundwater Use

In a demonstration to use Florida groundwater resources efficiently and reduce the quantity of groundwater withdrawals requested for the CIPP Unit 4, KUA proposes to extend the current use of the lowest water quality possible (treated wastewater effluent) as the primary source for the major water use at the site, cooling tower makeup water. The existing Units 2 and 3 (Unit 1 does not have an evaporative cooling tower) are currently taking wastewater effluent from the Tohopekaliga (Toho) Water Authority effluent pipeline. This use will be extended to include the new Unit 4.

Many small scale independent water treatment systems serve a small network of customers within the impact area. If a customer does not have access to a small water treatment network, potable water service is typically provided by either a local municipality (e.g.: Kissimmee, Orlando, St. Cloud) or Florida Water Services, Inc. The Toho Water Authority is the local water provider serving the corporate limits of Kissimmee as well as parts of central and Northwest Osceola County. The Toho Authority produces, treats, and distributes approximately 22.5 million gallons per day of potable water and treats approximately 12 million gallons of wastewater per day for its customers. It currently serves 45,000 water, 40,000 wastewater and 7,000 reclaimed water customers. Toho Water Authority maintains 500 miles of water mains, 466 miles of sewer mains as well as 84 miles of reclaimed water mains and has a staff of 135 employees.

The Toho Water Authority owns and operates eleven water and six wastewater plants. It has distributed public access reuse water since 1992 to selected parts of the service area. As indicated on the Water Mass Balance for Units 1- 4 (Attachment B-2 and B-3), re-use water use for Units 1 through 4 totals approximately 5.9 million gallons per day (mgd). The Unit 4 cooling tower makeup water source will primarily be reuse water piped in and provided by the Toho Water Authority, as for Units 2 and 3 (Unit 1 does not have an evaporative cooling tower). However, should the Toho Water Authority supply be unavailable or inadequate, four new onsite wells are being proposed to provide backup cooling tower makeup water supply. As shown on Water Mass Balance for Unit 4 only (Attachment B-1), a maximum of approximately 2.8 mgd of cooling tower makeup is expected to be required for Unit 4.

Potable and process water (service water, evaporative cooler makeup water, demineralization system supply water, and fire protection water for Unit 4 will be supplied from the existing CIPP service water system which will be upgraded. This system currently provides chlorinated well water from two existing onsite wells that are required to meet the Units 1 through 3 potable and process water demand. The process and potable water system demand for Unit 4 will be approximately 134,000 gpd when firing natural gas. Unit 4 will not be fired on fuel oil. A new well will be provided to supplement the existing two wells, and the chlorination system capacity will be increased as required to support the addition of Unit 4 and the total process and potable water needs of Units 1 through 4.



Additional process water-related equipment and facilities will be installed with Unit 4. Fire protection water and service water will be stored onsite in two new fire water/service water storage tanks. The new fire protection water system will interconnect with the existing site fire protection system, and will include two new fire water storage tanks to provide two independent dedicated fire water supply sources, two fire water pumps, a hydrant system, dry-pipe sprinkler or foam system for the steam turbine generator lube oil piping, and other fire protection systems in accordance with National Fire Protection Association (NFPA) recommendations. The two new combined service water and fire water storage tanks will each have a capacity of 500,000 gallons and a reserve capacity of 300,000 gallons dedicated to fire water. The new fire water pumps will each be capable of supplying 2,000 to 2,500 gallons per minute (gpm) of water to the systems. Demineralized water will be provided from the existing water treatment system for steam cycle makeup. A new demineralized water tank will be installed.

Re-use water from the Toho Water Authority will normally be the source of cooling tower makeup water for Unit 4. Groundwater from four proposed wells is being requested for use as a source of temporary cooling tower makeup when the Toho Water Authority effluent pipeline is offline and when Toho Water Authority is unable to supply adequate quantities of treated effluent. The new wells will be sized to provide the normal required water flow for the cooling tower makeup for Unit 4 at full load conditions. Groundwater to serve as a backup makeup water source is being requested for up to 30 days per year, at a rate of 2.786 MGD to allow continued operation of Unit 4 if there are disruptions in the water supply from the sewage treatment plant, such as water quality upsets or outages in the transfer pump and piping system. Although these latter scenarios are highly unlikely, if they should occur, any groundwater withdrawals are required to allow continued operation of Unit 4. Groundwater modeling is discussed in Section 5.3.2 of the Site Certification Application. The anticipated groundwater quality is identified in Table 1.

Constituent	Reuse Water*	Well Water**
Calcium, mg/L as CaCO ₃	115	68
Magnesium, mg/L as CaCO ₃	43	29
Sodium, mg/L as CaCO ₃	156	6
Potassium, mg/L as CaCO ₃	22	1
Alkalinity, mg/L as CaCO ₃	131	70
Sulfate, mg/L as CaCO ₃	35	6
Chloride, mg/L as CaCO ₃	116	10
Silica, mg/L as SiO ₂	21	14
Total dissolved solids, mg/L	417	119

* Based on samples taking of the present reuse water inflow to CIPP during June 2007.  
 ** Based on data from existing Floridan Aquifer wells 1 and 2 onsite.

### **Water Conservation Plans**

KUA will prepare a Water Conservation Plan to support the water use request post-site certification and prior to Unit 4 operation.

### **Demand Components**

For CIPP Unit 4 individually, and Units 1, 2 3 and 4 together, the water mass balance diagrams (Attachment B-1, and Attachments B-2 and B-3, respectively) depicting the natural gas case and fuel oil case that results in maximum water consumption are discussed in Section 3 of the *Site Certification Application* for the CIPP. The water mass balances represent operation at 100 percent load at average ambient conditions and indicate the water source, system use, flow rates, and wastewater streams.

## **Water Resource Evaluations**

### **Reclaimed Water Reuse Criteria**

As previously discussed, the treated sewage effluent (reclaimed water) will be used for cooling tower makeup water. The reclaimed water will be provided by the Toho Water Authority Effluent Pipeline

The area in which CIPP is located has not been designated a Critical Water Supply Problem Area pursuant to Chapter 40E-23. The SFWMD rules require that when reclaimed water is readily available it must be used in place of higher quality water sources, unless it is demonstrated by the applicant that its use is either not environmentally, economically, or technically feasible. In determining whether reclaimed water is readily available, the SFWMD considers the following factors:

**A. Whether a suitable source of reclaimed water exists.**

A suitable source of reclaimed water exists for use as cooling tower makeup. The source is not suitable for potable water and process water without significant additional treatment.

**B. Whether the source is offered to or controlled by the KUA.**

The Toho Water Authority and KUA have an agreement regarding the delivery, use, and return of reclaimed wastewater for use as cooling tower makeup.

**C. Whether the Applicant is capable of accessing the source through distribution lines.**

The Toho Water Authority's reclaimed water supply pipeline is accessible on the CIPP project site.

### **Reclaimed Water Reuse Requirements**

The South Florida Water Management District, *Basis of Review for Water Use Permit Applications within the South Florida Water Management District*, amended February 13, 2008, embraces the use of reclaimed water provided by domestic wastewater

treatment plants as environmentally acceptable and without threat to public health and safety. A significant portion (approximately 95%) of KUA's water use for Unit 4 will be supplied using reclaimed water.

**Mandatory Reclaimed Water Zones:** The CIPP is located outside of the mandatory reclaimed water zone.

**Environmental Feasibility:** The use of reclaimed water is environmentally feasible for the CIPP Unit 4. Secondary-level treated reclaimed water from the Toho Water Authority will be used to supply cooling tower makeup for the CIPP Unit 4. Estimated water quality of the treated effluent is provided in Table I. The treated effluent will meet all of the requirements of Chapter 62-610, Part III, F.A.C.

**Technical Feasibility:** Maximum water demand for cooling tower makeup of the CIPP Unit 4 under full load and average annual conditions will be approximately 2,786,000 gpd. Estimated reclaimed wastewater flow from Toho Water Authority of 3.1 mgd is available for use during maximum load and worst case ambient conditions. Therefore adequate reuse water supplies will be available for the cooling water needs for CIPP Unit 4. It is not economically feasible to treat the reuse water for the minimal higher water quality requirements.

**Economic Feasibility:** Water reuse is economically feasible with the Toho Water Authority Effluent Pipeline accessible to the CIPP site.

**Unanticipated Loss of Reclaimed Water Supply:** Groundwater is being requested to serve as a backup makeup water source for up to 30 days per year (2.786 mgd) if there are any disruptions in the water supply from the Toho Water Authority or supply is inadequate for short periods of time. This is requested in accordance with Chapter 3.0, Section 3.2.3.3 Unanticipated Loss of Reclaimed Water Supply of the South Florida Water Management District, *Basis of Review for Water Use Permit Applications within the South Florida Water Management District*, amended February 13, 2008.

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OSCEOLA COUNTY BY                     

WARRANTY DEED

This Warranty Deed made this 4th day of October, 1990, between NATIONAL OIL & GAS, INC., an Indiana corporation, as the successor by merger with National Petroleum, Inc. and National Oil Corporation, (the "Grantor"), and KISSIMMEE UTILITY AUTHORITY, a body politic, (the "Grantee"), whose post office address is Post Office Box 423219, Kissimmee, Florida 34742:

WITNESSETH:

That the Grantor, for and in consideration of the sum of ten and 00/100 dollars (\$10.00) and other good and valuable considerations to Grantor in hand paid by the Grantee, the receipt of which is hereby acknowledged, has granted, bargained and sold to the Grantee the following parcel of land situated in Osceola County, Florida, as described on attached Exhibit "A".

Subject to:

- (1) Real estate taxes for the current year and subsequent years.
- (2) Zoning and other prohibitions, rules and regulations imposed by governmental authorities.
- (3) Utility easements, restrictions and reservations described on Exhibit "B"

The Grantor does hereby fully warrant title to the aforesaid parcel of land and will defend same against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, the Grantor has executed this Warranty Deed on the day and year first above written.

Signed, sealed and delivered in the presence of:

Deborah L. Moore  
William Moser

NATIONAL OIL & GAS, INC.  
By: William Moser  
Its President  
(Corporate Seal)

STATE OF INDIANA  
COUNTY OF WELLS

Before me the undersigned authority personally appeared WILLIAM MOSER, President of NATIONAL OIL & GAS, INC., well known to me to be the person named in this instrument and he acknowledged that he executed this instrument for the purposes therein expressed.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 4 day of October, 1990.

William A. Zeiher  
Notary Public

My Commission Expires: 4-18-93

Prepared by: William A. Zeiher, Esq.  
William A. Zeiher, P.A.  
2780 East Oakland Park Boulevard  
Fort Lauderdale, Florida 33306

## Exhibit "A"

Section 29 - The northwest quarter (NW 1/4) of the northwest quarter (NW 1/4) of the northwest quarter (NW 1/4); the east one half (E 1/2) of the northwest quarter (NW 1/4); the southwest quarter (SW 1/4) of the northwest quarter (NW 1/4); the east one half (E 1/2); and the southwest quarter (SW 1/4) all in Section 29, Township 25 South, Range 28 East.

Section 32 - The north one half (N 1/2), lying north of Atlantic Coastline Railroad right-of-way; and the west one half (W 1/2) of the southwest quarter (SW 1/4), lying north of the Atlantic Coast Line Railroad right-of-way, and all of the southeast quarter (SE 1/4), lying north of the Atlantic Coast Line right-of-way, all in Section 32, Township 25 South, Range 28 East.

The north one half (N 1/2) of the northeast one quarter (NE 1/4) of the southwest one quarter (SW 1/4), except the right-of-way of Atlantic Coast Line Railroad in Section 32, Township 25 South, Range 28 East, and less beginning at the southeast corner of north one half (N 1/2) of northeast one quarter (NE 1/4) of the southwest one quarter (SW 1/4) of said Section, run thence west 75.9 feet, thence north 19 10' west 39 feet to the southern boundary of Old State Road No. 2, thence north 63 14' east 96.3 feet, thence south 77.3 feet to the point of beginning, all lying and being in Osceola County, Florida, and except right-of-way of Old State Road No. 2.

OLD  
STATE  
ROAD

Exhibit "B"

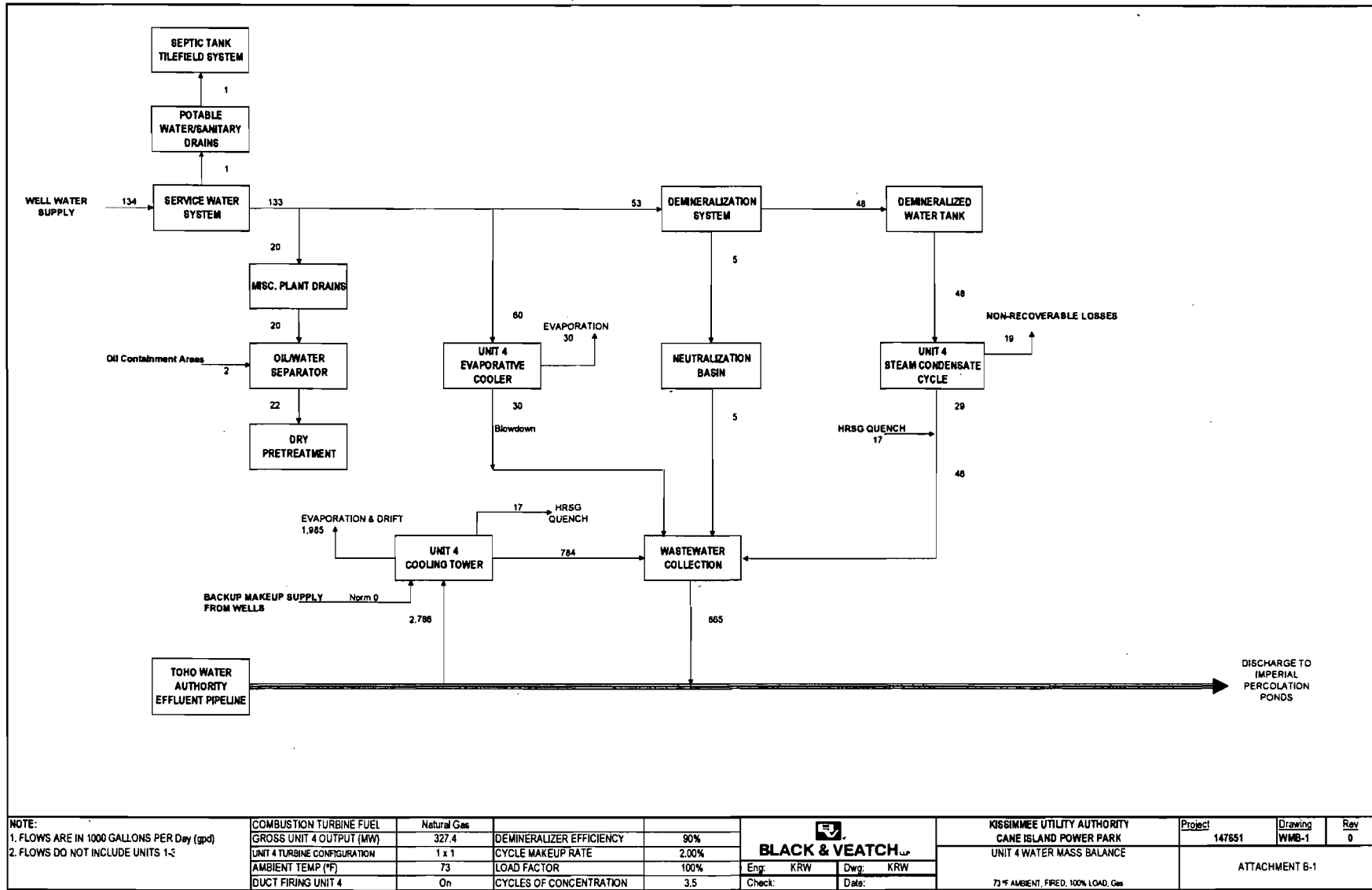
1. Encroachments, overlaps and any other matters which would be disclosed by an accurate survey.
2. Easement Deed recorded in Official Records Book 925, Page 210, of the Public Records of Osceola County, Florida.
4. Reservations to Trustees of the Tufts College, a non-profit Massachusetts corporation, contained in Deed Book 107, Page 564, Public Records of Osceola County, Florida, except those released by Deed from the Trustees of Tufts College to National Petroleum, Inc. dated July 29, 1974, and filed in Official Records Book 320, Page 25, of the Public Records of Broward County, Florida.
5. Reservations of Compass Rose Corporation under instrument recorded November 13, 1967, Official Records Book 168, Page 223, (Affects all property in question in Section 29, except the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4)], except those released by instrument of conveyance from Compass Rose Corporation to National Oil & Gas, Inc., dated March 27, 1986 and recorded in Official Records Book 815, Page 2150, of Osceola County, Florida. The above described property is also subject to the conditions of the General Release and Covenants Not To Sue, dated July 7, 1986, recorded in Official Records Book 815, Page 2152, of the Public Records of Osceola County, Florida.
6. An undivided one-half interest of all gas petroleum and petroleum products in J.W. Cantrell reserved in Warranty Deed recorded March 27, 1958 in Deed Book 146, Page 262, Public Records of Osceola County, Florida. Affects the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of Section 29.
7. Reservations by the Trustees of the Internal Improvement Fund of the State of Florida as contained in that certain Deed No. 132 dated February 10, 1941, and filed April 10, 1941, in Deed Book 104, Page 132, Public Records of Osceola County, Florida. Affects the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) in Section 29.
8. Easement to Florida Public Service Company as evidenced by said instrument dated October 25, 1928 and filed November 19, 1928 in Miscellaneous Book L, Page 620. Affects lands in the South one-half (S 1/2) of Section 32.
9. The warranties in this deed do not warrant access to the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of Section 29, Township 25 South, Range 28 East, nor title to the submerged land under the waters of Reedy Creek which meanders through the property described on Exhibit "A".

(t1inatcom.kis)

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MEL WILLS, JR, CLK CIR CI  
OSCEOLA COUNTY  
BY JB DL

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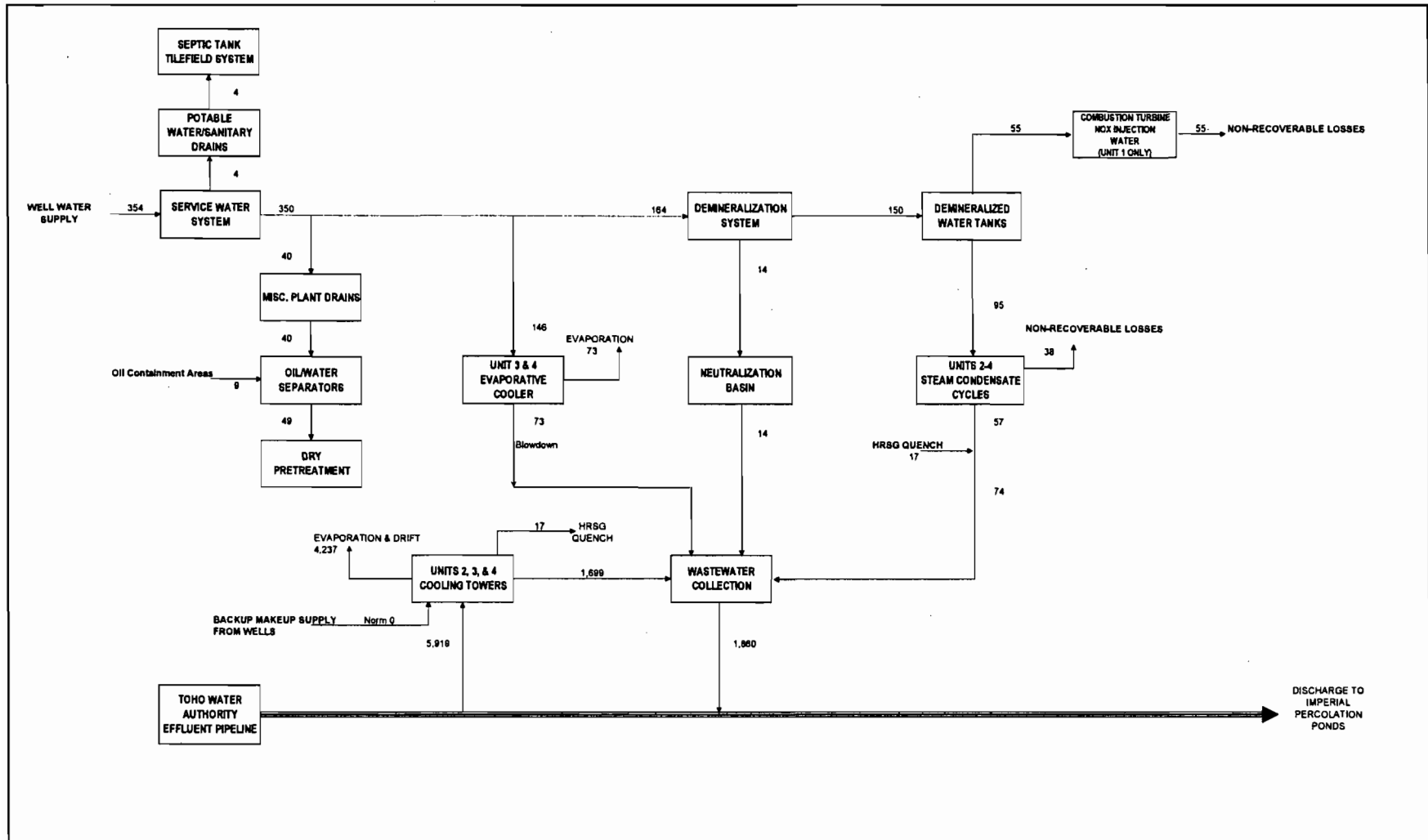
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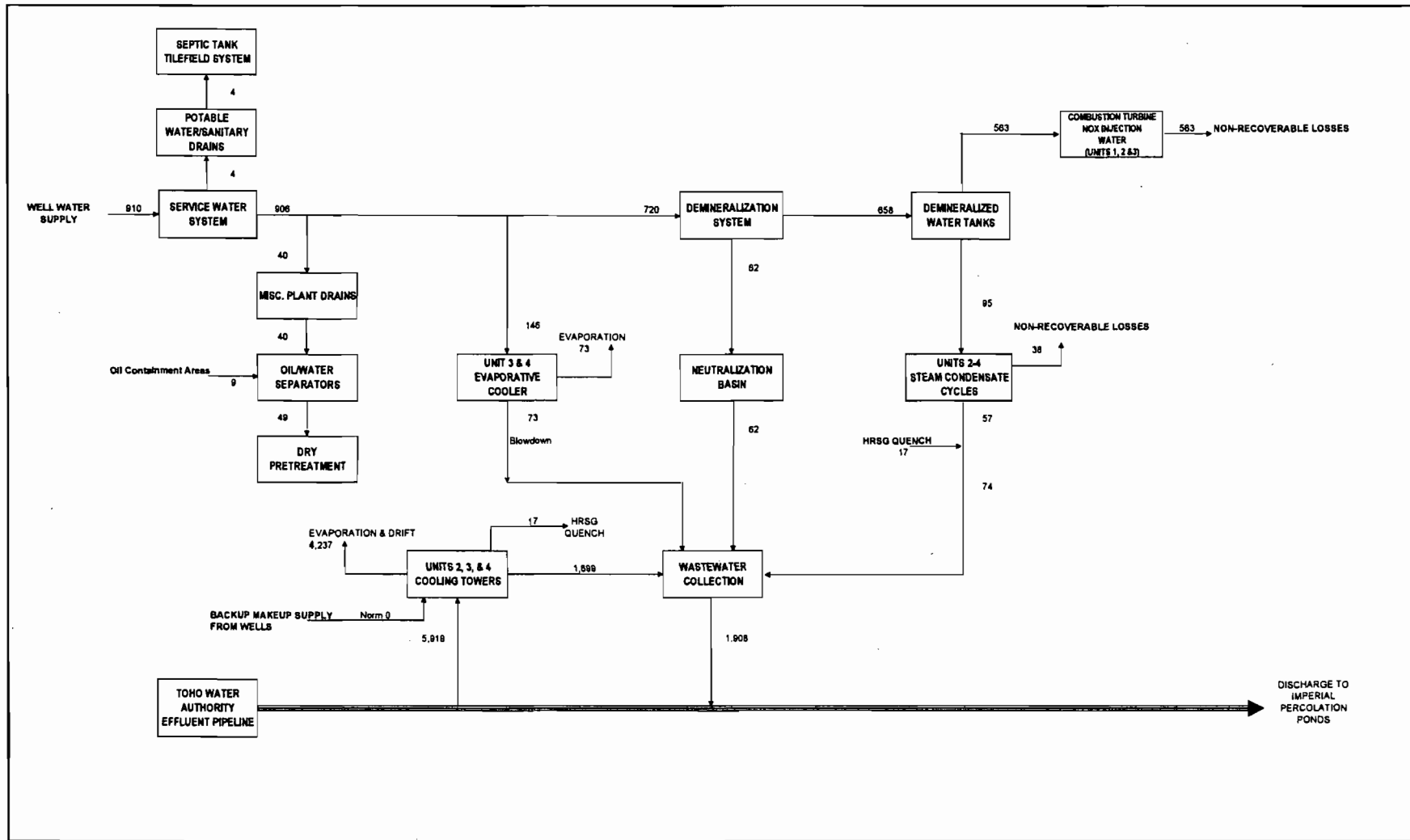
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ATTACHMENT B-1



<b>NOTE:</b> 1. FLOWS ARE IN 1000 GALLONS PER Day (gpd) 2. FLOWS INCLUDE UNITS 1-3 FLOWS FROM FIG 3.5-2 IN THE UNIT 3 SITE CERT APPLICATION EXCEPT CLG TWR CYCLES ADJUSTED TO 3.5	COMBUSTION TURBINE FUEL		Natural Gas			KISSIMMEE UTILITY AUTHORITY CANE ISLAND POWER PARK		Project	Drawing	Rev
	GROSS UNIT 4 OUTPUT (MW)		327.4	DEMINEALIZER EFFICIENCY		90%	UNITS 1 - 4 WATER MASS BALANCE UNIT 4 AT 73 °F AMBIENT, FIRED, 100% LOAD, Gas UNITS 1, 2, & 3 ON GAS	147651	WMB-2	0
	UNIT 4 TURBINE CONFIGURATION		1 x 1	CYCLE MAKEUP RATE		2.00%		ATTACHMENT B-2		
	AMBIENT TEMP (°F)		73	LOAD FACTOR		100%				
	DUCT FIRING UNIT 4		On	CYCLES OF CONCENTRATION		3.5				
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<b>NOTE:</b> 1. FLOWS ARE IN 1000 GALLONS PER Day (gpd) 2. FLOWS INCLUDE UNITS 1-3 FLOWS FROM FIG 3.5-4 IN THE UNIT 3 SITE CERT APPLICATION EXCEPT CLG TWR CYCLES ADJUSTED TO 3.5	COMBUSTION TURBINE FUEL	Units 1-3 Oil, Unit 4 Natural Gas				KISSIMMEE UTILITY AUTHORITY CANE ISLAND POWER PARK UNITS 1 - 4 WATER MASS BALANCE UNIT 4 AT 73 °F AMBIENT, FIRED, 100% LOAD, Gas UNITS 1, 2, & 3 OIL FIRED	Project	147551	Drawing	WMB-3	Rev	0	
	GROSS UNIT 4 OUTPUT (MW)	327.4	DEMINERALIZER EFFICIENCY	90%			Eng:	KRW	Dwg:	KRW	ATTACHMENT B-3		
	UNIT 4 TURBINE CONFIGURATION	1 x 1	CYCLE MAKEUP RATE	2.00%			Check:		Date:	2/13/2007			
	AMBIENT TEMP (°F)	73	LOAD FACTOR	100%									
	DUCT FIRING UNIT 4	On	CYCLES OF CONCENTRATION	3.5									

**ATTACHMENT C**  
**South Florida Water Management District**  
**Water Use Permit Application**  
**Supporting Information**

The following discussions supplement Items F1, F4, G1, G2, G3, and G5 of Page 3 of Form 0645-W01 (08/03), Water Use Permit Application Form (RC-1A, RC-1W, RC-1G).

**F.1. Maximum Gallons Per Month Needed**

The Cane Island Power Park – Unit 4 project will utilize reclaimed water from the Toho Water Authority Effluent Pipeline as the normal source of makeup for the cooling tower. It will use pumped groundwater as emergency makeup water for the cooling tower. For this reason the normal Unit 4 daily average water demand of 134,000 gallons per day (gpd) may occasionally be exceeded when emergency well water makeup (2,786,000 gpd) is required for the cooling tower. In the event of emergency well water use the scenario requested for use in this permit would require a maximum 720 hours of operation in a single month in a year, resulting in 87.6 million gallons per month (30 days) maximum well pumping for one month a year for Unit 4. Presently, Units 1 through 3 are allowed 30 days of pumping at a maximum rate of 3,645,000 gpd (780,000 gpd potable and process water plus 2,865,000 gpd emergency cooling tower makeup) which for a month would be 109.4 million gallons. Thus, the total maximum withdrawal for Units 1 through 4 will be 197 million gallons in a 30 day month.

**F.4. Water Conservation Plan**

The *Water Use Permit Application* will require a *Water Conservation Plan* because the projected maximum groundwater demand for Unit 4 is 2,920,000 gallons per day (gpd), which is above the 500,000 gpd threshold requirement for the completion of a *Water Conservation Plan*. The *Water Conservation Plan* will be prepared during the detailed design phase for this project and will be submitted post-certification and prior to operation.

**G. Groundwater**

The use of groundwater for this project will require a *Water Use Permit Application* to be submitted to the South Florida Water Management District. The *Water Use Permit Application* requires *Table A, Description of Wells* be submitted as supporting documentation regarding the groundwater wells constructed for this project. However, the groundwater well design will be completed during the detailed design phase and will be submitted post-certification and prior to well construction.

Water for fire water, service water, evaporative cooler makeup, demineralizer makeup, and cooling tower makeup initial and emergency operation will be supplied by the Upper Floridan Aquifer. The Upper Floridan Aquifer, as defined for the project, is a confined unit. The base of the confining unit is located at approximately 500 feet to 600 feet below ground surface (bgs).

There are six existing wells on the site of Units 1, 2 and 3. Five new wells (No. 7, 8, 9, 10, and 11) will be installed into the Upper Floridan Aquifer during the construction of Unit 4 of the Cane Island Power Park. Cane Island Power Park withdrawals (including groundwater for cooling tower water) are requested as a 30 day allocation not to exceed 197 million gallons; an annual allocation not to exceed 319.8 million gallons; and a maximum daily allocation not to exceed 6.565 million gallons per day. Excluding cooling system makeup, the normal new Unit 4 daily well water requirement is estimated to be 134,000 gallons per day. The normal total Units 1 through 4 daily well water requirement is estimated to be 354,000 gallons per day when firing all units on natural gas and 914,000 gallons per day when firing Units 1 through 3 on fuel oil and Unit 4 on natural gas. The peak rate of pumping would be 6.565 million gallons per day when in emergency tower water makeup mode. Two of the existing wells (Wells No 1 and 2) with a capacity of 200 gpm each provide potable and process water. A new well with a capacity of 250 gpm will be installed such that the three wells together can provide the maximum usage of 914,000 gpd. The proposed other four new wells for Unit 4 and the existing Wells No. 3 through 6 will be used for emergency cooling only or as maintenance spares for Wells No. 1 and 2.

