Hydromodification Compliance Report
(HMP)
For
Vista Valley Country Club Pool Center
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Hydromodification Report

INTRODUCTION

This report provides Hydromodification and Water Quality design based on LID (Low Impact Development) principles for a proposed Pool House recreational facility located at the Vista Valley Country Club, located in Vista Ca. It covers the Low Impact Design (LID) selection and sizing, and then the hydromodification analysis of the proposed site. The LID sizing is based on the County of San Diego (County) sizing standards (0.04) found in the County SUSMP.

The Hydromodification and Water Quality calculations were performed utilizing continuous simulation analysis to size the storm water treatment and control facilities. Storm Water Management Model (SWMM) version 5.0 distributed by USEPA is the basis of all calculations within this report. SWMM generates peak flow recurrence frequencies and flow duration series statistics based on an assigned rain gauge for both pre-unmitigated flows and mitigated flows to determine compliance with the State Water Resources Control Board Order 2009-0009-DWQ and the County wide Model Standard Urban Stormwater Management Plan (SUSMP) and Hydromodification Management Plan (HMP) requirements.

It is assumed that the reader has a basic working knowledge of the SWMM program. If the reader needs to review the preparation of a SWMM model or any of the design details, SWMM is an open source program available for download from the EPA web site and includes informative example projects which cover the main objects included in a SWMM model. SWMM is an approved program for performing continuous simulation analysis of storm water runoff in San Diego County.

LID Design

The LID portion of the design is a unique aspect of the site design process. The inclusion of LID elements is a required part of the drainage system. It is not considered mitigation as far as flow control measures are concerned.

LID elements are designed to slow, infiltrate, filter and treat the runoff produced from a developed site. The first step in the design of the site drainage is to divide the site up into distinct areas known as Drainage Management Areas (DMA). DMA areas generally follow grade breaks and roof ridge lines. A separate DMA area should be used for each surface type (pavement, landscape, roof, etc.) and for each soil type. Each DMA area will have a unique identifier number and measured size in square feet.

Once the DMA areas area defined, each one is assigned one of the following classifications:

Self-Treating Areas

Self-treating areas are landscaped or turf areas that do not drain to IMPs, but rather drain directly off site or to the storm drain system. Examples include upslope undeveloped areas which are ditched and drained around a development and grassed slopes which drain off-site to a street or storm drain. In general, self-treating areas include no impervious areas, unless the impervious area is very small (5% or less) in relationship to the receiving pervious area and slopes are gentle enough to ensure runoff will be absorbed into the vegetation and soil.

Self-Retaining Areas

Self-Retaining areas are designed to retain the first one inch of rainfall without producing any runoff. The technique works best on flat, heavily landscaped sites. It may be used on mild slopes if there is a reasonable expectation that a one-inch rainfall event would produce no runoff.

Areas Draining to Self-Retaining Areas.

Runoff from impervious or partially pervious areas can be routed to self-retaining pervious areas. The maximum ratio is 2 parts impervious area for every 1 part pervious area for water quality treatment.

Areas Draining to IMPs

IMPs (Integrated Management Practices) are constructed storm water treatment practices that treat the runoff they receive by filtration, evaporation, infiltration, etc. A Bioretention area is a good example of an IMP. Areas draining to IMPs are multiplied by a sizing factor to calculate the required size of the IMP.

IMP Sizing Factor

San Diego County has developed a uniform sizing factor for Bioretention IMPs used within the County jurisdiction. Bioretention IMPs are considered flow based facilities. The factor is based on maintaining a minimum percolation rate of 5 inches per hour through an engineered soil mix. The sizing factor is the ratio of the design intensity of rainfall on tributary impervious surfaces (0.2 inches/hour) to the design percolation rate in the facility (5 inches/hour), or 0.04 (dimensionless)[1].

Project Results

For this project, the tabulated LID charts, and sizing calculations are found in Attachment D of this report.

Hydromodification Design

Once the LID design is completed, the DMA areas developed in that process are used as the subcatchment areas used by the SWMM program.

The SWMM program performs a continuous simulation analysis of the site run-off characteristics. It performs this analysis by applying a time step amount of precipitation to each of the defined subcatchment objects, then calculates the various losses such as infiltration, evaporation, LID treatment flows, storage quantities, etc. The remainder of the precipitation after the various losses are subtracted is considered the runoff from the subcatchment. The runoff value from each subcatchment is then routed either to another receiving downstream subcatchment or to a conveyance system such as a pipe network. The program keeps track of the results for each subcatchment for each time step and then applies the next time step precipitation value. All of the site runoff is routed (usually) to one point on the site where the runoff leaves the site and becomes part of the overall runoff of the County. This point may be an improved conveyance system such as a public storm drain system (MS4), or some sort of un-named or named creek, stream or river.

The Hydromodification and Water Quality calculations were performed utilizing continuous simulation analysis to size the storm water treatment and control facilities. Storm Water Management

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[1] COUNTY OF SAN DIEGO SUSMP, Revised: August 1, 2012, Page 48

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The Hydromodification and Water Quality system proposed for this project is a collection of bio-retention basins located at disperse areas on the site. This system detains runoff in the basin surface and also in the underdrain reservoir, filters the water quality flows through plant roots and a biologically active soil mix, and then releases them to the on-site drainage system which ultimately discharges the treated flow to the original point of concentration of the site.

Low Flow Threshold

A downstream channel assessment has not been completed for this project and therefore the low flow threshold utilized for the system analysis is 10% of 2-year storm event (0.1Q2). This will be used as the low flow threshold to meet peak flow frequency and flow duration controls.

Soil Investigations

The soil runoff and infiltration properties were estimated by mapping the project location on the USDA Web Soil Survey site. The soils types indicated for this site are mainly type C and type D. The calculations were run assuming a weighted average of the corresponding values for soil type C and D.

I. MODEL SETUP

Pre-development Model Setup

The SWMM model for this project pre-development site is analyzed using historical rain gauge data. The Fallbrook gauge which can be found on the Project Clean Water web site, is utilized for this project based on similar terrain and proximity to said rain gauge. The rain gauge provides continuous precipitation input data to a sub-catchment with its outfall based on the contributing basins imperviousness.

This project has a few existing shed type structures on site. Considering the fact that these structures make up such a small percentage of the site, the site is analyzed as if it were in a completely natural state.

Post-Development Model Setup

The project site is divide up into numerous LID Drainage Management Areas (DMAs) in order to calculate the size of the respective LID Integrated Management Practices (IMPs). Once the IMP areas are established and adequately sized, the DMA areas are used as the basis of the subcatchments for the SWMM model. Each area is populated with the appropriate runoff, surface storage, slope, width, etc. factors. The storm drain system is assumed to be adequate for any flow rate so no sizing is provided for these items. See the hydrology report for further details.

II. SYSTEM REPRESENTATION

SWMM is a distributed model, which means that a study area can be subdivided into any number of irregular sub-catchments to best capture the effect that spatial variability in topography, drainage pathways, land cover, and soil characteristics have on runoff generation. For modeling of Hydromodification calculations, there are four main system representations: Rain gauge, Sub-catchment (contributing basin or LID area), Nodes and Links.

Rain Gauge

The properties of a rain gauge establish the source and format of the precipitation data that are applied to the study area. In this project, the rainfall data consist of a long-term rainfall record stored in an external rain gage file (Fallbrook ALERT Station.dat). The file data is labeled as "Fallbrook" in the SWMM input files. The Fallbrook rain station was chosen due to its data quality and its relative location to the project site. The rain gauge supplies 58 years of hourly precipitation data. The data is obtained from the Project Clean Water website (www.projectcleanwater.org). This data file contains records for rainfall intensity at an hourly-recorded time interval starting on 7/25/1951 and continuing on to 5/26/2008. This 58 years of hourly runoff measurements corresponds to approximately 508,080 distinct rainfall records. See Figure 4 for a graph of the hourly precipitation vs. rainfall intensity for the rain gauge.

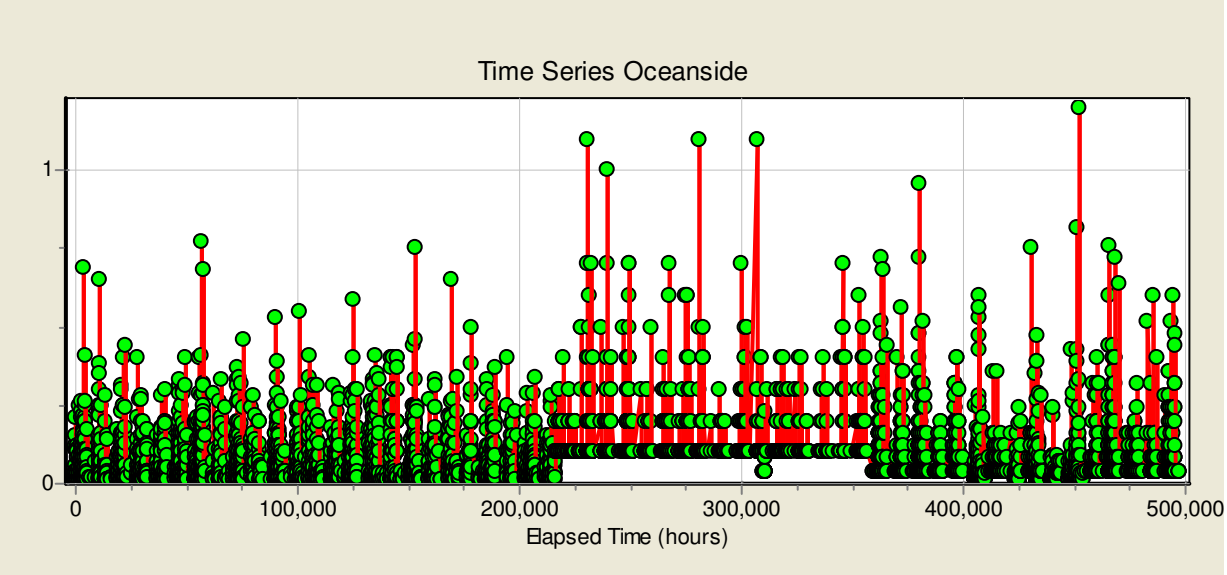

Fig. 4 – Time series rain data, which corresponds to runoff estimates for each of the 508,080 time steps (each date and hour) of the 58-year simulation period. (Inches/hour vs. elapsed time)

Sub-catchment (contributing basin or LID area)

A basin is modeled using a sub-catchment object, which contains some of the following properties:

Rain Gauge

The rate of stormwater runoff and volume depends directly on the precipitation magnitude and its spatial and temporal distribution over the catchment. Each sub-catchment in SWMM is linked to a rain gauge object that describes the format and source of the rainfall input for the sub-catchment.

Area

This area is bounded by the limits of the sub-catchment boundary or drainage area. Its value is determined directly from maps, field surveys, or scaled AutoCAD maps of the site, or by using SWMM's Auto-length tool when the sub-catchment is drawn to scale on SWMM's study area map. A Project may be divided into several sub-catchments based on its outfall. The subcatchments for this project are extracted directly from the polyline vertices outlining the subcatchments in the AutoCAD base drawing.

Width

Width can be defined as the sub-catchment's area divided by the length of the longest overland flow path that water can travel. When there are several such paths, one would use an average of their lengths to compute a width. If overland flow is visualized as flowing over an idealized, rectangular catchment, then the width of the sub-catchment is the physical width of overland flow.

In natural areas, true overland flow can only occur for distances of about 500 feet before it begins to consolidate into a small stream flow. In post-development, the true overland flow can be very short before it is collected into open channels. A maximum overland flow of 500 ft is appropriate for a non-urban catchment. The typical overland flow length for an urban subcatchment is the length from the back of a representative lot to the center of the street. If the overland flow length varies greatly within a sub-catchment, then an area-weighted average should be used.

Slope

This is the slope of the land surface over which runoff flows and is the same for both the pervious and impervious surfaces. It is the slope of what one considers being the overland flow path or its area-weighted average if there are several paths in the sub-catchment.

Imperviousness

This is the percentage of sub-catchment area covered by impervious surfaces such as sidewalks and roadways or whatever surfaces that rainfall cannot infiltrate.

Roughness Coefficient

The roughness coefficient reflects the amount of resistance that overland flow encounters as it runs off of the sub-catchment surface.

Infiltration Model

The pre-development condition is primarily natural vegetation. Based on the results of the Web Soil Survey, the site soils are assumed as soil types C & D. Infiltration of rainfall from the pervious area of a sub-catchment into the unsaturated upper soil zone can be described using three different infiltration

models: Horton, Green-Ampt, and Curve Number. There is no general agreement on which method of these three is the best.

The Green-Ampt method was chosen to calculate the infiltration of the pervious areas based on the availability of data for this project. It is accessed when editing the infiltration property of a sub-catchment.

Estimation of Green-Ampt Infiltration Parameters

(SWMM RUNOFF Variables SUCT, HYDCON, SMDMAX)

Provisional Values Suitable for Design Storm Events Where More Detailed Soils Data Is Not Available

USDA Soil Texture Classification	SUCT Avg. Capillary Suction		HYDCON Saturated Hydraulic Conductivity		SMDMAX Initial Moisture Deficit for Soil (Vol. of Air / Vol. of Voids, expressed as a fraction)	
	(in)	(mm)	(in/hr)	(mm/hr)	Moist Soil Climates (Eastern US)	Dry Soil Climates (Western US)
Sand	1.95	49.5	9.27	235.6	.346	.404
Loamy Sand	2.41	61.3	2.35	59.8	.312	.382
Sandy Loam	4.33	110.1	0.86	21.8	.246	.358
Loam	3.50	88.9	0.52	13.2	.193	.346
Silt Loam	6.57	166.8	0.27	6.8	.171	.368
Sandy Clay Loam	8.60	218.5	0.12	3.0	.143	.250
Clay Loam	8.22	208.8	0.08	2.0	.146	.267
Silty Clay Loam	10.75	273.0	0.08	2.0	.105	.263
Sandy Clay	9.41	239.0	0.05	1.2	.091	.191
Silty Clay	11.50	292.2	0.04	1.0	.092	.229
Clay	12.45	316.3	0.02	0.6	.079	.203

Notes:

1. These values are provisional, and are offered as reasonable parameters estimates for SWMM applications where more detailed soils information is not available. There is significant variance in these values; laboratory and field testing, sensitivity analysis, and calibration may be employed to improve upon these estimates.
2. Typically use USDA SCS (now NRCS) Soil Survey to determine Soil Texture. In these surveys, Saturated Hydraulic Conductivity is reported as Permeability . Use the values reported in the soil survey for permeability for **HYDCON**, rather than the **HYDCON** values listed in the table above. In the absence of a soil survey or more reliable information, the values listed above may be used.
3. Synthesized from *Handbook of Hydrology*, D.R. Maidment, Editor in Chief, McGraw-Hill, Inc., 1993, pp 5.1-5.39.

Table 1a – Soil Infiltration Parameter

Table 1b – Soil Porosity Parameters. (Source: Final HMP for County of San Diego by Brown and Caldwell Dated March 11, 2011. Appendix F – HSPF Modeling Analysis Technical Memo)

Soil Type	Porosity η	Effective Porosity θ_e	Residual Water Content θ_r
GRAVEL[1]	0.420	0.415	0.005
SAND	0.437	0.417	0.020
LOAMY SAND	0.437	0.401	0.035
SANDY LOAM	0.453	0.412	0.041
LOAM	0.463	0.434	0.027
SILT LOAM	0.501	0.486	0.015
SANDY CLAY LOAM	0.398	0.330	0.068
CLAY LOAM	0.464	0.390	0.075
SILTY CLAY LOAM	0.471	0.432	0.040
SANDY CLAY	0.430	0.321	0.109
SILTY CLAY	0.479	0.423	0.056
CLAY	0.475	0.385	0.090

1 – Values for gravel were obtained from Fayer (1992) as presented in INEEL (2002).

LID controls

Utilizing LID controls within a SWMM project is a two-step process that:

- Creates a set of scale-independent LID controls that can be deployed throughout the study area,
- Assign any desired mix and sizing of these controls to designated sub-catchments.

The LID control type that was selected was a bio-retention cell that contains vegetation grown in an engineered soil mixture placed above a gravel drainage bed. Bio-retention provides storage, infiltration (depending on the soil type) and evapotranspiration of both direct rainfall and runoff captured from surrounding areas. For this project, we do not allow infiltration to the existing/filled soil.

III. CONTINUOUS SIMULATION OPTIONS

Kinematic Wave Routing Model

This routing method solves the continuity equation along with a simplified form of the momentum equation in each conduit. The latter requires that the slope of the water surface be equal to the slope of the conduit.
The maximum flow that can be conveyed through a conduit is the full normal flow value. Any flow in excess of this entering the inlet node is either lost from the system or can pond atop the inlet node and be re-introduced into the conduit as capacity becomes available.

Kinematic wave routing allows flow and area to vary both spatially and temporally within a conduit. This can result in attenuated and delayed outflow hydrographs as inflow is routed through the channel. However this form of routing cannot account for backwater effects, entrance/exit losses, flow reversal, or pressurized flow, and is also restricted to dendritic network layouts. It can usually maintain numerical stability with moderately large time steps, on the order of 1 to 5 minutes. Since the aforementioned effects are not expected to be significant, this alternative can be an accurate and efficient routing method, especially for long-term simulations.

Simulation Dates

These dates determine the starting and ending dates/times of a simulation and are chosen based on the rain data availability.

Start analysis on 01/03/1951

Start Reporting on 01/03/1951

End Analysis on 05/23/2008

Time Steps

The Time Steps establish the length of the time steps used for runoff computation, routing computation and results reporting. Time steps are specified in days and hours: minutes: seconds except for flow routing which is entered as decimal seconds.

Climatology - Evaporation Data

The available evaporation data for San Diego County that is accepted as being similar to this project condition is taken from the Chula Vista Evaporation Station Western Regional Climate Center.

Table 2 – Chula Vista Monthly Evaporation data (in/day)

January	February	March	April	May	June
0.094	0.115	0.168	0.202	0.225	0.232
July	Augustus	September	October	November	December
0.254	0.250	0.207	0.167	0.119	0.09

IV. BIO-RETENTION AS LID CONTROL

LID controls are represented by a combination of vertical layers whose properties are defined on a per-unit-area basis. This allows an LID of the same design but differing coverage area to easily be placed within different sub-catchments of a study area. During a simulation, SWMM performs a moisture balance that keeps track of how much water moves between and is stored within each LID layer. The first volume to be accounted for is the upper storage volume of the LID unit. For this project it is the first 4 inches above the base of the Bioretention unit. Once this volume is satisfied, the remainder of the runoff for the time period becomes runoff from the subcatchment. This runoff is routed to a storage unit with specific dimensions such as elevation areas (contour areas) at specific depths. The storage unit discharges through two discharge links. The first link represents the side orifice in the riser structure. For this project the orifice is modeled as a 1 inch diameter circular hole. The second link is the top of the riser structure (pipe) and is modeled as a long crested weir with a length equal to the circumference of the riser pipe. Both of the link flows are collected in a common node and then routed to the projects point of compliance

1. Surface

Storage Depth

When confining walls or berms are present, this is the maximum depth to which water can pond above the surface of the unit before overflow occurs (in inches). In this project the storage depth was assumed to be 4 (four) inches, corresponding to the height of the riser orifice above the bottom of the surface of the unit.

Vegetation Volume Fraction

It is the fraction of the volume within the storage depth that is filled with vegetation. This is the volume occupied by stems and leaves, not their surface area coverage. Normally this volume can be ignored, but may be as high as 0.1 to 0.2 for very dense vegetative growth. For this project it is assumed to be zero (negligible).

Surface Roughness

Manning's n value for overland flow over the surface of a vegetative swale. A value of n=0 is used for a perfectly flat surface.

Surface Slope

Slope of porous pavement surface or vegetative swale (percent). A value of 0 (zero) percent is used for bio-retention.

2. Soil

Thickness

The thickness of the soil layer (inches). A value of 18 inches is used as a minimum depth recommended to filter storm water.

Porosity

The volume of pore space relative to total volume of soil (as a fraction). A design soil mix porosity similar to loamy sand porosity of 0.4 is used for a good percolation rate (Table 1b – Soil Porosity Parameters).

Field Capacity

Volume of pore water relative to total volume after the soil has been allowed to drain fully (as a fraction). A value of 0.105 is used for this soil. Below this level, vertical drainage of water through the soil layer does not occur. (Source: SWMM 5 User Manual-Soil Characteristics page 160).

Wilting Point

Volume of pore water relative to total volume for a well-dried soil where only bound water remains (as a fraction). The moisture content of the soil cannot fall below this limit.
An assumed minimum moisture content within the bio-retention soil of 0.047 was chosen (Source: SWMM 5 User Manual-Soil Characteristics page 160).

Conductivity

Hydraulic conductivity for the fully saturated soil is 5 inches/hour. This is a design minimum value for percolation rate.

Conductivity Slope

Slope of the curve of log (conductivity) versus soil moisture content (dimensionless). Typical values range from 5 for sands to 15 for silty clay. The soil is designed to have a good percolation rate as a loamy sand type therefore the conductivity slope is assumed as 7.

Suction Head

The average value of soil capillary suction along the wetting front (inches). This is the same parameter as used in the Green-Ampt infiltration model. Table 1a was utilized to determine the capillary of the soil mix top layer of a bio-retention system. Loamy Sand was considered for approximately 10% clay content and sedimentation collected during a rain event, therefore the suction head will be 2.35 inches. This is an assumption of a suction head for the soil mix after several years of bio-retention life span.

3. Storage Layer

The Storage Layer page of the LID Control Editor describes the properties of the crushed stone or gravel layer used in bio-retention cells as a bottom storage/drainage layer. The following data fields are displayed:

Height

This is the thickness of a gravel layer (inches). Crushed stone and gravel layers are typically 12-24 inches thick. This project is specifying a 12 inch thick storage layer.

Void Ratio

The volume of void space relative to the volume of solids in the layer. Typical values range from 0.5 to 0.75 for gravel beds. Note that porosity = void ratio / (1 + void ratio). A void ration of 0.65 is used.

Conductivity

The rate at which water infiltrates into the native soil below the layer (in inches/hour). This would typically be the Saturated Hydraulic Conductivity of the surrounding sub-catchment if Green-Ampt infiltration is used. Since this is soil type D with an impervious fabric layer, a value of 0 is assumed for no infiltration.

Clogging Factor

Total volume of treated runoff it takes to completely clog the bottom of the layer divided by the void volume of the layer. A value of 0 was used to ignore clogging since the system does NOT consider infiltration to the native soils. Clogging progressively reduces the Infiltration Rate in direct proportion to the cumulative volume of runoff treated and may only be of concern for infiltration trenches with permeable bottoms and no under drains. A value of zero for the clogging factor is chosen since the bio-retention base is lined with impervious geo-fabric.

4. Underdrain System

LID storage layers can contain an optional underdrain system that collects stored water from the bottom of the layer and conveys it to a conventional storm drain. The Underdrain page of the LID Control Editor describes the properties of this system. It contains the following data entry fields:

Drain Coefficient and Drain Exponent

Coefficient *C* and exponent *n* that determines the rate of flow through the underdrain as a function of height of stored water above the drain height. The following equation is used to compute this flow rate (per unit area of the LID unit):

$q = C(h\text{-}Hd)^n$

Where *q* is the outflow (in/hr), *h* is the height of stored water (inches), and *Hd* is the drain height. A typical value for *n* would be 0.5 (making the drain act like an orifice). The h parameter is defined as the depth of the storage layer based on EPA SWMM 5 source code inside the software under LID (Low Impact Development) module section which limits the h value to the maximum of storage depth.

Drain Offset Height

Height of any underdrain piping above the bottom of a storage layer (inches). In this project, this value was set to 0 as the underdrain piping is at the bottom of the storage layer.

It is noted here that the C coefficient in the above equation is NOT the same C value for a submerged orifice. See the explanation under Bioretention Integrated Management Practice (IMP) Details later in this section.

Drawdown Calculations

Per the Unified BMP sizing criteria the IMP must flow 5 inches per hour per unit area. The overall design depth of each of the Bioretention basins is 12 inches deep. If we ignore the discharge of the riser side orifice, and assume that the entire volume must pass through the filtration layers, assuming that the basin starts completely full, the entire depth of the Bioretention unit will drain in 2.4 hours (12inchs/5inches per hour). Note that each of the underdrain orifices are sized to ensure that the IMP flows at a minimum of 5in/hr. Since 2.4 hours is significantly less than the County required drawdown time of 96 hours, therefore the drawdown time is OK.

Bioretention Integrated Management Practice (IMP) Details

The SWMM program has the ability to model several different types of Low Impact Development (LID) practices. SWMM models each of the available LID functions within the runoff calculations of each subcatchment. The elements for a Bioretention LID include a surface storage volume, a soil filtration layer, an underground gravel storage layer and an underground underdrain system. For each time step in the calculations, the program subtracts the volume capacity of the LID area during that specific time step from the precipitation applied to the subcatchment and performs various soil flow and water balance calculations through the various Bioretention layers. Once that water has been treated it is reintroduced to the runoff component of the subcatchment. This is to say that the storage, treatment delay and underdrain discharge calculations are included in the runoff parameter of the subcatchment.

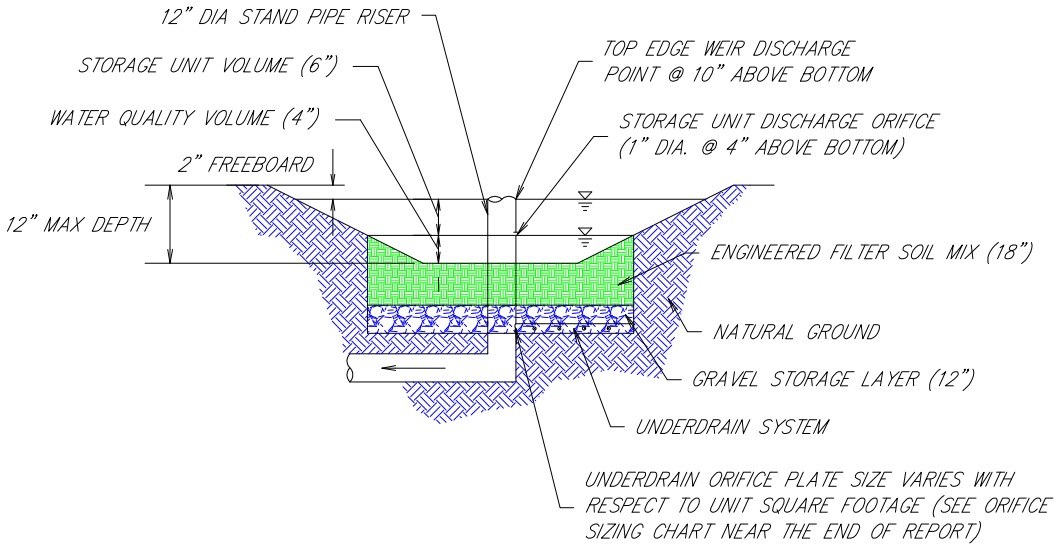

Figure 1

The SWMM program calculates the effects of a Bioretention feature as one distinct object. That object includes a predefined depth of water that can only exit the system by passing through the filter layer and underdrain. Any excess precipitation during that time step is considered runoff and is accounted for in the runoff parameter of the subcatchment calculations. The depth of the predefined Bioretention storage is the height of the orifice on the side of the riser structure.

In order to account for the hydromodification storage, the discharge of the Subcatchment is directed to a storage object in the SWMM model. While the storage volume of the LID area and the Bioretention volume of the area are physically integral to each other (i.e. no physical separation), the SWMM program models these two objects as distinct separate objects. So for each time step of a simulation, the first storage item to be filled is the Bioretention storage. Any excess precipitation not used by the

Bioretention unit then is considered runoff and is routed to the storage unit. Once in the storage unit, the water will discharge through the riser side orifice and depending on the depth, the riser top rim.

The storage object is modeled with two outlet features. The first feature is the orifice hole on the side of the riser. The second outlet feature is the rim of the riser structure. These two outlets are collected at a common node object which is then directed to the storm drain system. A typical layout of a Bioretention structure in the SWMM model is illustrated in the following figure.

Figure 2

In figure 2 the box identified as SC-40 is the subcatchment identification point. SC-40 represents the entire subcatchment and the Bioretention LID occupies the entire subcatchment. In this example SC-40 accepts runoff from SC-31 as well as another off screen subcatchment. The runoff from SC-40 is directed to the storage object identified as SC-40-Storage-Level. The capacity of this storage object is defined by entering in the elevation and surface areas of the low water mark contour elevation and the high water mark contour elevation. SWMM interpolates between these two values to determine the instantaneous volume and water depth of the storage unit. The inner bowtie object is the storage level orifice. It is physically located on the side of the riser structure at the depth of the Water Quality Volume (WQV) of the LID. It is modeled at the bottom of the storage unit. When the water level is above the WQV the water will be discharging through the riser side orifice and through the filtration layers and underdrain system. Once the water level falls below the WQV level, the discharge is only through the soil filter and underdrain system. The outer bowtie object represents the high water overflow of the structure. This object represents the rim of the riser structure and is modeled as a weir. Both of the bowtie objects are collected in a common node structure. This node structure represents the discharge point of the riser structure.

Because the modeling of the discharge of the Bioretention underdrain system is reintroduced to the system as runoff from the subcatchment, in the model calculations that discharge is also run through

the storage object and therefore the storage unit orifice. It is assumed that since the underdrain flow is released at a much slower rate than simply straight run-off discharge, then the effect of routing it though the storage object and orifice are negligible.