#### **G.1 Environmental Impacts**

The effects of groundwater withdrawals during the plant operation on drinking water supplies are discussed in Section 5.3.2 of the Site Certification Application. Based on groundwater analytic model predictive results, water withdrawal required for the CIPP operational activities will not cause harm to any sensitive areas, wetlands, or existing legal users. The CIPP groundwater wells are not located near a saline water source; therefore, saline water intrusion is not a concern.

#### **G.2 Saline Monitoring**

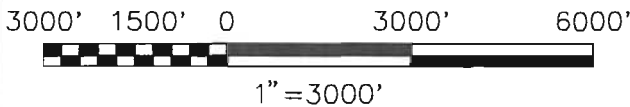
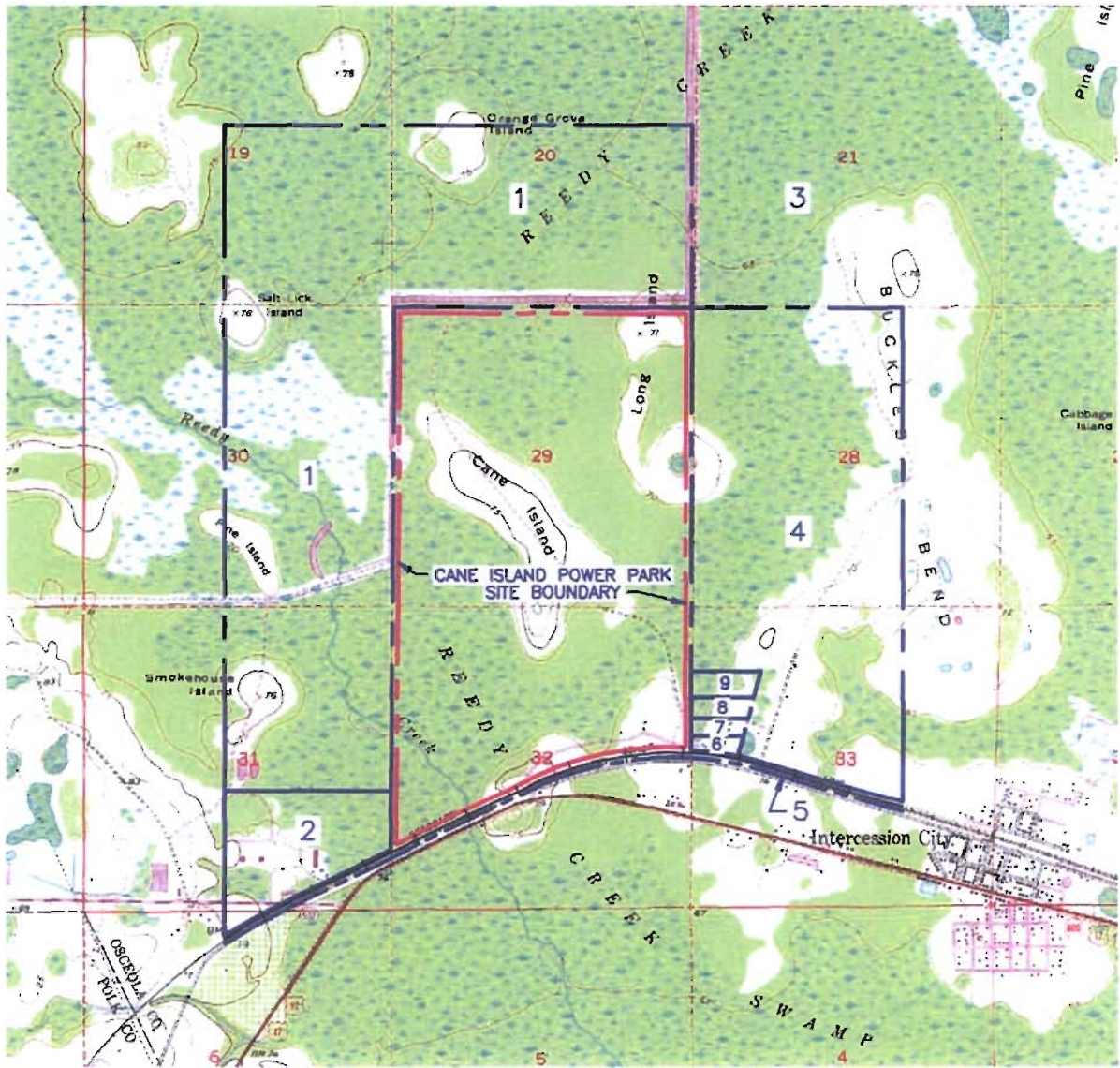
The CIPP groundwater wells are not located near a saline water source; therefore, saline water intrusion is not a concern and no saline water monitoring program is required.

#### **G.3 Reclaimed Water**

The use of reclaimed water from the Toho Water Authority Effluent Pipeline will be increased from the amount currently used for Units 1 through 3 to meet the needs of the entire 4 unit Cane Island Power Park. There is adequate reserve flow in the Effluent Pipeline to meet this extra need. The incremental amount of reclaimed water used by Unit 4 will be 2.786 million gallons per day. The peak amount of reclaimed water used by the four units together will be 5.919 million gallons per day. Should reclaimed water become temporarily unavailable, KUA will notify the SFWMD within 24 hours of commencing temporary withdrawals from the Upper Floridan Aquifer.

#### **G.5 Calibration Reports**

Calibration reports are provided to SFWMD for each existing well at CIPP. A copy of a calibration report from CIPP is included as Attachment H. Similar such reports will be provided for the new wells associated with Unit 4.



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FLORIDA MUNICIPAL POWER AGENCY CANE ISLAND POWER PARK UNIT 4						PROJECT 147651-4STA-S1003	DRAWING NUMBER 147651-4STA-S1003		REV 0		
SITE VICINITY						CODE	FIGURE 2.1-2				
						AREA					

Attachment D



# SOUTH FLORIDA WATER MANAGEMENT DISTRICT

## TABLE A Description of Wells

Well Name or Number	Well 1	Well 2	Well 3	Well 4	Well 5	Well 6
Map Designation						
Existing or Proposed	E	E	E	E	E	E
Date of Proposed Construction						
Date Installed if Existing						
Diameter (in)						
Total Depth (ft)						
Cased Depth (ft)						
Screened Interval (ft)						
Pumped or Flowing	P	P	P	P	P	P
Pump Type (see Instructions)						
Pump Intake Depth (ft bls)						
Pump or Flow Capacity (GPM)						
Working Valve if Artesian (yes, no or not applicable)						
Status (see Instructions)						
Purpose (see Instructions)						
Elevation of the Wellhead (ft NGVD - see Instructions)						
Water Use Accounting Method (see Instructions)						
Date Last Calibrated (ATTACH calibration report)						
Planar Coordinates (if known - see instructions)						
Section / Township / Range	S29 32 /T25 /R28	S29 32 /T25 /R28	S29 32 /T25 /R28	S29 32 /T25 /R28	S29 32 /T25 /R28	S29 32 /T25 /R28

[sfwmd.gov](http://sfwmd.gov)

# SOUTH FLORIDA WATER MANAGEMENT DISTRICT

## TABLE A Description of Wells

Well Name or Number	Well 7	Well 8	Well 9	Well 10	Well 11	
Map Designation						
Existing or Proposed	P	P	P	P	P	
Date of Proposed Construction						
Date Installed if Existing						
Diameter (in)						
Total Depth (ft)						
Cased Depth (ft)						
Screened Interval (ft)						
Pumped or Flowing	P	P	P	P	P	
Pump Type (see Instructions)						
Pump Intake Depth (ft bls)						
Pump or Flow Capacity (GPM)						
Working Valve if Artesian (yes, no or not applicable)						
Status (see Instructions)						
Purpose (see Instructions)						
Elevation of the Wellhead (ft NGVD - see Instructions)						
Water Use Accounting Method (see Instructions)						
Date Last Calibrated (ATTACH calibration report)						
Planar Coordinates (if known - see instructions)						
Section / Township / Range	S29 32 /T25 /R28	S29 32 /T25 /R28	S29 32 /T25 /R28	S29 32 /T25 /R28	S29 32 /T25 /R28	



## Instructions for Completing TABLE A, Description of Wells

Please provide the following information about the well, if known or if applicable:

**Well Name or Number:** *This is your designation of the well; if we contact you about the well, this is how you would refer to it.*

**Map Designation:** *This is how you have labeled the well on the map you submitted. This may be the same as Well Name or Number, but does not necessarily have to be.*

**Existing or Proposed:** *If the well is proposed enter the date of expected operation. If it is an existing well, enter the date it was installed if you know it.*

**Diameter:** *Outside diameter of the well casing.*

**Total Depth:** *Total length in feet between the land surface and the bottom of the well.*

**Cased Depth:** *The length in feet from land surface to the bottom of the well casing.*

**Screened Interval:** *The distance in feet below land surface to the top and bottom of the well screen if the well is so equipped.*

**Pumped or Flowing:** *Does the well produce water as a result of natural artesian flow, or is it pumped?*

**Pump Type:** *This is the type of pump that has been installed for your well. Typical choices are:*

centrifugal	diesel turbine	axial flow	windmill
submersible	jet	suction	other (specify)
electric turbine	hydraulic	portable	

**Pump Intake Depth:** *Location of the pump depth in feet below land surface. The pump may be on the surface or down inside the well.*

**Pump or Flow Capacity:** *The amount of water the pump can produce in gallons per minute (GPM).*

**Working Valve:** *If the well is artesian; does it have a working valve to control the flow?*

**Status:** *Typical choices are:*

- Primary
- Secondary (Ex: a production well that is rotated)
- Standby (Ex: used for freeze protection or emergency)
- Monitor
- Injection (Ex: Air Conditioning, pool heat exchange, etc.; sometimes used only periodically)
- Recharge (Ex: same as above)

**Purpose:** *This is what the water will be used for. Typical choices are:*

Dairy	Irrigation	Air Conditioning	Swimming Pool Heating
Monitor	Aquaculture	Freeze Protection	Irrigation/Lake Recharge
Livestock	Bottled Water	Mining/Dewatering	Aquifer Storage and Recovery
Industrial	Other (specify)	Public Water Supply	Aquifer Remediation and Recovery

**Elevation of the Wellhead:** *This is the elevation of the top of the finished well at the ground surface.*

**Flow Measurement Method:** *Section 4.1, Basis of Review for Water Use Permit Applications, requires all permittees with a **maximum monthly use of greater than 3 million gallons** to equip each existing water withdrawal facility with an authorized operating water use accounting system and a report of its calibration to be sent to the District. Describe how you measure the amount of water produced by the well.*

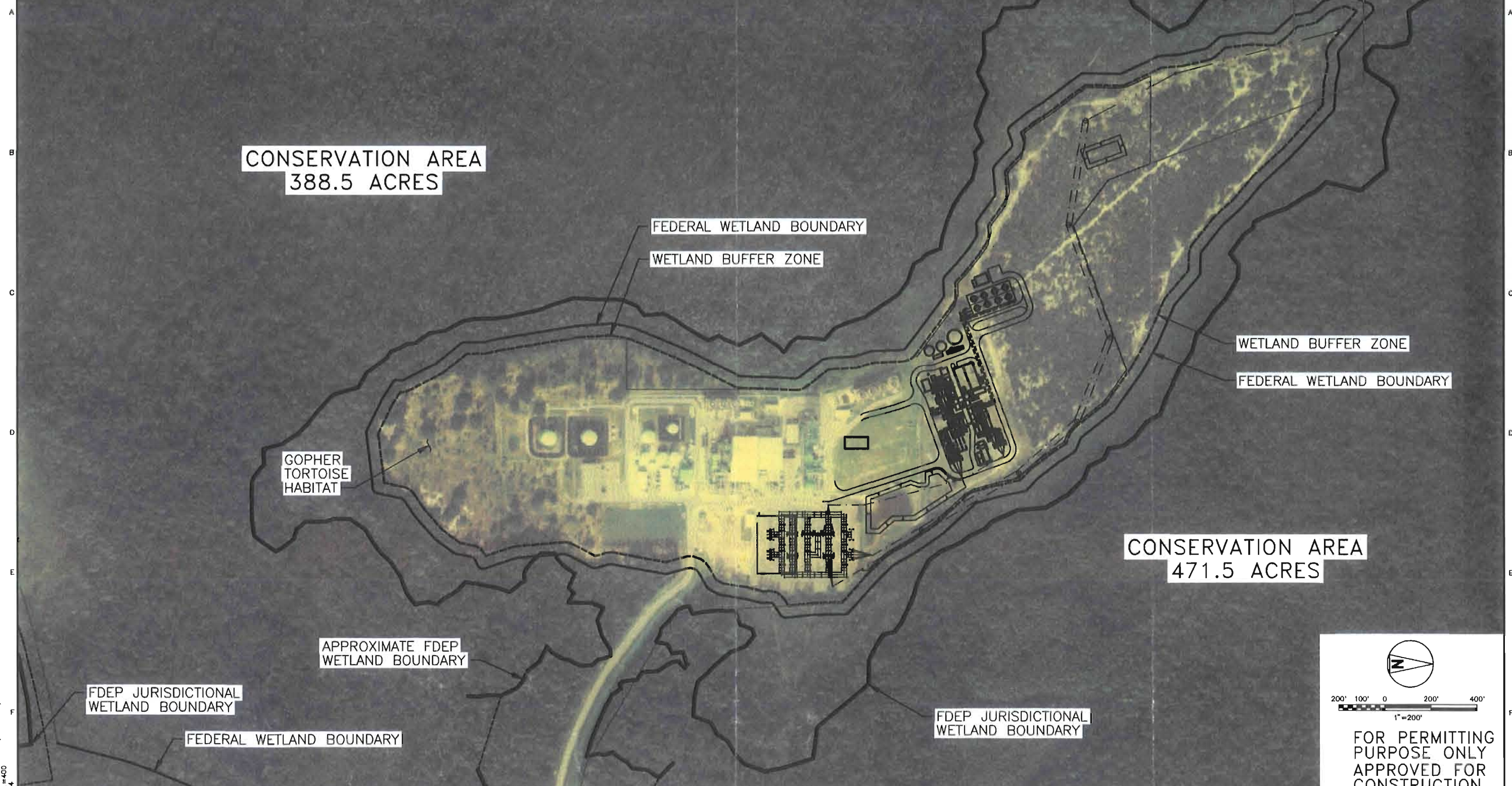
**Date Last Calibrated:** *When was the flow measurement method last calibrated? ATTACH the calibration report.*

**Planar coordinates:** *The Florida State Plane System (Planar Coordinates), should be submitted if you have a land survey which identifies the location of the well in terms of those measurements. If you do not know what these are, it is not necessary to include them.*

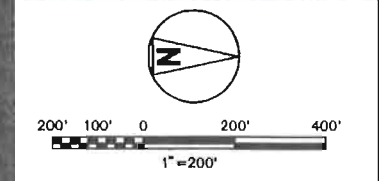
**Section / Township / Range:** *The section, township and range in which the well is located.*



1 2 3 4 5 6 7 8 9 10



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 03/26/06 09:38:34  
 #400



FOR PERMITTING  
 PURPOSE ONLY  
 APPROVED FOR  
 CONSTRUCTION

NO	DATE	REVISIONS AND RECORD OF ISSUE	DRN	DES	CHK	PDE	APP
0	04/01/2008	ISSUED FOR CONSTRUCTION	MRR	JMS	MJS	MJS	SAA

I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF FLORIDA.

SIGNED _____ DATE _____  
 REG. NO. _____

**BLACK & VEATCH**  
 CORPORATION

ENGINEER: JMS DRAWN: MRR  
 CHECKED: MJS DATE: 04/01/2008

FLORIDA MUNICIPAL POWER AGENCY  
 CANE ISLAND POWER PARK UNIT 4

PROJECT AERIAL

PROJECT	DRAWING NUMBER	REV
147651-DS-0112		0
CODE		
AREA		



INSTRUMENT  
CALIBRATION  
REPORT

DESCRIPTION: Well Pump flow Meter 2A  
TAG #: WSCFE 221  
SYSTEM: WSC  
SERIAL #: 15528526  
MODEL #: Badger Ft 4-20  
DATE: 8/27/07  
RANGE: 0-400 GPM

Transmitter AS FOUND	Transmitter AS LEFT
0% <u>0 GPM</u>	0% <u>0 GPM</u>
25% _____	25% _____
50% _____	50% _____
75% _____	75% _____
100% <u>250 GPM</u>	100% <u>250 GPM</u>

Polisonic  
GPM

GPM

CORRECTIVE ACTION: _____

TEST EQUIPMENT USED: Polisonic (Peck) DCT-7088  
TEST EQUIPMENT SERIAL #: 30362  
TEST PROCEDURE USED: _____  
REFERENCE DRAWING #: _____  
WORK ORDER #: _____

TECHNICIAN: *Marvin Diaz*





INSTRUMENT  
CALIBRATION  
REPORT

DESCRIPTION: Well Pump Flow meter 2B  
 TAG #: WSC FT & Q 2  
 SYSTEM: WSC  
 SERIAL #: 15527152  
 MODEL #: Badger Ft 4-20  
 DATE: 2/27/07  
 RANGE: 0-400 GPM MAXIMUM

	<u>AS FOUND</u>	<u>AS LEFT</u>	<u>Polisonic</u>
<u>Pump 2B</u> <u>OFF</u> →	<u>.32 GPM</u>	<u>.32 GPM</u>	<u>0 GPM</u>
<u>ON</u>	<u>245 GPM</u>	<u>245 GPM</u>	<u>250 GPM</u>

CORRECTIVE ACTION: No change Close enough.

TEST EQUIPMENT USED: Polisonic (Peak) DCT-7088  
 TEST EQUIPMENT SERIAL #: 30363  
 TEST PROCEDURE USED: _____  
 REFERENCE DRAWING #: _____  
 WORK ORDER #: _____

TECHNICIAN: David King

### **10.5.3 Short-Term Dewatering Permit Application**

Dewatering of ground water is considered a consumptive use of water and requires authorization from SFWMD. Dewatering will be required for the construction of Unit 4 including filling and stabilization of the site for placement of piping, electrical trenches, sumps, and foundations. Therefore, an Individual Dewatering Permit application has been prepared for review by the SFWMD. The permit application is prepared on SFWMD Form 0445 and is included herein. A detailed dewatering plan will be provided post-certification.

# SOUTH FLORIDA WATER MANAGEMENT DISTRICT

## MINING/DEWATERING PERMIT APPLICATION (RC-1A, RC-1W, RC-1G) For all DEWATERING Water Uses for Mining or Construction

General and Specific Authority, Chapter 373, State Statutes, 40E-2 and 40E-20 Florida Administrative Code and Basis of Review, Vol III, South Florida Water Management District.

### A. GENERAL INFORMATION

1. *Name of Owner, Responsible Entity, etc.*

**Name:** Florida Municipal Power Agency **Project Name:** Cane Island Unit 4

**Address:** 8553 Commodity Circle

**City:** Orlando **County:** Orange **State:** FL **ZIP:** 32819-9002

**Phone:** 407-355-7767 **Cell Phone:** Not Applicable **Fax:** 407-355-5794 **E-mail:** Not Applicable

2. *Proof of Ownership is required, in the form of a Deed, tax certificate, lease, or Articles of Incorporation*

**ATTACH Proof of Ownership to this Form**

3. *Name of Engineer, Contractor or Other.*

**Name:** (Later) **Firm:** EPC Contractor

**Address:**

**City:** **County:** **State:** **ZIP:**

**Phone:** **Cell Phone:** **Fax:**

4. *Is this a New Permit*  *Renewal/Modification*  **Permit No.:**

5. *Will this Permit be a General Permit (short-term dewatering; Chapter 40E-20.302 F.A.C )*   
*or an Individual Permit*

6. *Has a Surface Water Management Permit or Environmental Resource Permit from the District been issued for this Project?* **Permit No.:** No

*or has a Surface Water Management Permit or Environmental Resource Permit from the District been applied for?*

**Application No.:** Application Pending

7. *What are the: Total number of days for the Project:* Approximately 180.

**Total Pumpage (gallons per day) for the Project:** 0.6 MGD **Maximum gpd pumpage** 1.3 MGD

8. *To process this Application, a fee of \$500 for a General and between \$1,800.00 and \$4,000.00 for an Individual Permit is required (see Chapter 40E-1.607, F.A.C.).*

**ATTACH Application fee to this Form**

9. *Please Identify any Staff member you have discussed this Application with:*

### B. LOCATION OF THE PROPERTY

1. *General Location of the Property/Project*

**County:** Osceola **City:** Kissimmee

**Section 29.32 Township 25S Range 28E (or Land Grant Name )**

2. *Please submit: Location Map, (8¹/₂ x 11), showing location of the project in relation to major roads.*

**ATTACH Location Map to this Form**

3. *An aerial photograph of the entire project site is required.*

**ATTACH an aerial photograph**

### C. PROJECT DESCRIPTION (if more room is needed attach additional pages)

1. **Describe the mining/dewatering operation:**

2. **Describe the method of excavation:**

3. **What is the maximum elevation of excavation:**

4. **What is the maximum elevation of dewatering:**

5. **Describe the areas that will be mined/dewatered. Indicate if there are several sections/phases:**

6. **Describe the method of dewatering (Pumps, wellpoints, etc.):**

**ATTACH Table A (for wells) and/or Table B (for pumps) to this Form**

7. **Provide calculations to show how flow volumes were derived. What is the Maximum day and Average day pumpage, in gallons per minute, for each section/phase.**

**ATTACH Calculations (on a separate sheet) to this Form**

**sfwmd.gov**

D. DEWATERING WATER DISCHARGE (if more room is needed attach additional pages)

1. Describe and indicate for each section/phase, where dewatering water will be discharged or stored:
2. Will all dewatering water be retained on site? The Applicant must demonstrate if it is not feasible to retain water on-site and provide information as described in Section 2.5.2 (4) of the Basis of Review. ATTACH, if needed, feasibility report and all supporting information (Section 2.5.2 (4) B.O.R.
3. Describe any methods that will be utilized (settling tanks, berms, turbidity screens, recharge trenches, etc.) in order to protect sensitive areas from dewatering discharge:
4. Identify all wetland or sensitive areas on or adjacent to the project or which may be impacted by the project:
5. Note: It may be necessary to provide modeling to provide reasonable assurances that there are no harm to wetland areas due to the project's withdrawals or discharges.

E. POLLUTION AND CONTAMINATION

1. Describe and locate all sources of contamination or pollution and the location of the nearest saline water.  
Note: It may be necessary to provide modeling to provide reasonable assurances that there are no adverse impacts due to the proposed withdrawals or discharges.

F. SITE PLANS AND PHASE INVENTORY

1. Provide a Plan View: The Plan view should show the site in relation to adjacent roads/canals/open water, property boundaries, sections/phases to be dewatered, discharge areas, wells, wellpoint systems, pumps, areas of discharge, contamination areas, retention or settling tanks, etc. and all wetland or sensitive areas as well as protective devices such as berms, turbidity screens, recharge trenches, etc. and the location of any monitoring points or wells, etc.
2. Provide a Profile View: The Profile view should show cross-sections across the areas to be dewatered and indicate the maximum depth of excavation, maximum depth of dewatering, water table elevation, land surface elevation, berm elevation, recharge trenches and wetland areas.
3. If more than one phase of dewatering is proposed, provide, in a spread sheet format, an Inventory of Dewatering Phases. The Inventory should include the phase, start date, number of days for dewatering, maximum day gpm, average day gpm and total pumpage for the phase.  
ATTACH Plan View, Profile View and Phase Inventory (if needed) to this Form

G. ATTACHMENTS

1. Please make sure you have included the following attachments with your Application:

<input checked="" type="checkbox"/>	Proof of Ownership	<input checked="" type="checkbox"/>	Location Map
<input checked="" type="checkbox"/>	Plan View	<input type="checkbox"/>	Profile View
<input type="checkbox"/>	Table A for wells	<input type="checkbox"/>	Table B for pumps
<input type="checkbox"/>	Pumpage Calculations	<input type="checkbox"/>	Phase Inventory (if necessary)
<input type="checkbox"/>	Application Fee (see Form XXXX)	<input checked="" type="checkbox"/>	Aerial Photograph
<input type="checkbox"/>	Feasibility report and supporting information for off-site discharge (if needed)		

F. CERTIFICATION

I hereby certify that, to the best of my knowledge, the total project acreage listed above is owned or controlled by me and encompasses the project referenced in this permit application. In addition, I agree to provide entry to the project site for South Florida Water Management Inspectors with proper identification or documents as required by law for the purpose of making analyses of the site. Further, I agree to provide entry to the project site for such inspectors to monitor permitted work if a permit is granted. If this application is not complete within 240 days, it may be denied pursuant to Rule 40E-1.603, Florida Administrative Code.

Print: Name of Owner or Authorized Agent Title

Signature Date

16.000  
11,000.00

ORDK0938 PG2799

Documentary Tax Ptd. \$ 11000.00  
Intangible Tax Ptd  
MEL WILLS JR., CLERK OF COURT  
OSCEOLA COUNTY BY CB

WARRANTY DEED

This Warranty Deed made this 4th day of October, 1990, between NATIONAL OIL & GAS, INC., an Indiana corporation, as the successor by merger with National Petroleum, Inc. and National Oil Corporation, (the "Grantor"), and KISSIMMEE UTILITY AUTHORITY, a body politic, (the "Grantee"), whose post office address is Post Office Box 423219, Kissimmee, Florida 34742:

WITNESSETH:

That the Grantor, for and in consideration of the sum of ten and 00/100 dollars (\$10.00) and other good and valuable considerations to Grantor in hand paid by the Grantee, the receipt of which is hereby acknowledged, has granted, bargained and sold to the Grantee the following parcel of land situated in Osceola County, Florida, as described on attached Exhibit "A".

Subject to:

- (1) Real estate taxes for the current year and subsequent years.
- (2) Zoning and other prohibitions, rules and regulations imposed by governmental authorities.
- (3) Utility easements, restrictions and reservations described on Exhibit "B"

The Grantor does hereby fully warrant title to the aforesaid parcel of land and will defend same against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, the Grantor has executed this Warranty Deed on the day and year first above written.

Signed, sealed and delivered in the presence of:  
William Moser  
William Moser

NATIONAL OIL & GAS, INC.  
By: William Moser  
Its President  
(Corporate Seal)

STATE OF INDIANA  
COUNTY OF WELLS

Before me the undersigned authority personally appeared WILLIAM MOSER, President of NATIONAL OIL & GAS, INC., well known to me to be the person named in this instrument and he acknowledged that he executed this instrument for the purposes therein expressed.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 4 day of October, 1990.

William A. Zeiher  
Notary Public

My Commission Expires: 4-15-93

Prepared by: William A. Zeiher, Esq.  
William A. Zeiher, P.A.  
2780 East Oakland Park Boulevard  
Fort Lauderdale, Florida 33306

Exhibit "A"

Section 29 - The northwest quarter (NW 1/4) of the northwest quarter (NW 1/4) of the northwest quarter (NW 1/4); the east one half (E 1/2) of the northwest quarter (NW 1/4); the southwest quarter (SW 1/4) of the northwest quarter (NW 1/4); the east one half (E 1/2); and the southwest quarter (SW 1/4) all in Section 29, Township 25 South, Range 28 East.

Section 32 - The north one half (N 1/2), lying north of Atlantic Coastline Railroad right-of-way; and the west one half (W 1/2) of the southwest quarter (SW 1/4), lying north of the Atlantic Coast Line Railroad right-of-way, and all of the southeast quarter (SE 1/4), lying north of the Atlantic Coast Line right-of-way, all in Section 32, Township 25 South, Range 28 East.

The north one half (N 1/2) of the northeast one quarter (NE 1/4) of the southwest one quarter (SW 1/4), except the right-of-way of Atlantic Coast Line Railroad in Section 32, Township 25 South, Range 28 East, and less beginning at the southeast corner of north one half (N 1/2) of northeast one quarter (NE 1/4) of the southwest one quarter (SW 1/4) of said Section, run thence west 75.9 feet, thence north 29.10, west 39 feet to the southern boundary of Old State Road No. 2, thence north 63 14' east 96.3 feet, thence south 77.3 feet to the point of beginning, all lying and being in Ocala County, Florida, and except right-of-way of Old State Road No. 2.

DRBKO988



Exhibit "B"

1. Encroachments, overlaps and any other matters which would be disclosed by an accurate survey.
2. Easement Deed recorded in Official Records Book 925, Page 210, of the Public Records of Osceola County, Florida.
4. Reservations to Trustees of the Tufts College, a non-profit Massachusetts corporation, contained in Deed Book 107, Page 564, Public Records of Osceola County, Florida, except those released by Deed from the Trustees of Tufts College to National Petroleum, Inc. dated July 29, 1974, and filed in Official Records Book 320, Page 25, of the Public Records of Broward County, Florida.
5. Reservations of Compass Rose Corporation under instrument recorded November 13, 1967, Official Records Book 168, Page 223, (Affects all property in question in Section 29, except the Northwest quarter (NW 1/4) of the Northwest quarter [NW 1/4] of the Northwest quarter (NW 1/4)], except those released by instrument of conveyance from Compass Rose Corporation to National Oil & Gas, Inc., dated March 27, 1986 and recorded in Official Records Book 815, Page 2150, of Osceola County, Florida. The above described property is also subject to the conditions of the General Release and Covenants Not To Sue, dated July 7, 1986, recorded in Official Records Book 815, Page 2152, of the Public Records of Osceola County, Florida.
6. An undivided one-half interest of all gas petroleum and petroleum products in J.W. Santrell reserved in Warranty Deed recorded March 27, 1954 in Deed Book 146, Page 262, Public Records of Osceola County, Florida. Affects the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of Section 29.
7. Reservations by the Trustees of the Internal Improvement Fund of the State of Florida as contained in that certain Deed No. 132 dated February 10, 1941, and filed April 10, 1941, in Deed Book 104, Page 132, Public Records of Osceola County, Florida. Affects the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) in Section 29.
8. Easement to Florida Public Service Company as evidenced by said instrument dated October 25, 1928 and filed November 19, 1928 in Miscellaneous Book L, Page 620. Affects lands in the South one-half (S 1/2) of Section 32.
9. The warranties in this deed do not warrant access to the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of Section 29, Township 25 South, Range 28 East, nor title to the submerged land under the waters of Reedy Creek which meanders through the property described on Exhibit "A".

(t1inatcom.kis)

FILED, RECORDED AND  
RECORD VERIFIED  
MEL WILLS, JR, CLK CIR CT  
OSCEOLA COUNTY

BY JB D.L.