Underdrain Orifice Calculations

Per the SWMM user's manual the following equation is used in the outflow calculations for the LID underdrain:

$q = C(h\text{-}Hd)^n$ *(in/hr)* (1)

Where q = outflow in inches per hour, and (h-Hd) is the water "head" above the orifice in inches, n is the drain exponent set to 0.5 to model the outflow as an orifice, and C is a special "Drain Coefficient" specific to the above equation. It should be noted that the C coefficient in this equation is NOT the same C coefficient found in the standard orifice equation. The above equation is used by SWMM on a per unit basis which makes the LID units scalable.

To estimate the C factor required for the underdrain the SWMM user's manual suggest using the following formula:

$C = 2D^{1/2}/T$ *(in$^{0.5}$/hr)* (2)

To derive this formula we set the change in volume of the LID storage layer with respect to time equal to the standard orifice equation (found in the County Hydraulics manual):

$$\frac{dh}{dt} Ap = CoAo\sqrt{2gh} \quad (3)$$

$$\int_{h=0}^{h=D} h^{-0.5} dh = \int_{t=0}^{t=T} \frac{CoAo\sqrt{2g}}{Ap} \, dt \quad (4)$$

$$2\sqrt{D} = K\,(T) \quad (5)$$

$$where: C = K = \frac{CoAo\sqrt{2g}}{Ap} \quad (6)$$

The LID units on this project are sized based on the County of San Diego uniform sizing factor (0.04). The sizing factor is the ratio of the design intensity of rainfall on tributary impervious surfaces (0.2 inches/hour) to the design percolation rate in the facility (5 inches/hour), or 0.04 (dimensionless)[i]. This means that in order for the LID unit to meet the 0.04 sizing criteria the unit as a whole needs to flow at 5in/hr.

Setting the orifice equation (1) above equal to 5in/hr and assuming a storage depth of approximately 12 inches, leads to an assumed initial value of the C factor of 1.4.

Using the assumed C factor above in the SWMM model, if acceptable results are obtained, then the area of the orifice can be calculated using equation (7) below.

To calculate orifice area given K:

$$Ao = \frac{K\ Ap}{Co\sqrt{2g}}\ (ft^2)\ \ (7)$$

Where:

Ao = area of the orifice (sf)

K = C = assumed C factor from above

Ap = Area of the LID area (pond) (sf)

Co = discharge orifice coefficient

g = gravity constant (in/hr^2)

Note: All units must be consistent with in/hr,

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[i] County of San Diego SUSMP, Revised: August 1, 2012, Page 48. (http://www.sdcounty.ca.gov/dpw/watersheds/susmp/susmp.html)

Soil Parameter Calculations

Soil Type	A	B	C	D	composite
% of soil type	0.000	0.000	0.573	0.427	1.000
n-imp	0.012	0.012	0.012	0.012	0.012
n-perv	0.150	0.150	0.150	0.150	0.150
dStore-imp	0.020	0.020	0.020	0.020	0.020
dStore-perv	0.100	0.100	0.100	0.100	0.100
% zero imp	25.000	25.000	25.000	25.000	25.000
Green-Ampt Values*					
Suction Head	1.500	3.000	6.000	9.000	7.281
undeveloped conductivity	0.300	0.200	0.100	0.025	0.068
initial deficit	0.330	0.320	0.310	0.300	0.306

* values are under consideration for San Diego County but not approved at this time

STATISTICS ANALYSIS OF THE SWMM FILES FOR:

13008\GPIP\GPIP1\SWMP (REV 2)\WORKING FILES\DMA-MAP\EXISTING CONDITIONS

ANALYSIS DETAILS

Statistics Selection: Nodes/Total Inflow
Stream Susceptibility to Channel Erosion: High (Qlf = (0.1)Q2)
Assumed time between storms (hours): 24

PRE-DEVELOPEMENT SWMM FILE

SWMM file name: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Existing Conditions\VVCC SWMM exisiting Conditions-SWMM.out
SWMM file time stamp: 9/9/2014 2:52:07 AM
Selected Node to Analyze: Project-Discharge-Point

POST-DEVELOPEMENT UN-MITIGATED SWMM FILE

SWMM file name: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Proposed Conditions\VVCC SWMM Proposed Conditions UNmitigated.out
SWMM file time stamp: 9/9/2014 10:27:31 AM
Selected Node to Analyze: Project-Discharge-Point

POST-DEVELOPEMENT MITIGATED SWMM FILE

SWMM file name: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Proposed Conditions\VVCC SWMM Proposed Conditions Mitigated.out
SWMM file time stamp: 9/9/2014 10:27:46 AM
Selected Node to Analyze: Project-Discharge-Point

MITIGATED CONDITIONS RESULTS

For the Unmitigated Conditions:
Flow Duration Conditions PASS
Peak Flow Conditions PASS

For the Mitigated Conditions:
Flow Duration Conditions PASS
Peak Flow Conditions PASS

---Mitigated Conditions---
The Mitigated Conditions flow duration curve is composed of 318 points. Of the points, 1 point(s) are above the flow control upper limit (Q10), 47 point(s) are below the low flow threshold value (Qlf). Of the points within the flow control range (Qlf to Q10), 270 point(s) have a lower duration than pre-development conditions. These points

all pass. There are no points that failed, therefore the unmitigated conditions flow duration requirements have been met.

The Mitigated Conditions peak flow frequency curve is composed of 414 points. Of the points, 1 point(s) are above the flow control upper limit (Q10), 219 point(s) are below the low flow threshold value (Qlf). Of the points within the flow control range (Qlf to Q10), 194 point(s) have a lower peak flow rate than pre-development conditions. These points all pass. There are no points that failed, therefore the unmitigated conditions peak flow requirements have been met.

---Unmitigated Conditions---
The Unmitigated Conditions flow duration curve is composed of 317 points. Of the points, 1 point(s) are above the flow control upper limit (Q10), 47 point(s) are below the low flow threshold value (Qlf). Of the points within the flow control range (Qlf to Q10), 267 point(s) have a lower duration than pre-development conditions, and 2 point(s) have a duration that exceeds the pre-development by less than 10%, and for less than 10% of the curve length. These points all pass. There are no points that failed, therefore the unmitigated conditions flow duration requirements have been met.

The Unmitigated Conditions peak flow frequency curve is composed of 427 points. Of the points, 1 point(s) are above the flow control upper limit (Q10), 228 point(s) are below the low flow threshold value (Qlf). Of the points within the flow control range (Qlf to Q10), 198 point(s) have a lower peak flow rate than pre-development conditions. These points all pass. There are no points that failed, therefore the unmitigated conditions peak flow requirements have been met.

Development of the Peak Flow Statistics

The peak flow statistics are developed directly from the binary output file produced by the SWMM program. The site is modeled three ways, Pre-Development, Post-Development-Unmitigated, and Post-Development-Mitigated. For each of these files a specific time period differentiating distinct storms is chosen. The SWMM results are extracted and each flow value is queried. The majority of the values for Southern California sites are zero flow. As each successive record is read, as soon as a non-zero value is read the time and flow value of that record are recorded as the beginning of an event. The first record is automatically recorded as the "tentative" peak value. As each successive non-zero value is read and the successive flow value is compared to the peak value and the greater value is retained as the peak value of the storm. As soon as a successive number of zero values equal to the predetermined storm separation value, then the time value of the last non-zero value is recorded as the end of the storm, the duration of the storm is the difference between the end time and the start time, and the peak value is recorded as the highest flow value between the start and end times.

Once the entire SWMM output file is read all of the distinct storm events will have been recorded in a special list. The storms will be in the order of their occurrence. To develop the peak flow statistics table the first step is to sort the storms in descending order of the peak flow value. Once the list is sorted then the relative rank of each storm is assigned with the highest ranking storm being the storm with the highest peak flow. There are several methods that can be used to determine which storm should be ranked above another equally valued storm. For the purposes of these studies an Ordinal ranking is used so that each storm has a unique rank number. Where two or more storms have equal flow values, the earlier storm is assigned the higher rank. This is done consistently throughout the storm record. Since we are only looking at peak flow statistics, it is assumed that the relative ranking of individual (but equal) storms is irrelevant to the calculations.

The exceedance frequency and return period are both computed using the Weibull formula for plotting position. Therefore, for a specific event the exceedance frequency F and the return period in years T are calculated using the following equations[1]:

$F=m/(n_R+1)$ and $T=n+1/m$

[1] Pg 169-170 STORM WATER MANAGEMENT MODEL APPLICATIONS MANUAL, EPA/600/R-09/000 July 2009

where m is the event's rank, n_R is the total number of events and n is the number of years under analysis.

Once the Peak flow statistics table is complete, a plot of Return Frequency vs. peak flow is created. All three conditions (pre, post and mitigated) are plotted on the same plot.

The Peak Flow Statistics Analysis

The Peak Flow Statistics analysis is composed of the following series of files:

1. The Peak Flow Frequency Plot
2. The Comparison of the Un-Mitigated Peak Flow Curve to the Pre-Development Curve (Pass/Fail)
3. The Comparison of the Mitigated Conditions Curve to the Pre-Development Curve (Pass/Fail)
4. The Peak Flow Statistics Calculation for the Pre-Development Curve.
5. The Peak Flow Statistics Calculation for the Un-Mitigated Curve.
6. The Peak Flow Statistics Calculation for the Mitigated Curve.

The Peak Flow Frequency Plot

The Peak Flow Frequency Curves are the plotting of all three (Pre, Un-Mitigated and Mitigated) sets of return Period vs peak flow data point pair lists. In addition to these curves horizontal lines are plotted corresponding to the Q_{10}, Q_5, Q_2 and Q_{lf} (low flow threshold) values. Within the geomorphically significant range ($Q_{10} – Q_{lf}$) one can see a visual representation of the relative positions of the peak flow curves. The peak flow curves are compared in a North/South (vertical) direction to compare post development peak flows to pre-development flows. The Pre-Development curve is plotted in blue, the unmitigated curve is plotted in red, and the mitigated curve is plotted in green. As long as the post development curve lies below the pre-development curve (mostly[2]), the project meets the peak flow hydromodification requirements.

Pass/Fail comparison of the curves

The next two sets of data are the point by point comparison of the post-development curve(s) and the pre-development curve. The Pass/Fail table is helpful in determining compliance since the plotted lines can be difficult to see at the scales suitable for use in a report. Each point on the post- development curve has a corresponding "X" value (Recurrence Interval), and "Y" value (Peak Flow). For each point on the post development curve, the "X" value is used to interpolate the corresponding peak flow value from the pre-development curve. Then the Post-development peak flow value is compared to the pre-development peak flow value. Based on the relative values of each point, pass/fail criteria are determined point by point.

For each set of data, the upper right hand header value shows the name of the file being displayed (ex. peakFlowPassFailMitigated.TXT). The first line of the file also shows this value. The next line shows the

[2] See hydromodification limits for exceedance of pre-development values

time stamp of the file that is being analyzed. The time stamps of all of the report files should be within a minute or two of each other, otherwise there may have been tampering with the files. Each report run creates and prints all of the files and reports at one time so all the time stamps should be very close. It should be noted that the SWMM.out files will not have related time stamps since each file is developed independently.

The first column is the zero based number of the point. The next two columns show the post development "X" and "Y" values. The next column shows the value interpolated between the two bounding points on the pre-development curve. The next three columns show the true or false values of the comparison of the two "Y" values. The last column shows the resultant pass or fail status of the point. There are three ways a point can pass. They are:

1. Point is outside of the geomorphically significant range $Q_{10} – Q_{lf}$
2. Q_{post} being less than Q_{pre}
3. Q_{post} being less than 110% of the value of Q_{pre} if the point is between Q_5 and Q_{10}[3]

There are four ways that a point can fail. They are:

1. Q_{post} being greater than Q_{pre} if the point is between Q_{lf} and Q_5
2. Q_{post} being greater than 110% of Q_{pre} if the point is between Q_{lf} and Q_{10}
3. If more than 10% of the points are between 100% and 110% of Q_{pre} for the points between Q_5 and Q_{10}
4. If the frequency interval for points > 100% of Q_{pre} is greater than 1 year for the points between Q_5 and Q_{10}

A quick scan down the last column will quickly tell if there are any points that fail.

At the bottom of each set of data are the date stamp of the report to the left, and to the right is the page number/number of pages for the specific set of data (not the pages of the report!). Each new set of data has its own page numbering. Between the file name in the header row and the page numbering in the footer row, the engineer can readily scan the document for the data of interest.

The Peak Flow Statistics Calculations

There are three sets of data for the Peak Flow Statistics calculations (Pre-Development, Un-Mitigated, and Mitigated). As was the case for the pass/fail data, the upper right hand corner of each sheet has the file name. The first row of the data is the SWMM file name. The second row is the SWMM file time stamp of the file being analyzed. The 4th, 5th, and 6th rows are the calculated values for Q_{10}, Q_5, and Q_2. These values are derived by linear interpolation between the nearest bounding points in the listing. While the relationship between the points in the peak flow analysis is not technically a linear relationship, the error introduced in using linear interpolation between such relatively close data points is assumed to be irrelevant. Finally, the footer row shows the report time and the page/number of pages of the data set.

As was previously discussed, each storm listed was determined by reading the flow values directly from the binary output file from the SWMM program. The storms were then sorted in descending order of peak flow values. Then each storm was assigned a unique rank, then the Frequency and Return Period

[3] See section on how a point can fail point number 3 hereon

were calculated using Weibull formulas. Every discharge value for the entire rainfall record is listed in each of these lists. It should be noted that the derivation of these peak flow statistics values use full precision (i.e. no rounding off) of the SWMM output values. Since the precision of the calculations may not be the same as the SWMM program uses, and also the assignment of rank to values of equal peak flow value may differ slightly from the way SWMM calculates the tables, minor variances in the data values and/or the order of storms can be expected.

Finally, as was previously stated, the values of the Return Period were plotted vs. the peak flow values to develop the peak flow frequency curves.

Plan Check Suggestions

As is the responsibility of the reviewing agency, any and all methods should be considered to verify that the SWMM analysis adequately models the site as far as hydrologic discharge is concerned, and that the data sets presented are valid results from consistent calculations, and that any and all results can be duplicated by manual methods and achieve the same results. In light of these goals, the plan checker is invited to consider the following tasks as part of the plan check process.

Compare the Data Stamps for Each of the Statistics Files Used In This Analysis.

For each set of calculations and report files, the first step of the process is to list out all the files in the report folder and delete those files. The very first step leaves the reports folder completely empty. Then as each successive step is performed, the results file is placed in the reports folder. Once all of the results files are complete, then the report file is compiled using the data directly from the files placed in the results folder. This means that the time stamps on each of the report files in the report should be within a minute or two depending on the speed of the computer. If the time values are more than a few minutes apart then the potential for inconsistent results files should be investigated.