900063997

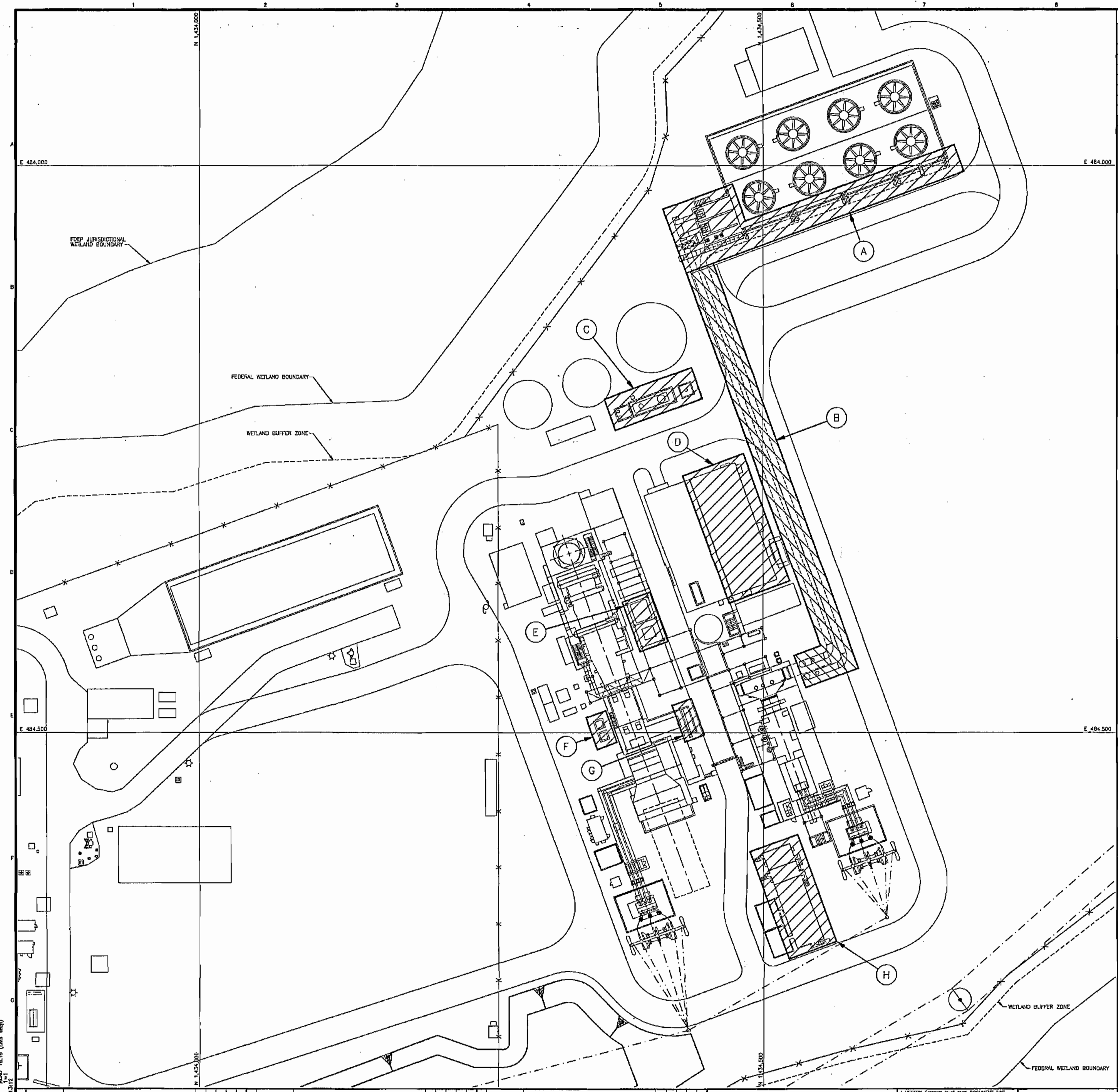
REC'D OCT 29 AM 10 13





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 03/26/08 09:30:23

 <b>BLACK &amp; VEATCH</b> CORPORATION														
ENGINEER	JMS	DRAWN	MRR	0	04/01/2008	ISSUED FOR CONSTRUCTION	MRR	JMS	MJS	MJS	SAA			
CHECKED	MJS	DATE	04/01/2008	NO	DATE	REVISIONS AND RECORD OF ISSUE	DRN	DES	CHK	PDE	APP			
<b>FLORIDA MUNICIPAL POWER AGENCY</b> CANE ISLAND POWER PARK UNIT 4						PROJECT	DRAWING NUMBER				REV			
						147651-4STA-S1006				0				
EXISTING STATE OF PARCEL						CODE								
						AREA								



DEWATERING SCHEDULE			
DEWATERING AREA	DEWATERING AREA DESCRIPTION	APPROXIMATE DURATION DEWATERING WILL BE IN PLACE	REQUIRED DEWATER DEPTH FEET BELOW GROUND SURFACE
A	COOLING TOWER AND CIRCULATING WATER PUMP PIT	WEEKS 1 THRU 10	14
B	UNDERGROUND CIRCULATING WATER PIPE	WEEKS 1 THRU 8	14
C	OIL/WATER SEPARATOR AND WASTEWATER SUMP	WEEKS 7 THRU 10	13
D	MISCELLANEOUS SERVICE BUILDING VAULT	WEEKS 7 THRU 10	8
E	BLOWDOWN TANK SUMP AND BLOWDOWN SUMP	WEEKS 11 THRU 10	10
F	WASHWATER TANK	WEEKS 11 THRU 13	8
G	ACCESSORY MODULE TRENCH AND SUMP	WEEKS 14 THRU 18	8
H	ELECTRICAL EQUIPMENT BUILDING	WEEKS 17 THRU 21	8

**LEGEND**

---	WETLAND BUFFER ZONE	---	OVERHEAD TRANSMISSION LINE
---	FDEP JURISDICTIONAL WETLAND BOUNDARY	---X---	FENCE LINE
[Hatched Box]	GOPHER TORTOISE HABITAT		
①	DEWATERING AREA		

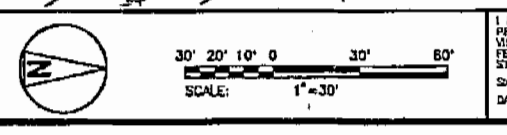
**NOTES**

- SEE DRAWING 147651-45TA-S1001 FOR SITE ARRANGEMENT.
- DEWATERING SHALL BE COMPLETED WITH A SERIES OF WELLPOINTS INSTALLED AROUND THE PERIMETER OF EXCAVATION. DISCHARGE FROM DEWATERING ACTIVITIES SHALL BE DIRECTED TO UNIT 3 AND 4 STORM WATER POND.

**FOR PERMITTING PURPOSE ONLY  
APPROVED FOR CONSTRUCTION**

REMOVED BY: [Signature]  
 AUTHORITY: [Signature]  
 DATE: 04/01/2008

NO.	DATE	ISSUED FOR CONSTRUCTION	REVISIONS AND RECORD OF ISSUE
1	04/01/2008	ISSUED FOR CONSTRUCTION	



I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A duly licensed PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF FLORIDA.  
 ENGINEER: [Signature] DATE: 04/01/2008  
 CHECKED: [Signature] DATE: 04/01/2008

**BLACK & VEATCH CORPORATION**  
 FLORIDA MUNICIPAL POWER AGENCY  
 CANE ISLAND POWER PARK UNIT 4  
 DEWATERING PLAN  
 PROJECT: 147651-DS-0110  
 DRAWING NUMBER: 0  
 SHEET: 0



#### **10.5.4 Florida Division of Historical Resources Review**

In January 1992, in association with construction and operation of Units 1 and 2, the Florida Division of Historical Resources (DHR) was requested to review the CIPP site and project area for known or potential cultural resources. The DHR indicated in February 1992 that there were no known archeological or historical resources onsite or within the project area listed on the *National Register of Historic Place*, but requested a systematic survey of the site prior to any land disturbing activities.

A Phase I cultural resources investigation of the CIPP and associated corridors was conducted by Janus Research/Piper Archaeology of St. Petersburg, Florida, in May 1992. The investigation discovered 13 previously unrecorded sites: seven prehistoric and six historic. It was the consultant's opinion that none of the sites were eligible for listing on the *National Register of Historic Places*. All of the historic sites were outside of direct impact areas. The Phase I report was submitted to the DHR for review in June 1992. On July 23, 1992, the DHR issued a clearance letter concurring with the consultant's opinion and approving the site for construction. The DHR was notified of the Unit 4 project by letter in March 2008 (copy included herein).



**BLACK & VEATCH**  
Building a world of difference.

FMPA/KUA  
Cane Island Power Park Unit 4

B&V Project 147651  
B&V File 32.6000  
March 21, 2008

Florida Division of Historical Resources  
Review and Compliance Section  
R.A. Gray Building, 4th Floor  
500 South Bronough Street  
Tallahassee, Florida 32399-0250

Subject: Project Notification

Attention: Ms. Laura Kammerer  
Deputy State Historic Preservation Officer

Dear Ms. Kammerer:

The Florida Municipal Power Agency (FMPA) and the Kissimmee Utility Authority (KUA) propose to construct and operate a new electrical generating unit at the Cane Island Power Park located near Intercession City in Osceola County. The Cane Island Power Park is a power plant that currently includes three combustion turbine units and associated support facilities, certified under the Florida Electrical Power Plant Siting Act in 1999. Units 1 and 2 began commercial operation in 1995; Unit 3 in 2001.

Unit 4 is proposed as a nominal 300 megawatt, one-on-one combined cycle combustion turbine unit firing natural gas as the only fuel. Unit 4 is scheduled for commercial operation in May 2011. Construction of Unit 4 will occur entirely within the previously permitted area on the central portion of the geographic feature known as Cane Island (Section 29, Township 25 South, Range 28 East). Approximately 25 acres of the approved generation area will be impacted during construction of Unit 4; 9 acres will support permanent facilities. There will be no new off-site linear facilities.

In January 1992, in association with construction and operation of Units 1 and 2, the DHR was requested to review the site and project area for known or potential cultural/historical resources. The DHR indicated in February 1992 that there were no known archeological or historical resources onsite or within the project area listed on the NRHP, but recommended that a systematic survey of the site be conducted prior to any project land disturbing activities.

A Phase I cultural resources investigation of the Power Park and associated corridors was conducted by Janus Research/Piper Archaeology of St. Petersburg, in May 1992. The investigation discovered thirteen previously unrecorded sites: seven prehistoric; six historic. It was the consultant's opinion that none of the sites were eligible for listing on the *National Register of Historic Places*. All of the historic sites were and are outside of direct impact areas. The Phase I report was submitted to the DHR for review in June 1992. In July 1992, the DHR issued a clearance letter concurring with the consultant's opinion and approving the project for construction. A project location map and an aerial of the site are enclosed for your reference.

FMPA/KUA  
Ms. Kammerer

B&V Project 147651  
March 21, 2008

On behalf of FMPA and KUA, and in compliance with Section 403, *Florida Statutes*, and Section 106 of the *National Historic Preservation Act*, Black & Veatch wishes to inform the Division of Historic Resources of the proposed project and requests a written acknowledgement or response for the project record.

If you have any questions during your review, please contact me at (913) 458-7563 or [soltysjm@bv.com](mailto:soltysjm@bv.com).

Very truly yours,

BLACK & VEATCH

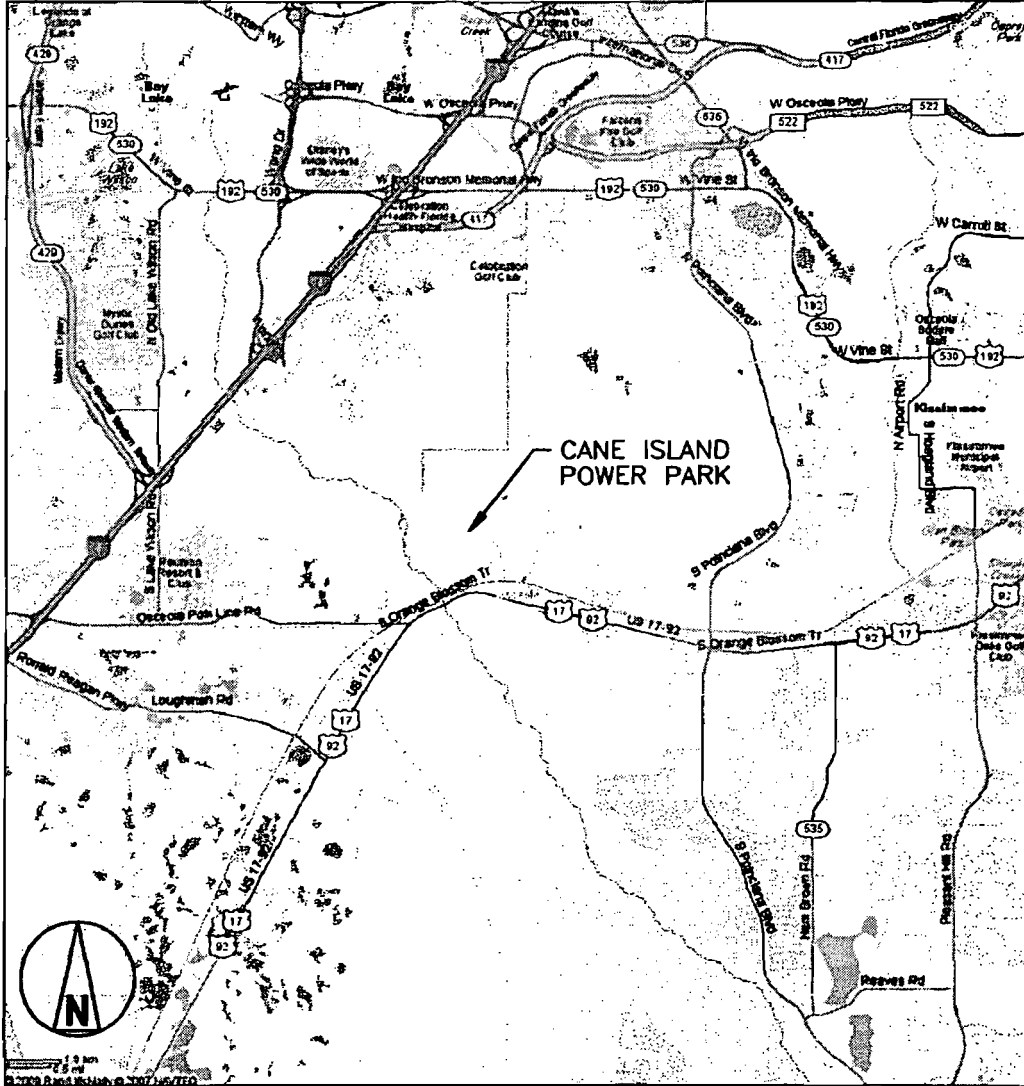
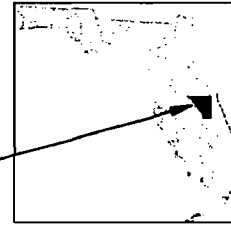


Michael Soltys  
Site Certification Coordinator

Enclosures

cc: Ms. Susan Schumann, FMPA  
Mr. Jay Butters, KUA

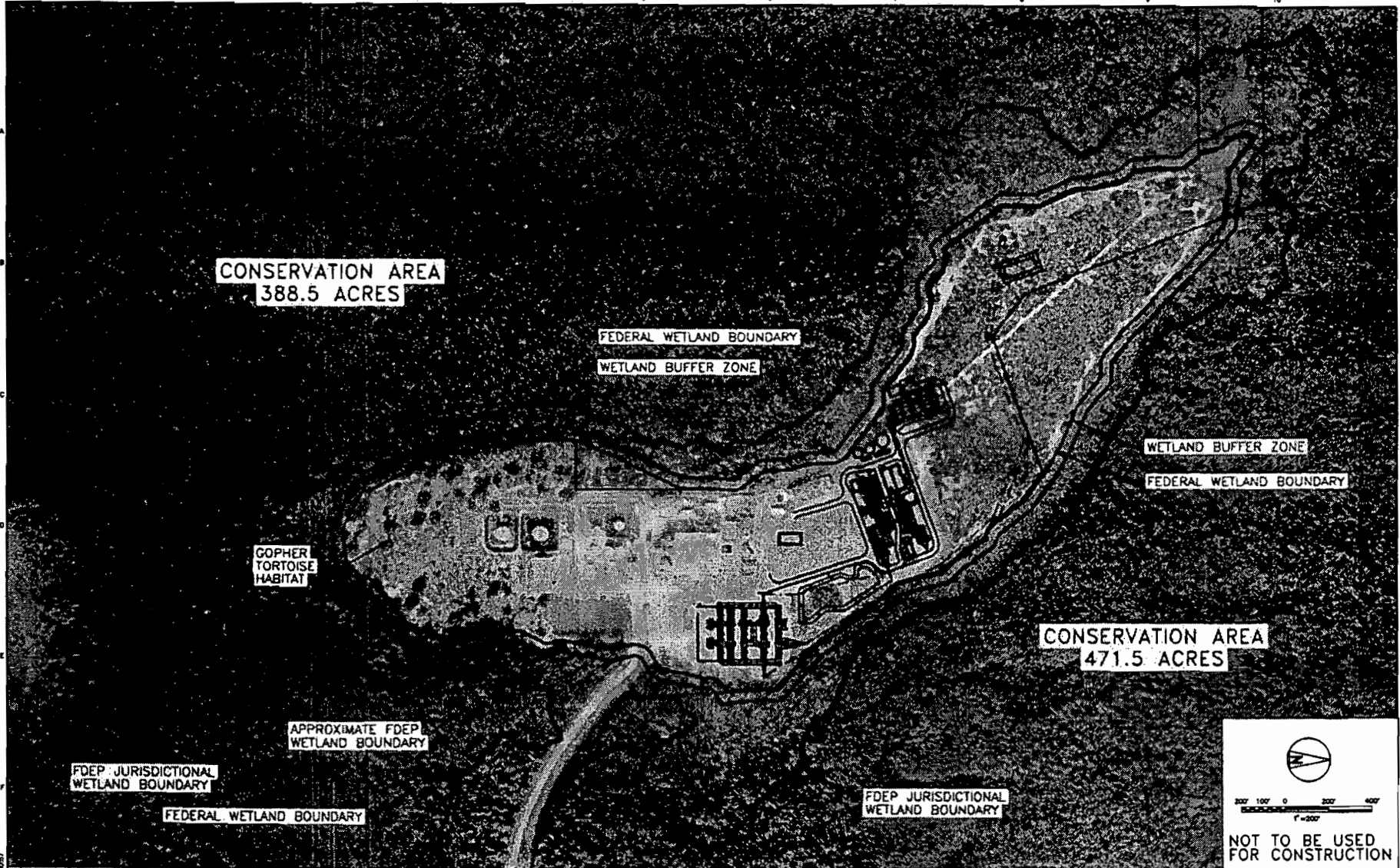
LOCATION OF OSCEOLA COUNTY IN THE STATE OF FLORIDA



RUM02825  
 ACAD 16.1s (LMS Tech)  
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 02/13/08 10:13:18

ENGINEER	ALM	DRAWN	MRR	A	02/15/2008	ISSUED FOR CLIENT REVIEW	MRR	ALM		MJS			
CHECKED		DATE		NO	DATE	REVISIONS AND RECORD OF ISSUE	DRN	DES	CHK	PDE	APP		
FLORIDA MUNICIPAL POWER AGENCY CANE ISLAND POWER PARK UNIT 4						PROJECT	DRAWING NUMBER				REV		
						147651-4STA-S1002					A		
REGIONAL SITE LOCATION						CODE	FIGURE 2.1-1						
						AREA							





DRAWN BY: ACAD 16.16 (DMS Team)  
 DATE: 02/20/08  
 PROJECT: 147651

I HEREBY CERTIFY THAT THE INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THAT I AM A duly Licensed Professional Engineer under the laws of the State of Florida.		<b>BLACK &amp; VEATCH CORPORATION</b>		FLORIDA MUNICIPAL POWER AGENCY CANE ISLAND POWER PARK UNIT 4		PROJECT NUMBER 147651-DS-0112		SHEET A
NO.	DATE	ISSUED FOR PHASE 2 INVESTIGATION TRANSMITTAL TO MFLA MEMBERS AND RECORD OF SALE	SCALE	DATE	PROJECT AERIAL		DATE	SHEET

NOT TO BE USED FOR CONSTRUCTION

**10.5.5 Florida Natural Areas Inventory Review**

The Florida Natural Areas Inventory (FNAI) was notified of the Unit 4 project in March 2008. A copy of this notification letter is included herein.



**BLACK & VEATCH**  
Building a world of difference.

FMPA/KUA  
Cane Island Power Park Unit 4

B&V Project 147651  
B&V File 32.3500  
March 21, 2008

Mr. Jonathan Oetting  
Conservation Planner  
Florida Natural Areas Inventory  
1018 Thomasville Road, Suite 200-C  
Tallahassee, Florida 32303

Subject: Project Notification

Dear Mr. Oetting:

The Florida Municipal Power Agency (FMPA) and the Kissimmee Utility Authority (KUA) propose to construct and operate a new electrical generating unit at the Cane Island Power Park located near Intercession City in Osceola County. The Cane Island Power Park is a power plant that currently includes three combustion turbine units and associated support facilities, certified under the Florida Electrical Power Plant Siting Act in 1999. Units 1 and 2 began commercial operation in 1995; Unit 3 in 2001.

Unit 4 is proposed as a nominal 300 megawatt, one-on-one combined cycle combustion turbine unit firing natural gas as the only fuel. Unit 4 is scheduled for commercial operation in May 2011. Construction of Unit 4 will occur entirely within the previously permitted area on the central portion of the geographic feature known as Cane Island (Section 29, Township 25 South, Range 28 East). Approximately 25 acres of the permitted generation area will be impacted during construction of Unit 4; 9 acres will support permanent facilities. There will be no new off-site linear facilities. There will be no waters or wetlands impacts associated with the development of Unit 4.

On behalf of FMPA and KUA, Black & Veatch wishes to advise you of this project. A project location map and aerial are attached for your use. If you have any questions, please contact me at (913) 458-7563 or [soltysjm@bv.com](mailto:soltysjm@bv.com).

Very truly yours,

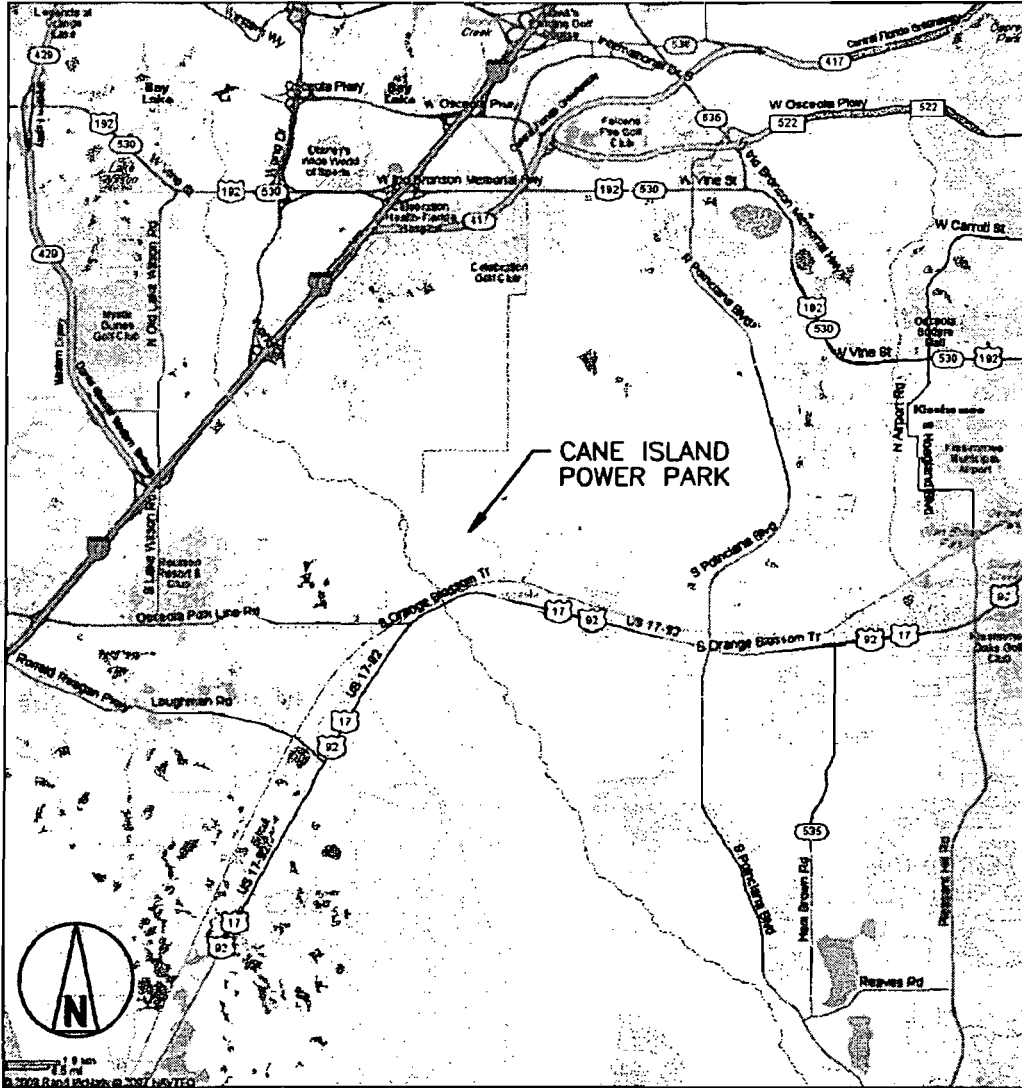
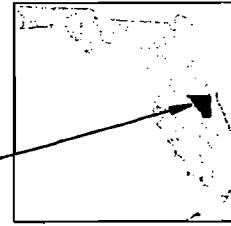
BLACK & VEATCH

Michael Soltys  
Site Certification Coordinator

Enclosures

cc: Ms. Susan Schumann, FMPA  
Mr. Jay Butters, KUA

LOCATION OF  
OSCEOLA COUNTY IN  
THE STATE OF FLORIDA



RUM02825  
ACAD 16.1s (LMS Tech)  
A1ASLO11 A2 1=1  
02/13/08 10:13:18



ENGINEER	ALM	DRAWN	MRR	A	02/15/2008	ISSUED FOR CLIENT REVIEW	MRR	ALM	MJS
CHECKED		DATE		NO	DATE	REVISIONS AND RECORD OF ISSUE	DRN	DES	CHK

<b>FLORIDA MUNICIPAL POWER AGENCY</b> CANE ISLAND POWER PARK UNIT 4		PROJECT 147651-4STA-S1002	DRAWING NUMBER 147651-4STA-S1002	REV A
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REGIONAL SITE LOCATION		CODE	FIGURE 2.1-1
		AREA	



**10.5.6 *Permit Application to Construct, Repair, Modify, or Abandon a Well***

FMPA and KUA propose to construct five new ground water wells on the CIPP site. The permit application for well construction will be reviewed by the SFWMD. At this time, the detailed well design and well drilling contractor have not been selected. The partially completed application is included herein. The final application will be submitted post-certification.



STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

- Southwest
Northwest
St. Johns River
South Florida
Suwannee River

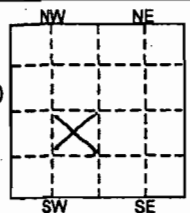
THIS FORM MUST BE FILLED OUT COMPLETELY. The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

Permit No.
Florida Unique I.D.
Permit Stipulations Required (See attached)
62-524 well
CUP/WUP Application No.

Fold at this line in order that address is visible through envelope window

1. FMPA/KUA 6075 Old Tampa Hwy Intercession City 33848 407-933-7777
2. Well Location - Address, Road Name or Number, City TBD
3. Well Drilling Contractor License No. Telephone No. 29
4. 1/4 of 1/4 of Section 29 (smallest) (biggest)
5. Township 25S Range 28E
6. Osceola County Subdivision Name Lot Block Unit

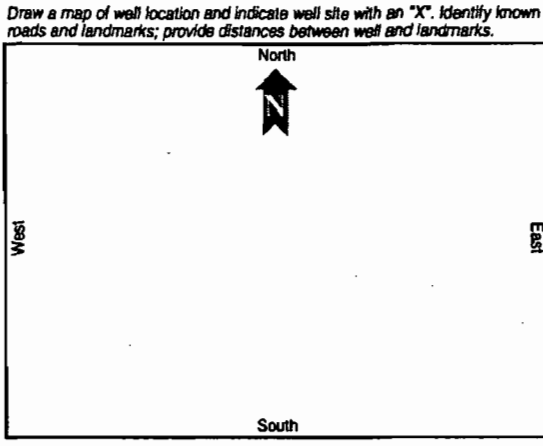


7. Number of proposed wells 5 Check the use of well: (See back of permit for additional choices) Domestic Monitor (type) Industrial
Irrigation (type) Public Water Supply (type) List Other
Distance from septic system ft. Description of facility Power Plant Estimated start of construction date 2009

8. Application for: X New Construction Repair/Modify Abandonment
9. Estimated: Well Depth 400 ft. Casing Depth 150 ft. Screen Interval from to
Casing Material: Blk-Steel / Gal / PVC Casing Diameter 10 inch Seal Material
10. If applicable: Proposed From to Seal Material
Grouting Interval From to Seal Material

11. Telescope Casing or Liner (check one) Diameter
Blk-Steel / Galvanized / PVC Other (specify:
12. Method of Construction: Rotary Cable Tool Combination
Auger Other (specify:
13. Indicate total No. of wells on site 6 List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? No X Yes
(If yes, complete the following) CUP/WUP No. Site Cert. PA 98-38
District well I.D. No.
Latitude Longitude
Data obtained from GPS or map or survey (map datum NAD 27 NAD 83)



15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if needed, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governments, if applicable. I agree to provide a well completion report to the District within 30 days after drilling or the permit expiration, whichever occurs first.

Signature of Contractor License No. Owner's or Agent's Signature Date

DO NOT WRITE BELOW THIS LINE - FOR OFFICIAL USE ONLY

Approval Granted By: Issue Date: Hydrologist Approval
Owner Number: Fee Received: \$ Receipt No.: Check No.:
THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. This permit is valid for 90 days from date of issue.



**10.5.7 Florida Fish and Wildlife Conservation Commission Review**

The FFWCC is a statutory party to the certification process.

Gopher tortoises are the only known state threatened or endangered species confirmed onsite. A copy of the previously issued gopher tortoise Incidental Take Permit OSC-6 is included in Appendix D of the ERP application, Subsection 10.5.1. The FFWCC confirmed in March 2008 that this permit is still valid, which allows the CIPP staff to relocate tortoises onsite.



### **10.5.8 Coastal Zone Management Certification**

The Coastal Management Act of 1978 (Section 380.21-380.25, FS) requires that the Coastal Zone Management Section of FDEP be responsible for certification of consistency with the Florida Coastal Management Program (FCMP) for all federal licenses, permits, activities, and projects listed in Section 380.23 (3)(c), FS, when such activities are subject to federal consistency review and affect land or water use, are seaward of the jurisdiction of the state, or there is no state agency with sole jurisdiction for such consistency review. The requirements related to Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act are addressed in Appendix 10.1.4. Issuance of the final Site Certification will demonstrate consistency with Section 307 of the Coastal Zone Management Act.

**10.5.9 Public Drinking Water System Extension Permit Application**

The existing drinking water system will require an extension to the Miscellaneous Services Building and Power Distribution Center associated with Unit 4 to supply eye wash stations. This extension will be reviewed through completion of Form 62-555.900(7), FAC. A partially completed application is included herein. A complete application will be submitted post-certification.



# NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

**INSTRUCTIONS:** This notice shall be completed and submitted by persons proposing to construct projects permitted under the "General Permit for Construction of Water Main Extensions for Public Water Systems" in Rule 62-555.405, F.A.C. AT LEAST 30 DAYS BEFORE BEGINNING CONSTRUCTION OF A WATER MAIN EXTENSION PROJECT, complete and submit one copy of this notice to the appropriate Department of Environmental Protection (DEP) District Office or Approved County Health Department (ACHD) along with payment of the proper permit processing fee. (When completed, Part II of this notice serves as the preliminary design report for a water main extension project, and thus, it is unnecessary to submit a separate preliminary design report or drawings, specifications, and design data with this notice.) All information provided in this notice shall be typed or printed in ink. The DEP permit processing fee for projects requiring the services of a professional engineer during design is \$250, and the DEP permit processing fee for projects not requiring the services of a professional engineer during design is \$100.* ~~Some ACHDs charge a county permit processing fee in addition to the DEP permit processing fee.~~ Checks for permit processing fees shall be made payable to the Department of Environmental Protection or the appropriate ACHD. NOTE THAT A SEPARATE NOTIFICATION AND A SEPARATE PERMIT PROCESSING FEE ARE REQUIRED FOR EACH NON-CONTIGUOUS PROJECT.†

* Except as noted in paragraphs 62-555.520(3)(a) and (b), F.A.C., projects shall be designed under the responsible charge of one or more professional engineers licensed in Florida.

† Non-contiguous projects are projects that are neither interconnected nor located nearby one another (i.e., on the same site, on adjacent streets, or in the same neighborhood).

## I. General Project Information

A. Name of Project: Cane Island Power Park - Unit 4

B. Description of Project and Its Purpose: The Cane Island Power Park is a combustion turbine power plant jointly owned by KUA and FMPA, and is operated by KUA. Bulk electricity is generated and sold to KUA and FMPA customers. Unit 4 at the Power Park is proposed. Unit 4 will be provided potable drinking water by an extension of the existing Unit 1, 2, and 3 non-community public drinking water system.

C. Location of Project  
 1. County Where Project Located: Osceola  
 2. Description of Project Location: at existing Cane Island Power Park at 6075 Old Tampa Highway, Intercession City, Florida, Section 29 & 32 , Township 25 South, Range 23 East.

D. Estimate of Cost to Construct Project: Greater than \$250 million  
 E. Estimate of Dates for Starting and Completing Construction of Project: 2009-2011

F. Permittee

PWS/Company Name: <u>Kissimmee Utility Authority (Kua)</u>		PWS Identification No.: * <u>3494409</u>	
PWS Type: * <input type="checkbox"/> Community <input checked="" type="checkbox"/> Non-Transient Non-Community <input type="checkbox"/> Transient Non-Community <input type="checkbox"/> Consecutive			
Contact Person: <u>Jay Butters</u>		Contact Person's Title: <u>Manager Of Production</u>	
Contact Person's Mailing Address: <u>6075 Old Tampa Highway</u>			
City: <u>Intercession City</u>		State: <u>FL</u>	Zip Code: <u>33848</u>
Contact Person's Telephone Number: <u>407 - 933-9853</u>		Contact Person's Fax Number: <u>407-846-6485</u>	
Contact Person's E-Mail Address: <u>jbutters@kua.com</u>			

* This information is required only if the permittee is a public water system (PWS).

G. Public Water System (PWS) Supplying Water to Project

PWS Name: <u>Cane Island Power Park</u>		PWS Identification No.: <u>3494409</u>	
PWS Type: <input type="checkbox"/> Community <input checked="" type="checkbox"/> Non-Transient Non-Community <input type="checkbox"/> Transient Non-Community <input type="checkbox"/> Consecutive			
PWS Owner: <u>KUA</u>			
Contact Person: <u>Jay Butters</u>		Contact Person's Title: <u>Manager Of Production</u>	
Contact Person's Mailing Address: <u>6075 Old Tampa Highway</u>			
City: <u>Intercession City</u>		State: <u>FL</u>	Zip Code: <u>33848</u>
Contact Person's Telephone Number: <u>407-933-9853</u>		Contact Person's Fax Number: <u>407-846-6485</u>	
Contact Person's E-Mail Address: <u>jbutters@kua.com</u>			

# NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

Project Name: Cane Island Power Park - Unit 4      Permittee: Kissimmee Utility Authority (Kua)

**H. Public Water System (PWS) that Will Own Project After It Is Placed into Permanent Operation**

PWS Name: Cane Island Power Park		PWS Identification No.:* 3494409	
PWS Type:* <input type="checkbox"/> Community	<input checked="" type="checkbox"/> Non-Transient Non-Community	<input type="checkbox"/> Transient Non-Community	<input type="checkbox"/> Consecutive
PWS Owner: Kua			
Contact Person: Jay Butters		Contact Person's Title: Manager Of Production	
Contact Person's Mailing Address: 6075 Old Tampa Highway			
City: Intercession City		State: FL	Zip Code: 33848
Contact Person's Telephone Number: 407-933-9853		Contact Person's Fax Number: 407-846-6485	
Contact Person's E-Mail Address: jbutters@kua.com			

* This information is required only if the owner/operator is an existing PWS.

**I. Professional Engineer(s) or Other Person(s) in Responsible Charge of Designing Project***

Company Name: EPC Contractor		
Designer(s): TBD	Title(s) of Designer(s):	
Qualifications of Designer(s):		
<input checked="" type="checkbox"/> Professional Engineer(s) Licensed in Florida – License Number(s): _____		
<input type="checkbox"/> Public Officer(s) Employed by State, County, Municipal, or Other Governmental Unit of State†		
<input type="checkbox"/> Plumbing Contractor(s) Licensed in Florida – License Number(s):^ _____		
Mailing Address of Designer(s):		
City:	State:	Zip Code:
Telephone Number of Designer(s):	Fax Number of Designer(s):	
E-Mail Address(es) of Designer(s):		

* Except as noted in paragraphs 62-555.520(3)(a) and (b), F.A.C., projects shall be designed under the responsible charge of one or more professional engineers licensed in Florida.

† Attach a detailed construction cost estimate showing that the cost to construct this project is \$10,000 or less.

^ Attach documentation showing that this project will be installed by the plumbing contractor(s) designing this project, documentation showing that this project involves a public water system serving a single property and fewer than 250 fixture units, and a detailed construction cost estimate showing that the cost to construct this project is \$50,000 or less.

**II. Preliminary Design Report for Project***

**A. Service Area, Water Use, and Service Pressure Information**

**1. Design Type and Number of Service Connections, and Average Daily Water Demands and Maximum-Day Water Demands, in the Entire Area to Be Served by the Water Mains Being Constructed Under this Project:**

A = Type of Service Connection	B = Number of Service Connections	C = Average Daily Water Demand Per Service Connection, gpd	D = Total Average Daily Water Demand ^a , gpd (Column BxC for Residential Service Connections)	E = Total Maximum-Day Water Demand ^b , gpd
Single-Family Home			0	
Mobile Home			0	
Apartment			0	
Commercial, Institutional, or Industrial Facility ^a	1		354,000	914,000
<b>Total</b>			0	914000

a. Description of Commercial, Institutional, or Industrial Facilities and Explanation of Method(s) Used to Estimate Average Daily Water Demand for These Facilities: Facility is a power plant consisting of 4 operating units. Potable uses were estimated at 4200 gpd based on 35 employees for 3 operating shifts with 40 gpd/person. The remaining flow is estimated for water service and process uses at 100% plant load.

b. Explanation of Peaking Factor(s) or Method(s) Used to Estimate Maximum-Day Water Demand: same as above but with service water quantities based on providing water for NOx injection to the combustion units when firing oil.

# NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

Project Name: Cane Island Power Park - Unit 4      Permittee: Kissimmee Utility Authority (Kua)

2. Explanation of Peaking Factor(s) or Method(s) Used to Estimate Design Peak-Hour Water Demand and, for Small Water Systems that Use Hydropneumatic Tanks or that Are Not Designed to Provide Fire Protection, Peak Instantaneous Water Demand: 66,000 gallons based on anticipated capacity of well pumps to provide raw water to service water system.

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3. Design Fire-Flow Rate and Duration: Two new fire pumps each can provide 2000 to 2500 gpm from two 500,000 gallon service water and fire water service tanks, each with a fire reserve capacity of 300,000 gallons (2 hours of fire pump operation)
4. Design Service Pressure Range: 40 to 85 psig for the service water and potable water distribution systems.

## B. Project Site Information

1. ATTACH A SITE PLAN OR SKETCH SHOWING THE SIZE AND APPROXIMATE LOCATION OF NEW OR ALTERED WATER MAINS, SHOWING THE APPROXIMATE LOCATION OF HYDRANTS, VALVES, METERS, AND BLOW-OFFS IN SAID MAINS, AND SHOWING HOW SAID MAINS CONNECT TO THE PUBLIC WATER SYSTEM SUPPLYING WATER FOR THE PROJECT.
2. Description of Any Areas Where New or Altered Water Mains Will Cross Above or Under Surface Water or Be Located in Soil that Is Known to Be Aggressive: SITE PLAN TBD -- line will cross from existing units to new Unit 4 - no surface water crossing and no aggressive soil.

## C. Information About Compliance with Design and Construction Requirements

1. If this project is being designed to comply with the following requirements, initial in ink before the requirements. If any of the following requirements do not apply to this project or if this project includes exceptions to any of the following requirements as allowed by rule, mark "X" before the requirements and complete Part II.C.2 below. *RSWW = Recommended Standards for Water Works* as incorporated into Rule 62-555.330, F.A.C.
  - a. This project is being designed to keep existing water mains and service lines in operation during construction or to minimize interruption of water service during construction. [*RSWW* 1.3.a; exceptions allowed under FAC 62-555.330]
  - b. All pipe, pipe fittings, pipe joint packing and jointing materials, valves, fire hydrants, and meters installed under this project will conform to applicable American Water Works Association (AWWA) standards. [FAC 62-555.320(21)(b), *RSWW* 8.0, and AWWA standards as incorporated into FAC 62-555.330; exceptions allowed under FAC 62-555.320(21)(c)]
  - c. All public water system components, excluding fire hydrants, that will be installed under this project and that will come into contact with drinking water will conform to NSF International Standard 61 as adopted in Rule 62-555.335, F.A.C., or other applicable standards, regulations, or requirements referenced in paragraph 62-555.320(3)(b), F.A.C. [FAC 62-555.320(3)(b); exceptions allowed under FAC 62-555.320(3)(d)]
  - d. All pipe and pipe fittings installed under this project will contain no more than 8.0% lead, and any solder or flux used in this project will contain no more than 0.2% lead. [FAC 62-555.322]
  - e. All pipe and pipe fittings installed under this project will be color coded or marked in accordance with subparagraph 62-555.320(21)(b)3, F.A.C., using blue as a predominant color. (Underground plastic pipe will be solid-wall blue pipe, will have a co-extruded blue external skin, or will be white or black pipe with blue stripes incorporated into, or applied to, the pipe wall; and underground metal or concrete pipe will have blue stripes applied to the pipe wall. Pipe striped during manufacturing of the pipe will have continuous stripes that run parallel to the axis of the pipe, that are located at no greater than 90-degree intervals around the pipe, and that will remain intact during and after installation of the pipe. If tape or paint is used to stripe pipe during installation of the pipe, the tape or paint will be applied in a continuous line that runs parallel to the axis of the pipe and that is located along the top of the pipe; for pipe with an internal diameter of 24 inches or greater, tape or paint will be applied in continuous lines along each side of the pipe as well as along the top of the pipe. Aboveground pipe will be painted blue or will be color coded or marked like underground pipe.) [FAC 62-555.320(21)(b)3]
  - f. All new or altered water mains included in this project are sized after a hydraulic analysis based on flow demands and pressure requirements. ATTACH A HYDRAULIC ANALYSIS JUSTIFYING THE SIZE OF ANY NEW OR ALTERED WATER MAINS WITH AN INSIDE DIAMETER OF LESS THAN THREE INCHES. [FAC 62-555.320(21)(b) and *RSWW* 8.1]

# NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

Project Name: Cane Island Power Park - Unit 4	Permittee: Kissimmee Utility Authority (Kua)
-----------------------------------------------	----------------------------------------------

- _____ g. The inside diameter of new or altered water mains that are included in this project and that are being designed to provide fire protection and serve fire hydrants will be at least six inches. [FAC 62-555.320(21)(b) and *RSWW* 8.1.2]
- _____ h. New or altered water mains that are included in this project and that are not being designed to carry fire flows do not have fire hydrants connected to them. [FAC 62-555.320(21)(b) and *RSWW* 8.1.5]
- _____ i. This project is being designed to minimize dead-end water mains by making appropriate tie-ins where practical. [FAC 62-555.320(21)(b) and *RSWW* 8.1.6.a]
- _____ j. New or altered dead-end water mains included in this project will be provided with a fire or flushing hydrant or blow-off for flushing purposes. [FAC 62-555.320(21)(b) and *RSWW* 8.1.6.b]
- _____ k. Sufficient valves will be provided on new or altered water mains included in this project so that inconvenience and sanitary hazards will be minimized during repairs. [FAC 62-555.320(21)(b) and *RSWW* 8.2]
- _____ l. New or altered fire hydrant leads included in this project will have an inside diameter of at least six inches and will include an auxiliary valve. [FAC 62-555.320(21)(b) and *RSWW* 8.3.3]
- _____ m. All fire hydrants that will be installed under this project and that will have unplugged, underground drains will be located at least three feet from any existing or proposed storm sewer, stormwater force main, pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., or vacuum-type sanitary sewer; at least six feet from any existing or proposed gravity- or pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-10, F.A.C.; and at least ten feet from any existing or proposed "on-site sewage treatment and disposal system." [FAC 62-555.314(4)]
- _____ n. At high points where air can accumulate in new or altered water mains included in this project, provisions will be made to remove the air by means of air relief valves, and automatic air relief valves will not be used in situations where flooding of the valve manhole or chamber may occur. [FAC 62-555.320(21)(b) and *RSWW* 8.4.1]
- _____ o. The open end of the air relief pipe from all automatic air relief valves installed under this project will be extended to at least one foot above grade and will be provided with a screened, downward-facing elbow. [FAC 62-555.320(21)(b) and *RSWW* 8.4.2]
- _____ p. New or altered chambers, pits, or manholes that contain valves, blow-offs, meters, or other such water distribution system appurtenances and that are included in this project will not be connected directly to any sanitary or storm sewer, and blow-offs or air relief valves installed under this project will not be connected directly to any sanitary or storm sewer. [FAC 62-555.320(21)(b) and *RSWW* 8.4.3]
- _____ q. New or altered water mains included in this project will be installed in accordance with applicable AWWA standards or in accordance with manufacturers' recommended procedures. [FAC 62-555.320(21)(b), *RSWW* 8.5.1, and AWWA standards as incorporated into FAC 62-555.330]
- _____ r. A continuous and uniform bedding will be provided in trenches for underground pipe installed under this project; backfill material will be tamped in layers around underground pipe installed under this project and to a sufficient height above the pipe to adequately support and protect the pipe; and unsuitably sized stones (as described in applicable AWWA standards or manufacturers' recommended installation procedures) found in trenches will be removed for a depth of at least six inches below the bottom of underground pipe installed under this project. [FAC 62-555.320(21)(b), *RSWW* 8.5.2]
- _____ s. All water main tees, bends, plugs, and hydrants installed under this project will be provided with thrust blocks or restrained joints to prevent movement. [FAC 62-555.320(21)(b) and *RSWW* 8.5.4]
- _____ t. New or altered water mains that are included in this project and that will be constructed of asbestos-cement or polyvinyl chloride pipe will be pressure and leakage tested in accordance with AWWA Standard C603 or C605, respectively, as incorporated into Rule 62-555.330, F.A.C., and all other new or altered water mains included in this project will be pressure and leakage tested in accordance with AWWA Standard C600 as incorporated into Rule 62-555.330. [FAC 62-555.320(21)(b)1 and AWWA standards as incorporated into FAC 62-555.330]
- _____ u. New or altered water mains, including fire hydrant leads and including service lines that will be under the control of a public water system and that have an inside diameter of three inches or greater, will be disinfected and bacteriologically evaluated in accordance with Rule 62-555.340, F.A.C. [FAC 62-555.320(21)(b)2 and FAC 62-555.340]
- _____ v. New or altered water mains that are included in this project and that will be installed in areas where there are known aggressive soil conditions will be protected through use of corrosion-resistant water main materials, through encasement of the water mains in polyethylene, or through provision of cathodic protection. [FAC 62-555.320(21)(b) and *RSWW* 8.5.7.d]

**NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs**

Project Name: Cane Island Power Park - Unit 4	Permittee: Kissimmee Utility Authority (Kua)
-----------------------------------------------	----------------------------------------------

- w. New or relocated, underground water mains included in this project will be laid to provide a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed vacuum-type sanitary sewer, storm sewer, stormwater force main, or pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C.; a horizontal distance of at least six feet between the outside of the water main and the outside of any existing or proposed gravity-type sanitary sewer (or a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed gravity-type sanitary sewer if the bottom of the water main will be laid at least six inches above the top of the sewer); a horizontal distance of at least six feet between the outside of the water main and the outside of any existing or proposed pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.; and a horizontal distance of at least ten feet between the outside of the water main and all parts of any existing or proposed "on-site sewage treatment and disposal system." [FAC 62-555.314(1); exceptions allowed under FAC 62-555.314(5)]
- x. New or relocated, underground water mains that are included in this project and that will cross any existing or proposed gravity- or vacuum-type sanitary sewer or storm sewer will be laid so the outside of the water main is at least six inches above the other pipeline or at least 12 inches below the other pipeline; and new or relocated, underground water mains that are included in this project and that will cross any existing or proposed pressure-type sanitary sewer, wastewater or stormwater force main, or pipeline conveying reclaimed water will be laid so the outside of the water main is at least 12 inches above or below the other pipeline. [FAC 62-555.314(2); exceptions allowed under FAC 62-555.314(5)]
- y. At the utility crossings described in Part II.C.1.w above, one full length of water main pipe will be centered above or below the other pipeline so the water main joints will be as far as possible from the other pipeline or the pipes will be arranged so that all water main joints are at least three feet from all joints in vacuum-type sanitary sewers, storm sewers, stormwater force mains, or pipelines conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., and at least six feet from all joints in gravity- or pressure-type sanitary sewers, wastewater force mains, or pipelines conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C. [FAC 62-555.314(2); exceptions allowed under FAC 62-555.314(5)]
- z. New or altered water mains that are included in this project and that will cross above surface water will be adequately supported and anchored, protected from damage and freezing, and accessible for repair or replacement. [FAC 62-555.320(21)(b) and *RSWW* 8.7.1]
- aa. New or altered water mains that are included in this project and that will cross under surface water will have a minimum cover of two feet. [FAC 62-555.320(21)(b) and *RSWW* 8.7.2]
- bb. New or altered water mains that are included in this project and that will cross under surface water courses greater than 15 feet in width will have flexible or restrained, watertight pipe joints and will include valves at both ends of the water crossing so the underwater main can be isolated for testing and repair; the aforementioned isolation valves will be easily accessible and will not be subject to flooding; the isolation valve closest to the water supply source will be in a manhole; and permanent taps will be provided on each side of the isolation valve within the manhole to allow for insertion of a small meter to determine leakage from the underwater main and to allow for sampling of water from the underwater main. [FAC 62-555.320(21)(b) and *RSWW* 8.7.2]
- cc. This project is being designed to include proper backflow protection at those new or altered service connections where backflow protection is required or recommended under Rule 62-555.360, F.A.C., or in *Recommended Practice for Backflow Prevention and Cross-Connection Control*, AWWA Manual M14, as incorporated into Rule 62-555.330, F.A.C.; or the public water system that will own this project after it is placed into operation has a cross-connection control program requiring water customers to install proper backflow protection at those service connections where backflow protection is required or recommended under Rule 62-555.360, F.A.C., or in AWWA Manual M14. [FAC 62-555.360 and AWWA Manual M14 as incorporated into FAC 62-555.330]
- dd. Neither steam condensate, cooling water from engine jackets, nor water used in conjunction with heat exchangers will be returned to the new or altered water mains included in this project. [FAC 62-555.320(21)(b) and *RSWW* 8.8.2]





# NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

Project Name: Cane Island Power Park - Unit 4

Permittee: Kissimmee Utility Authority (Kua)

### III. Certifications

#### A. Certification by Permittee

I am duly authorized to sign this notice on behalf of the permittee identified in Part I.F of this notice. I certify that, to the best of my knowledge and belief, this project complies with Chapter 62-555, F.A.C. I also certify that construction of this project has not begun yet and that, to the best of my knowledge and belief, this project does not include any of the following construction work:

- construction of water mains conveying raw or partially treated drinking water;
- construction of drinking water treatment, pumping, or storage facilities or conflict manholes;
- construction of water mains in areas contaminated by low-molecular-weight petroleum products or organic solvents;
- construction of an interconnection between previously separate public water systems or construction of water mains that create a "new system" as described under subsection 62-555.525(1), F.A.C.; or
- construction of water mains that will remain dry following completion of construction.

(A specific construction permit is required for each project involving any of the above listed construction work.)

I understand that, if this project is designed under the responsible charge of one or more professional engineers (PEs) licensed in Florida, the permittee must retain a Florida-licensed PE to take responsible charge of inspecting construction of this project for the purpose of determining in general if the construction proceeds in compliance with the Department of Environmental Protection construction permit, including the approved preliminary design report, for this project. I understand that the permittee must have complete record drawings prepared for this project. I also understand that the permittee must submit a certification of construction completion to the Department and obtain written approval, or clearance, from the Department before the permittee places this project into operation for any purpose other than disinfection or testing for leaks.

Signature and Date	Jay Butters Printed or Typed Name	Manger of Production Title
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#### B. Certification by PWS Supplying Water to Project

I am duly authorized to sign this notice on behalf of the PWS identified in Part I.G of this notice. I certify that said PWS will supply the water necessary to meet the design water demands for this project. As indicated below, the water treatment plant(s) to which this project will be connected has(have) the capacity necessary to meet the design water demands for this project, and I certify that all other PWS components affected by this project also have the capacity necessary to meet the design water demands for this project. I certify that said PWS is in compliance with applicable planning requirements in Rule 62-555.348, F.A.C.; applicable cross-connection control requirements in Rule 62-555.360, F.A.C.; and to the best of my knowledge and belief, all other applicable rules in Chapters 62-550, 62-555, and 62-699, F.A.C.; furthermore, I certify that, to the best of my knowledge and belief, said PWS's connection to this project will not cause said PWS to be in noncompliance with Chapter 62-550 or 62-555, F.A.C. I also certify that said PWS has reviewed the preliminary design report for this project and that said PWS considers the connection(s) between this project and said PWS acceptable as designed.

- Name(s) of Water Treatment Plant(s) to Which this Project Will Be Connected: Cane Island Power Park
- Total Permitted Maximum Day Operating Capacity of Plant(s), gpd: 914,000
- Total Maximum Day Flow at Plant(s) as Recorded on Monthly Operating Reports During Past 12 Months, gpd: 220,000

Signature and Date	Jay Butters Printed or Typed Name	Manager of Production Title
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#### C. Certification by PWS that Will Own Project After It Is Placed into Permanent Operation

I am duly authorized to sign this notice on behalf of the PWS identified in Part I.H of this notice. I certify that said PWS will own this project after it is placed into permanent operation. I also certify that said PWS has reviewed the preliminary design report for this project and that said PWS considers this project acceptable as designed.

Signature and Date	Jay Butters Printed or Typed Name	Manager of Production Title
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# NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

Project Name: Cane Island Power Park - Unit 4	Permittee: Kissimmee Utility Authority (Kua)
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**D. Certification by Professional Engineer(s) in Responsible Charge of Designing Project***

I, the undersigned professional engineer licensed in Florida, am in responsible charge of designing this project. I certify that, to the best of my knowledge and belief, the design of this project complies with Chapter 62-555, F.A.C. I also certify that, to the best of my knowledge and belief, this project is not being designed to include any of the following construction work:

- construction of water mains conveying raw or partially treated drinking water;
- construction of drinking water treatment, pumping, or storage facilities or conflict manholes;
- construction of water mains in areas contaminated by low-molecular-weight petroleum products or organic solvents;
- construction of an interconnection between previously separate public water systems or construction of water mains that create a "new system" as described under subsection 62-555.525(1), F.A.C.; or
- construction of water mains that will remain dry following completion of construction.

(A specific construction permit is required for each project involving any of the above listed construction work.)

Signature, Seal, and Date:
Printed/Typed Name: Epc Engineer
License Number:
Portion of Preliminary Design Report for Which Responsible:

Signature, Seal, and Date:
Printed/Typed Name:
License Number:
Portion of Preliminary Design Report for Which Responsible:

** Except as noted in paragraphs 62-555.520(3)(a) and (b), F.A.C., projects shall be designed under the responsible charge of one or more professional engineers (PEs) licensed in Florida. If this project is being designed under the responsible charge of one or more PEs licensed in Florida, Part III.D of this notice shall be completed by the PE(s) in responsible charge. If this project is not being designed under the responsible charge of one or more PEs licensed in Florida, Part III.D does not have to be completed.*

**10.5.10 Industrial Wastewater Treatment and Disposal System Permit**

Process wastewaters from Unit 4 will be treated and conveyed to a new onsite percolation pond for discharge to groundwater. Form 62-620.910(4) FAC (Form 2CG), and supporting documentation are included herein.

Additional process wastewaters will be treated and returned to the Toho reuse water pipeline. KUA and FMPA will work with Toho to address Unit 4 wastewaters consistent with the Effluent Delivery and Use Agreement (refer to Subsection 10.7.1).



# WASTEWATER APPLICATION FORM 2CG

PERMIT TO DISCHARGE PROCESS WASTEWATER  
FROM NEW OR EXISTING  
INDUSTRIAL WASTEWATER FACILITIES  
TO GROUND WATER

2CG-1

## INSTRUCTIONS - FORM 2CG

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This form must be completed by all applicants who check "yes" to Item II-D in DEP Form 62-620.910(1) (Form 1).

### **Public Availability of Submitted Information.**

You may not claim as confidential any information required by this form or Form 1, whether the information is reported on the forms or in an attachment. This information will be made available to the public upon request. Any information you submit to the Department which goes beyond that required by this form or Form 1 you may claim as confidential, but claims for information which is effluent data will be denied. If you do not assert a claim of confidentiality at the time of submitting the information, the Department may make the information public without further notice to you. Claims of confidentiality must be in accordance with Rule 62-620.302, Florida Administrative Code.

### **Completeness**

Your application will not be considered complete unless you answer every question on this form and on Form 1. If an item does not apply to you, enter "NA" (for "not applicable") to show that you considered the question. Also, you may need a Ground Water Monitoring Plan (GWMP) required by Rule 62-522.600, Florida Administrative Code. Please contact the Department for more information.

### **Follow-up Requirements (for New or Substantially Modified Facilities)**

Although you are now required to submit estimated data on this form, please note that no later than six months after you begin discharging from the proposed or substantially modified facility, you must complete and submit items V and VI of this Form 2CG. However, you need not complete those portions of Item V requiring test which you have already performed under the discharge monitoring requirements of your permit.

### **Definitions**

All significant terms used in these instructions and in the form are defined in the glossary found in the General Instructions which accompany Form 1.

### **DEP ID Number**

If you are applying for a renewal of an existing permit or for a substantial revision to an existing permit, fill in your DEP Identification Number at the top of each page of Form 2CG. You may copy this number directly from Item 1 of Form 1. If you are applying for a permit for a proposed facility, leave the DEP Identification Number blank. The Department will assign a number.

### **Item I**

You may use the map you provided for Item XI of Form 1 to determine the latitude and longitude of each of your discharge locations.

### **Item II**

Describe any land application of effluent.

### Item III

A. The line drawing should show generally the route taken by water in your facility from intake to discharge. Show all operations contributing wastewater, including process and production areas, sanitary flows, cooling water, and stormwater runoff. You may group similar operations into a single unit, labeled to correspond to the more detailed listing in Item III B. The water balance should show average flows. Show all significant losses of water to products, atmosphere, and discharge. You should use actual measurements whenever available; otherwise, use your best estimate.

B. List all sources of wastewater to each discharge point. Operations may be described in general terms (for example, "dye-making reactor" or "distillation tower"). You may estimate the flow contributed by each source if no data are available. For stormwater discharges you may estimate the average flow, but you must indicate the rainfall event upon which the estimate is based and the method of estimation. For each treatment unit, indicate its size, flow rate, and retention time, and describe the ultimate disposal of any solid or liquid wastes not discharged. Treatment units should be listed in order and you should select the proper code from Table 2CG-1 to fill in column 3-b for each treatment unit. Insert "XX" into column 3-b if no code corresponds to a treatment unit you list.

C. A discharge is intermittent unless it occurs without interruption during the operating hours of the facility, except for infrequent shut-downs for maintenance, process changes, or other similar activities. A discharge is seasonal if it occurs only during certain parts of the year. Fill in every applicable column in this item for each source of intermittent or seasonal discharges. Base your answers on actual data whenever available; otherwise, provide your best estimate. Report the highest daily value for flow rate and total volume in the "Max. Daily" columns (columns 4-a and 4-b). Report the average of all daily values measured during days when the discharge occurred within the last year in the "Long Term Avg." columns (columns 4-a and 4-b).

### Item IV

A. If you check "yes" to this question, complete all parts of the chart, or attach a copy of any previous submission you have made to the Department containing the same information.

B. You are not required to submit a description of future pollution control projects if you do not wish to or if none is planned.

### Item V (A, B, C, and D, including Tables V-A, V-B, and V-C)

This item requires you to collect and report data on the pollutants discharged from each of your discharge points. Each part of this item addresses a different set of pollutants and must be completed in accordance with the specific instructions for that part. The following general instructions apply to the entire item.

#### General Instructions

Part A requires you to report at least one analysis for each pollutant listed. Parts B and C require you to report analytical data in two ways. For some pollutants, you may be required to mark "X" in the "Testing Required" column (*column 2-a, Part C*), and test (*sample and analyze*) and report the levels of the pollutants in your discharge whether or not you expect them to be present in your discharge. For all other, you must mark "X" in either the "Believe Present" column or the "Believe Absent" column (*columns 2-a or 2-b, Part B, and Columns 2-b or 2-c, Part C*) based on your best estimate, and test for those which you believe to be present. (*See specific instructions on the form and below for Parts A through D.*) Base your determination that a pollutant is present in or absent from your discharge on your knowledge of your raw materials, maintenance chemicals, intermediate and final products and by-products, and any previous analyses known to you of your effluent or similar effluent. (*For example, if you manufacture pesticides, you should expect those pesticides to be present in contaminated stormwater runoff.*) If you would expect a pollutant to be present solely as a result of its presence in your intake water, you must mark "Believe Present" but you are not required to analyze for that pollutant. Instead, mark an "X" in the "Intake" column.

## A. Reporting

All levels must be reported as concentration and as total mass. You may report some or all of the required data by attaching separate sheets of paper instead of filling out pages V-1 to V-10 if the separate sheets contain all the required information in a format which is consistent with pages V-1 to V-10 in spacing and in identification of pollutants and columns. (*For example, the data systems used in your GC/MS analysis may be able to print data in the proper format.*) Use the following abbreviations in the columns headed "Units" (*column 3, Part A, and Column 4, Parts B and C*).

Concentration  
ppm - parts per million  
mg/l - milligrams per liter  
ppb - parts per billion  
ug/l - micrograms per liter

Mass  
lbs - pounds  
ton - tons (English tons)  
mg - milligrams  
g - grams  
kg - kilograms  
T - tonnes (metric tons)

All reporting of values for metals must be in terms of "total recoverable metal," unless (1) an applicable, promulgated effluent limitation or standard specifies the limitation for the metal in dissolved, valent, or total form; or (2) all approved analytical methods for the metal inherently measure only its dissolved form (e.g., hexavalent chromium). If you measure only one daily value, complete only "Max. Daily Values" columns and insert "1" into the "Number of Analyses" column (*columns 2-a and 2-d, Part A, and column 3-a, 3-d, Parts B and C*). The Department may require you to conduct additional analyses to further characterize your discharges. For composite sample, the daily value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24-hour period; for grab samples, the daily value is the arithmetic or flow-weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24-hour period. If you measure more than one daily value for a pollutant and those values are representative of your waste stream, you must report them. You must describe your method of testing and data analysis. You also must determine

the average of all values within the last year and report the concentration and mass under the "Long Term Avg. Values" columns (*column 2-c, Part A, and column 3-c, Parts B and C*), and the total number of daily values under the "Number of Analyses" columns (*column 2-d, Part A, and columns 3-d, Parts B and C*). Also determine the average of all daily values taken during each calendar month, and report the highest average under the "Max. 30-day Values" columns (*column 2-c, Part A, and column 3-b, Parts B and C*).

## B. Sampling

The collection of the samples for the reported analyses should be supervised by a person experienced in performing sampling of industrial wastewater. Any specific requirements contained in the applicable analytical methods should be followed for sample containers, sample preservation, holding times, the collection of duplicate samples, etc. The time when you sample should be representative of your normal operation, to the extent feasible, with all processes which contribute wastewater in normal operation, and with your treatment system operating properly with no system upsets. Samples should be collected from the center of the flow channel, where turbulence is at a maximum, at a site specified in your present permit, or at any site adequate for the collection of a representative sample. Sampling for metals that are hardness-dependent shall also include sampling for hardness.

For pH, temperature, cyanide, total phenols, residual chlorine, oil and grease, and fecal coliform, grab samples must be used. For all other pollutants 24-hour composite samples must be used. However, a minimum of one grab sample may be taken for effluents from holding ponds, or other impoundments with a retention period of greater than 24 hours. For stormwater discharges a minimum of one to four grab samples may be taken, depending on the duration of the discharge. One grab must be taken in the first hour (*or less*) of discharge, with one additional grab (*up to a minimum of four*) taken in each succeeding hour of discharge for discharges lasting four or more hours. The Department may waive composite sampling for any discharge point for which you demonstrate that use of an automatic sampler is infeasible and that a minimum of four grab samples will be representative of your discharge.

Grab and composite samples¹ are defined as follows:

Grab sample: An individual sample or at least 100 milliliters collected at a randomly-selected time over a period not exceeding 15 minutes.

Composite sample: A combination of at least 8 sample aliquots of a least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24-hour period. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically. For GC/MS Volatile Organic Analysis (VOA), aliquots must be combined in the laboratory immediately before analysis. Four (4) (*rather than eight*) aliquots or grab samples should be collected for VOA. These four samples should be collected during actual hours of discharge over a 24-hour period and need not be flow proportioned. Only one analysis is required.

Data from samples taken in the past may be used if all data requirement are met; sampling was done no more than three years before submission; and all data are representative of the present discharge. Among the factors which would cause the data to be unrepresentative are significant changes in production level; changes in raw materials, processes, or final products; and changes in wastewater treatment. When EPA promulgates new analytical methods in 40 CFR Part 136, EPA will provide information as to when you should use the new methods to generate data on your discharges. The Department may promulgate new methods in Chapter 160, Florida Administrative Code, with the date when the new methods are to be used. Always be sure you have current copies of these two documents before you take samples or submit sampling data to the Department. If you have submitted data from past sampling, the Department may request additional information, including current quantitative data, if it is determined to be necessary to assess your discharges.

#### C. Analysis

You must use test methods promulgated in 40 CFR Part 136 or Chapter 160, Florida Administrative Code; however, if none has been promulgated for a particular pollutant, you may use any suitable method for measuring the level of the pollutant in your discharge if you submit a description of the method or a reference to a published method. Your description should include the sample holding time, preservation techniques, and the quality control measures which you used. If you have two or more substantially identical discharge points, you may request permission from the Department to sample and analyze only one point and submit the results of the analysis for other substantially identical points. If your request is granted by the Department, or a separate sheet attached to the application form identify which point you did test, and describe why the other points you did not test are substantially identical to the point which you did test.

#### D. Reporting of Intake Data

You are not required to report data under the "Intake" columns unless you wish to demonstrate your eligibility for a "net" effluent limitation for one or more pollutants, that is, an effluent limitation adjusted by subtracting the average level of the pollutant(s) present in your intake water. To demonstrate your eligibility, under the "Intake" columns report the average of the results of analyses on your intake water (*If your water is treated before use, test the water after it is treated.*), and discuss the requirements for a new limitation with the appropriate district office.

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¹ Sampling requirements are periodically reviewed in light of recent research on testing methods. Upon completion of the review, changes to sampling requirements may be made. Before starting any required sampling or submitting past sampling to the Department, be sure that you have a current copy of 40 CFR Part 136 or Chapter 62-160, Florida Administrative Code.



#### Part V-A

Part V-A must be completed by all applicants for all discharge points including discharges of non-contact cooling water or storm runoff. However, at your request, the Department may waive the requirement to test for one or more of these pollutants, upon a determination that available information is adequate to support issuance of the permit with less stringent reporting requirements for these pollutants. Use composite samples for all pollutants in this Part, except use grab samples for pH and temperature. See the discussion in General Instructions to item V for definitions of the columns in Part A. The "Long Term Avg. Values" column (*column 2-c*) and "Max. 30-day Values" column (*column 2-b*) are not compulsory but should be filled out if data are available.

#### Part V-B

Part V-B must be completed by all applicants for all discharge points, including points containing only non-contact cooling water or storm runoff. You must report quantitative data if the pollutant(s) in question is limited in an effluent limitation either directly or indirectly but expressly through a limitation on an indicator (*e.g., use of TSS as an indicator to control the discharge of iron and aluminum*). For other discharged pollutants you must provide quantitative data or explain their presence in your discharge. The Department will consider a request to eliminate the requirement to test for pollutants for an industrial category or subcategory. Your request must be supported by data representative of the industrial category or subcategory in question. The data must demonstrate that individual testing for each applicant is unnecessary, because the facilities in the category or subcategory discharge substantially identical levels of the pollutant or discharge the pollutant uniformly at sufficiently low levels. Use composite samples for all pollutants you analyze for in this part, except use grab samples for residual chlorine, oil and grease, and fecal coliform. The "Long Term Avg. Values" column (*column 2-c*) and "Max. 30-day Values" column (*column 2-b*) are not compulsory but should be filled out if data are available.

#### Part V-C

Table 2CG-2 at the end of these instructions lists 34 primary industry categories. For each discharge point, if any of your processes which contribute wastewater falls into one of those categories, you must mark "X" in "Testing Required" column (*column 2-a*) and test for (1) all of the toxic metals, cyanide, and total phenols; and (2) the organic toxic pollutants contained in Table 2CG-3 as applicable to your category. The organic toxic pollutants are listed by GC/MS fractions on pages V-4 to V-10 in Part V-C. The inclusion of total phenols in Part V-C is not intended to classify total phenols as a toxic pollutant. When you determine which industry category you are in to find your testing requirements, you are not determining your category for any other purpose and you are not giving up your right to challenge your inclusion in that category before your permit is issued. For all other cases (*secondary industries, non-process wastewater discharge points, and GC/MS fractions that are not required*), you must mark "X" in either the "Believed Present" column or the "Believed Absent" column for each pollutant.

You must report quantitative data as follows:

For every pollutant you know or have reason to believe is present in your discharge in concentrations of 10 ppb or greater;

For acrolein; acrylonitrile; 2,4 dinitrophenol; and 2-methyl-4,6 dinitrophenol where you expect these four pollutants to be discharged in concentrations of 100 ppb or greater; and

For every pollutant expected to be discharged in concentrations less than the thresholds specified above. For pollutants in this last category, in lieu of quantitative data, you may briefly describe the reasons the pollutant is expected to be discharged.

You are required to mark "Testing Required" for dioxin if you use or manufacture one of the following compounds:

- (a) 2,4,5-trichlorophenoxy acetic acid, (2,4,5-T);

- (b) 2-(2,4,5-trichlorophenoxy) propanoic acid, (Silvex, 2,4,5-TP);
- (c) 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate, (Erbon);
- (d) 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate, (Ronnel);
- (e) 2,4,5-trichlorophenol, (TCP); or
- (f) hexachlorophene, (HCP).

If you mark "testing Required" or "Believed Present," you must perform a screening analysis for dioxins, using gas chromatography with an electron capture detector. A TCDD standard for quantitation is not required. Describe the results of this analysis in the space provided: for example, "no measurable baseline deflection at the retention time of TCDD" or "a measurable peak within the tolerances of the retention time of TCDD." The Department may require you to perform a quantitative analysis if you report a quantitative analysis if you report a positive result.

#### Part V-D

List any pollutants in Table 2CG-3 that you believe to be present and explain why you believe them to be present. No analysis is required, but if you have analytical data, you must report it. Table 2CG-4 lists certain hazardous substances which may be exempt from reporting requirements contained in section 311 of the Clean Water Act. If you discharge any of these substances, please contact the Department for further information.

#### **Item VI**

This requirement applies to current use or manufacture of a toxic pollutant as an intermediate or final product or by-product. The Department may waive or modify the requirement if you demonstrate that it would be unduly burdensome to identify each toxic pollutant and the Department has adequate information to issue your permit. You may not claim this information as confidential; however, you do not have to distinguish between use or production of the pollutants or list the amounts.

#### **Item VII**

This item is self explanatory.

#### **Item VIII**

There are severe penalties for submitting false information on this application form. Chapter 62-620, Florida Administrative Code, requires, in addition to the certification provided by a professional engineer, a certification from the owner or responsible authority of the facility as follows:

A. For a corporation: by a responsible corporate official. For purposes of this section, a responsible corporate official means (1) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or (2) the manager of one or more manufacturing, production or operating facilities employing more than 250 person or have gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

B. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

C. For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official. A principal executive officer includes the chief executive officer of the agency or a senior executive officer having the responsibility for the overall operations of a principal geographic unit of the agency, for example, a regional or district administrator.

**TABLE 2CG-1  
CODES FOR TREATMENT UNITS**

<b>PHYSICAL TREATMENT PROCESSES</b>			
1-A	Ammonia Strippin	1-N	Microstraining
2-B	Dialysis	1-O	Mixing
1-C	Diatomaceous Earth Filtration	1-P	Moving Bed Filters
1-D	Distillation	1-Q	Multimedia Filtration
1-E	Electrodialysis	1-R	Rapid Sand Filtration
1-F	Evaporation	1-S	Reverse Osmosis (Hyperfiltration)
1-G	Flocculation	1-T	Screening
1-H	Flotation	1-U	Sedimentation (Settling)
1-I	Foam Fractionation	1-V	Slow Sand Filtration
1-J	Freezing	1-W	Solvent Extraction
1-K	Gas-Phase Separation	1-X	Sorption
1-L	Grinding (Comminutors)	1-Y	Percolation Pond
1-M	Grit Removal		
<b>CHEMICAL TREATMENT PROCESSES</b>			
2-A	Carbon Adsorption	2-G	Disinfection ( <i>Ozone</i> )
2-B	Chemical Oxidation	2-H	Disinfection ( <i>Other</i> )
2-C	Chemical Precipitation	2-I	Electrochemical Treatment
2-D	Coagulation	2-J	Ion Exchange
2-E	Dechlorination	2-K	Neutralization
2-F	Disinfection ( <i>Chlorine</i> )	2-L	Reduction
<b>BIOLOGICAL TREATMENT PROCESSES</b>			
3-A	Activated Sludge	3-E	Pre-Aeration
3-B	Aerated Lagoons	3-F	Spray Irrigation/Land Application
3-C	Anaerobic Treatment	3-G	Stabilization Ponds
3-D	Nitrification-Denitrification	3-H	Trickling Filter
<b>OTHER PROCESSES</b>			
4-A	Discharge to Surface Water	4-C	Reuse/Recycle of Treated Effluent
4-B	Ocean Discharge Through Outfall	4-D	Underground Injection

Table 2CG-1, Codes for Treatment Units Contd.

SLUDGE TREATMENT AND DISPOSAL PROCESSES			
5-A	Aerobic Disgestion	5-M	Heat Drying
5-B	Anaerobic Digestion	5-N	Heat Treatment
5-C	Belt Filtration	5-O	Incineration
5-D	Centrifugation	5-P	Land Application
5-E	Chemical Conditioning	5-Q	Landfill
5-F	Chlorine Treatment	5-R	Pressure Filtration
5-G	Composting	5-S	Pyrolysis
5-H	Drying Beds	5-T	Sludge Lagoons
5-I	Elutriation	5-U	Vacuum Filtration
5-J	Flotation Thickening	5-V	Vibration
5-K	Freezing	5-W	Wet Oxidation
5-L	Gravity Thickening		

TABLE 2CG-2  
TESTING REQUIREMENTS FOR ORGANIC TOXIC POLLUTANTS INDUSTRY CATEGORY

INDUSTRY CATEGORY	GC/MS FRACTION ²			
	Volatile	Acid	Base/Neutral	Pesticide
Adhesives and sealants	X	X	X	
Aluminum forming	X	X	X	
auto and other laundries	X	X	X	X
Battery manufacturing	X		X	
Coal mining	X	X	X	X
Coil coating	X	X	X	
Copper forming	X	X	X	
Electric and electronic compounds	X	X	X	X
Electroplating	X	X	X	
Explosives manufacturing		X	X	
Foundries	X	X	X	
Gum and wood chemicals	X	X	X	X
Inorganic chemicals manufacturing	X	X	X	
Iron and steel manufacturing	X	X	X	
Leather tanning and finishing	X	X	X	X
Mechanical products manufacturing	X	X	X	
Nonferrous metals manufacturing	X	X	X	X

² The pollutants in each fraction are listed in Item V-C  
X - Testing required.

Table 2CG-2, Testing Requirements for Organic Toxic Pollutants Industry Category, contd.

INDUSTRY CATEGORY	GC/MS FRACTION ³			
	Volatile	Acid	Base/Neutral	Pesticide
Ore mining	X	X	X	X
Organic chemicals manufacturing	X	X	X	X
Paint and ink formulation	X	X	X	X
Pesticides	X	X	X	X
Petroleum refining	X	X	X	X
Pharmaceutical preparations	X	X	X	
Photographic equipment and supplies	X	X	X	X
Plastic and synthetic materials manufacturing	X	X	X	X
Plastic processing	X			
Porcelain enameling	X		X	X
Printing and publishing	X	X	X	X
Pulp and paperboard mills	X	X	X	X
Rubber processing	X	X	X	
Soap and detergent manufacturing	X	X	X	
Steam electric power plants	X	X	X	
Textile mills	X	X	X	X
Timber products processing	X	X	X	X

¹The pollutants in each fraction are listed in Item V-C  
X = Testing required.

³ The pollutants in each fraction are listed in Item V-C.  
X + Testing required.

**TABLE 2CG-3  
TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES REQUIRED TO BE IDENTIFIED  
BY APPLICANTS IF EXPECTED TO BE PRESENT**

<u>Toxic Pollutant</u>	<u>Hazardous Substances</u>	<u>Hazardous Substances</u>
Asbestos	2,2 Dichloropropionic acid	Monomethyl amine
	Dichlorvos	Naled
<u>Hazardous Substances</u>	Diethyl amine	Naphthenic acid
Acetaldehyde	Dimethyl amine	Nitrotoluene
Allyl alcohol	Dintrobenzene	Parathion
Altylchloride	Diquat	Phenolsulfonate
Amyl acetate	Disulfoton	Phosgene
Aniline	Diuron	Propargite
Benzonitrile	Epichlorohydrin	Propylene oxide
Benzyl chloride	Ethion	Pyrethrins
Butyl acetate	Ethylene diamine	Quinoline
Butylamine	Formaldehyde	Resorcinol
Captan	Furfural	Strontium
Carbaryl	Guthion	Strychnine
	Isoprene	2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)
Carbōfuran	Isopropanolamine dodecylbenzenesulfonate	TDE (Terochlorodiphenyl ethane)
Carbon disulfide	Kelthane	2,4,5-TP [2-(2,4,5-Trichlorophenosyl) pro-panic acide]
Chlopyrifos	Kepone	Trichlorofon
Coumpahos	Malathion	Triethanolamine
Cresol	Mercaptodimethur	dodecylbenzenesulfonate
		Triethylamine
Crotonaldehyde	Methoxychlor	Uranium
Cyclohexane	Methyl mercaptan	Vanadium
2,4-D (2,4-Dichlorophenoxyacetic acid)	Methyl methacrylate	Vinyl acetate
Diazinon	Methyl parathion	Xylene
Dicamba	Mevinphos	Xylenol
Dichlobenil	Mexacarbate	Zirconium
Dichlone	Monoethyl amine	

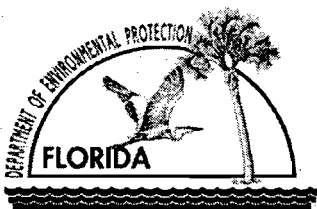
**TABLE 2CG-4  
HAZARDOUS SUBSTANCES**

1. Acetaldehyde	64. Cadmium bromide	126. Dodecylbenzenesulfonic acid
2. Acetic acid	65. Cadmium chloride	127. Endosulfan
3. Acetic anhydride	66. Calcium arsenate	128. Endrin
4. Acetone cyanohydrin	67. Calcium arsenite	129. Epichlorohydrin
5. Acetyl bromide	68. Calcium carbide	130. Ethion
6. Acetyl chloride	69. Calcium chromate	131. Ethylbenzene
7. Acrolein	70. Calcium cyanide	132. Ethylenediamine
8. Acrylonitrile	71. Calcium dodecylbenzenesulfonate	133. Ethylene dibromide
9. Adipic acid	72. Calcium hypochlorite	134. Ethylene dichloride
10. Aldrin	73. Captan	135. Ethylene Diaminetetracetic acid (EDTA)
11. Allyl alcohol	74. Carbaryl	136. Ferric ammonium citrate
12. Allyl chloride	75. Carbofuran	137. Ferric ammonium oxalate
13. Aluminum sulfate	76. Carbon disulfide	138. Ferric chloride
14. Ammonia	77. Carbon tetrachloride	139. Ferric fluoride
15. Ammonium acetate	78. Chlordane	140. Ferric nitrate
16. Ammonium benzoate	79. Chlorine	141. Ferric sulfate
17. Ammonium bicarbonate	80. Chlorobenzene	142. Ferrous ammonium sulfate
18. Ammonium bichromate	81. Chloroform	143. Ferrous chloride
19. Ammonium bifluoride	82. Chloropyrifos	144. Ferrous sulfate
20. Ammonium bisulfite	83. Chlorosulfonic acid	145. Formaldehyde
21. Ammonium carbamate	84. Chromic acetate	146. Formic acid
22. Ammonium carbonate	85. Chromic acid	147. Fumaric acid
23. Ammonium chloride	86. Chromic sulfate	148. Furfural
24. Ammonium chromate	87. Chromous chloride	149. Guthion
25. Ammonium citrate	88. Cobaltous bromide	150. Heptachlor
26. Ammonium fluoroborate	89. Cobaltous formate	151. Hexachlorocyclopentadiene
27. Ammonium fluoride	90. Cobaltous sulfamate	152. Hydrochloric acid
28. Ammonium hydroxide	91. Coumaphos	153. Hydrofluoric acid
29. Ammonium oxalate	92. Cresol	154. Hydrogen cyanide
30. Ammonium silicofluoride	93. Crotonaldehyde	155. Hydrogen sulfide
31. Ammonium sulfamate	94. Cupric acetate	156. Isoprene
32. Ammonium sulfide	95. Cupric acetoarsenite	157. Isopropanolamine dodecylbenzenesulfonate
33. Ammonium sulfite	96. Cupric chloride	158. Kelthane
34. Ammonium tartrate	97. Cupric nitrate	159. Kepone
35. Ammonium thiocyanate	98. Cupric oxalate	160. Lead acetate
36. Ammonium thiosulfate	99. Cupric sulfate	161. Lead arsenate
37. Amyl acetate	100. Cupric sulfate ammoniated	162. Lead chloride
38. Aniline	101. Cupric tartrate	163. Lead fluoborate
39. Antimony pentachloride	102. Cyanogen chloride	164. Lead fluorite
40. Antimony potassium tartrate	103. Cyclohexane	165. Lead iodide
41. Antimony tribromide	104. 2,4-D acid (2,4-Dichlorophenoxyacetic acid)	166. Lead nitrate
42. Antimony trichloride	105. 2,4-D esters (2,4-Dichlorophenoxyacetic acid esters)	167. Lead stearate
43. Antimony trifluoride		168. Lead sulfate
44. Antimony trioxide	106. DDT	169. Lead sulfide
45. Arsenic disulfide	107. Diazinon	170. Lead thiocyanate
46. Arsenic pentoxide	108. Dicamba	171. Lindane
47. Arsenic trichloride	109. Dichlobenil	172. Lithium chromate
48. Arsenic trioxide	110. Dichlone	173. Malathion
49. Arsenic trisulfide	111. Dichlorobenzene	174. Maleic acid
50. Barium cyanide	112. Dichloropropane	175. Maleic anhydride
51. Benzene	113. Dichloropropene	176. Mercaptodimethur
52. Benzoic acid	114. Dichloropropene-Dichloropropane mix	177. Mercuric cyanide
53. Benzointrile	115. 2,2-Dichloropropionic acid	178. Mercuric nitrate
54. Benzoyl chloride	116. Dichlorvos	179. Mercuric sulfate
55. Benzyl chloride	117. Dieldrin	180. Mercuric thiocyanate
56. Beryllium chloride	118. Diethylamine	181. Mercurous nitrate
57. Beryllium fluoride	119. Dimethylamine	182. Methoxychlor
58. Beryllium nitrate	120. Dinitrobenzene	183. Methyl mercaptan
59. Butylacetate	121. Dinitrophenol	184. Methyl methacrylate
60. n-Butylphthalate	122. Dinitrotoluene	185. Methyl parathion
61. Butylamine	123. Diquat	186. Mevinphos
62. Butyric acid	124. Disulfoton	187. Mexacarbate
63. Cadmium acetate	125. Diuron	188. Monoethylamine

- 189. Monomethylamine
- 190. Naled
- 191. Naphthalene
- 192. Naphthenic acid
- 193. Nickel ammonium sulfate
- 194. Nickel chloride
- 195. Nickel hydroxide
- 196. Nickel nitrate
- 197. Nickel sulfate
- 198. Nitric acid
- 199. Nitrobenzene
- 200. Nitrogen dioxide
- 201. Nitrophenil
- 202. Nitrotoluene
- 203. Paraformaldehyde
- 204. Parathion
- 205. Pentachlorophenol
- 206. Phenol
- 207. Phosgene
- 208. Phosphoric acid
- 209. Phosphorus
- 210. Phosphorus oxychloride
- 211. Phosphorus pentasulfide
- 212. Phosphorus trichloride
- 213. Polychlorinated biphenyls (PCB)
- 214. Potassium arsenate
- 215. Potassium arsenite
- 216. Potassium bichromate
- 217. Potassium chromate
- 218. Potassium cyanide
- 219. Potassium hydroxide
- 220. Potassium permanganate
- 221. Propargite
- 222. Propionic acid
- 223. Propionic anhydride
- 224. Propylene oxide
- 225. Pyrethrins
- 226. Quinoline
- 227. Resorcinol
- 228. Selenium oxide
- 229. Silver nitrate
- 230. Sodium
- 231. Sodium arsenate
- 232. Sodium arsenite
- 233. Sodium bichromate
- 234. Sodium bifluoride
- 235. Sodium bisulfite
- 236. Sodium chromate
- 237. Sodium cyanide
- 238. Sodium dodecylbenzenesulfonate
- 239. Sodium fluoride
- 240. Sodium hydrosulfide
- 241. Sodium hydroxide
- 242. Sodium hypochlorite
- 243. Sodium methylate
- 244. Sodium nitrate
- 245. Sodium phosphate (dibasic)
- 246. Sodium phosphate (tribasic)
- 247. Sodium selenite
- 248. Strontium chromate
- 249. Strychnine
- 250. Styrene
- 251. Sulfuric acid
- 252. Sulfur monochloride
- 253. 2,4,5-T acid (2,4,5-Trichlorophenoxy acetic acid)
- 254. 2,4,5-T amines (2,4,5-Trichlorophenoxy acetic acid amines)
- 255. 2,4,5-T esters (2,4,5-Trichlorophenoxy acetic acid esters)
- 256. 2,4,5-T salts (2,4,5-Trichlorophenoxy acetic acid salts)
- 257. 2,4,5-TP acid (2,4,5-Trichlorophenoxy propanoic acid)
- 258. 2,4,5-TP acid esters (2,4,5-Trichlorophenoxy propanoic acid esters)
- 259. TDE (Tetrachlorodiphenyl ethane)
- 260. Tetraethyl lead
- 261. Tetraethyl pyrophosphate
- 262. Thallium sulfate
- 263. Toluene
- 264. Toxaphene
- 265. Trichlorofon
- 266. Trichloroethylene
- 267. Trichlorophenol
- 268. Triethanolamine dodecylbenzenesulfonate
- 269. Triethylamine
- 270. Trimethylamine
- 271. Uranyl acetate
- 272. Uranyl nitrate
- 273. Vanadium pentoxide
- 274. Vanadyl sulfate
- 275. Vinyl acetate
- 276. Vinylidene chloride
- 277. Xylene
- 278. Xylenol
- 279. Zinc acetate
- 280. Zinc ammonium chloride
- 281. Zinc borate
- 282. Zinc bromide
- 283. Zinc carbonate
- 284. Zinc chloride
- 285. Zinc cyanide
- 286. Zinc fluoride
- 287. Zinc formate
- 288. Zinc hydrosulfite
- 289. Zinc nitrate
- 290. Zinc phenolsulfonate
- 291. Zinc phosphide
- 292. Zinc silcofluoride
- 293. Zinc sulfate
- 294. Zirconium nitrate
- 295. Zirconium potassium fluoride
- 296. Zirconium sulfate
- 297. Zirconium tetrachloride



FORM  
2CG



WASTEWATER APPLICATION FOR PERMIT TO DISCHARGE PROCESS  
WASTEWATER FROM NEW OR EXISTING INDUSTRIAL  
WASTEWATER FACILITIES TO GROUND WATER

Facility I.D. Number: _____

Please print or type information in the appropriate areas.

**I DISCHARGE LOCATION** For each location, list the X,Y coordinates and, where applicable, the name of the land application site.

(latitude/longitude to the nearest 15 seconds)

A. Discharge Location No. (list)	B. Latitude			C. Longitude			D. Name of Land Application
	Deg.	Min.	Sec.	Deg.	Min.	Sec.	
G002	28	16	49.53	81	32	12.86	Percolation Pond (onsite)

**II LAND APPLICATION DESIGN**

A. Discharge No.	B. Design Configuration and Construction Materials	C. Cover Crop	D. Application Rate	E. Land Application Area	F. Ground Water
G002	Single cell, above-grade, earthen pond	Grass	22,000 gpd	16,200 sq ft	G-II
	See Attachment A for Project Description				

**III FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES**

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and discharge points. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

**See Attachment B.**

B. For each discharge location, provide a description of:

**See Attachment C.**

1. All operations contributing wastewater to the effluent; including process wastewater, sanitary wastewater, cooling water, and storm water runoff;
2. The average flow contributed by each operation; and
3. The treatment received by the wastewater.

Use the space below. Continue on additional sheets, if necessary.

(1) Discharge Location No.	(2) Operation(s) Contributing Flow		(3) Treatment		
	(a) Operation (list)	(b) Avg. Flow & Units	(a) Description	(b) List Code from Table 2CG-1	
G002	Misc. Plant & Eqpmt Drains	20,000 gpd	Oil Water Separation & Perc. Pond	xx	1-Y
	Oil Containment Areas - Precip	2,000 gpd avg.	Oil Water Separation & Perc. Pond	xx	1-Y

III Contd.

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

Yes (complete the following table)

No (go to D. below)

(1) Outfall # (List)	(2) Operations(s) Contributing Flow (List)	(3) Frequency		(4) Flow				(c) Duration (in days)
		(a) Days per Week (specify avg.)	(b) Months per Yr. (specify avg.)	(a) Flow Rate (in mgd)		(b) Total Volume (specify with units)		
				Long Term Avg	Max. Daily	Long Term Avg.	Max. Daily	
G002	Misc. Plant & Equip Drains	7	12	0.022	0.050	22,000 g	(later) g	0.5

*For land application systems, also include the Rest Period.

D. Describe practices to be followed to ensure adequate wastewater treatment during emergencies such as power loss and equipment failures causing shutdown of pollution abatement equipment of the proposed/permitted facilities.

**See Attachment C.**

E. List the method(s) and location(s) of flow measurement.

**See Attachment C.**

**IV IMPROVEMENTS**

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

Yes (complete the following table)

No (go to Item VI-B)

1. Identification of Condition, Agreement, Etc.	2. Affected Discharge Locations		3. Brief Description of Project	4. Final Compliance Date	
	a. No.	b. Source of Discharge		a. Required	b. Projected

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (or other environmental projects which may affect your discharges) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

Mark "X" if description of additional control programs is attached.

**V INTAKE AND EFFLUENT CHARACTERISTICS**

A, B, & C: See instructions before proceeding--Complete one set of tables for each discharge location -- Annotate the location number in the space provided. NOTE: Tables V-A, V-B, and V-C are included on separate sheets number V-1 through V-10.

D. Use the space below to list any of the pollutants listed in Table 2CG-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. Pollutant	2. Source	1. Pollutant	2. Source
N/A			

**VI POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS**

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or by-product?

- YES (list all such pollutants below)       NO (go to VII)

**VII CONTRACT ANALYSIS INFORMATION**

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

- YES (list the name, address, telephone number, and certification number of, and pollutants analyzed by each such laboratory or firm below)  
 NO (go to Section VIII)

A. Name	B. Address	C. Telephone (area code & no.)	D. Pollutants Analyzed (list)

Facility I.D. Number: _____

**VIII CONNECTION TO REGIONAL POTW**

A. Indicate the relationship between this project and area regional planning for wastewater treatment. List steps to be taken for this industrial wastewater facility to become part of an area-wide wastewater treatment system.