Verify A Few Random Storm Statistics

For each of the Pre, Un-mitigate and Mitigated peak flow statics tables, a few randomly selected storms should be checked against the values taken directly from the SWMM file. This can be done by opening the corresponding SWMM file, selecting the outfall node, selecting Report>Table>By Object, Setting the time format to Date/Time, selecting the appropriate node value, and clicking the OK button to generate a table of the date/time/Total Inflow values. Now scroll down the list to the start date and time of the randomly selected storm. Verify that the start date, end date, and the highest flow value between the start and end date correspond to the values shown in the statistics table. Do this for a few storm to verify that the data corresponds to the SWMM output file. Verify by hand a few of the frequency and return period values.

Compare Plotted Curves to Table Data

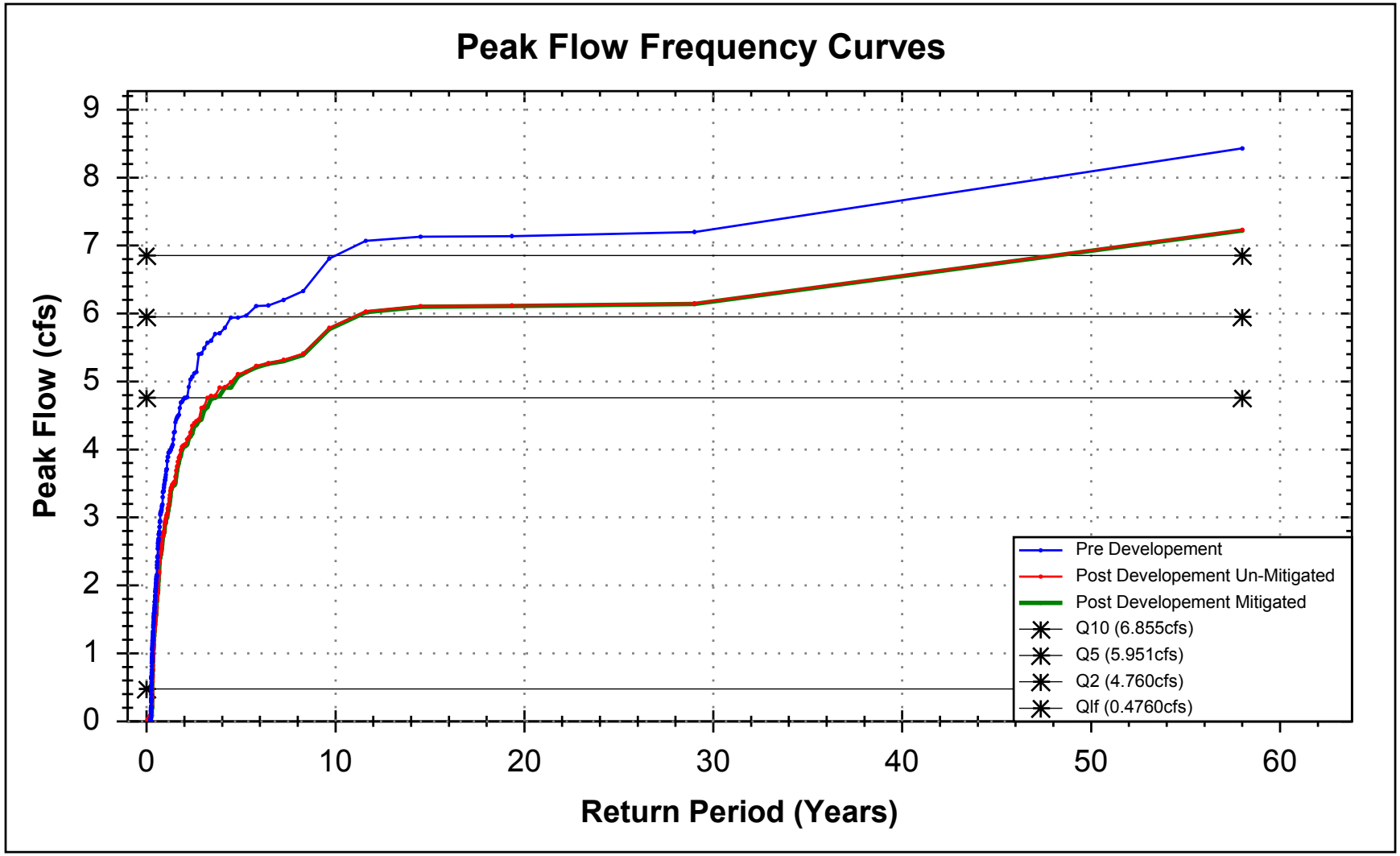
Randomly check a few of the plotted points against the values found in the Peak Flow Frequency Tables.

Verify by Observation that the values of Q_{10}, Q_5, Q_2 and Q_{lf} are reasonable.

For each value shown on the reports, verify that the value shown for say Q10 is in between the next higher return period and the next lower period. Also verify that the correct values for each of these return periods are plotted correctly on the peak flow frequency graph.

Manually Verify That the Pass Fail Table Is Correctly Calculated

Select at random several points on each of the pass/fail tables to verify that the values for post X/Y and interpolated Y look reasonable. Also check that the various test results are shown accurately in the chart and also the final pass/fail result looks accurate.


Peak Flow Frequency Curves
Peak Flow (cfs)
Return Period (Years)
0
1
2
3
4
5
6
7
8
9
0
10
20
30
40
50
60
Pre Developement
Post Developement Un-Mitigated
Post Developement Mitigated
Q10 (6.855cfs)
Q5 (5.951cfs)
Q2 (4.760cfs)
Qlf (0.4760cfs)

Compare Post-Developement Curve to Pre-Developement Curve

post-developement SWMM file: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Proposed Conditions\VVCC SWMM Proposed Conditions UNmitigated.out
post-developement time stamp: 9/9/2014 10:27:31 AM
Compared to:
pre-developement SWMM file: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Existing Conditions\VVCC SWMM exisiting Conditions-SWMM.out
pre-developement time stamp: 9/9/2014 2:52:07 AM

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
0	58.00	7.23	8.43	FALSE	FALSE	FALSE	Pass- Qpost Above Flow Control Upper Limit
1	29.00	6.15	7.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
2	19.33	6.12	7.14	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
3	14.50	6.11	7.13	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
4	11.60	6.03	7.07	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
5	9.67	5.79	6.81	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
6	8.29	5.41	6.33	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
7	7.25	5.32	6.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
8	6.44	5.27	6.12	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
9	5.80	5.23	6.11	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
10	5.27	5.14	5.97	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
11	4.83	5.11	5.94	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
12	4.46	4.99	5.94	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
13	4.14	4.92	5.79	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
14	3.87	4.91	5.71	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
15	3.63	4.79	5.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
16	3.41	4.79	5.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
17	3.22	4.76	5.57	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
18	3.05	4.63	5.49	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
19	2.90	4.61	5.41	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
20	2.76	4.44	5.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
21	2.64	4.42	5.14	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
22	2.52	4.39	5.12	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
23	2.42	4.35	5.07	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
24	2.32	4.25	5.03	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
25	2.23	4.18	4.92	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
26	2.15	4.15	4.77	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
27	2.07	4.08	4.76	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
28	2.00	4.07	4.76	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
29	1.93	4.06	4.73	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
30	1.87	4.04	4.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
31	1.81	3.99	4.69	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
32	1.76	3.91	4.61	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
33	1.71	3.88	4.51	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
34	1.66	3.82	4.49	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
35	1.61	3.75	4.47	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
36	1.57	3.69	4.44	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
37	1.53	3.60	4.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
38	1.49	3.52	4.26	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
39	1.45	3.52	4.25	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
40	1.42	3.49	4.15	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
41	1.38	3.49	4.07	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
42	1.35	3.48	4.04	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
43	1.32	3.45	4.03	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
44	1.29	3.43	4.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
45	1.26	3.39	3.99	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
46	1.23	3.33	3.97	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
47	1.21	3.28	3.96	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
48	1.18	3.19	3.96	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
49	1.16	3.19	3.95	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
50	1.14	3.14	3.89	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
51	1.12	3.13	3.89	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
52	1.09	3.06	3.83	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
53	1.07	3.05	3.71	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
54	1.06	3.03	3.71	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
55	1.04	3.00	3.68	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
56	1.02	2.98	3.63	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
57	1.00	2.95	3.59	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
58	0.98	2.94	3.55	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
59	0.97	2.92	3.55	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
60	0.95	2.88	3.51	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
61	0.94	2.80	3.48	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
62	0.92	2.78	3.44	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
63	0.91	2.78	3.39	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
64	0.89	2.78	3.39	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
65	0.88	2.77	3.38	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
66	0.87	2.74	3.37	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
67	0.85	2.72	3.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
68	0.84	2.72	3.19	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
69	0.83	2.71	3.19	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
70	0.82	2.66	3.18	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
71	0.81	2.64	3.16	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
72	0.80	2.60	3.12	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
73	0.78	2.60	3.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
74	0.77	2.56	3.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
75	0.76	2.52	3.08	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
76	0.75	2.50	3.08	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
77	0.74	2.49	3.07	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
78	0.73	2.48	3.06	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
79	0.73	2.47	3.04	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
80	0.72	2.46	2.95	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
81	0.71	2.44	2.94	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
82	0.70	2.42	2.93	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
83	0.69	2.42	2.86	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
84	0.68	2.41	2.86	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
85	0.67	2.35	2.79	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
86	0.67	2.35	2.77	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
87	0.66	2.33	2.76	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
88	0.65	2.22	2.75	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
89	0.64	2.19	2.75	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
90	0.64	2.15	2.69	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
91	0.63	2.15	2.68	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
92	0.62	2.11	2.65	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
93	0.62	2.10	2.65	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
94	0.61	2.05	2.62	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
95	0.60	2.02	2.62	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
96	0.60	1.93	2.58	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
97	0.59	1.92	2.54	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
98	0.59	1.91	2.43	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
99	0.58	1.91	2.42	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
100	0.57	1.91	2.42	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
101	0.57	1.90	2.41	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
102	0.56	1.89	2.35	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
103	0.56	1.86	2.34	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
104	0.55	1.86	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
105	0.55	1.85	2.26	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
106	0.54	1.84	2.16	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
107	0.54	1.81	2.14	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
108	0.53	1.79	2.14	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
109	0.53	1.77	2.13	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
110	0.52	1.77	2.12	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
111	0.52	1.69	2.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
112	0.51	1.66	2.09	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
113	0.51	1.65	2.08	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
114	0.50	1.65	2.05	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
115	0.50	1.61	2.03	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
116	0.50	1.61	2.03	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
117	0.49	1.60	1.99	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
118	0.49	1.59	1.98	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
119	0.48	1.59	1.95	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
120	0.48	1.58	1.95	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
121	0.48	1.58	1.92	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
122	0.47	1.57	1.92	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
123	0.47	1.52	1.91	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
124	0.46	1.52	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
125	0.46	1.51	1.85	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
126	0.46	1.50	1.85	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
127	0.45	1.50	1.83	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
128	0.45	1.49	1.79	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
129	0.45	1.49	1.77	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
130	0.44	1.47	1.76	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
131	0.44	1.46	1.76	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
132	0.44	1.46	1.76	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
133	0.43	1.42	1.75	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
134	0.43	1.42	1.71	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
135	0.43	1.41	1.68	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
136	0.42	1.40	1.67	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
137	0.42	1.38	1.66	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
138	0.42	1.38	1.64	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
139	0.41	1.37	1.61	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
140	0.41	1.36	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
141	0.41	1.36	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
142	0.41	1.36	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
143	0.40	1.34	1.59	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
144	0.40	1.32	1.59	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
145	0.40	1.31	1.59	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
146	0.40	1.31	1.58	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
147	0.39	1.27	1.56	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
148	0.39	1.24	1.55	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
149	0.39	1.24	1.54	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
150	0.38	1.23	1.53	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
151	0.38	1.22	1.51	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
152	0.38	1.22	1.51	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
153	0.38	1.21	1.47	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
154	0.37	1.20	1.47	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
155	0.37	1.20	1.45	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
156	0.37	1.20	1.45	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
157	0.37	1.15	1.45	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
158	0.37	1.15	1.44	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
159	0.36	1.11	1.43	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
160	0.36	1.11	1.42	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
161	0.36	1.09	1.41	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
162	0.36	1.08	1.39	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
163	0.35	1.08	1.38	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
164	0.35	1.08	1.33	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
165	0.35	1.07	1.32	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
166	0.35	1.06	1.32	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
167	0.35	1.05	1.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
168	0.34	1.03	1.29	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
169	0.34	1.02	1.27	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
170	0.34	0.99	1.26	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
171	0.34	0.96	1.25	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
172	0.34	0.95	1.23	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
173	0.33	0.95	1.22	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
174	0.33	0.94	1.21	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
175	0.33	0.94	1.21	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
176	0.33	0.90	1.21	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
177	0.33	0.90	1.21	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
178	0.32	0.90	1.21	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
179	0.32	0.89	1.19	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
180	0.32	0.85	1.19	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
181	0.32	0.82	1.19	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
182	0.32	0.79	1.16	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
183	0.32	0.77	1.14	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
184	0.31	0.76	1.14	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
185	0.31	0.75	1.12	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
186	0.31	0.70	1.11	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
187	0.31	0.69	1.11	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
188	0.31	0.66	1.09	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
189	0.31	0.66	1.07	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
190	0.30	0.64	1.07	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
191	0.30	0.64	1.05	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
192	0.30	0.63	1.05	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
193	0.30	0.63	1.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
194	0.30	0.61	1.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
195	0.30	0.61	0.98	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
196	0.29	0.60	0.96	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
197	0.29	0.58	0.94	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
198	0.29	0.52	0.93	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
199	0.29	0.47	0.93	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
200	0.29	0.43	0.91	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
201	0.29	0.41	0.89	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
202	0.29	0.40	0.87	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
203	0.28	0.37	0.87	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
204	0.28	0.36	0.87	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
205	0.28	0.35	0.86	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
206	0.28	0.33	0.86	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
207	0.28	0.31	0.81	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
208	0.28	0.30	0.76	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
209	0.28	0.27	0.72	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
210	0.28	0.24	0.71	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
211	0.27	0.23	0.68	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
212	0.27	0.21	0.68	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
213	0.27	0.21	0.66	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
214	0.27	0.21	0.66	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
215	0.27	0.21	0.66	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
216	0.27	0.20	0.65	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
217	0.27	0.18	0.65	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
218	0.27	0.15	0.65	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
219	0.26	0.12	0.65	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
220	0.26	0.12	0.64	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
221	0.26	0.10	0.64	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
222	0.26	0.10	0.63	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
223	0.26	0.10	0.63	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
224	0.26	0.09	0.62	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
225	0.26	0.09	0.58	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
226	0.26	0.09	0.55	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
227	0.25	0.08	0.53	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
228	0.25	0.08	0.48	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
229	0.25	0.08	0.47	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
230	0.25	0.08	0.47	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
231	0.25	0.08	0.46	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
232	0.25	0.08	0.40	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
233	0.25	0.08	0.39	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
234	0.25	0.08	0.35	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
235	0.25	0.08	0.32	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
236	0.25	0.08	0.32	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
237	0.24	0.08	0.29	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
238	0.24	0.08	0.28	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
239	0.24	0.08	0.23	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
240	0.24	0.08	0.21	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
241	0.24	0.08	0.21	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
242	0.24	0.08	0.20	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
243	0.24	0.08	0.19	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
244	0.24	0.08	0.18	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
245	0.24	0.08	0.16	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
246	0.24	0.08	0.16	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
247	0.23	0.08	0.15	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
248	0.23	0.08	0.15	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
249	0.23	0.08	0.13	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
250	0.23	0.08	0.11	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
251	0.23	0.08	0.11	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
252	0.23	0.08	0.10	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
253	0.23	0.08	0.10	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
254	0.23	0.08	0.06	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
255	0.23	0.08	0.05	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
256	0.23	0.08	0.04	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
257	0.22	0.08	0.03	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
258	0.22	0.07	0.02	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
259	0.22	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
260	0.22	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
261	0.22	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
262	0.22	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
263	0.22	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
264	0.22	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
265	0.22	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
266	0.22	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
267	0.21	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
268	0.21	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
269	0.21	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
270	0.21	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
271	0.21	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
272	0.21	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
273	0.21	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
274	0.21	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
275	0.21	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
276	0.21	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
277	0.20	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
278	0.20	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
279	0.20	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
280	0.20	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
281	0.20	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
282	0.20	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
283	0.20	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
284	0.20	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
285	0.20	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
286	0.20	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
287	0.19	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
288	0.19	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
289	0.19	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
290	0.19	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
291	0.19	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
292	0.19	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
293	0.19	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
294	0.19	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
295	0.19	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
296	0.19	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
297	0.18	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
298	0.18	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
299	0.18	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
300	0.18	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
301	0.18	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
302	0.18	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
303	0.18	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
304	0.18	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
305	0.18	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
306	0.18	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
307	0.18	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
308	0.17	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
309	0.17	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
310	0.17	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
311	0.17	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
312	0.17	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
313	0.17	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
314	0.17	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
315	0.17	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
316	0.17	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
317	0.17	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
318	0.16	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
319	0.16	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
320	0.16	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
321	0.16	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
322	0.16	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
323	0.16	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
324	0.16	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
325	0.16	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
326	0.16	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
327	0.16	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
328	0.15	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
329	0.15	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
330	0.15	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
331	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
332	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
333	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
334	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
335	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
336	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
337	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
338	0.14	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
339	0.14	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
340	0.14	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
341	0.14	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
342	0.14	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
343	0.14	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
344	0.14	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
345	0.14	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
346	0.14	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
347	0.14	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
348	0.13	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
349	0.13	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
350	0.13	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
351	0.13	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
352	0.13	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
353	0.13	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
354	0.13	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
355	0.13	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
356	0.13	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
357	0.13	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
358	0.12	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
359	0.12	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
360	0.12	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
361	0.12	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
362	0.12	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
363	0.12	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
364	0.12	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
365	0.12	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
366	0.12	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
367	0.12	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
368	0.12	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
369	0.11	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
370	0.11	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
371	0.11	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
372	0.11	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
373	0.11	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
374	0.11	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
375	0.11	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
376	0.11	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
377	0.11	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
378	0.11	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
379	0.11	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
380	0.10	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
381	0.10	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
382	0.10	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
383	0.10	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
384	0.10	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
385	0.10	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
386	0.10	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
387	0.10	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
388	0.10	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
389	0.10	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
390	0.09	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
391	0.09	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
392	0.09	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
393	0.09	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
394	0.09	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
395	0.09	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
396	0.09	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
397	0.09	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
398	0.09	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
399	0.09	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
400	0.09	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
401	0.08	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
402	0.08	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
403	0.08	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
404	0.08	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
405	0.08	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
406	0.08	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
407	0.08	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
408	0.08	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
409	0.08	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
410	0.08	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
411	0.07	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
412	0.07	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
413	0.07	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
414	0.07	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
415	0.07	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
416	0.07	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
417	0.07	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
418	0.07	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
419	0.07	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
420	0.07	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
421	0.07	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
422	0.06	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
423	0.06	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
424	0.06	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
425	0.06	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
426	0.06	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold

Compare Post-Developement Curve to Pre-Developement Curve

post-developement SWMM file: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Proposed Conditions\VVCC SWMM Proposed Conditions Mitigated.out
post-developement time stamp: 9/9/2014 10:27:46 AM
Compared to:
pre-developement SWMM file: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Existing Conditions\VVCC SWMM exisiting Conditions-SWMM.out
pre-developement time stamp: 9/9/2014 2:52:07 AM

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
0	58.00	7.22	8.43	FALSE	FALSE	FALSE	Pass- Qpost Above Flow Control Upper Limit
1	29.00	6.14	7.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
2	19.33	6.11	7.14	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
3	14.50	6.10	7.13	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
4	11.60	6.02	7.07	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
5	9.67	5.77	6.81	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
6	8.29	5.39	6.33	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
7	7.25	5.30	6.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
8	6.44	5.26	6.12	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
9	5.80	5.21	6.11	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
10	5.27	5.14	5.97	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
11	4.83	5.07	5.94	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
12	4.46	4.91	5.94	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
13	4.14	4.91	5.79	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
14	3.87	4.79	5.71	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
15	3.63	4.76	5.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
16	3.41	4.74	5.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
17	3.22	4.62	5.57	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
18	3.05	4.58	5.49	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
19	2.90	4.44	5.41	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
20	2.76	4.42	5.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
21	2.64	4.36	5.14	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
22	2.52	4.34	5.12	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
23	2.42	4.23	5.07	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
24	2.32	4.19	5.03	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
25	2.23	4.16	4.92	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
26	2.15	4.07	4.77	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
27	2.07	4.05	4.76	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
28	2.00	4.05	4.76	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
29	1.93	4.02	4.73	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
30	1.87	3.99	4.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
31	1.81	3.90	4.69	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
32	1.76	3.87	4.61	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
33	1.71	3.80	4.51	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
34	1.66	3.76	4.49	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
35	1.61	3.68	4.47	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
36	1.57	3.60	4.44	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
37	1.53	3.50	4.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
38	1.49	3.48	4.26	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
39	1.45	3.47	4.25	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
40	1.42	3.47	4.15	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
41	1.38	3.47	4.07	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
42	1.35	3.44	4.04	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
43	1.32	3.41	4.03	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
44	1.29	3.40	4.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
45	1.26	3.31	3.99	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
46	1.23	3.25	3.97	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
47	1.21	3.18	3.96	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
48	1.18	3.17	3.96	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
49	1.16	3.11	3.95	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
50	1.14	3.10	3.89	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
51	1.12	3.04	3.89	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
52	1.09	3.04	3.83	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
53	1.07	3.02	3.71	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
54	1.06	2.98	3.71	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
55	1.04	2.98	3.68	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
56	1.02	2.92	3.63	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
57	1.00	2.91	3.59	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
58	0.98	2.91	3.55	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
59	0.97	2.89	3.55	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
60	0.95	2.79	3.51	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
61	0.94	2.78	3.48	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
62	0.92	2.77	3.44	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
63	0.91	2.76	3.39	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
64	0.89	2.75	3.39	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
65	0.88	2.72	3.38	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
66	0.87	2.72	3.37	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
67	0.85	2.70	3.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
68	0.84	2.66	3.19	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
69	0.83	2.60	3.19	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
70	0.82	2.58	3.18	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
71	0.81	2.55	3.16	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
72	0.80	2.53	3.12	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
73	0.78	2.50	3.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
74	0.77	2.49	3.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
75	0.76	2.47	3.08	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
76	0.75	2.45	3.08	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
77	0.74	2.45	3.07	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
78	0.73	2.42	3.06	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
79	0.73	2.41	3.04	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
80	0.72	2.41	2.95	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
81	0.71	2.40	2.94	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
82	0.70	2.39	2.93	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
83	0.69	2.34	2.86	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
84	0.68	2.33	2.86	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
85	0.67	2.31	2.79	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
86	0.67	2.21	2.77	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
87	0.66	2.18	2.76	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
88	0.65	2.16	2.75	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
89	0.64	2.15	2.75	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
90	0.64	2.08	2.69	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
91	0.63	2.08	2.68	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
92	0.62	2.05	2.65	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
93	0.62	2.00	2.65	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
94	0.61	1.93	2.62	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
95	0.60	1.93	2.62	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
96	0.60	1.92	2.58	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
97	0.59	1.89	2.54	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
98	0.59	1.89	2.43	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
99	0.58	1.89	2.42	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
100	0.57	1.87	2.42	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
101	0.57	1.86	2.41	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
102	0.56	1.84	2.35	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
103	0.56	1.83	2.34	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
104	0.55	1.80	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
105	0.55	1.79	2.26	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
106	0.54	1.77	2.16	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
107	0.54	1.76	2.14	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
108	0.53	1.76	2.14	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
109	0.53	1.68	2.13	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
110	0.52	1.67	2.12	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
111	0.52	1.64	2.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
112	0.51	1.63	2.09	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
113	0.51	1.58	2.08	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
114	0.50	1.58	2.05	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
115	0.50	1.57	2.03	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
116	0.50	1.57	2.03	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
117	0.49	1.57	1.99	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
118	0.49	1.56	1.98	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
119	0.48	1.53	1.95	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
120	0.48	1.53	1.95	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
121	0.48	1.51	1.92	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
122	0.47	1.51	1.92	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
123	0.47	1.50	1.91	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
124	0.46	1.49	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
125	0.46	1.49	1.85	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
126	0.46	1.48	1.85	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
127	0.45	1.46	1.83	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
128	0.45	1.43	1.79	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
129	0.45	1.43	1.77	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
130	0.44	1.41	1.76	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
131	0.44	1.40	1.76	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
132	0.44	1.39	1.76	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
133	0.43	1.38	1.75	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
134	0.43	1.37	1.71	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
135	0.43	1.36	1.68	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
136	0.42	1.35	1.67	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
137	0.42	1.35	1.66	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
138	0.42	1.35	1.64	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
139	0.41	1.34	1.61	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
140	0.41	1.32	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
141	0.41	1.31	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
142	0.41	1.30	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
143	0.40	1.27	1.59	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
144	0.40	1.26	1.59	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
145	0.40	1.25	1.59	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
146	0.40	1.23	1.58	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
147	0.39	1.21	1.56	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
148	0.39	1.21	1.55	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
149	0.39	1.21	1.54	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
150	0.38	1.20	1.53	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
151	0.38	1.19	1.51	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
152	0.38	1.19	1.51	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
153	0.38	1.19	1.47	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
154	0.37	1.14	1.47	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
155	0.37	1.12	1.45	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
156	0.37	1.12	1.45	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
157	0.37	1.10	1.45	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
158	0.37	1.09	1.44	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
159	0.36	1.08	1.43	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
160	0.36	1.07	1.42	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
161	0.36	1.06	1.41	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
162	0.36	1.05	1.39	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
163	0.35	1.04	1.38	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
164	0.35	1.04	1.33	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
165	0.35	1.03	1.32	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
166	0.35	1.02	1.32	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
167	0.35	0.97	1.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
168	0.34	0.94	1.29	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
169	0.34	0.92	1.27	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
170	0.34	0.92	1.26	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
171	0.34	0.91	1.25	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
172	0.34	0.91	1.23	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
173	0.33	0.90	1.22	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
174	0.33	0.88	1.21	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
175	0.33	0.88	1.21	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
176	0.33	0.83	1.21	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
177	0.33	0.81	1.21	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
178	0.32	0.76	1.21	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
179	0.32	0.75	1.19	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
180	0.32	0.74	1.19	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
181	0.32	0.74	1.19	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
182	0.32	0.69	1.16	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
183	0.32	0.68	1.14	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
184	0.31	0.65	1.14	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
185	0.31	0.63	1.12	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
186	0.31	0.63	1.11	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
187	0.31	0.62	1.11	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
188	0.31	0.61	1.09	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
189	0.31	0.61	1.07	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
190	0.30	0.61	1.07	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
191	0.30	0.59	1.05	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
192	0.30	0.57	1.05	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
193	0.30	0.55	1.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
194	0.30	0.52	1.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
195	0.30	0.45	0.98	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
196	0.29	0.40	0.96	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
197	0.29	0.40	0.94	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
198	0.29	0.37	0.93	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
199	0.29	0.35	0.93	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
200	0.29	0.33	0.91	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
201	0.29	0.30	0.89	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
202	0.29	0.28	0.87	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
203	0.28	0.26	0.87	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
204	0.28	0.25	0.87	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
205	0.28	0.23	0.86	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
206	0.28	0.23	0.86	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
207	0.28	0.21	0.81	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
208	0.28	0.21	0.76	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
209	0.28	0.20	0.72	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
210	0.28	0.19	0.71	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
211	0.27	0.19	0.68	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
212	0.27	0.17	0.68	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
213	0.27	0.14	0.66	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
214	0.27	0.13	0.66	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
215	0.27	0.09	0.66	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
216	0.27	0.09	0.65	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
217	0.27	0.09	0.65	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
218	0.27	0.08	0.65	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
219	0.26	0.08	0.65	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
220	0.26	0.08	0.64	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
221	0.26	0.08	0.64	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
222	0.26	0.08	0.63	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
223	0.26	0.08	0.63	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
224	0.26	0.08	0.62	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
225	0.26	0.08	0.58	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
226	0.26	0.08	0.55	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
227	0.25	0.08	0.53	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
228	0.25	0.08	0.48	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
229	0.25	0.08	0.47	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
230	0.25	0.08	0.47	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
231	0.25	0.08	0.46	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
232	0.25	0.08	0.40	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
233	0.25	0.08	0.39	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
234	0.25	0.08	0.35	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
235	0.25	0.08	0.32	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
236	0.25	0.08	0.32	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
237	0.24	0.08	0.29	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
238	0.24	0.07	0.28	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
239	0.24	0.07	0.23	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
240	0.24	0.07	0.21	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
241	0.24	0.07	0.21	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
242	0.24	0.07	0.20	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
243	0.24	0.07	0.19	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
244	0.24	0.07	0.18	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
245	0.24	0.07	0.16	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
246	0.24	0.07	0.16	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
247	0.23	0.07	0.15	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
248	0.23	0.07	0.15	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
249	0.23	0.07	0.13	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
250	0.23	0.07	0.11	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
251	0.23	0.07	0.11	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
252	0.23	0.07	0.10	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
253	0.23	0.07	0.10	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
254	0.23	0.07	0.06	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
255	0.23	0.07	0.05	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
256	0.23	0.07	0.04	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
257	0.22	0.07	0.03	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
258	0.22	0.07	0.02	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
259	0.22	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
260	0.22	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
261	0.22	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
262	0.22	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
263	0.22	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
264	0.22	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
265	0.22	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
266	0.22	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
267	0.21	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
268	0.21	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
269	0.21	0.07	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
270	0.21	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
271	0.21	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
272	0.21	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
273	0.21	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
274	0.21	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
275	0.21	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
276	0.21	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
277	0.20	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
278	0.20	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
279	0.20	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
280	0.20	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
281	0.20	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
282	0.20	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
283	0.20	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
284	0.20	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
285	0.20	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
286	0.20	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
287	0.19	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
288	0.19	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
289	0.19	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
290	0.19	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
291	0.19	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
292	0.19	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
293	0.19	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
294	0.19	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
295	0.19	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
296	0.19	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
297	0.18	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
298	0.18	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
299	0.18	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
300	0.18	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
301	0.18	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
302	0.18	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
303	0.18	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
304	0.18	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
305	0.18	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
306	0.18	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
307	0.17	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
308	0.17	0.06	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
309	0.17	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
310	0.17	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
311	0.17	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
312	0.17	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
313	0.17	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
314	0.17	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
315	0.17	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
316	0.17	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
317	0.17	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
318	0.16	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
319	0.16	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
320	0.16	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
321	0.16	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
322	0.16	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
323	0.16	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
324	0.16	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
325	0.16	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
326	0.16	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
327	0.16	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
328	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
329	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
330	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
331	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
332	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
333	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
334	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
335	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
336	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
337	0.15	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
338	0.14	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
339	0.14	0.05	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
340	0.14	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
341	0.14	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
342	0.14	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
343	0.14	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
344	0.14	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
345	0.14	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
346	0.14	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
347	0.14	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
348	0.14	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
349	0.13	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
350	0.13	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
351	0.13	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
352	0.13	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
353	0.13	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
354	0.13	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
355	0.13	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
356	0.13	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
357	0.13	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
358	0.13	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
359	0.12	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
360	0.12	0.04	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
361	0.12	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
362	0.12	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
363	0.12	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
364	0.12	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
365	0.12	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
366	0.12	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
367	0.12	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
368	0.12	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
369	0.12	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
370	0.11	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
371	0.11	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
372	0.11	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
373	0.11	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
374	0.11	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
375	0.11	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
376	0.11	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
377	0.11	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
378	0.11	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
379	0.11	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
380	0.10	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
381	0.10	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
382	0.10	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
383	0.10	0.03	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
384	0.10	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
385	0.10	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
386	0.10	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
387	0.10	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
388	0.10	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
389	0.10	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
390	0.10	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
391	0.09	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
392	0.09	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
393	0.09	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
394	0.09	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
395	0.09	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
396	0.09	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
397	0.09	0.02	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
398	0.09	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
399	0.09	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
400	0.09	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
401	0.09	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
402	0.08	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
403	0.08	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
404	0.08	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
405	0.08	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
406	0.08	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
407	0.08	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
408	0.08	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
409	0.08	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
410	0.08	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
411	0.08	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold

Post PT #	Rtn Prd (yrs)	Post Dev Q	Pre Dev Q	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
412	0.07	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
413	0.07	0.01	0.01	FALSE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold

SWMM.out file name: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Existing Conditions\VVCC SWMM exisiting Conditions-SWMM.out
SWMM.out time stamp: 9/9/2014 2:52:07 AM

Q10: 6.855
Q5: 5.951
Q2: 4.760

Peak Flow Statistics Table Values

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
1	1995/01/04 14:00:00	1995/01/04 21:00:00	8	8.43	0.38%	58
2	1995/03/05 02:00:00	1995/03/06 01:00:00	24	7.2	0.75%	29
3	1986/03/15 21:00:00	1986/03/16 07:00:00	11	7.14	1.13%	19.33
4	1963/02/09 22:00:00	1963/02/10 17:00:00	20	7.13	1.50%	14.5
5	1978/02/07 17:00:00	1978/02/10 16:00:00	72	7.07	1.88%	11.6
6	2004/02/22 07:00:00	2004/02/22 09:00:00	3	6.81	2.26%	9.67
7	1959/02/11 10:00:00	1959/02/11 11:00:00	2	6.33	2.63%	8.29
8	1980/02/17 21:00:00	1980/02/21 00:00:00	76	6.2	3.01%	7.25
9	1998/02/22 09:00:00	1998/02/24 05:00:00	45	6.12	3.38%	6.44
10	1980/01/09 05:00:00	1980/01/11 14:00:00	58	6.11	3.76%	5.8
11	1982/03/17 12:00:00	1982/03/18 03:00:00	16	5.97	4.14%	5.27
12	1978/01/16 18:00:00	1978/01/16 21:00:00	4	5.94	4.51%	4.83
13	1980/02/16 18:00:00	1980/02/16 20:00:00	3	5.94	4.89%	4.46
14	1978/02/12 20:00:00	1978/02/12 23:00:00	4	5.79	5.26%	4.14
15	1998/01/09 22:00:00	1998/01/10 00:00:00	3	5.71	5.64%	3.87
16	1980/01/28 20:00:00	1980/01/29 06:00:00	11	5.7	6.02%	3.63
17	1993/01/14 04:00:00	1993/01/14 04:00:00	1	5.6	6.39%	3.41
18	1978/01/04 14:00:00	1978/01/04 23:00:00	10	5.57	6.77%	3.22
19	1973/02/11 06:00:00	1973/02/11 10:00:00	5	5.49	7.14%	3.05
20	1992/02/15 12:00:00	1992/02/15 15:00:00	4	5.41	7.52%	2.9
21	1992/02/12 16:00:00	1992/02/13 12:00:00	21	5.4	7.89%	2.76
22	1969/02/23 22:00:00	1969/02/25 19:00:00	46	5.14	8.27%	2.64
23	1965/11/22 09:00:00	1965/11/23 04:00:00	20	5.12	8.65%	2.52
24	1983/11/24 23:00:00	1983/11/24 23:00:00	1	5.07	9.02%	2.42
25	1966/12/05 03:00:00	1966/12/06 23:00:00	45	5.03	9.40%	2.32
26	1955/01/18 16:00:00	1955/01/18 18:00:00	3	4.92	9.77%	2.23
27	2007/11/30 15:00:00	2007/11/30 20:00:00	6	4.77	10.15%	2.15
28	1969/02/06 06:00:00	1969/02/06 13:00:00	8	4.76	10.53%	2.07
29	1978/01/10 04:00:00	1978/01/10 04:00:00	1	4.76	10.90%	2
30	1976/09/10 10:00:00	1976/09/10 11:00:00	2	4.73	11.28%	1.93
31	1983/03/24 03:00:00	1983/03/24 03:00:00	1	4.7	11.65%	1.87
32	1995/03/11 04:00:00	1995/03/11 09:00:00	6	4.69	12.03%	1.81
33	1990/06/10 06:00:00	1990/06/10 06:00:00	1	4.61	12.41%	1.76
34	1952/11/15 13:00:00	1952/11/16 07:00:00	19	4.51	12.78%	1.71
35	1981/01/29 17:00:00	1981/01/29 19:00:00	3	4.49	13.16%	1.66
36	1980/02/14 03:00:00	1980/02/15 02:00:00	24	4.47	13.53%	1.61
37	1993/01/15 13:00:00	1993/01/17 02:00:00	38	4.44	13.91%	1.57
38	1967/12/18 14:00:00	1967/12/18 16:00:00	3	4.4	14.29%	1.53

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
39	2004/10/19 17:00:00	2004/10/20 14:00:00	22	4.26	14.66%	1.49
40	1986/02/14 23:00:00	1986/02/15 05:00:00	7	4.25	15.04%	1.45
41	1969/01/24 17:00:00	1969/01/25 15:00:00	23	4.15	15.41%	1.42
42	1983/02/27 15:00:00	1983/02/28 04:00:00	14	4.07	15.79%	1.38
43	2005/01/11 00:00:00	2005/01/11 07:00:00	8	4.04	16.17%	1.35
44	1972/11/14 13:00:00	1972/11/14 14:00:00	2	4.03	16.54%	1.32
45	1994/02/07 14:00:00	1994/02/07 15:00:00	2	4	16.92%	1.29
46	1982/04/01 10:00:00	1982/04/01 11:00:00	2	3.99	17.29%	1.26
47	1997/12/06 12:00:00	1997/12/06 18:00:00	7	3.97	17.67%	1.23
48	2005/01/09 04:00:00	2005/01/09 22:00:00	19	3.96	18.05%	1.21
49	2005/02/21 03:00:00	2005/02/23 04:00:00	50	3.96	18.42%	1.18
50	1978/01/14 23:00:00	1978/01/15 05:00:00	7	3.95	18.80%	1.16
51	1952/03/15 19:00:00	1952/03/16 05:00:00	11	3.89	19.17%	1.14
52	1979/01/15 14:00:00	1979/01/15 15:00:00	2	3.89	19.55%	1.12
53	1957/01/13 02:00:00	1957/01/13 07:00:00	6	3.83	19.92%	1.09
54	1964/01/22 06:00:00	1964/01/22 08:00:00	3	3.71	20.30%	1.07
55	1983/01/29 00:00:00	1983/01/29 03:00:00	4	3.71	20.68%	1.06
56	2004/10/18 06:00:00	2004/10/18 07:00:00	2	3.68	21.05%	1.04
57	1973/01/18 20:00:00	1973/01/18 23:00:00	4	3.63	21.43%	1.02
58	1977/01/06 00:00:00	1977/01/07 07:00:00	32	3.59	21.80%	1
59	1983/03/01 14:00:00	1983/03/03 11:00:00	46	3.55	22.18%	0.98
60	2005/02/19 10:00:00	2005/02/19 11:00:00	2	3.55	22.56%	0.97
61	1993/01/06 04:00:00	1993/01/07 03:00:00	24	3.51	22.93%	0.95
62	1968/03/08 08:00:00	1968/03/08 10:00:00	3	3.48	23.31%	0.94
63	1970/02/28 16:00:00	1970/03/02 03:00:00	36	3.44	23.68%	0.92
64	1963/11/21 04:00:00	1963/11/21 05:00:00	2	3.39	24.06%	0.91
65	2006/03/11 06:00:00	2006/03/11 07:00:00	2	3.39	24.44%	0.89
66	1991/03/26 22:00:00	1991/03/27 04:00:00	7	3.38	24.81%	0.88
67	1958/03/15 18:00:00	1958/03/16 09:00:00	16	3.37	25.19%	0.87
68	1965/12/29 19:00:00	1965/12/29 19:00:00	1	3.3	25.56%	0.85
69	1979/01/05 17:00:00	1979/01/06 05:00:00	13	3.19	25.94%	0.84
70	2001/01/11 04:00:00	2001/01/11 08:00:00	5	3.19	26.32%	0.83
71	1960/01/12 03:00:00	1960/01/12 07:00:00	5	3.18	26.69%	0.82
72	2008/01/27 02:00:00	2008/01/28 09:00:00	32	3.16	27.07%	0.81
73	1971/12/24 15:00:00	1971/12/25 21:00:00	31	3.12	27.44%	0.8
74	1967/01/22 17:00:00	1967/01/22 23:00:00	7	3.1	27.82%	0.78
75	1986/03/10 15:00:00	1986/03/10 15:00:00	1	3.1	28.20%	0.77
76	1961/12/02 08:00:00	1961/12/02 09:00:00	2	3.08	28.57%	0.76
77	1996/06/01 02:00:00	1996/06/01 02:00:00	1	3.08	28.95%	0.75
78	1973/01/16 21:00:00	1973/01/16 21:00:00	1	3.07	29.32%	0.74
79	1998/02/08 00:00:00	1998/02/08 04:00:00	5	3.06	29.70%	0.73
80	1984/12/18 23:00:00	1984/12/19 19:00:00	21	3.04	30.08%	0.73
81	1962/01/20 14:00:00	1962/01/20 19:00:00	6	2.95	30.45%	0.72
82	1967/04/11 09:00:00	1967/04/11 10:00:00	2	2.94	30.83%	0.71
83	1970/11/29 13:00:00	1970/11/29 17:00:00	5	2.93	31.20%	0.7
84	1982/01/01 08:00:00	1982/01/01 10:00:00	3	2.86	31.58%	0.69
85	1985/11/29 09:00:00	1985/11/29 14:00:00	6	2.86	31.95%	0.68

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
86	1960/02/01 23:00:00	1960/02/02 01:00:00	3	2.79	32.33%	0.67
87	1983/02/26 13:00:00	1983/02/26 13:00:00	1	2.77	32.71%	0.67
88	1991/03/01 00:00:00	1991/03/01 18:00:00	19	2.76	33.08%	0.66
89	1987/01/06 23:00:00	1987/01/07 00:00:00	2	2.75	33.46%	0.65
90	1993/02/08 01:00:00	1993/02/08 10:00:00	10	2.75	33.83%	0.64
91	2004/12/28 10:00:00	2004/12/29 09:00:00	24	2.69	34.21%	0.64
92	1970/12/21 07:00:00	1970/12/21 12:00:00	6	2.68	34.59%	0.63
93	1957/02/28 23:00:00	1957/03/01 04:00:00	6	2.65	34.96%	0.62
94	2008/01/07 00:00:00	2008/01/07 04:00:00	5	2.65	35.34%	0.62
95	1967/11/19 15:00:00	1967/11/20 03:00:00	13	2.62	35.71%	0.61
96	1998/02/03 12:00:00	1998/02/03 15:00:00	4	2.62	36.09%	0.6
97	1969/01/21 09:00:00	1969/01/21 10:00:00	2	2.58	36.47%	0.6
98	1984/12/27 17:00:00	1984/12/27 19:00:00	3	2.54	36.84%	0.59
99	2000/03/05 17:00:00	2000/03/05 18:00:00	2	2.43	37.22%	0.59
100	1958/04/03 09:00:00	1958/04/03 12:00:00	4	2.42	37.59%	0.58
101	1988/12/24 21:00:00	1988/12/25 00:00:00	4	2.42	37.97%	0.57
102	1956/01/26 19:00:00	1956/01/27 04:00:00	10	2.41	38.35%	0.57
103	1952/12/02 00:00:00	1952/12/02 02:00:00	3	2.35	38.72%	0.56
104	1958/01/25 22:00:00	1958/01/26 10:00:00	13	2.34	39.10%	0.56
105	1986/03/12 12:00:00	1986/03/12 12:00:00	1	2.3	39.47%	0.55
106	1978/02/28 18:00:00	1978/03/01 14:00:00	21	2.26	39.85%	0.55
107	1974/01/06 17:00:00	1974/01/08 03:00:00	35	2.16	40.23%	0.54
108	1952/01/16 08:00:00	1952/01/16 16:00:00	9	2.14	40.60%	0.54
109	1991/12/29 15:00:00	1991/12/30 00:00:00	10	2.14	40.98%	0.53
110	1977/05/08 18:00:00	1977/05/08 19:00:00	2	2.13	41.35%	0.53
111	1995/01/10 14:00:00	1995/01/10 20:00:00	7	2.12	41.73%	0.52
112	1957/12/17 05:00:00	1957/12/17 05:00:00	1	2.1	42.11%	0.52
113	1958/02/04 03:00:00	1958/02/04 09:00:00	7	2.09	42.48%	0.51
114	2004/10/27 03:00:00	2004/10/27 08:00:00	6	2.08	42.86%	0.51
115	1959/12/24 11:00:00	1959/12/24 13:00:00	3	2.05	43.23%	0.5
116	1954/01/25 04:00:00	1954/01/25 09:00:00	6	2.03	43.61%	0.5
117	1997/01/26 00:00:00	1997/01/26 06:00:00	7	2.03	43.98%	0.5
118	1992/12/07 15:00:00	1992/12/07 15:00:00	1	1.99	44.36%	0.49
119	1982/11/30 04:00:00	1982/11/30 11:00:00	8	1.98	44.74%	0.49
120	1967/01/24 17:00:00	1967/01/24 23:00:00	7	1.95	45.11%	0.48
121	2005/01/07 14:00:00	2005/01/07 17:00:00	4	1.95	45.49%	0.48
122	1974/03/08 02:00:00	1974/03/08 12:00:00	11	1.92	45.86%	0.48
123	1998/12/06 06:00:00	1998/12/06 06:00:00	1	1.92	46.24%	0.47
124	1974/01/04 22:00:00	1974/01/04 22:00:00	1	1.91	46.62%	0.47
125	1978/11/13 20:00:00	1978/11/13 20:00:00	1	1.9	46.99%	0.46
126	1973/02/13 01:00:00	1973/02/13 01:00:00	1	1.85	47.37%	0.46
127	1992/03/23 03:00:00	1992/03/23 04:00:00	2	1.85	47.74%	0.46
128	1960/01/14 17:00:00	1960/01/14 18:00:00	2	1.83	48.12%	0.45
129	1952/12/20 09:00:00	1952/12/20 13:00:00	5	1.79	48.50%	0.45
130	1972/11/16 11:00:00	1972/11/17 06:00:00	20	1.77	48.87%	0.45
131	1957/01/28 02:00:00	1957/01/29 07:00:00	30	1.76	49.25%	0.44
132	1976/02/08 18:00:00	1976/02/08 20:00:00	3	1.76	49.62%	0.44

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
133	1977/01/03 03:00:00	1977/01/03 04:00:00	2	1.76	50.00%	0.44
134	1982/01/20 05:00:00	1982/01/20 06:00:00	2	1.75	50.38%	0.43
135	1958/04/07 01:00:00	1958/04/07 14:00:00	14	1.71	50.75%	0.43
136	1984/12/11 05:00:00	1984/12/11 06:00:00	2	1.68	51.13%	0.43
137	1952/04/10 18:00:00	1952/04/10 19:00:00	2	1.67	51.50%	0.42
138	2004/02/26 03:00:00	2004/02/26 09:00:00	7	1.66	51.88%	0.42
139	1954/01/18 22:00:00	1954/01/19 21:00:00	24	1.64	52.26%	0.42
140	1998/02/14 16:00:00	1998/02/14 19:00:00	4	1.61	52.63%	0.41
141	1991/03/20 07:00:00	1991/03/20 09:00:00	3	1.6	53.01%	0.41
142	1995/01/07 21:00:00	1995/01/08 00:00:00	4	1.6	53.38%	0.41
143	1996/03/13 03:00:00	1996/03/13 03:00:00	1	1.6	53.76%	0.41
144	1965/04/08 15:00:00	1965/04/09 23:00:00	33	1.59	54.14%	0.4
145	1993/01/18 05:00:00	1993/01/18 15:00:00	11	1.59	54.51%	0.4
146	1998/03/29 03:00:00	1998/03/29 04:00:00	2	1.59	54.89%	0.4
147	1951/10/25 18:00:00	1951/10/25 18:00:00	1	1.58	55.26%	0.4
148	1992/01/05 14:00:00	1992/01/05 20:00:00	7	1.56	55.64%	0.39
149	1963/09/17 06:00:00	1963/09/17 06:00:00	1	1.55	56.02%	0.39
150	1952/03/07 10:00:00	1952/03/07 19:00:00	10	1.54	56.39%	0.39
151	1983/10/01 02:00:00	1983/10/01 03:00:00	2	1.53	56.77%	0.38
152	1967/03/13 18:00:00	1967/03/13 21:00:00	4	1.51	57.14%	0.38
153	1978/02/06 10:00:00	1978/02/06 11:00:00	2	1.51	57.52%	0.38
154	1954/02/13 19:00:00	1954/02/13 22:00:00	4	1.47	57.89%	0.38
155	1974/12/04 07:00:00	1974/12/04 07:00:00	1	1.47	58.27%	0.37
156	1951/12/29 22:00:00	1951/12/30 11:00:00	14	1.45	58.65%	0.37
157	1975/03/11 14:00:00	1975/03/11 14:00:00	1	1.45	59.02%	0.37
158	2005/01/28 15:00:00	2005/01/28 17:00:00	3	1.45	59.40%	0.37
159	1997/01/15 18:00:00	1997/01/15 18:00:00	1	1.44	59.77%	0.37
160	2003/12/25 19:00:00	2003/12/25 19:00:00	1	1.43	60.15%	0.36
161	2005/01/03 08:00:00	2005/01/03 10:00:00	3	1.42	60.53%	0.36
162	1988/04/21 19:00:00	1988/04/21 20:00:00	2	1.41	60.90%	0.36
163	1972/12/04 14:00:00	1972/12/04 15:00:00	2	1.39	61.28%	0.36
164	1966/12/03 16:00:00	1966/12/03 18:00:00	3	1.38	61.65%	0.35
165	1978/03/04 12:00:00	1978/03/05 08:00:00	21	1.33	62.03%	0.35
166	1999/01/26 12:00:00	1999/01/26 13:00:00	2	1.32	62.41%	0.35
167	2004/12/31 14:00:00	2004/12/31 15:00:00	2	1.32	62.78%	0.35
168	1996/11/21 21:00:00	1996/11/22 20:00:00	24	1.3	63.16%	0.35
169	2000/02/21 17:00:00	2000/02/21 18:00:00	2	1.29	63.53%	0.34
170	1992/03/03 14:00:00	1992/03/03 14:00:00	1	1.27	63.91%	0.34
171	1983/03/21 04:00:00	1983/03/21 04:00:00	1	1.26	64.29%	0.34
172	1994/01/27 13:00:00	1994/01/27 13:00:00	1	1.25	64.66%	0.34
173	1971/12/27 15:00:00	1971/12/27 17:00:00	3	1.23	65.04%	0.34
174	1965/11/16 17:00:00	1965/11/16 17:00:00	1	1.22	65.41%	0.33
175	1952/01/18 00:00:00	1952/01/18 07:00:00	8	1.21	65.79%	0.33
176	1970/12/19 02:00:00	1970/12/19 13:00:00	12	1.21	66.17%	0.33
177	1977/12/18 04:00:00	1977/12/18 05:00:00	2	1.21	66.54%	0.33
178	1986/11/18 00:00:00	1986/11/18 00:00:00	1	1.21	66.92%	0.33
179	1994/04/26 18:00:00	1994/04/26 18:00:00	1	1.21	67.29%	0.32

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
180	1963/09/18 19:00:00	1963/09/18 19:00:00	1	1.19	67.67%	0.32
181	1964/12/27 13:00:00	1964/12/27 13:00:00	1	1.19	68.05%	0.32
182	1985/02/09 08:00:00	1985/02/09 11:00:00	4	1.19	68.42%	0.32
183	1962/02/19 14:00:00	1962/02/19 15:00:00	2	1.16	68.80%	0.32
184	1956/04/13 13:00:00	1956/04/13 19:00:00	7	1.14	69.17%	0.32
185	2001/11/25 17:00:00	2001/11/25 17:00:00	1	1.14	69.55%	0.31
186	1973/03/18 07:00:00	1973/03/18 07:00:00	1	1.12	69.92%	0.31
187	1979/01/31 05:00:00	1979/01/31 05:00:00	1	1.11	70.30%	0.31
188	1995/01/26 18:00:00	1995/01/26 18:00:00	1	1.11	70.68%	0.31
189	1979/03/28 09:00:00	1979/03/28 09:00:00	1	1.09	71.05%	0.31
190	1980/03/06 10:00:00	1980/03/06 10:00:00	1	1.07	71.43%	0.31
191	1989/02/13 18:00:00	1989/02/13 20:00:00	3	1.07	71.80%	0.3
192	1957/01/07 14:00:00	1957/01/07 18:00:00	5	1.05	72.18%	0.3
193	1973/02/07 14:00:00	1973/02/07 15:00:00	2	1.05	72.56%	0.3
194	1975/04/08 18:00:00	1975/04/09 00:00:00	7	1	72.93%	0.3
195	1982/12/22 22:00:00	1982/12/22 23:00:00	2	1	73.31%	0.3
196	1997/01/12 17:00:00	1997/01/13 06:00:00	14	0.98	73.68%	0.3
197	1992/03/20 23:00:00	1992/03/20 23:00:00	1	0.96	74.06%	0.29
198	1990/02/17 18:00:00	1990/02/17 18:00:00	1	0.94	74.44%	0.29
199	1955/01/10 09:00:00	1955/01/10 10:00:00	2	0.93	74.81%	0.29
200	1993/02/19 20:00:00	1993/02/19 23:00:00	4	0.93	75.19%	0.29
201	1983/04/20 05:00:00	1983/04/20 06:00:00	2	0.91	75.56%	0.29
202	1967/11/21 13:00:00	1967/11/21 13:00:00	1	0.89	75.94%	0.29
203	1988/12/21 03:00:00	1988/12/21 06:00:00	4	0.87	76.32%	0.29
204	1996/12/09 18:00:00	1996/12/09 18:00:00	1	0.87	76.69%	0.28
205	2006/03/28 22:00:00	2006/03/29 08:00:00	11	0.87	77.07%	0.28
206	1987/11/04 17:00:00	1987/11/05 05:00:00	13	0.86	77.44%	0.28
207	1998/05/13 14:00:00	1998/05/13 14:00:00	1	0.86	77.82%	0.28
208	1987/02/25 01:00:00	1987/02/25 01:00:00	1	0.81	78.20%	0.28
209	1971/12/22 10:00:00	1971/12/22 10:00:00	1	0.76	78.57%	0.28
210	2006/04/04 22:00:00	2006/04/04 22:00:00	1	0.72	78.95%	0.28
211	1963/03/17 00:00:00	1963/03/17 00:00:00	1	0.71	79.32%	0.28
212	1991/02/27 23:00:00	1991/02/27 23:00:00	1	0.68	79.70%	0.27
213	1993/02/18 13:00:00	1993/02/18 13:00:00	1	0.68	80.08%	0.27
214	1953/03/01 22:00:00	1953/03/02 00:00:00	3	0.66	80.45%	0.27
215	1965/12/10 15:00:00	1965/12/10 15:00:00	1	0.66	80.83%	0.27
216	1984/11/13 09:00:00	1984/11/13 09:00:00	1	0.66	81.20%	0.27
217	1964/03/23 00:00:00	1964/03/23 01:00:00	2	0.65	81.58%	0.27
218	1983/11/20 10:00:00	1983/11/20 10:00:00	1	0.65	81.95%	0.27
219	1993/03/28 03:00:00	1993/03/28 03:00:00	1	0.65	82.33%	0.27
220	2006/01/02 13:00:00	2006/01/02 14:00:00	2	0.65	82.71%	0.26
221	1983/01/27 08:00:00	1983/01/27 10:00:00	3	0.64	83.08%	0.26
222	1996/02/27 21:00:00	1996/02/27 21:00:00	1	0.64	83.46%	0.26
223	1958/04/01 16:00:00	1958/04/01 18:00:00	3	0.63	83.83%	0.26
224	1995/04/18 11:00:00	1995/04/18 12:00:00	2	0.63	84.21%	0.26
225	1952/01/13 04:00:00	1952/01/13 08:00:00	5	0.62	84.59%	0.26
226	2000/02/12 17:00:00	2000/02/12 17:00:00	1	0.58	84.96%	0.26

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
227	1961/11/20 18:00:00	1961/11/20 18:00:00	1	0.55	85.34%	0.26
228	1976/03/01 16:00:00	1976/03/01 16:00:00	1	0.53	85.71%	0.25
229	1978/12/18 12:00:00	1978/12/18 12:00:00	1	0.48	86.09%	0.25
230	1976/02/06 04:00:00	1976/02/06 06:00:00	3	0.47	86.47%	0.25
231	1998/02/06 14:00:00	1998/02/06 14:00:00	1	0.47	86.84%	0.25
232	1976/03/02 23:00:00	1976/03/02 23:00:00	1	0.46	87.22%	0.25
233	2000/10/29 22:00:00	2000/10/29 22:00:00	1	0.4	87.59%	0.25
234	2008/02/22 04:00:00	2008/02/22 05:00:00	2	0.39	87.97%	0.25
235	1990/01/17 01:00:00	1990/01/17 01:00:00	1	0.35	88.35%	0.25
236	1975/03/08 08:00:00	1975/03/08 12:00:00	5	0.32	88.72%	0.25
237	1987/10/12 12:00:00	1987/10/12 13:00:00	2	0.32	89.10%	0.25
238	1957/10/14 03:00:00	1957/10/14 04:00:00	2	0.29	89.47%	0.24
239	1973/11/23 00:00:00	1973/11/23 00:00:00	1	0.28	89.85%	0.24
240	2006/03/21 02:00:00	2006/03/21 02:00:00	1	0.23	90.23%	0.24
241	1958/02/19 13:00:00	1958/02/19 13:00:00	1	0.21	90.60%	0.24
242	1969/01/26 17:00:00	1969/01/26 19:00:00	3	0.21	90.98%	0.24
243	1966/11/07 16:00:00	1966/11/07 16:00:00	1	0.2	91.35%	0.24
244	1987/12/04 21:00:00	1987/12/04 21:00:00	1	0.19	91.73%	0.24
245	1960/02/10 06:00:00	1960/02/10 07:00:00	2	0.18	92.11%	0.24
246	1958/03/21 23:00:00	1958/03/22 03:00:00	5	0.16	92.48%	0.24
247	1978/03/11 18:00:00	1978/03/11 18:00:00	1	0.16	92.86%	0.24
248	1954/03/22 13:00:00	1954/03/23 11:00:00	23	0.15	93.23%	0.23
249	1986/09/25 03:00:00	1986/09/25 03:00:00	1	0.15	93.61%	0.23
250	1955/02/27 19:00:00	1955/02/27 20:00:00	2	0.13	93.98%	0.23
251	1982/02/10 16:00:00	1982/02/10 16:00:00	1	0.11	94.36%	0.23
252	2005/10/18 04:00:00	2005/10/18 04:00:00	1	0.11	94.74%	0.23
253	1996/12/11 14:00:00	1996/12/11 14:00:00	1	0.1	95.11%	0.23
254	2006/02/28 06:00:00	2006/02/28 06:00:00	1	0.1	95.49%	0.23
255	1983/03/22 23:00:00	1983/03/22 23:00:00	1	0.06	95.86%	0.23
256	1983/12/25 05:00:00	1983/12/25 05:00:00	1	0.05	96.24%	0.23
257	2005/04/28 08:00:00	2005/04/28 08:00:00	1	0.05	96.62%	0.23
258	1979/02/21 05:00:00	1979/02/21 05:00:00	1	0.04	96.99%	0.23
259	1998/03/27 14:00:00	1998/03/27 16:00:00	3	0.03	97.37%	0.22
260	1978/01/19 11:00:00	1978/01/19 11:00:00	1	0.02	97.74%	0.22
261	1957/11/03 00:00:00	1957/11/03 00:00:00	1	0.01	98.12%	0.22
262	1958/03/06 12:00:00	1958/03/06 12:00:00	1	0.01	98.50%	0.22
263	1969/01/14 10:00:00	1969/01/14 10:00:00	1	0.01	98.87%	0.22
264	1984/11/24 18:00:00	1984/11/24 18:00:00	1	0.01	99.25%	0.22
265	1996/02/01 01:00:00	1996/02/01 01:00:00	1	0.01	99.62%	0.22
-End of Data----------						