The Cane Island Power Park is a combustion turbine power plant jointly owned by KUA and FMFA, and operated by KUA. Bulk electricity is generated and sold to KUA and FMFA customers. Unit 4 at the Power Park is proposed and will use similar wastewater treatment and disposal methods as previously permitted for Units 1, 2 & 3. An agreement exists between KUA and Toho Water Authority for delivery and return of reuse water.

**IX-A CERTIFICATIONS FOR NEW OR MODIFIED FACILITIES**

This is to certify the engineering features of this pollution control project have been designed by me and found to be in conformity with sound engineering principles, applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules of the Department. It is also agreed that the undersigned, if authorized by the owner, will furnish the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signature	Company Name
Name (please type)	Address
(Affix Seal)	Florida Registration No.: _____
	Telephone No.: _____ Date _____

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name (type or print)	Signature
Title	Date Signed
Telephone No. (area code & No.)	

Facility I.D. Number: _____

**IX-B CERTIFICATIONS FOR PERMIT RENEWALS**

This is to certify the engineering features of this pollution control project have been examined by me and found to be in conformity with sound engineering principles, applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules of the Department.

_____ Signature	_____ Company Name
_____ Name (please type)	_____ Address
_____ (Affix Seal)	_____ Florida Registration No.:
	_____ Telephone No.: _____ Date _____

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ Name (type or print)	_____ Signature
_____ Title	_____ Date Signed
_____ Telephone No. (area code & No.)	

Facility ID. Number: _____ Outfall No. G002

PLEASE PRINT OR TYPE ONLY: You may report some or all of this information on separate sheets instead of completing these pages. Use the same format. SEE INSTRUCTIONS.

**V. INTAKE AND EFFLUENT CHARACTERISTICS**

**PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.**

1. Pollutant	2. Effluent						d. No. of Analyses	3. Units		4. Intake (optional)		
	a. Max. Daily Value		b. Max. 30-day Value		c. Annual Avg. Value			a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
a. BOD, Carbonaceous, 5-day, 20 Deg. C.	10	6						ppm	lbs			
b. Chemical Oxygen Demand (COD)	20	12						ppm	lbs			
c. Total Organic Carbon (TOC)	20	12						ppm	lbs			
d. Total Suspended Solids (TSS)	100	60						ppm	lbs			
e. Total Nitrogen (as N)	0.01	0.006						ppm	lbs			
f. Total Phosphorus (as P)	0.02	0.012						ppm	lbs			
g. Ammonia (as N)	0.01	0.006						ppm	lbs			
h. Flow - actual or projected	Value 50,000		Value		Value			gpd		Value		
i. Flow - design	Value 50,000		Value		Value			gpd		Value		
j. Specific Conductivity	Value 160		Value		Value			umhos/cm		Value		
k. Temperature (winter)	Value 10		Value		Value			°C		Value		
l. Temperature (summer)	Value 32		Value		Value			°C		Value		
m. pH	Min. 6	Max 8.5	Min.	Max.				STANDARD UNITS				

*Conc. = Concentration

**PART B - Mark "X" in column 2a for each pollutant you know or have reason to believe is present. Mark "X" in column 2b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.**

1. Pollutant and CAS No. (if available)	2. Mark "X"		3. Effluent						4. Units		5. Intake (optional)			
	a. believed present	b. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
			(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
a. Bromide (24949-67-9)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
b. Chlorine, Total Residual	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.2	0.2						ppm	lbs			
c. Color	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<5							ppm	lbs			
d. Fecal Coliform	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
e. Fluoride (16984-48-8)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.2	0.2						ppm	lbs			
f. Nitrate-Nitrite (as N)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												

Item V-B Contd

Facility ID. Number: _____ Outfall No. G002

1. Pollutant and CAS No. (if available)	2. Mark "X"		3. Effluent						4. Units		5. Intake (optional)			
	a. believed present	b. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
			(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
g. Nitrogen, Total Organic (as N)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
h. Oil and grease	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10	1.2						ppm	lbs			
i. Phosphorus, Total (as P) (7723-14-0)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.03	0.004						ppm	lbs			
j. Radioactivity														
(1) Alpha, Total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.2							pCi/l				
(2) Beta, Total	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
(3) Radium, Total	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
(4) Radium 226, Total	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
k. Sulfate (as SO ₄ ) (14808-79-8)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	19	2.2						ppm	lbs			
l. Sulfide (as S)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
m. Sulfite (as SO ₃ ) (14265-45-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
n. Surfactants	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
o. Aluminum, Total (7429-90-5)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
p. Barium, Total (7440-39-3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.02	0.002						ppm	lbs			
q. Boron, Total (7440-42-8)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
r. Cobalt, Total (7440-48-4)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
s. Iron, Total (7439-89-6)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.1	0.02						ppm	lbs			
t. Magnesium, Total (7439-95-4)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7	0.9						ppm	lbs			
u. Molybdenum, Total (7439-98-7)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
v. Manganese, Total (7439-96-5)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
w. Tin, Total (7440-31-5)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
x. Titanium, Total (7440-32-6)	<input type="checkbox"/>	<input checked="" type="checkbox"/>												



Facility ID. Number: _____ Outfall No. G002

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2a for all GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2a (secondary industries, non-process wastewater outfalls, and non-required GC/MS fractions), mark "X" in column 2b for each pollutant you know or have reason to believe is present. Mark "X" in column 2c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4,6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent						4. Units		5. Intake (optional)			
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
<b>METALS, CYANIDE, AND TOTAL PHENOLS</b>															
1M. Antimony, Total (7440-36-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
2M. Arsenic, Total (7723-14-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
3M. Beryllium, Total (7440-41-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
4M. Cadmium, Total (7440-43-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
5M. Chromium, Total (7440-47-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
6M. Copper, Total (7440-50-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
7M. Lead, Total (7439-92-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
8M. Mercury, Total (7439-97-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
9M. Nickel, Total (7440-02-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
10M. Selenium, Total (7782-49-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
11M. Silver, Total (7440-22-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
12M. Thallium, Total (7440-28-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
13M. Zinc, Total (7440-66-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
14M. Cyanide, Total (57-12-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
15M. Phenols, Total	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
<b>DIOXIN</b>															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
<b>GC/MS FRACTION VOLATILE COMPOUNDS</b>															
1V. Acrolein (107-02-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
2V. Acrylonitrile (107-13-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												

Facility ID. Number: _____ Outfall No. G002

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent						4. Units		5. Intake (optional)			
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
<b>GC/MS FRACTION - VOLATILE COMPOUNDS (continued)</b>															
3V. Benzene (71-43-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
4V. Bis (Chloromethyl) Ether (542-88-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
5V. Bromoform (75-25-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
6V. Carbon Tetrachloride (56-23-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
7V Chlorobenzene (108-90-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
8V. Chlorodibromomethane (124-8-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
9V. Chloroethane (74-00-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
10V. 2-Chloro-ethylvinyl Ether (110-75-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
11V. Chloroform (67-86-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
12V. Dichlorobromomethane (75-24-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
13V. Dichlorodifluoromethane (75-71-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
14V. 1,1-Dichloroethane (75-34-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
15V. 1,2-Dichloroethane (107-06-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
16V. 1,1-Dichloroethylene (75-35-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
17V. 1,2-Dichloropropane (78-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
18V. 1,3-Dichloropropylene (542-75-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
19V. Ethylbenzene (100-41-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
20V. Methyl Bromide (74-83-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
21V. Methyl Chloride (74-87-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
22V. Methylene Chloride (74-98-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
23V. 1,1,2,2-Tetrachloroethane (79-34-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
24V. Tetrachloroethylene (127-18-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent						4. Units		5. Intake (optional)			
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2)	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
<b>GC/MS FRACTION - VOLATILE COMPOUNDS (continued)</b>															
25V. Toluene (108-88-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
26V. 1,2-Trans-Dichloroethylene (156-60-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
27V. 1,1,2-Trichloroethane (71-55-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
28V. 1,1,2-Trichloroethane (79-00-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
29V. Trichloroethylene (79-01-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
30V. Trichloro-fluoromethane (75-69-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
31V. Vinyl Chloride (75-01-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
<b>GC/MS FRACTION - AROMATIC COMPOUNDS</b>															
1A. 2-Chlorophenol (95-57-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
2A. 2,4-Dichlorophenol (120-83-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
3A. 2,4-Dimethylphenol (105-67-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
4A. 4,6-Dinitro-O-Cresol (534-53-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
5A. 2,4-Dinitrophenol (51-28-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
6A. 2-Nitrophenol (88-75-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
7A. 4-Nitrophenol (100-02-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
8A P-Chloro-M-Cresol (59-50-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
9A Pentachlorophenol (87-86-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
10A Phenol (108-95-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
11A 2,4,5-Trichloro-phenol (88-06-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
<b>GC/MS FRACTION - BASIC/NEUTRAL COMPOUNDS</b>															
1B. Acenaphthene (63-32-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
2B. Acenaphthylene (208-96-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
3B. Anthracene (120-12-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
4B. Benzidine (92-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent						4. Units		5. Intake (optional)			
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
5B. Benzo (a) Anthracene (56-55-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
6B. Benzo (a) Pyrene (50-32-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
7B. 3,4-Benzo-fluoranthene (205-99-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
8B. Benzo (ghi) Perylene (191-24-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
9B. Benzo (k) Fluoranthene (207-08-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
10B. Bis (2-Chloromethoxy) Methane (111-91-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
11B. Bis (2-chloroethyl) Ether (111-44-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
12B. Bis (2-Chloroisopropyl) Ether (102-60-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
15B. Butyl Benzyl Phthalate (84-68-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
16B. 2-Chloronaphthalene (91-58-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
18B. Chrysene (218-01-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
19B. Dibenzo (a,h) Anthracene (53-70-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
20B. 1,2-Dichlorobenzene (95-50-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
21B. 1,3-Dichlorobenzene (541-73-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
22B. 1,4-Dichlorobenzene (106-46-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
23B. 3,3'-Dichlorobenzidine (92-94-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
24B. Diethyl Phthalate (84-66-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
25B. Dimethyl Phthalate (131-11-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
26B. Di-N-Butyl Phthalate (84-74-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
27B. 2,4-Dinitrotoluene (121-14-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
28B. 2,6-Dinitrotoluene (606-20-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												

Facility ID. Number: _____ Outfall No. G002

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent						4. Units		5. Intake (optional)			
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
29B. Di-N-Octyl Phthalate (117-84-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
31B. Fluoranthene (206-44-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
32B. Fluorene (86-73-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
33B. Hexachlorobenzene (118-74-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
34B. Hexachlorobutadiene (87-68-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
35B. Hexachlorocyclopentadiene (77-47-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
36B. Hexachloroethane (67-72-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
38B. Isophorone (78-59-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
39B. Naphthalene (91-20-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
40B. Nitrobenzene (98-95-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
41B N-Nitrosodimethylamine (62-75-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
42B. N-Nitrosodi-N-Propylamine (621-64-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
43B. N-Nitrosodiphenylamine (86-30-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
44B Phenanthrene (85-01-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
45B. Pyrene (129-00-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
46B. 1,2,4-Trichlorobenzene (120-82-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
<b>GC/MS FRAGMENTATION PESTICIDES</b>															
1P. Aldrin (309-00-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
2P. -BHC (319-84-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
3P. -BHC (319-85-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
4P. -BHC (58-89-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
5P. -BHC (319-86-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												

Facility ID. Number:

Outfall No. G002

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent						4. Units		5. Intake (optional)			
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
6P. Chlordane (57-74-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
7P. 4,4'-DDT (50-29-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
8P. 4,4'-DDE (72-55-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
9P. 4,4'-DDD (72-54-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
10P. Dieldrin (60-57-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
11P. -Endosulfan (115-29-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
12P. -Endosulfan (115-29-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
13P. Endosulfan Sulfate (1031-07-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
14P. Endrin (72-20-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
15P. Endrin Aldehyde (7421-92-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
16P. Heptachlor (76-44-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
17P. Heptachlor Epoxide (1024-57-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
18P. PCB-1242 (53469-21-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
19P. PCB-1254 (11097-69-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
20P. PCB-1221 (11104-28-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
21P. PCB-1232 (11141-16-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
22P. PCB-1248 (12672-29-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
23P. PCB-1260 (11096-82-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
24P. PCB-1016 (12674-11-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
25P. Toxaphene (8001-35-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												

## Attachment A

### Cane Island Unit 4 Project Description

Cane Island Unit 4 is a natural gas-fired combined cycle power plant unit to be added to an existing 3-unit site. No fuel oil use is planned for this unit and no additional fuel oil storage or unloading facilities are included. Unit 4 has one F-Class combustion turbine generator. A heat recovery steam generator (HRSG) recovers waste heat from the combustion turbine exhaust by generating steam for use in a steam turbine power cycle. Power is generated by both the combustion turbine generator and the steam turbine generator. Unit 4 generates an average of 240 MW of power without applying supplemental gas firing to the HRSG. An additional approximately 60 MW of power may be generated with supplemental gas firing of the HRSG.

Flue gas in the HRSG is treated with selective catalytic reduction to remove NO_x. Treatment involves injection of anhydrous ammonia into the flue gas and subsequent NO_x removal in the presence of catalyst installed in a section of the HRSG. Treated exhaust gas is discharged from a stack into the atmosphere. A continuous emissions monitoring system (CEMS) is provided.

Steam cycle condensate is treated on an as needed basis with hydrazine and amine solution feed systems. Phosphate feed is provided to boiler drum water.

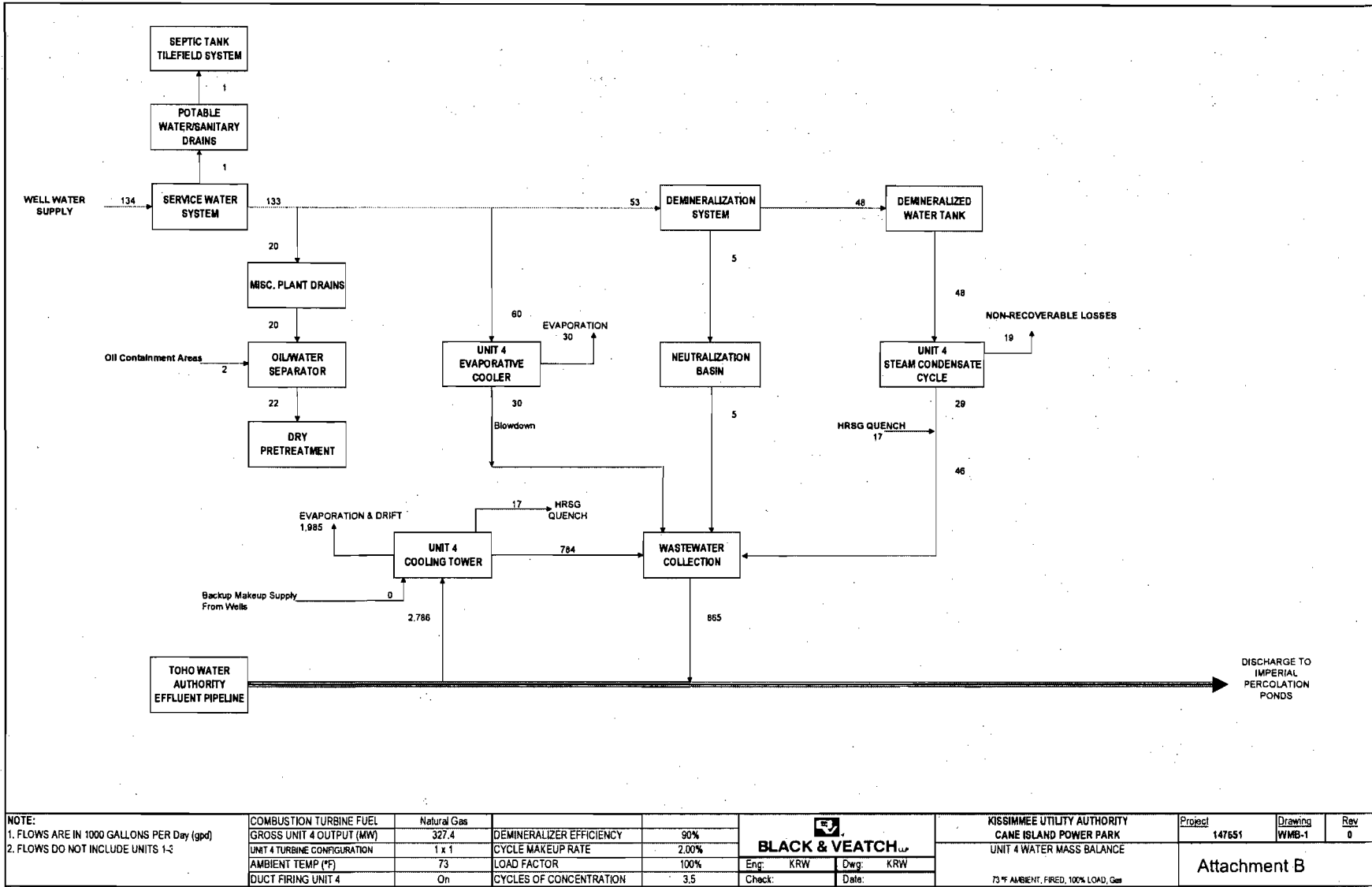
Steam that passes through the steam turbine is condensed in a water cooled surface condenser. Various plant condensate drains are also collected in the condenser for re-use. The cooling water used for heat removal in the condenser circulates through an evaporative cooling tower from which it is pumped back through the condenser. Makeup water for the cooling tower is drawn from the Toho Water Authority reuse pipeline as indicated in the water mass balance. The cooling tower circulating water system is treated on an as-required basis with sodium hypochlorite, acid, inhibitor and biocide feed systems.

Redundant condensate pumps and boiler feed water pumps return condensate from the condenser to the HRSG for generation of steam for the steam turbine cycle.

Various ancillary plant systems are provided. These include electrical systems, lighting, controls, condensate storage, plumbing, wash water, natural gas treatment, lube oil, compressed air, compressed gases, surface condenser air removal and auxiliary cooling water systems.

Water for use as plant service water, potable water or steam cycle makeup will be provided from existing and new wells as indicated in the water mass balance diagrams. Water intended for steam cycle makeup is treated by the existing demineralization system and stored for use in above ground storage tank(s). Boiler blowdown, combustion turbine air inlet evaporative cooler blowdown, demineralization wastewaters and cooling tower blowdown are combined in a collection sump for pumping to the Toho Water Authority reuse pipeline.

Miscellaneous plant drains and drains from oil containment areas (such as those for oil-filled transformers) are passed through an oil water separator and pumped to a grass covered percolation pond.



NOTE:  
 1. FLOWS ARE IN 1000 GALLONS PER DAY (gpd)  
 2. FLOWS DO NOT INCLUDE UNITS 1-3

COMBUSTION TURBINE FUEL	Natural Gas		
GROSS UNIT 4 OUTPUT (MW)	327.4	DEMINEALIZER EFFICIENCY	90%
UNIT 4 TURBINE CONFIGURATION	1 x 1	CYCLE MAKEUP RATE	2.00%
AMBIENT TEMP (°F)	73	LOAD FACTOR	100%
DUCT FIRING UNIT 4	On	CYCLES OF CONCENTRATION	3.5

**BLACK & VEATCH**  
 Eng: KRW Dwg: KRW  
 Check: Date:

KISSIMMEE UTILITY AUTHORITY CANE ISLAND POWER PARK	Project 147551	Drawing WMB-1	Rev 0
UNIT 4 WATER MASS BALANCE			
73 °F AMBIENT, FRED, 100% LOAD, Gas			

Attachment B



## Attachment C

### Form 2CG Additional Information

#### Item III.B.

As indicated on the water mass balance, the percolation pond receives effluent only from the oil/water separator. The separator will receive potentially contaminated (oily) waters from secondary containment areas, plant equipment drains and non-chemical floor drains. Oil collected in the separator is removed by a licensed hauler to a licensed facility for disposal.

A "valved" system controls the release of secondary containment area waters to the separator. An "un-valved" system directs waters from plant equipment drains and non-chemical area floor drains to the separator. The separator will be sized to contain the oil capacity of the largest piece of equipment discharging to the separator. Separator effluent is guaranteed to 10 ppm or less of oil and grease.

A new percolation pond dedicated to Unit 4 will be sized to contain the average daily flow of 22,000 gpd from the plant equipment and floor drains, and an average rainfall amount. Total storage capacity of the percolation pond, with a 12 inch design freeboard, is 621,618 gallons. Percolation time for the average daily flow is approximately 20 minutes. In the event of a 10 year-24 hour rainfall, the total flow into the pond would be 146,500 gallons, which would require 2.3 hours to percolate (48,800 gallons in flow, plus 97,700 gallons direct rainfall).

The percolation pond is cleaned as required to maintain operating efficiency. The removed materials are disposed of by a licensed hauler.

#### Item III.D.

In the event of a total power failure at the Power Park, the units will go off-line and would not produce wastewater. Should a particular wastewater lift station lose power or fail, a "High Level Alarm" will activate when the water level in the sump reaches the alarm elevation. Upon activation, a signal is transmitted to the Control Room which is manned 24 hours a day.

The power source associated with the alarm is independent of the sump, and originates from the Control Room. In the event that the pump and Control Room lose power simultaneously, battery back-up exists at the Control Room.

#### Item III.E.

The oily waste system is monitored for flow on the downstream side of the oil/water separator. Oil/water separator flow is discharged to the wastewater lift station which pumps the wastewater to the percolation pond. The flow meter is located in the discharge line associated with the lift station. The flow meter will be connected to the control panel in the Control Room.

## **10.6 Monitoring Programs**

Several monitoring programs are in effect at the CIPP site. Unit 4 will be incorporated into these programs. No new monitoring programs are proposed at this time.

KUA and FMPA also request modification of the groundwater monitoring program as described in the Conditions of Certification Section XVIII – Groundwater. The request is to reduce the sampling schedule from quarterly to semi-annually, based on demonstrated performance and compliance of the existing percolation pond.

## **10.7 Toho Water Authority Agreements**

### ***10.7.1 Effluent Delivery and Use Agreement***

An agreement between KUA and Toho was executed in 1993 for the delivery, use, and return of treated sewage effluent. A copy of the agreement is included herein. The reuse agreement indicates that KUA has the right of first refusal to reuse water.

### ***10.7.2 Well Installation and Well Water Supply Agreement***

The well water agreement between KUA and Toho was executed in 2003 and allows Toho to install up to five wells on the CIPP site (two wells currently exist). With the installation of Unit 4, Toho has the obligation to deliver up to 330,000 gpd of raw well water to the Cane Island facility. Toho well water may also be used for emergency cooling, as available, if reuse supply is interrupted. A copy of the agreement is included herein.

A. K. (BEN) SHARMA, P.E.  
DIRECTOR OF POWER SUPPLY



P.O. BOX 475218 KISSIMMEE, FLORIDA 34742-3218  
(407) 833-7777 • FAX: (407) 847-0787

*orig: To Vault*

May 4, 1992

Mr. Brian Wheeler  
Director of Water & Sewer Department  
City of Kissimmee  
101 North Church Street  
Kissimmee, FL 34741

RE: Executed Agreement and Easement Concerning Delivery and Use  
of Treated Sewage Effluent

Dear Brian:

I am returning herewith an original of the fully executed  
agreement between the City of Kissimmee and KUA for the  
utilization of the City's effluent at KUA's Cane Island site.

We very much appreciated the time and effort you and Don  
Smallwood put in to develop this agreement and get it approved.

Sincerely,

*A. K. Sharma*

A. K. (Ben) Sharma, P.E.  
Director of Power Supply

AKS/css

Enclosure

cc: Mr. Mike Soltys, B&V  
Mr. Myron Rollins, B&V

**Agreement and Easement Concerning Delivery  
and Use of Treated Sewage Effluent**

This Agreement and Easement is made and entered into this 28th day of April, 1993, by and between the CITY OF KISSIMMEE, a municipal corporation, organized and existing under the laws of the State of Florida (hereinafter referred to as City); and KISSIMMEE UTILITY AUTHORITY, a body politic (hereinafter referred to as KUA).

**Witnesseth:**

WHEREAS, KUA is a body politic, organized under the laws of the State of Florida, empowered among other things to plan, finance, acquire, construct, reconstruct, own, lease, operate, maintain, repair, improve, or extend electric generation, transmission, and distribution projects; and

WHEREAS, the City is a municipal corporation empowered among other things to plan, finance, acquire, construct, reconstruct, own, lease, operate, maintain, repair, improve, or extend wastewater treatment and disposal facilities; and

WHEREAS, KUA and the City both serve residents of the City and the surrounding area providing the essential services of electricity and wastewater disposal; and

WHEREAS, KUA has purchased an electrical generating unit site, the Cane Island Site, adjacent to the City's treated wastewater effluent pipeline (Effluent Pipeline); and

WHEREAS, KUA has entered a joint participation agreement with the Florida Municipal Power Agency (FMPA) to construct two electrical generating units at the Cane Island Site; and

WHEREAS, FMPA has designated KUA as its agent; and

WHEREAS, KUA must obtain water for cooling tower makeup for the second unit to be constructed at the Cane Island Site; and

WHEREAS, KUA must dispose of wastewater from the Cane Island Site; and

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WHEREAS, KUA anticipates building additional generating units at the Cane Island Site in the future which will require water for cooling tower makeup and wastewater discharge; and

WHEREAS, it is to the mutual benefit of KUA, the City, and their customers for KUA at the Cane Island Site to use the City's treated sewage effluent for cooling tower makeup and to discharge plant wastewater into the Effluent Pipeline;

NOW, THEREFORE, in consideration of the premises and other valuable consideration given one party to the other, the City and KUA hereby agree as follows:

I. Terms: Volume and Delivery Schedule.

A. The City shall deliver and KUA shall accept, use, and return treated sewage effluent, in quantities and under the quality provisions set forth herein. This Agreement shall be effective for a term of thirty (30) years. This Agreement shall be extended for additional terms of five (5) years unless written notification is given at least 18 months prior to the expiration of the initial thirty year term. KUA agrees to notify the City at least 30 days prior to the date it expects to actually accept the treated sewage effluent. Notwithstanding this provision, in the event changes in state or federal law subsequently prohibit the use of treated sewage effluent in the manner contemplated by this Agreement, the Agreement shall be terminated as a matter of law.

B. The City shall deliver treated sewage effluent to KUA for use at the Cane Island Site via the Effluent Pipeline. The City shall deliver up to 800,000 gallons per day at a flow rate of up to 600 gallons per minute for Cane Island Unit 2 through the term of the Agreement. The average annual withdrawal rate for this initial increment is estimated to be up to 220,000,000 gallons per year.

C. Throughout the term of the Agreement the parties acknowledge that the withdrawal and delivery of the treated sewage effluent will be on an as needed basis. KUA agrees to give reasonable notice (i.e., by telephone or written communications) of the expected treated sewage effluent quantities and the anticipated dates and times of withdrawal. The City must give KUA prior written notice of its inability to supply the treated sewage effluent to KUA as soon as practicable under the circumstances upon the initial discovery by the City. KUA acknowledges that from time to time there may be an interruption of flow or significant diminution of flow due to failure of mechanical equipment at the treatment plants, failure of the

pipeline, and/or failure due to substandard effluent quality. The City agrees to notify KUA at least 60 days in advance of scheduled outages of the Effluent Pipeline and any associated treatment plant and to cooperate with KUA during the scheduled outages. The City agrees to repair mechanical, pipeline, or effluent quality failures within seventy-two hours of the initial discovery by the City. If the City is not able to deliver the average daily allocation of treated sewage effluent to KUA because of mechanical, pipeline or effluent quality failures, KUA has the right to obtain water from an alternate source during such period of the City's inability to supply. During the periods of the City's inability to supply, wastewater discharges resulting from water obtained from other sources shall be excluded from any computation of ratios of annual withdrawals. No penalties shall be assessed against KUA for the amount of alternate wastewater discharged to the City.

D. The City agrees to notify KUA of any proposed agreements with third parties, negotiated for delivery and use of treated sewage effluent from the Effluent Pipeline prior to approval and execution by the City. The City will, upon request, demonstrate that the proposed additional agreement will not prevent the City from fulfilling the terms and obligations contained herein, materially affect the quality of the treated sewage effluent provided to KUA, or otherwise affect KUA in a detrimental manner. The City agrees to favor KUA with copies of any and all agreements between the City and third parties relating to the subject matter of this Agreement.

II. Option.

A. The City shall maintain subject to availability of sufficient quantity the capability to deliver to the KUA Cane Island Site additional treated sewage effluent in the following sequential increments.

Table of Increments of Treated Sewage Allocation

<u>Increment</u>	<u>Gallons per Day (1,000)</u>	<u>Gallons per Minute GPM</u>
A	2,900	2,200
B	1,000	800
C	900	700

D	900	700
E	2,900	2,200
F		
	_____	_____
Upset Maximum Limit	8,600	6,600

The term of this availability of additional treated sewage effluent shall be twenty (20) years, however, the term of availability may be extended for additional terms of five (5) years based upon written request of KUA at least twelve (12) months prior to expiration of the initial twenty year term.

B. KUA shall notify the City in writing of its intent to exercise its option to utilize the next increment of allocation of treated sewage effluent in the sequence a minimum of two (2) years in advance of the projected date for the Cane Island Site to actually need the increased allocation. Within thirty (30) days of receipt of the KUA notice of intent to utilize the next increment of allocation of treated sewage effluent, the City shall provide KUA written notice of its availability to provide the increment of allocation with the schedule provided in the KUA notice. If the City does not have or project to have sufficient quantity of treated sewage effluent to fully provide the increment of allocation requested in the KUA notice, the City shall provide KUA in writing the estimated date of availability of the total quantity of treated sewage effluent.

C. KUA may substitute one increment for another increment subject to availability of sufficient quantity of treated sewage effluent and with the consent of the City by amendment to this Agreement. KUA may also establish an additional increment F by modifying one or more of the increments A-E above, however, the total upset limit of all increments A-F shall not exceed 8.6 million gallons per day and/or 6,600 gallons per minute of treated sewage effluent as established in the table contained herein. Additional amendments or modification to the Table of Increments of Treated Sewage Allocation not outlined herein may be requested by KUA, but will be subject to maintaining the Upset Maximum Limits contained in the table, the availability of sufficient quantity of treated sewage effluent and the consent of the City.

D. KUA shall not exercise its option for the next increment of allocation of treated sewage effluent in the sequence until the two (2) year period has expired from the last KUA written notification of intent to utilize an increment of allocation, e.g., if KUA notifies the City in writing on January 1, 1994, of its intent to utilize Increment A no earlier than January 1, 1996; then KUA cannot file written notification of its intent to utilize Increment B until January 1, 1996.

E. KUA may request in writing that the minimum two (2) year period between notification of intent to utilize the next increment of allocation of treated sewage effluent be waived. The City may grant a request for waiver of the minimum two (2) year period based on the City's ability to provide the requested increased allocation within the reduced schedule.

F. The schedule of sequential increment of treated sewage effluent allocation may be modified by the mutual consent of both parties.

G. KUA may request increased withdrawal rates in excess of the schedule contained in Paragraph II A by filing a request which indicates with specificity the increased withdrawal rate, date of proposed increase, the proposed increase in wastewater discharge and characteristics, and all other information which may be necessary for the City to evaluate the request. Such additional request must be filed a minimum of six months in advance of desired increased withdrawal. Within thirty (30) days of receipt of said request the city shall in writing either approve, reject, or approve with conditions the additional withdrawal.

H. Notwithstanding the above, throughout the term of this Agreement specified in Paragraph I A., the City will not modify or enter into any agreements that would limit the City's ability to supply KUA at the Cane Island Site the amounts of treated sewage effluent specified in Paragraph II A without providing KUA a first right of refusal. The first right of refusal shall be exercised by the City providing KUA a proposed agreement executed by the third party seeking the use of treated sewage effluent as well as the City's best effort projections of the availability of treated sewage effluent with and without the proposed agreement. At the same time, the City shall provide KUA the City's costs associated with foregoing the proposed agreement. KUA shall have 90 days to notify the City of KUA's decision as to whether KUA will exercise KUA's first right of refusal. If KUA exercises the first right of refusal, KUA will pay the City's costs associated with foregoing the proposed agreement and the City will maintain the capability to provide KUA with the amounts of treated sewage effluent specified in Paragraph II A. If KUA does not



give notice to the City that KUA will exercise KUA's first right of refusal within 90 days, the City may reduce the schedule of treated sewage effluent reserved for KUA by the amount of the third party agreement. The City agrees to make its best effort (subject to the conditions contained in this Agreement) to maintain the amounts of treated sewage effluent specified by the schedule in Paragraph II A available to KUA even though KUA does not exercise its first right of refusal. KUA and the City agree to cooperate and upon request provide the other party their best effort projections of availability and use of treated sewage effluent.

I. The City agrees to project the availability of treated sewage effluent and the consumption of reuse water. In the event the installation of a new reuse system in a new development is projected to result in the City's inability to provide KUA with the treated sewage effluent in accordance with the schedule in Paragraph II A, the City shall notify KUA of the proposed installation of the reuse system together with estimated costs of installation, costs of operation and maintenance and/or costs to perform (including but not limited to loss of revenue, cost of retrofitting reuse facilities, etc.). KUA shall have a 90 day period in which to exercise a first right of refusal for the proposed reuse system. If KUA gives notice to the City that KUA is exercising the first right of refusal, KUA shall reimburse the City for the City's cost associated with the installation of the reuse system; however, the users of the reuse system will only be provided with treated sewage effluent when it is not needed by KUA. KUA will also reimburse the City for the City's additional disposal costs until the effective date of the KUA's additional treated sewage effluent withdrawal. KUA will also reimburse the City for any ongoing costs including loss of revenue after KUA's additional treated sewage effluent withdrawal begins that are the result of KUA exercising this first right of refusal. Interest on KUA's costs to reimburse the City for the installation of the reuse water system will accrue monthly based on the rate per annum reported in Muniweek on the last publication of the calendar month as the Current Bond Buyer Revenue Bond Index. Revenues collected by the City from the sale of reuse water in the systems paid for by KUA will be paid to KUA by the City until the cost of the system including interest as calculated above has been repaid at such time and for thereafter the City will retain the revenues from the sale of the reuse water.

III. Effluent Quality.

A. All wastewater effluent delivered to KUA under this Agreement shall be treated by advanced treatment methods to control the levels of bacteria and any other constituents which would constitute a damage to human health and in accordance with the requirements of permits issued by state and federal regulatory agencies. The quality of the wastewater effluent shall be treated to meet the public access levels of treatment standards as defined in Florida Department of Environmental Regulation (FDER) Rule 17.610 Florida Administrative Code (F.A.C.) (the primary and secondary drinking water standards). The City agrees to provide to KUA copies of its monthly monitoring reports which are required to be filed with the FDER.

B. The City agrees to provide to KUA an annual chemical analysis of the treated sewage effluent from each wastewater treatment facility discharging to the Effluent Pipeline. This effluent will be analyzed for primary and secondary drinking water standards as established by the FDER. The City will not modify or enter into any agreements that would substantially reduce the quality or characteristics of the treated sewage effluent delivered to KUA without KUA concurrence. KUA agrees to provide the City with a copy of all reports as required by the FDER for KUA's wastewater returned to the Effluent Pipeline. KUA and the City will comply with the water quality standards set forth by the applicable permits issued by FDER.

C. Upon discovery by the City of any effluent discharged to the pipeline which does not meet the standards or requirements of the FDER permit, the City will immediately notify KUA. Notification will be made by telephone to the Cane Island Site followed by written notification to KUA at:

Kissimmee Utility Authority  
Director of Power Supply  
P. O. Box 423219  
Kissimmee, Florida 34742-3219

D. The City and KUA each agree to indemnify and hold the other harmless for damages resulting from its actions causing wastewaters to be discharged into the Imperial Effluent Disposal Site which exceeds the FDER permit limits. The City also agrees to indemnify KUA for damages resulting from the actions of third parties with whom the city contracts, which cause wastewater to be discharged into the Imperial Effluent Disposal Site exceeding the FDER permit limits.

E. Should a dispute arise as to a determination of compliance or noncompliance with the FDER primary and secondary drinking water standards, hydraulic balance and mass balance analyses shall be conducted. If KUA and City Engineers' conclusions conflict, a mutually agreed upon independent Certified Engineer will be hired as a consultant to conduct an analysis.

F. Both parties agree to initially share equally the cost of such independent Certified Engineer. The opinion of the independent consultant shall be binding on the parties. If the results of the analysis determine that the discharge from the Cane Island Site is responsible for the effluent within the pipeline to be out of compliance with standards or requirements of the FDER permit or any other applicable permit, KUA shall immediately take all necessary and reasonable remedial actions at its cost and expense, and shall insure that any discharge from its facility does not result in non-compliance by the City of the standards and requirement of its permits. KUA shall be the party liable for all corrective action, fines and damages, including the initial analysis if the Cane Island Site is determined to be the cause of the non-compliance incident. If the cause of the non-compliance incident is determined to have been the City, then KUA shall not be liable for any required corrective action, fines and damages, including the initial analysis.

#### IV. Use of Treated Effluent.

A. It is contemplated by the parties hereto that KUA will use the treated sewage effluent as make-up supply for cooling towers for its facility. However, the parties agree that KUA may use the treated sewage effluent made available by the City for any on site purposes and in any manner determined by KUA; provided, however, that (i) KUA's use of treated sewage effluent shall at all times be consistent with all local, state, and federal guidelines and requirements; (ii) KUA shall not discharge the treated sewage effluent directly into any surface waters of the State of Florida without the express, written authorization of FDER, EPA, or any other jurisdictional agency, (iii) KUA shall comply with all local, state, and federal regulations and guidelines, and advise potential users of the limitations on the use of the treated sewage effluent. The City recognizes that the treated sewage effluent quality in the Effluent Pipeline at point of KUA's withdrawal must be of a quality that is better than required by F.A.C. 17.610 in order for KUA to meet the discharge permit quality requirements. The City will use reasonable efforts to provide KUA with treated sewage effluent which is of a quality that is better than that required by

F.A.C. 17.610 and which will meet KUA's requirements; however, the City is under no obligation to expend capital funds or increase the City's operating cost to provide treated sewage effluent which is of better quality than that required by F.A.C. 17.610 unless requested to do so by KUA. If KUA requests the City to take action to provide KUA with treated sewage effluent which is of better quality than that required by F.A.C. 17.610 which requires the City to expend capital funds and/or increases the City's operation costs the KUA shall fully reimburse the City for the additional costs the City incurs.

V. Return/Discharge.

A. KUA shall discharge and the City agrees to accept wastewater from the KUA Cane Island Site. The wastewater from the Cane Island Site will be injected into the City's Effluent Pipeline for disposal. The composition of the wastewater includes pretreatment equipment wastewater, neutralized demineralized wastes, and cooling tower blowdown. The City shall begin accepting return wastewater from KUA on or about November 1, 1993.

B. The KUA facility shall not discharge a chemical constituent in a concentration which, when combined with the effluent from the City's wastewater treatment facility at the end of the Effluent Pipeline, will result in a concentration of that constituent which will violate applicable permits or would prohibit Florida Power Corporation from exercising its rights under its contract with the City for delivery and use of Treated Sewage Effluent dated January 5, 1993.

C. KUA will sample the treated sewage effluent from the City of Kissimmee at the point of KUA withdrawal from the Effluent Pipeline and analyze for the following parameters:

<u>Parameter</u>	<u>Units</u>	<u>Daily Average</u>	<u>Daily Maximum</u>	<u>Sample Type</u>	<u>Freq.</u>
Nitrates (Total)	mg/l	Report	Report	Composite	weekly
Nitrates (Total)	lb/day	Report	Report	Composite	weekly

Total Nitrogen	mg/l	Report	Report	Composite	weekly
Total Nitrogen	lb/day	Report	Report	Composite	weekly

D: Samples shall be taken prior to the point of discharge from the Cane Island Site into the Effluent Pipeline and analyzed as follows:

<u>Parameter</u>	<u>Units</u>	<u>Daily Average</u>	<u>Daily Maximum</u>	<u>Sample Type</u>	<u>Freq.</u>
Flow	MGD	0.110	report	metered	daily
pH	SU	6.0 min.	8.5 max.	composite	2/mo.
TDS	mg/l	report	report	composite	2/mo.
Chlorides (total)	mg/l	report	report	composite	2/mo.
Sodium	mg/l	report	report	composite	2/mo.
Sulfates (total)	mg/l	report	report	composite	2/mo.
TRPH*	mg/l	BDL**	5.0	composite	weekly
Nitrates (total)	lbs/day	***	***	composite	weekly
Nitrogen (total)	lbs/day	***	***	composite	weekly
Nitrates (total)	mg/l	report	report	composite	weekly
Nitrogen (total)	mg/l	report	report	composite	weekly

*Total Recoverable Petroleum Hydrocarbon.

**Below detectable limits.

***There shall be no net increase in nitrates compared with the nitrates already present in the effluent line and the ground water used at the Cane Island Site.

E. There shall be no net increase in nitrates compared to the water sources. Parameters may be amended, from time to time, by agencies having jurisdiction over

the permit requirements of this Agreement. KUA agrees to modify sampling parameters in accordance with any future permit modifications.

F. If the City's treated sewage effluent does not exceed its permit limits at the point where KUA accepts the treated sewage effluent yet the discharge from the Cane Island facility contains any constituent in a concentration resulting in the City's violation of its disposal site permits or any federal, state or local regulation, the City shall immediately notify KUA of the problem. Notification will be made as indicated in Section III C, above. Upon receiving said notification, KUA will terminate the discharge of wastewater and review its data in an effort to determine the source of the problem. KUA acknowledges the contractual rights of Florida Power Corporation and the foreseeability that such permit violation may result in damages suffered by the City and Florida Power Corporation.

G. If the City notifies KUA that the quality of treated sewage effluent is such that the treated sewage effluent cannot be utilized as set forth in Agreement and Easement Concerning Delivery and Use of Treated Effluent between the City and Florida Power Corporation (FPC) dated January 5, 1993, KUA will review operations at the Cane Island Site and coordinate with FPC to attempt to provide treated sewage effluent of a quality adequate for FPC's use, although, KUA has no obligation to modify discharges to the Effluent Pipeline to provide treated sewage effluent of a quality better than that required for the combined effluent of the City's wastewater treatment facilities and the KUA Cane Island Site effluent to meet the requirements of the governing permit requirements and F.A.C. 17.610 as may be amended from time to time.

H. Should a dispute arise as to a determination of the cause of the noncompliance resolution shall be by the procedure outlined in Paragraphs III E and F.

I. KUA shall provide the City with copies of permits associated with the use of the treated sewage effluent and discharge of wastewater as well as reports summarizing sampling results and immediately notify the City of any violation or failure to meet the requirements of such permits.

#### VI. Rates.

A. This section governs the rates and compensation associated with the use of the treated sewage effluent at the Cane Island Site. For purposes of determining

charges, year will be defined as KUA's fiscal year which runs from October 1 through September 30. Payments for partial years will be prorated.

B. The ratio of annual gallons withdrawn to annual gallons returned will be 2.2/1. KUA and the City shall use this ratio as the basis for establishing compensation for the use of treated sewage effluent and administrative costs associated with the monitoring of effluent quality and quantity as required by the FDER and this Agreement.

C. On or about October 1 of each year, KUA will pay the City the Annual Base Rate (ABR). The first day of each month or as soon thereafter as practical, the City will read the meter recording the treated sewage effluent withdrawal and the wastewater discharge. Each month the City will bill KUA for the treated sewage effluent withdrawal in accordance with the charge outlined herein. The ABR shall be applied as a credit against the monthly treated sewage effluent charge for the contract year (October 1 through September 30). KUA shall receive a bill each month indicating the monthly and cumulative amounts for the contract year of treated sewage effluent withdrawn and wastewater discharged, the amount of credit, if any, remaining from the ABR and the amount, if any, due to the City. Payment shall be made to the City within twenty (20) days of receipt of the bill for any amounts due. A penalty of five percent (5%) shall be applied to any delinquent payments. The initial payment for the ABR shall not be made until KUA withdraws treated sewage effluent or discharges wastewater. The initial payment for the ABR shall be prorated based on the amount of the contract year remaining.

D. Compensation to the City shall be defined by the formula: annual payment =  $ABR \text{ (new year)} + [(cumulative \text{ sum of MGW for the current operating year}) * RWC - ABR \text{ (current year)}]$  where: ABR = (Annual Base Rate), equals the incremental expenses incurred by the City for lab fees, monitoring, meter reading, and administrative costs. The ABR will escalate at a rate equal to the annual increase in the Consumer Price Index for the previous calendar year as published in the January issue of the *Survey of Current Business*. The first adjustment will be made for the ABR in October 1994.

RWC = (Reuse Water Charge) is the lowest commercial rate available for the suburban service area by City ordinance for reuse water charges.

MGW = (Monthly Gallon Withdrawals) is the KUA monthly gallon withdrawals from the Effluent Pipeline as read locally by the City using the KUA installed meters.

E. For the 1993-94 contract year, the City has established the following rates: ABR = \$12,000 and RWC = \$0.25/1,000 gallons. Should the annual ratio of 2.2/1 minus 0.05 not be achieved by KUA in any given year, then a rate penalty may be assessed at the end of that year according to Section VII (Penalties) of this contract.

VII. Penalties.

A. Beginning in October 1994, and each successive October thereafter, the ratio of the annual withdrawal of the treated sewage effluent to the discharge of wastewater shall be calculated. The calculation of the ratio will be based upon the meter readings of the treated sewage effluent withdrawal and the wastewater discharge for the previous contract year. If the minimum annual ratio of 2.2/1 with an allowance of minus 0.05 is not achieved, KUA shall pay a penalty surcharge on the incremental amount of wastewater discharged which is in excess of the amount allowed to maintain the 2.2/1 ratio. The surcharge shall be equal to three times the RWC. KUA shall be billed for the surcharge, if any, in November.

B. The amount of wastewater against which the surcharge shall be applied will be calculated as follows:

$$SCF = TWW - (RW/2.2)$$

SCF = Incremental amount of wastewater to be assessed penalty surcharge.

TWW = Wastewater discharged by KUA into the Effluent Pipeline.

RW = Treated sewage effluent withdrawn by KUA from the Effluent Pipeline.

VIII. Connection and Metering.

A. KUA shall be responsible for connecting to the City's Effluent Pipeline to receive the treated sewage effluent from the City and to discharge its wastewater from its facility to the Effluent Pipeline. KUA shall be responsible for the connection, all costs of installation, and agrees that it will be responsible for all damages associated with the loss of use, or damage to or destruction of the Effluent Pipeline resulting from the KUA connection.

B. KUA agrees to retain a professional engineer licensed/registered in Florida and a contractor, likewise licensed in Florida, both of whom are experienced in handling concrete pipe under pressure (PCP). KUA shall submit plans and procedures for connecting to the Effluent Pipeline for review and approval by the City. The City shall review and approve or disapprove the engineer, contractor, and connection plans within 30 days of receipt from KUA.



C. Within 30 days of execution of this agreement, the City agrees to make application to FDER to obtain and/or modify all necessary permits as required by FDER to allow KUA to connect to the Effluent Pipeline. The City will use due diligence to obtain permit approval as soon as possible thereafter. KUA agrees to obtain all permits required to connect to the Effluent Pipeline and to notify the City at least 30 days prior to the start of construction.

D. KUA shall provide metering of the treated sewage effluent taken from the City's Effluent Pipeline and of the discharge of wastewater from the KUA Cane Island Site to the Effluent Pipeline. The two meters and their location shall be subject to approval by the City, and will be easily accessible for reading, testing, and maintenance. The City shall retain the responsibility for testing and maintaining the meters. Unless an emergency arises, the City shall give KUA a 24-hour notice should service be interrupted to KUA operations due to maintenance or testing activity.

IX. Excuse from Performance by Governmental Act.

A. If for any reason during the term of this Agreement any local, state or federal governments or agencies shall fail to issue necessary permits, grant necessary approvals, or require any change in the operation of the treatment, transmission and distribution systems or the application and use of the treated sewage effluent by KUA, then, to the extent that such requirements shall affect the ability of any party to perform any of the terms of this Agreement, the affected party shall be excused from the performance thereof. The parties hereto shall immediately undertake to renegotiate that portion (and only that portion) of this Agreement affected by such requirements so that this Agreement, as renegotiated, will be in conformity with such permits, approvals or requirements.

X. Assignment and Damages.

A. The City shall have the right to transfer all or any part of the treatment, transmission or distribution facilities to another entity, and to assign all or any part of its rights and obligations under this Agreement to an alternate entity, who shall be bound by, accept, and be exclusively responsible for all applicable terms and conditions of this Agreement.

B. If KUA improperly refuses to accept the treated sewage effluent specified in this Agreement for any reason, and the City has otherwise complied with the terms

of this Agreement and the FDER permit, KUA shall be liable to the City for the City's reasonable, verifiable costs to dispose of the improperly refused treated sewage effluent, not to exceed three times the RWC. If exercised by the City, these costs shall be invoiced to KUA within one year of the refusal to accept the treated sewage effluent. Failure to invoice these costs within one year of the refusal to accept the treated sewage effluent shall constitute a waiver by the City for reimbursement of those costs, but failure to exercise this right by the City shall not constitute a waiver by the City for reimbursement upon subsequent breaches of this Agreement. For the purposes of this paragraph, "improperly refused" is defined as: KUA using water from another ultimate source for cooling tower makeup when the volume and flow rate of treated sewage effluent necessary for KUA's needs was available from the Effluent Pipeline and the quality of the treated sewage effluent at the point of KUA's withdrawal from the Effluent Pipeline meets the City's discharge permit requirements and is of sufficient quality to enable KUA to meet its discharge permit requirements after treatment and discharge.

C. If the City improperly refuses to supply the agreed upon annual allocation of treated sewage effluent for any reason and KUA has otherwise complied with the terms of this Agreement and the FDER permit, the City shall be liable to KUA for its reasonable costs to acquire placement water. If exercised by KUA, these costs shall be invoiced to the City within one year of the refusal to supply the treated sewage effluent. Failure to invoice these costs within one year of the refusal to supply the treated sewage effluent shall constitute a waiver by KUA for reimbursement of these costs, but failure to exercise this right by KUA shall not constitute a waiver by KUA for reimbursement upon subsequent breaches of this Agreement. For the purposes of this paragraph "improperly refused" is defined as: the City having the treated sewage effluent available from treatment facilities, making all reasonable efforts to treat the treated sewage effluent to an acceptable quality level, and not be subject to a force majeure event relative to delivery.

#### XI. Decisions by the City.

A. In those circumstances set forth herein in which a decision must or can be made by the City, the City shall not exercise such discretion in an unreasonable or arbitrary manner, nor will the City unreasonably or arbitrarily withhold or delay a decision or approval. For purposes of this agreement, decisions on behalf of the City shall be made by the City Manager or designee. In the case that such position does

not exist, a comparable administrative office of the City shall make decisions on behalf of the City.

XII. Administrative Review, Arbitration.

A. All determinations, approvals, etc. made by the City respecting the rights and duties of the Parties, and all demands made by the City to KUA respecting the performance of its obligations to the City consistent with the provisions herein, shall be binding upon KUA; provided, however, that such determinations and demands shall be subject to administrative review and arbitration as provided below.

B. In the event the City alleges that KUA is in breach of its obligations herein or determines course of action to be taken by the KUA; the KUA may within fourteen (14) business days following receipt of written notice from the City containing a determination or demand, send a written notice with any objections to the City Manager and request that the City Manager review such determination or demand. Such notice shall set forth KUA's position on the matter to the extent possible. KUA shall have the right to meet with the City Manager to explain more fully its position.

C. The City Manager shall review the matter after receiving information from KUA, and make a determination on the matter. For purposes hereof, the failure of the City Manager to make a determination within seven (7) business days following the receipt of KUA's request shall be deemed to constitute a determination supporting the position of the City. KUA shall also have the right to an administrative review of the City Manager's determination by the City Commission (Commission) of the City of Kissimmee. In order to exercise this right, KUA shall, within thirty (30) days following KUA's receipt of the written notice from the City Manager containing the review determination, or within twenty-one (21) business days following the City's receipt of the KUA written objection(s), send a written notice (by certified mail return receipt requested) to the Commission and request that the Commission review this determination.

D. The Commission shall schedule a hearing thereon at the next regularly scheduled Commission meeting at which the hearing can reasonably become part of the agenda, but no later than thirty (30) days following the Commission's receipt of such notice. KUA shall be notified of the date, time, and location of the hearing and be permitted to present evidence and argument at the hearing. The Commission

shall make a determination on the matter, which determination shall constitute the final and binding determination.

E. So long as KUA shall comply in a timely fashion with the foregoing administrative review procedures, its good faith failure to comply with a determination or demand of the City Manager or the Commission shall not constitute a breach of this Agreement. However, if any damages to the City shall accrue as a result of KUA's failure or delay in complying with any such determinations or demands, KUA shall be fully liable for all reasonably foreseeable damages unless the determinations of demands are found by the Commission, to be invalid.

F. In the event that KUA alleges that the City is in breach of its obligations herein, it shall request in writing that the City Manager make a determination as to whether the City is complying with its obligations. Such request shall set forth KUA's position on the matter and KUA shall have the right to meet with the City Manager to explain more fully its position. If the City Manager determines that the City is in breach hereof, he shall immediately initiate action directed at curing the breach, and the City shall be fully liable to KUA for any reasonably foreseeable damages suffered by KUA during the period for which the breach occurred and remains uncured.

G. If the City Manager determines that the City is not in breach of such obligations, KUA may utilize the administrative review procedures outlined above with respect to such determination. For purposes hereof the failure of the City Manager to make a determination within seven (7) business days following KUA's request shall be deemed to constitute a determination that the City is not in breach of such obligations, and KUA shall be entitled to request an administrative review by the Commission as outlined above.

H. If the City Manager determines that the City is not in breach of this Agreement, or if the City Manager fails to make any determination within fourteen (14) business days after receipt of such request by KUA, and KUA shall fail to timely utilize the administrative review procedure described above, then KUA shall be deemed to have agreed that the subject matter of such request does not constitute a breach hereunder.

I. The parties agree that no legal action related to this Agreement shall be brought in any court of competent jurisdiction except for an action arising from the contractual obligations contained in the Florida Power Corporation agreement dated January 5, 1993.

XIII. Notices.

All notices required or authorized under this Agreement shall be given in writing, and shall be served by United States Mail to the parties at the addresses listed below (or as such addresses may be changed from time to time in the same manner):

CITY: City Manager  
City of Kissimmee  
101 North Church Street  
Kissimmee, FL 34741

WITH COPY TO: Director of Water & Sewer  
City of Kissimmee  
101 North Church Street  
Kissimmee, FL 34741

KUA: Kissimmee Utility Authority  
James Welsh  
President and General Manager  
P. O. Box 423219  
Kissimmee, FL 34742-3219

XIV. Inspection.

The City shall have the right to enter upon the Cane Island Site to review and inspect KUA's operating practices as they relate to this Agreement.

XV. Joinder.

This Agreement is being executed by KUA as acknowledgement on their parts that this Agreement impacts them and further acknowledges their acceptance of the terms.

XVI. Severability.

If any part of this Agreement is found invalid or unenforceable by any court of competent jurisdiction, such invalidity or unenforceability shall not affect the other parts of this Agreement if the right and obligations of the parties contained therein

are not materially prejudiced, and if the intentions of the parties can continue to be effectuated. To that end, this Agreement is declared severable.

XVII. Land Use Approvals.

This Agreement shall not be construed as granting, or assuring, or indicating any future grant of any land use or zoning approvals, permissions, variances, special exceptions or rights thereof with respect to the land.

XVIII. Entire Agreement.

This Agreement as executed by both the parties supersedes all previous agreements or representations, either verbal or written, heretofore in effect between the City and KUA that may have concerned the matters covered herein. No additions, alterations, or variations to the terms of this Agreement shall be valid, nor can the provisions of this Agreement be waived by either party unless such additions, alterations or waivers are expressly set forth in writing in a document of import equal to this Agreement and duly executed by the parties hereto.

XIX. Time is of the essence.

XX. Execution of Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this AGREEMENT to be executed by their duly authorized officers, and copies delivered to each Party, as of the day and year first above stated.

Witnesses to

Kissimmee Utility Authority

*Rosemary E. Klinge*

*Olga A. Rueda*

KISSIMMEE UTILITY AUTHORITY

BY *Richard L. Hall* 4/20/12  
Chairman Date

ATTEST  
Secretary

*Bob B. [Signature]*

(Seal)

Witnesses to  
City of Kissimmee

*Cindy Frazer*  
CINDY FRAZER

*Wendell A. Davis*  
Wendell A. Davis

CITY OF KISSIMMEE

BY *John B. Pollet*

Mayor-Commissioner Date 4-20-93

ATTEST *Sandra L. Yeager*  
Secretary City Clerk

(Seal)

APPROVED AS TO FORM AND  
LEGALITY

By *R. Smallwood* 4-10-93  
City Attorney Date

**AGREEMENT CONCERNING WELL INSTALLATION  
AND DELIVERY OF WELL WATER**

THIS AGREEMENT and Easement is made and entered into this 26 day of March, 2003, by and between the CITY OF KISSIMMEE, a municipal corporation, organized and existing under the laws of the State of Florida (hereinafter referred to as City), and KISSIMMEE UTILITY AUTHORITY, a body politic (hereinafter referred to as KUA), for the installation of five water supply wells on KUA's Cane Island Power Park property and the delivery of water from those wells to KUA for use at the Cane Island Power Park.

WITNESSETH:

WHEREAS, KUA is a body politic, organized under the laws of the State of Florida, empowered among other things to plan, finance, acquire, construct, reconstruct, own, lease, operate, maintain, repair, improve, or extend electric generation, transmission, and distribution projects; and

WHEREAS, the City is a municipal corporation empowered among other things to plan, finance, acquire, construct, reconstruct, own, lease, operate, maintain, repair, improve, or extend public water supply facilities; and

WHEREAS, KUA and the City both serve residents of the City and the surrounding area providing the essential services of electricity and water supply; and

WHEREAS, KUA owns an electrical generating unit site, the Cane Island Power Park; and

WHEREAS, KUA has entered a joint participation agreement with the Florida Municipal Power Agency (FMPA) for the ownership and operation of electrical generating units at the Cane Island Power Park; and

WHEREAS, FMPA has designated KUA as its agents; and

WHEREAS, KUA must obtain water for process, service, potable, and emergency cooling uses for all existing and future units to be constructed at the Cane Island Power Park; and

WHEREAS, it is to the mutual benefit of KUA, the City and their customers for the City to install wells on Cane Island Power Park and for KUA to use the City's well water at the Cane Island Power Park;

NOW THEREFORE, in consideration of the premises and other valuable consideration given one party to the other, the City and KUA hereby agree as follows:



1. WELL INSTALLATION:

- A KUA shall allow the City to permit, install and operate five (5) public water supply wells and the associated delivery system on the Cane Island Power Park. The well and delivery system locations shall be approved in writing by KUA.
- B The City shall own the well locations and shall accept easements from KUA required for pipeline and delivery facilities.
- C KUA will use its best efforts to have the well locations removed from the Cane Island Power Park Site Certification issued under the Florida Electrical Power Plant Siting Act.

2. TERMS: Volume and Deliver Schedule.

- A The City shall deliver and KUA shall accept and use Floridan Aquifer well water for the existing Cane Island Units 1-3 and future units to be constructed on Cane Island Power Park in quantities set forth herein. This Agreement shall be effective for a term of thirty (30) years. This Agreement shall be extended for additional terms of five (5) years unless written notification is given by KUA or any successor in interest to KUA at least eighteen (18) months prior to the expiration of the initial thirty (30) year term. KUA agrees to notify the City at least thirty (30) days prior to the date it expects to actually accept the well water. Notwithstanding this provision, in the event changes in State or Federal law subsequently prohibit the use of well water in the manner contemplated by this Agreement, the Agreement shall be terminated as a matter of law.
- B Upon the receipt of DEP well clearance for wells #3, #4, or #5 or the installation of Cane Island Unit 4, then the City shall deliver raw (untreated) well water to KUA for potable and process use at the Cane Island Power Park. The City shall deliver up to 330,000 gallons per day for Cane Island Units 1-4 through the term of the Agreement. Raw water quantities for future power generation requirements will be established prior to the delivery date but the total maximum gallon per day shall not exceed 0.5 million gallons per day. KUA shall notify the City in writing of its intent to request additional well water a minimum of two (2) years in advance of the delivery date. KUA may request in writing a waiver of the two (2) year advance notification request period. The City may grant or deny the waiver request in writing within thirty (30) days of the request based on the City's ability to provide the requested increased requirements.
- C The City must give KUA prior written notice of its inability to supply the well water to KUA as soon as practicable under the circumstances upon

the initial discovery by the City. KUA acknowledges that from time to time there may be interruption of flow or significant diminution of flow due to failure of mechanical equipment at the wells, failure of the delivery system, or aquifer performance. The City agrees to notify KUA at least sixty (60) days in advance of scheduled outages, maintenance, or repairs of the wells or supporting delivery equipment and to cooperate with KUA during the outages. The City agrees to repair the wells or supporting delivery equipment failures within seventy-two (72) hours of the initial discovery and/or notification or as soon as practicable.

### 3. USE OF WELL WATER

- A It is contemplated by the parties hereto that KUA will use the well water as make-up supply for process, service, potable water uses at the Cane Island Power Park. However, the parties agree that KUA may use well water made available by the City for any onsite purposes and in any manner determined by KUA; provided, however, that KUA's use of well water shall at all times be consistent with all Local, State and Federal guidelines and requirements.
- B In the event the City is unable to supply treated sewage effluent under the Agreement and Easement Concerning Delivery and Use of Treated Sewage Effluent dated April 28, 1993, KUA may use the City well water for emergency cooling water to the extent the City has excess well water available.

### 4. CONNECTION AND METERING

- A The City shall be responsible for connecting to the Cane Island Power Park water supply to deliver the well water from the City wells. The City shall be responsible for the connection, all costs of well installation and well water delivery, and agrees that it will be responsible for all damages associated with the loss of use, or damage to or destruction of the Cane Island Power Park water supply system resulting from the City connection.
- B The City shall submit plans and procedures for connecting to the Cane Island Power Park water supply system for review and approval by KUA. KUA shall review and approve or disapprove the engineer, contractor, and connection plans within thirty (30) days of receipt from the City.
- C Within thirty (30) days of execution of this Agreement, the City agrees to make application to FDEP and/or the SFWMD to obtain and/or modify all necessary permits for the initial two (2) wells as may be required by FDEP and/or SFWMD to install the wells, withdraw the

Florican Aquifer groundwater, and allow the City to connect to the Cane Island Power Park water supply system. The City will use due diligence to obtain permit approval as soon as possible thereafter. KUA agrees to use best efforts to obtain all permits required by KUA to accept/connect to the City well water supply system and to notify the City when such approvals are obtained.

- D KUA shall provide metering of the well water delivered to the Cane Island Power Park from the City's water wells. The meter(s) and the meter location(s) shall be subject to approval by the City, and will be easily accessible for reading, testing, and maintenance. The City shall be responsible for testing and maintaining the meter(s). Unless an emergency arises, the City shall give KUA a 24-hour notice should delivery be interrupted due to meter maintenance or testing activity.

5. COST RESPONSIBILITY.

- A The City shall be responsible for all costs of installing the wells and the delivery system up to the point of interconnection with the Cane Island Power Park system.
- B The City shall be responsible for all maintenance costs associated with the wells and the delivery system up to the point of interconnection with the Cane Island Power Park system.
- C KUA shall provide power to all the well pumps, and the City shall pay for the power under KUA's lowest rates and policies applicable.
- D KUA shall sell to the City the portions of the Cane Island Power Park necessary for the installation of the wells for a price of \$10.00. KUA shall convey by warranty deed to the City. The legal description for these portions of the Cane Island Power Park are contained in Attachment B.
- E KUA shall convey an easement to the City, on a nonexclusive basis, for the portions of the Cane Island Power Park necessary for the installation of the delivery system for wells #1 and #2 for a price of \$10.00. The legal description for these easements is contained in Attachment C.
- F KUA shall convey an easement to the City, on a nonexclusive basis, for the portions of the Cane Island Power Park necessary for the installation of the delivery system for wells #3, #4 and #5 when those wells are installed for a price of \$10.00. The location of the easement will depend upon the location of existing and planned generating units.

at Cane Island Power Park. One alternative for the easements is shown in Attachment A.

- G The City shall provide to Cane Island Power Plant, up to 330,000 gallons per day as an in-kind exchange for the consideration of the conveyance of the real property for the five (5) well sites and utility easements given to the City by KUA.

6. WELL INSTALLATION SCHEDULE.

The City anticipates installing the two wells located on the southern portion of the Cane Island Power Park first. While only the first two wells are installed, KUA will continue to operate Cane Island Units 1-3 using KUA's existing wells. The City shall connect the City's delivery system to the Cane Island Power Park's system upon the installation of new generating units at Cane Island Power Park. If the operation of the City's wells has an adverse effect on the operation of the existing wells at Cane Island Power Park, the City shall determine the most cost effective solution to maintain the capability of KUA wells or connect the City's delivery system to the Cane Island Power Park system.

7. ASSIGNMENT AND DAMAGES.

- A The City shall have the right to transfer all or any part of the withdrawal or delivery facilities to another entity, and to assign all or any part of its rights and obligations under this Agreement to an alternate entity, who shall be bound by, accept, and be exclusively responsible for all applicable terms and conditions of this Agreement.
- B If the City improperly refuses to supply the agreed upon allocation of well water for any reason and KUA has otherwise complied with the terms of this Agreement and all applicable permits, the City shall be liable to KUA for its reasonable costs to acquire replacement water. If exercised by KUA, these costs shall be invoiced to the City within one year of the refusal to supply the well water. Failure to invoice these costs within one year of the refusal to supply the well water shall constitute a waiver by KUA for reimbursement of these costs, but failure to exercise this right by KUA shall not constitute a waiver by KUA for reimbursement upon subsequent breaches of this Agreement. For the purposes of this paragraph "improperly refused" is defined as: the City having the well water available and not be subject to a force majeure event relative to withdrawal or delivery.
- C KUA shall have the right to assign all or any part of its rights and obligations under this Agreement to an alternate entity, who shall be bound by, accept, and be exclusively responsible for all applicable terms and conditions of this Agreement.

8. DEFAULT.

If there is a material default due and punctual observance or performance of any provision contained herein, including the obligation to pay money, and such default continues for at least thirty (30) days following written notice to the defaulting party. Upon the occurrence of an event of default, the non-defaulting party shall be entitled to pursue all remedies available under law or equity, including without limitation, terminating this agreement upon thirty (30) days prior written notice.

9. NOTICES.

All notices required or authorized under this Agreement shall be given in writing, and shall be served by United States Mail, hand-delivered, or overnight delivery to the parties at the addresses listed below (or as such addresses may be changed from time to time in the same manner):

City: City of Kissimmee  
City Manager  
101 N. Church Street  
Kissimmee, FL 34741

Copy to: City of Kissimmee  
Director of Water Resources  
101 N. Church Street  
Kissimmee, FL 34741

KUA: Kissimmee Utility Authority  
President and General Manager  
1701 W. Carroll Street  
Kissimmee, FL 34741

10. INSPECTION.

With proper identification the City shall have the right to enter the Cane Island Power Park to review and inspect KUA's operating practices as such practices relate to this Agreement.

11. JOINDER.

This Agreement is being executed by KUA as acknowledgement on their part that this Agreement impacts them and further acknowledges their acceptance of the terms.

12. SEVERABILITY.

If any part in this Agreement is found invalid or unenforceable by any court of competent jurisdiction, such invalidity or unenforceability shall not affect the other parts of this Agreement if the right and obligations of

the parties contained herein are not materially prejudiced, and if the intentions of the parties can continue to be effectuated. To that end, this Agreement is declared severable.

**13. LAND USE APPROVALS.**

This Agreement shall not be construed as granting, or assuring, or indicating any future grant of any land use or zoning approvals, permissions, variances, special exceptions or rights thereof with respect to the land.

**14. ENTIRE AGREEMENT.**

A This Agreement as executed by both parties supersedes all previous agreements or representations, either verbal or written, heretofore in effect between the City and KUA that may have concerned the matters covered herein. No additions, alterations, or variations to the terms of this Agreement shall be valid, nor can the provisions of this Agreement be waived by either party unless such additions, alterations, or waivers are expressly set forth in writing in a document of import equal to this Agreement and duly executed by the parties hereto.

B This Agreement as executed by both parties shall not affect the hunting rights of Thomas J. Addison, Sr. and Wilma M. Addison on the Conservation Area as granted and available under the agreement between KUA and Thomas J. Addison, Sr. and Wilma M. Addison, dated August 28, 1991, and as renewed.

**15. TIME IS OF THE ESSENCE.**

Time is of the essence in this Agreement.

**16. WAIVER OF JURY TRIAL, VENUE.**

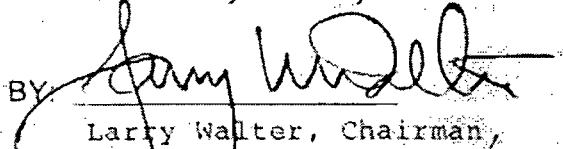
Venue of all actions shall lie in Osceola County, Florida. Each party waives the right to a jury trial.


**17. INDEMNIFICATION.**

To the extent allowed by State law, including but not limited to Chapter 768, Florida Statutes, KUA and the City agree, (a) to hold the other harmless from the negligent acts or its omissions of itself, its officers, employees, agents, or gross negligence of its officers, employees or agents; (b) to hold the other harmless from third party suits against the indemnifying party which results from the performance of this agreement. Neither KUA or the City shall, by virtue of entering into this agreement, waive the sovereign immunity limits established by State law.

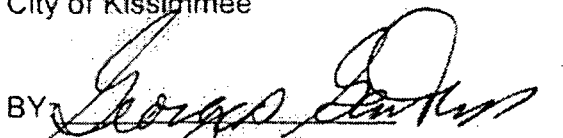
IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized officers, and copied delivered to each party, as of the day and year first above stated.

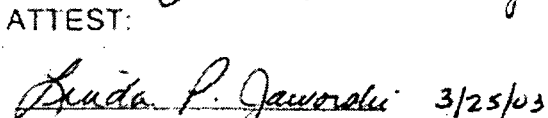
Kissimmee Utility Authority

BY:   
Larry Walter, Chairman

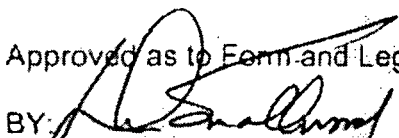
ATTEST:  
  
Domingo Toro, Secretary

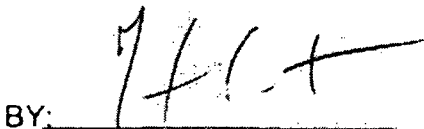
City of Kissimmee

BY:   
George A. Gant, M.D. - Mayor

ATTEST:  
 3/25/03  
Linda P. Jaworski - City Clerk

Approved as to Form and Legality

BY:   
City Attorney

BY:   
KUA Attorney

## 10.8 Carbon Reduction Activities

On July 13, 2007, Governor Crist issued Executive Order 07-127, entitled “Immediate Action to Reduce Greenhouse Gas Emissions within Florida.” This order directs the Department of Environmental Protection (DEP) to adopt rules requiring carbon dioxide (CO₂) emission reductions from electric utilities. Although DEP has not yet adopted any rules in response to the Governor’s Order, the All-Requirements Project (ARP) is committed to responsibly reducing its CO₂ emissions. This Section summarizes the ARP’s historical CO₂ emissions, as well as actions the ARP has taken or may take that will help reduce the ARP’s CO₂ emissions. Specifically, Section 10.8.1 summarizes the ARP’s carbon footprint. Section 10.8.2 summarizes actions the ARP has taken that will reduce the ARP’s CO₂ emissions. Finally, Section 10.8.3 summarizes future planned actions, including the addition of Cane Island Unit 4, as well as other potential actions that would reduce the ARP’s carbon footprint.

### 10.8.1 The ARP’s Carbon Footprint

The Governor’s Executive Order 07-127 sets goals for utilities to reduce their greenhouse gas emissions to 2000 levels by 2017, to 1990 levels by 2025, and by 80 percent of 1990 levels by 2050. This section describes the CO₂ emissions inventory developed for 1990 and 2000 to determine the baseline carbon footprint of the ARP in those years.

**10.8.1.1 Methodology.** Because DEP has not established any guidelines on reporting of greenhouse gases as of the date of this filing, the emissions inventory was performed using the guidelines set forth in the United States Department of Energy’s (U.S. DOE) final “General Guidelines for Voluntary Reporting of Greenhouse Gases (1605(b)) Program” issued in April 2006, and “Technical Guidelines for Voluntary Reporting of Greenhouse Gases (1605(b)) Program” (the Technical Guidelines) issued in January 2007.¹

The 1605(b) Guidelines categorize emissions for electric utilities as occurring from either direct or indirect sources. Direct emissions are those emissions that the utility is directly responsible for producing; that is, the utility produces these emissions through operation of its own generating units. Indirect emissions are those emissions associated with purchased power.

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¹The U.S. DOE initiated the Voluntary Reporting of Greenhouse Gases Program (the GHG Program) during 1994 in response to Section 1605(b) of the Energy Policy Act of 1992, which required the U.S. DOE to issue guidelines establishing such a program. The U.S. DOE developed both General Guidelines and Technical Guidelines for the GHG Program. The Technical Guidelines define the permissible methods of calculating and reporting emissions quantities and reductions under the GHG Program.



The collective 1990 and 2000 emissions for all 15 ARP Members¹ were developed using the equity share approach set forth in the 1605(b) Guidelines. Under this approach, a utility includes the percentage of the total emissions produced from a jointly owned facility that corresponds with its ownership percentage of that resource.

Where available, data from continuous emissions monitors (CEMs) were used to estimate direct emissions. However, as CEMS were not required to be installed on plants until after 1990, this data was not available for the 1990 computation. Additionally, some small generating units are not required to install CEMS, so CEMs data was not available for all generators for 2000. Where CEMs data was not available, emission factors provided in the 1605(b) Guidelines or other publicly available sources were used. Likewise, such publicly available emission factors were used to estimate emissions from purchase power.

**10.8.1.2 Final Adjustments.** The first step in determining the total emissions quantities for each year involved determining whether all energy sources had been captured for that year. The sum of all energy generated and purchased, net of wholesale energy sold to other entities, theoretically should be at least equal to the utility's energy requirements (some excess of energy sources above energy requirements may exist due to losses).

For computing total generation associated with direct emissions, the generation and consumption data from Global Energy Decisions' Velocity Suite was used for all units. This provided a consistent source of generation for all resources.

For both 1990 and 2000, however, the sum of the total energy sources amounted to less than the total energy requirements. For purposes of the analysis, CO₂ emissions were computed for the "missing" energy amount using the regional emissions factor for that year.

**10.8.1.3 Emissions Totals.** The total CO₂ emissions inventoried consist of the sum of the direct emissions, indirect emissions, and any adjustments. The computed total CO₂ emissions are shown in Table 10.8-1.

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¹ The current ARP members are the City of Bushnell, the City of Clewiston, the City of Fort Meade, the Fort Pierce Utilities Authority, the City of Green Cove Springs, the Town of Havana, Beaches Energy Services (the electric department of the City of Jacksonville Beach), Keys Energy Services (also known as the Utility Board of the City of Key West), the Kissimmee Utility Authority, the City of Lake Worth, the City of Leesburg, the City of Newberry, the City of Ocala, the City of Starke, and the City of Vero Beach.

Table 10.8-1 Summary of ARP CO ₂ Emissions in 1990 and 2000 ⁽¹⁾			
Item	Units	1990	2000
Total Energy Sources	GWh	3,142	6,426
Total Energy Requirements	GWh	4,663 ⁽²⁾	6,467
Surplus/(Shortfall)	GWh	(1,521)	(41)
Surplus/(Shortfall)	%	(32.6)	(0.6)
Direct CO ₂ Emissions	000 Short Tons	1,442	2,538
Indirect CO ₂ Emissions	000 Short Tons	836	2,139
Adjustments ⁽³⁾	000 Short Tons	1,203	30
Total CO ₂ Emissions	000 Short Tons	3,481	4,707

⁽¹⁾Analysis performed as if all 15 current ARP Members were ARP Members in 1990 and 2000.  
⁽²⁾Energy requirements estimated for 1990. Actual energy requirements for the ARP Members in 1990 were not available.  
⁽³⁾Adjustments reflect CO₂ emissions computed for additional energy amounts necessary to balance total energy sources and total energy requirements and were computed using the regional emissions factor for Florida applicable to that year.

## 10.8.2 Historical Carbon Reduction Activities

**10.8.2.1 Generation Efficiency.** Historically, the ARP has consistently sought to improve the efficiency of its generating fleet, which can have the added benefit of reducing carbon intensity (quantity of CO₂ per unit of energy produced). The ARP's actions have displaced generation from older, Member-owned generating resources with newer, more efficient units. Table 10.8-2 contains a list of the units that either have been or are scheduled to be retired, the retirement year, and the average CO₂ emissions eliminated by retiring these resources. Additional member owned generation will be displaced with operation of Cane Island Unit 4.

Unit Name	Owner	Fuel Type	Retirement Year	Annual CO ₂ Emissions (Short Tons) ⁽¹⁾
Hansel IC 8, 14-20	KUA	No. 2 Oil	2005	1,800
Big Pine Key IC 1	Keys Energy Services	No. 2 Oil	2006	400
Cudjoe Key IC 2-3	Keys Energy Services	No. 2 Oil	2006	1,500
H. D. King CC 5/9	Fort Pierce	Natural Gas	2008	11,100
H. D. King ST 7-8	Fort Pierce	Natural Gas	2008	20,400
H. D. King IC 1-2	Fort Pierce	No. 2 Oil	2008	200
<b>Total</b>				<b>35,400</b>

⁽¹⁾Based on the average annual tons of CO₂ emitted during the years 2001 through 2005.

As appropriate and cost effective, FMPA has also sought to replace energy obtained from purchased power with more efficient means. Emissions for purchased power that are not tied to specific generating plants or units can be much higher than the carbon intensity of energy produced by efficient, natural gas-fired resources. As examples, FMPA has either recently replaced or is planning to replace energy from purchases from the City of Lakeland, Progress Energy Florida (PEF), and Florida Power & Light Company (FPL) with new generating resources or purchases from specific, gas-fired facilities.

FMPA has added several new generating resources in recent years through both ownership and facility-specific purchased power contracts. These new resources provide CO₂ emission reduction benefits to the ARP by allowing the ARP (1) to displace the operation of other, less efficient owned generating resources, and (2) to reduce the amount of more carbon-intensive energy it purchases from other entities. These new resources are described in more detail below.

- Cane Island CC3**--Cane Island CC3 commenced operation in 2002. This 246 MW, natural-gas fired, combined cycle facility is jointly owned by Kissimmee Utility Authority (KUA) and FMPA, with all of its output going to the ARP. During its first five years of commercial operation, Cane Island CC3 emitted an average of approximately 0.21 short tons of CO₂ per MWh less than other ARP generating resources and approximately 0.22 short tons of CO₂ per MWh less than all energy sources for the ARP.

- **Stanton Energy Center CCA**--Stanton Energy Center CCA commenced operation in 2003. KUA and FMPA each owns a 3.5 percent share of this 600 MW, natural-gas fired, combined cycle facility, and each also purchases an additional 6.5 percent share from Southern Company with the total 20 percent share going to the ARP. During its first three complete years of commercial operation, Stanton Energy Center CCA emitted an average of approximately 0.26 short tons of CO₂ per MWh less than other ARP generating resources and approximately 0.28 short tons of CO₂ per MWh less than all other energy sources for the ARP.
- **Calpine (Osprey) Purchase**--FMPA has a contract with Calpine that provided 75 MW in 2006. The purchase increased to 100 MW in 2007 and expires in 2009. During 2006, each MWh of energy purchased from Calpine produced approximately 0.19 short tons of CO₂ less than the average of the ARP generating units and approximately 0.23 short tons of CO₂ less than other purchases.
- **Stock Island CT4**--In 2006, the ARP commenced operation of its Stock Island GT4 in Key West. If operating at full load, every MWh of energy generated from Stock Island CT4 in lieu of other on-island resources can reduce FMPA's CO₂ emissions output by up to 0.17 short tons.
- **Southern Purchase**--FMPA has a contract to purchase 156 MW of new peaking power from Southern Company's Oleander plant beginning in December 2007. Since the unit has only been in operation since December 2007, actual emission data is not yet available; however, as a new efficient General Electric 7FA simple cycle combustion turbine, the Oleander purchase will reduce CO₂ emissions compared to other less efficient FMPA peaking resources or purchased power.

FMPA also currently receives renewable energy from two renewable resources. These resources also provide CO₂ reduction benefits to the ARP, as described below.

- **U.S. Sugar**--Energy purchased from the U.S. Sugar Corporation is considered carbon neutral because it uses renewable, carbon-neutral bagasse as its primary fuel source. Over the period 2000 through 2006, the U.S. Sugar purchase is estimated to have reduced CO₂ emissions for the ARP by an average of approximately 1,300 short tons per year. As U.S. Sugar utilizes its generating facility to serve its own energy requirements, the ARP indirectly avoids having to serve the U.S. Sugar load using more carbon intensive generating resources.

- **Landfill Gas (Stanton Energy Center)**--The Stanton Energy Center utilizes landfill gas to supplement the fuel requirements for the coal-fired Units 1 and 2. The reportable CO₂ content for landfill gas/municipal solid waste (MSW) varies based on the plastic content of the underlying waste product. The national average CO₂ emissions factor for MSW as provided by the U.S. DOE is 92 pounds of CO₂ per MMBtu of MSW consumed and is based on a plastic content of 16 percent. As the plastic content of the landfill gas burned by Stanton Energy Center Units 1 and 2 could not be obtained, the default factor was assumed. Based on this factor, CO₂ emissions for the ARP were estimated to have been reduced by approximately 19,700 short tons per year over the period 2001 through 2006 by consuming landfill gas instead of coal.

**10.8.2.2 Demand Side Management.** FMPA is a wholesale supplier of electricity to the fifteen ARP Member cities. As such, FMPA does not directly implement demand-side management (DSM) to retail customers. The individual ARP Members actually provide the DSM programs to their customers. Several ARP members offer various DSM programs including the following:

- Energy Audits.
- Energy Savings Tips.
- Energy Star[®] Programs.
- Green Energy Programs.
- Solar Projects and Net Metering.
- Solar Promotion.
- Appliance Rebates.
- Compact Fluorescent Bulb Promotions.
- ESCO Projects.
- City-Wide Energy Conservation.
- LED Traffic Signals.
- Low Income Energy Assistance.
- Load Profiling for Commercial Customers.
- Fix-Up Programs for the Elderly and Handicapped.

To the extent these measures help to reduce FMPA's energy requirements, they have a corresponding CO₂ reduction benefit to the ARP.

### **10.8.3 Future Planned and Potential Carbon Reduction Activities**

**10.8.3.1 Treasure Coast Energy Center.** FMPA's Treasure Coast Energy Center Unit 1 (TCEC Unit 1) is scheduled to commence operation in May 2008. This approximately 300 MW, natural gas-fired combined cycle unit represents FMPA's largest self-owned generating project to date. It is estimated that TCEC Unit 1 will reduce FMPA's CO₂ emissions by approximately 305,000 short tons in 2009, the first full year of commercial operation, as summarized in Table 10.8-3.

As shown in Table 10.8-3, the largest reduction in CO₂ results from a reduction in purchased power. It is also anticipated that TCEC Unit 1 will displace the operation of less efficient generating resources.

The projections shown in Table 10.8-3 were developed based on output from FMPA's production simulation model. To the extent that future conditions vary from the inputs included in the model, the actual CO₂ emissions reductions experienced may differ.

**10.8.3.2 Cane Island 4.** Cane Island 4 also will significantly reduce FMPA's total future CO₂ emissions. Cane Island 4 will displace the operation of less efficient generating resources. By operating this more efficient unit, FMPA will reduce the average CO₂ emitted per MWh produced for its system. Additionally, Cane Island 4 will reduce FMPA's purchase power requirements and associated higher CO₂ emissions. The addition of Cane Island 4 is estimated to reduce FMPA's CO₂ emissions by approximately 262,000 short tons in 2012, the first full year of commercial operation, as summarized in Table 10.8-4.

As shown in Table 10.8-4, the largest reduction in CO₂ results from a reduction in purchased power. It is also anticipated that Cane Island 4 will displace the operation of less efficient generating resources. Additionally, the need for Cane Island 4 resulted from the cancellation of the Taylor Energy Center (TEC), the coal-fired project that was jointly proposed by FMPA, JEA, Reedy Creek Improvement District, and the City of Tallahassee. The CO₂ emissions rate for the TEC was estimated between 200 and 215 lb/MMBtu, or between 0.92 and 0.99 short tons/MWh based on the average heat rate of 9,238 Btu/kWh, depending on the type of coal consumed. By contrast, the estimated CO₂ emissions rate for Cane Island 4 of approximately 115 lb/MMBtu, or 0.43 short tons/MWh based on the average heat rate of approximately 7,420 Btu/kWh (including duct firing), is significantly lower.

The projections shown in Table 10.8-4 were developed based on output from FMPA's production simulation model. To the extent that future conditions vary from the inputs included in the model, the actual CO₂ emissions reductions experienced may differ from the amounts shown in Table 10.8-4.

Table 10.8-3 Projected Impact of TCEC Unit 1 on ARP CO ₂ Emissions in 2009	
Energy Source	CO ₂ Increase/ (Decrease) (000 Short Tons) ⁽¹⁾
Treasure Coast Energy Center	593
Stanton Energy Center Coal	(25)
Stanton CC A ⁽²⁾	(24)
Cane Island Plant	(130)
Hansel Plant	(14)
Indian River CT A-D	(11)
H.D. King Plant	(18)
Tom G. Smith Plant	(9)
Stock Island Plant	10
Vero Beach Plant	(22)
Net Market Transactions	(500)
Other Purchases ⁽³⁾	(155)
Net Increase/(Decrease)	(305)
(1) Represents the projected increase or decrease in CO ₂ emissions for each energy source resulting from the operation of TCEC Unit 1. (2) Includes the portion of Stanton A that is purchased power. (3) Other purchases include purchases from PEF, FPL, Calpine, and Southern.	

Table 10.8-4 Projected Impact of Cane Island 4 on ARP CO ₂ Emissions in 2012	
Energy Source	CO ₂ Increase/ (Decrease) (000 Short Tons) ⁽¹⁾
Cane Island 4	640
Stanton Energy Center Coal	(58)
Stanton CC A ⁽²⁾	(26)
Treasure Coast Energy Center	(10)
Cane Island Plant (excludes Unit 4)	(95)
Hansel Plant	(3)
Indian River CT A-D	(2)
Tom G. Smith Plant	(2)
Stock Island Plant	6
Net Market Transactions	(688)
Other Purchases ⁽³⁾	(23)
Net Increase/(Decrease)	(262)
⁽¹⁾ Represents the projected increase or decrease in CO ₂ emissions for each energy source resulting from the operation of Cane Island 4. ⁽²⁾ Includes the portion of Stanton A that is purchased power. ⁽³⁾ Other purchases include purchases from FPL and Southern.	



**10.8.3.3 Nuclear Uprates.** FMPA’s capacity shares of the Crystal River 3 and St. Lucie 2 nuclear units will increase as a result of upgrades to the facilities being undertaken by PEF and FPL, respectively. FMPA or Members that own shares of these facilities will receive proportional increases in their capacity allotments based on their ownership percentage. The total planned incremental capacity increase for each unit and the ARP Members’ allocation of these capacity increases are shown below.

	Crystal River 3		St. Lucie 2	
	Total Uprate	ARP Allocation	Total Uprate	ARP Allocation
2008	12 MW	0.3 MW	--	--
2009	28 MW	0.8 MW	--	--
2010	--	--	--	--
2011	140 MW	4.0 MW	--	--
2012	--	--	100 MW	5.8 MW

This increase in nuclear capacity will provide a CO₂ emission reduction benefit to FMPA.

**10.8.3.4 Future Nuclear Ownership.** FMPA is currently investigating the feasibility of acquiring an ownership share in future nuclear resources proposed to be built in Florida. FMPA is currently in discussions with PEF concerning potential participation in the Levy County nuclear project. Since nuclear generation does not produce CO₂, acquiring additional nuclear ownership could bring significant CO₂ emission reduction benefits to the ARP as early as 2016.

**10.8.3.5 System Loss Reduction.** FMPA encourages the concept of asset management for both itself and Member utilities. Asset management involves investigating methods of utilizing existing assets to improve efficiency, lower costs, or improve revenue. CO₂ reductions can be obtained through management of the ARP’s generating assets and aggregated electrical load.

Losses are an aggregated component of the electric load of the Member utilities. As losses are controlled and reduced, so is the need for additional electrical generation. Therefore, reducing losses reduces CO₂ emissions and can reduce or delay the need for additional generating resources to be constructed. FMPA is leading an effort among the Members to investigate losses and for Members to invest in loss reduction.

### **10.8.3.6 Potential Future Renewable Resources.**

**10.8.3.6.1 Potential Biomass Generation.** As part of its efforts to reduce its overall CO₂ emissions, FMPA has issued requests for proposals (RFPs) for renewable resources. Based on the results of the RFPs, FMPA has decided to enter into negotiations for a purchase from a biomass facility. The biomass unit, which would utilize renewable, carbon-neutral resources, would reduce FMPA's CO₂ emissions by approximately 190,000 short tons per year. Because the cost of biomass energy is higher than FMPA's avoided cost, before committing to a biomass purchase, FMPA will need to examine the biomass resource to ensure that the costs are within a reasonably acceptable margin higher than FMPA's avoided cost. Furthermore, FMPA's ultimate commitment to utilizing biomass energy at its attendant higher cost as a means of its meeting CO₂ reduction targets will depend on whether the emissions inventory guidelines to be developed by FDEP confirm biomass as a carbon-neutral resource in Florida. FMPA will also need to examine the actions of other utilities in Florida in meeting their CO₂ reduction targets to ensure that FMPA's rates remain cost competitive. The time frame for implementation of the biomass resource would depend on the time necessary to complete negotiations and obtain all required regulatory approvals and permits.

**10.8.3.6.2 Potential Solar Photovoltaic Project.** FMPA has decided to enter into negotiations for the installation of 10 MW of solar photovoltaic (PV) technology on its Member systems. FMPA will additionally explore the feasibility of acquiring up to an additional 90 MW of PV systems. The average amount of CO₂ that could be reduced each year through PV resources ranges from approximately 9,000 short tons for 10 MW to 61,000 short tons for 100 MW. Before committing to the 10 MW PV project, FMPA will need to examine the PV resources to ensure that the costs are within a reasonably acceptable margin higher than FMPA's avoided cost. FMPA will also need to examine the actions of other utilities in Florida in meeting their CO₂ reduction targets to ensure that FMPA's rates remain cost competitive. FMPA's decision to pursue additional solar capacity beyond the initial 10 MW would depend on successful negotiation for and implementation of the initial 10 MW project. The time frame for implementation of solar capacity would depend on the time necessary to complete negotiations and obtain all required regulatory approvals and permits.

**10.8.3.6.3 Potential Use of Bio-Fuels at Stock Island.** FMPA is currently investigating the feasibility of operating several of the generating units at the Stock Island facility in Key West using bio-diesel fuel. These units currently operate using fuel oil. If ultimately implemented, the switch from fuel oil to bio-diesel fuel for these units could reduce FMPA's CO₂ emissions.

**10.8.3.7 Potential Future Conservation Programs.**

**10.8.3.7.1 DSM Request for Proposals.** In July 2007, FMPA issued an RFP for DSM activities. Four proposals were received, and three of the proposals have been short-listed for further evaluation. Discussions are proceeding with the proposers to examine the possibility of implementing demand-side programs. To the extent any of these measures, if ultimately implemented, help to reduce FMPA's future energy requirements, they would have a corresponding CO₂ reduction benefit to the ARP.

**10.8.3.7.2 Potential ARP-Funded Energy Conservation Program.** As a wholesale energy provider, FMPA does not directly implement demand-side conservation measures. However, FMPA is considering undertaking a program to assist its Members in implementing energy conservation measures. Under this program, FMPA could collect funds through its rates that would be allocated among the ARP Members. As an example, the Members could utilize these funds to purchase compact fluorescent light bulbs that could be distributed to retail customers at reduced or no cost. These measures would help to reduce FMPA's energy requirements, which would have a corresponding CO₂ reduction benefit to the ARP.

**10.8.4 Conclusion**

The ARP has demonstrated a strong track record in improving the efficiency of its generating fleet and it is committed to exploring new ways to improve efficiency and to reduce CO₂ emissions in a cost-effective manner. Because Cane Island Unit 4 will be one of the most efficient generating units in the state, it will enable the ARP to displace generation from less efficient units. As such, along with FMPA's other efforts, Cane Island Unit 4 will help the ARP to reduce CO₂ emissions consistent with the state's goals.