SWMM.out file name: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Proposed Conditions\VVCC SWMM Proposed Conditions UNmitigated.out
SWMM.out time stamp: 9/9/2014 10:27:31 AM

Q10: 5.831
Q5: 5.121
Q2: 4.070

Peak Flow Statistics Table Values

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
1	1995/01/03 09:00:00	1995/01/05 17:00:00	57	7.23	0.10%	58
2	1995/03/03 07:00:00	1995/03/06 17:00:00	83	6.15	0.21%	29
3	1986/03/15 21:00:00	1986/03/17 11:00:00	39	6.12	0.31%	19.33
4	1963/02/09 17:00:00	1963/02/11 15:00:00	47	6.11	0.41%	14.5
5	1978/02/05 10:00:00	1978/02/11 15:00:00	150	6.03	0.52%	11.6
6	2004/02/22 02:00:00	2004/02/23 22:00:00	45	5.79	0.62%	9.67
7	1959/02/11 09:00:00	1959/02/12 18:00:00	34	5.41	0.72%	8.29
8	1980/02/13 12:00:00	1980/02/22 08:00:00	213	5.32	0.83%	7.25
9	1980/01/07 07:00:00	1980/01/15 15:00:00	201	5.27	0.93%	6.44
10	1998/02/22 05:00:00	1998/02/24 22:00:00	66	5.23	1.03%	5.8
11	1982/03/14 05:00:00	1982/03/19 04:00:00	120	5.14	1.14%	5.27
12	1978/01/14 14:00:00	1978/01/20 02:00:00	133	5.11	1.24%	4.83
13	1978/02/12 16:00:00	1978/02/14 15:00:00	48	4.99	1.34%	4.46
14	1998/01/09 13:00:00	1998/01/10 21:00:00	33	4.92	1.44%	4.14
15	1980/01/27 20:00:00	1980/01/31 03:00:00	80	4.91	1.55%	3.87
16	1978/01/03 18:00:00	1978/01/07 00:00:00	79	4.79	1.65%	3.63
17	1993/01/12 16:00:00	1993/01/19 07:00:00	160	4.79	1.75%	3.41
18	1973/02/11 03:00:00	1973/02/13 18:00:00	64	4.76	1.86%	3.22
19	1992/02/12 16:00:00	1992/02/14 05:00:00	38	4.63	1.96%	3.05
20	1992/02/15 12:00:00	1992/02/16 11:00:00	24	4.61	2.06%	2.9
21	1969/02/22 03:00:00	1969/02/26 11:00:00	105	4.44	2.17%	2.76
22	1965/11/21 00:00:00	1965/11/25 22:00:00	119	4.42	2.27%	2.64
23	1983/11/24 21:00:00	1983/11/25 16:00:00	20	4.39	2.37%	2.52
24	1966/12/03 07:00:00	1966/12/07 16:00:00	106	4.35	2.48%	2.42
25	1955/01/18 15:00:00	1955/01/19 15:00:00	25	4.25	2.58%	2.32
26	2007/11/30 07:00:00	2007/12/01 23:00:00	41	4.18	2.68%	2.23
27	1978/01/09 13:00:00	1978/01/11 10:00:00	46	4.15	2.79%	2.15
28	1976/09/10 01:00:00	1976/09/11 18:00:00	42	4.08	2.89%	2.07
29	1969/02/05 08:00:00	1969/02/07 08:00:00	49	4.07	2.99%	2
30	1995/03/11 02:00:00	1995/03/12 12:00:00	35	4.06	3.10%	1.93
31	1983/03/21 04:00:00	1983/03/25 04:00:00	97	4.04	3.20%	1.87
32	1990/06/09 11:00:00	1990/06/11 02:00:00	40	3.99	3.30%	1.81
33	1952/11/14 16:00:00	1952/11/17 00:00:00	57	3.91	3.41%	1.76
34	1981/01/28 06:00:00	1981/01/30 18:00:00	61	3.88	3.51%	1.71
35	1967/12/18 13:00:00	1967/12/20 09:00:00	45	3.82	3.61%	1.66
36	2004/10/17 05:00:00	2004/10/21 12:00:00	104	3.75	3.72%	1.61
37	1986/02/13 11:00:00	1986/02/16 13:00:00	75	3.69	3.82%	1.57
38	1969/01/23 22:00:00	1969/01/29 04:00:00	127	3.6	3.92%	1.53

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
39	1972/11/14 12:00:00	1972/11/15 06:00:00	19	3.52	4.02%	1.49
40	1997/12/06 08:00:00	1997/12/08 16:00:00	57	3.52	4.13%	1.45
41	1983/02/26 10:00:00	1983/03/04 17:00:00	152	3.49	4.23%	1.42
42	2005/01/07 12:00:00	2005/01/12 05:00:00	114	3.49	4.33%	1.38
43	1982/04/01 10:00:00	1982/04/02 07:00:00	22	3.48	4.44%	1.35
44	1994/02/07 09:00:00	1994/02/08 18:00:00	34	3.45	4.54%	1.32
45	1979/01/14 17:00:00	1979/01/19 00:00:00	104	3.43	4.64%	1.29
46	2005/02/18 05:00:00	2005/02/24 03:00:00	143	3.39	4.75%	1.26
47	1952/03/15 19:00:00	1952/03/17 02:00:00	32	3.33	4.85%	1.23
48	1957/01/13 02:00:00	1957/01/13 23:00:00	22	3.28	4.95%	1.21
49	1964/01/21 08:00:00	1964/01/23 02:00:00	43	3.19	5.06%	1.18
50	1983/01/27 07:00:00	1983/01/29 20:00:00	62	3.19	5.16%	1.16
51	1977/01/05 20:00:00	1977/01/07 22:00:00	51	3.14	5.26%	1.14
52	1973/01/18 20:00:00	1973/01/19 17:00:00	22	3.13	5.37%	1.12
53	1993/01/06 04:00:00	1993/01/09 05:00:00	74	3.06	5.47%	1.09
54	1968/03/06 15:00:00	1968/03/09 04:00:00	62	3.05	5.57%	1.07
55	1970/02/28 13:00:00	1970/03/02 22:00:00	58	3.03	5.68%	1.06
56	2006/03/11 03:00:00	2006/03/11 23:00:00	21	3	5.78%	1.04
57	1958/03/15 15:00:00	1958/03/17 17:00:00	51	2.98	5.88%	1.02
58	1991/03/25 06:00:00	1991/03/27 22:00:00	65	2.95	5.99%	1
59	1963/11/20 06:00:00	1963/11/21 22:00:00	41	2.94	6.09%	0.98
60	1965/12/29 07:00:00	1966/01/01 07:00:00	73	2.92	6.19%	0.97
61	1979/01/05 08:00:00	1979/01/07 00:00:00	41	2.88	6.30%	0.95
62	1967/01/22 15:00:00	1967/01/25 15:00:00	73	2.8	6.40%	0.94
63	1961/12/01 22:00:00	1961/12/03 15:00:00	42	2.78	6.50%	0.92
64	2001/01/10 21:00:00	2001/01/12 19:00:00	47	2.78	6.60%	0.91
65	2008/01/27 00:00:00	2008/01/29 02:00:00	51	2.78	6.71%	0.89
66	1986/03/08 15:00:00	1986/03/14 12:00:00	142	2.77	6.81%	0.88
67	1960/01/10 11:00:00	1960/01/12 23:00:00	61	2.74	6.91%	0.87
68	1971/12/22 05:00:00	1971/12/29 03:00:00	167	2.72	7.02%	0.85
69	1996/06/01 02:00:00	1996/06/01 19:00:00	18	2.72	7.12%	0.84
70	1973/01/16 17:00:00	1973/01/17 17:00:00	25	2.71	7.22%	0.83
71	1984/12/18 14:00:00	1984/12/20 17:00:00	52	2.66	7.33%	0.82
72	1998/02/06 13:00:00	1998/02/09 14:00:00	74	2.64	7.43%	0.81
73	1962/01/20 12:00:00	1962/01/23 06:00:00	67	2.6	7.53%	0.8
74	1967/04/11 07:00:00	1967/04/12 17:00:00	35	2.6	7.64%	0.78
75	1970/11/28 19:00:00	1970/11/30 17:00:00	47	2.56	7.74%	0.77
76	1985/11/29 07:00:00	1985/11/30 11:00:00	29	2.52	7.84%	0.76
77	1993/02/07 21:00:00	1993/02/09 16:00:00	44	2.5	7.95%	0.75
78	1991/02/27 15:00:00	1991/03/02 11:00:00	69	2.49	8.05%	0.74
79	1981/12/30 07:00:00	1982/01/02 20:00:00	86	2.48	8.15%	0.73
80	1970/12/16 23:00:00	1970/12/22 23:00:00	145	2.47	8.26%	0.73
81	1960/02/01 20:00:00	1960/02/02 17:00:00	22	2.46	8.36%	0.72
82	2004/12/28 09:00:00	2004/12/30 05:00:00	45	2.44	8.46%	0.71
83	1957/02/28 17:00:00	1957/03/01 23:00:00	31	2.42	8.57%	0.7
84	1987/01/04 16:00:00	1987/01/07 21:00:00	78	2.42	8.67%	0.69
85	1967/11/19 05:00:00	1967/11/23 08:00:00	100	2.41	8.77%	0.68

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
86	1969/01/18 21:00:00	1969/01/22 05:00:00	81	2.35	8.88%	0.67
87	1998/02/03 12:00:00	1998/02/04 23:00:00	36	2.35	8.98%	0.67
88	2008/01/05 01:00:00	2008/01/07 21:00:00	69	2.33	9.08%	0.66
89	1984/12/26 23:00:00	1984/12/28 11:00:00	37	2.22	9.18%	0.65
90	2000/03/04 17:00:00	2000/03/06 12:00:00	44	2.19	9.29%	0.64
91	1956/01/25 16:00:00	1956/01/28 01:00:00	58	2.15	9.39%	0.64
92	1958/01/25 03:00:00	1958/01/27 06:00:00	52	2.15	9.49%	0.63
93	1988/12/24 20:00:00	1988/12/26 11:00:00	40	2.11	9.60%	0.62
94	1958/04/01 09:00:00	1958/04/04 17:00:00	81	2.1	9.70%	0.62
95	1978/02/27 05:00:00	1978/03/05 23:00:00	163	2.05	9.80%	0.61
96	1952/12/02 00:00:00	1952/12/02 18:00:00	19	2.02	9.91%	0.6
97	1974/01/04 15:00:00	1974/01/09 21:00:00	127	1.93	10.01%	0.6
98	1957/12/15 07:00:00	1957/12/17 21:00:00	63	1.92	10.11%	0.59
99	1977/05/07 21:00:00	1977/05/10 00:00:00	52	1.91	10.22%	0.59
100	1991/12/29 15:00:00	1991/12/30 17:00:00	27	1.91	10.32%	0.58
101	1992/12/07 09:00:00	1992/12/08 08:00:00	24	1.91	10.42%	0.57
102	1952/01/16 08:00:00	1952/01/19 01:00:00	66	1.9	10.53%	0.57
103	1995/01/10 14:00:00	1995/01/13 05:00:00	64	1.89	10.63%	0.56
104	1954/01/24 10:00:00	1954/01/26 01:00:00	40	1.86	10.73%	0.56
105	1958/02/03 04:00:00	1958/02/05 08:00:00	53	1.86	10.84%	0.55
106	2004/10/27 03:00:00	2004/10/28 20:00:00	42	1.85	10.94%	0.55
107	1982/11/29 08:00:00	1982/12/01 06:00:00	47	1.84	11.04%	0.54
108	1997/01/25 19:00:00	1997/01/27 13:00:00	43	1.81	11.15%	0.54
109	1959/12/24 05:00:00	1959/12/25 18:00:00	38	1.79	11.25%	0.53
110	1974/03/06 11:00:00	1974/03/09 04:00:00	66	1.77	11.35%	0.53
111	1978/11/13 20:00:00	1978/11/14 13:00:00	18	1.77	11.46%	0.52
112	1998/12/05 03:00:00	1998/12/06 22:00:00	44	1.69	11.56%	0.52
113	1992/03/20 16:00:00	1992/03/23 23:00:00	80	1.66	11.66%	0.51
114	1958/04/06 16:00:00	1958/04/08 06:00:00	39	1.65	11.76%	0.51
115	1982/01/20 03:00:00	1982/01/21 23:00:00	45	1.65	11.87%	0.5
116	1952/12/20 09:00:00	1952/12/21 08:00:00	24	1.61	11.97%	0.5
117	1960/01/14 17:00:00	1960/01/15 20:00:00	28	1.61	12.07%	0.5
118	1976/02/03 20:00:00	1976/02/11 10:00:00	183	1.6	12.18%	0.49
119	1972/11/16 08:00:00	1972/11/18 01:00:00	42	1.59	12.28%	0.49
120	1977/01/02 23:00:00	1977/01/03 21:00:00	23	1.59	12.38%	0.48
121	1952/04/10 13:00:00	1952/04/11 11:00:00	23	1.58	12.49%	0.48
122	1984/12/10 22:00:00	1984/12/11 22:00:00	25	1.58	12.59%	0.48
123	1957/01/24 22:00:00	1957/01/30 07:00:00	130	1.57	12.69%	0.47
124	1954/01/18 12:00:00	1954/01/20 19:00:00	56	1.52	12.80%	0.47
125	1996/03/12 17:00:00	1996/03/13 23:00:00	31	1.52	12.90%	0.46
126	1995/01/07 12:00:00	1995/01/09 02:00:00	39	1.51	13.00%	0.46
127	1951/10/25 04:00:00	1951/10/26 14:00:00	35	1.5	13.11%	0.46
128	1998/03/25 00:00:00	1998/03/29 19:00:00	116	1.5	13.21%	0.45
129	1965/04/07 06:00:00	1965/04/13 06:00:00	145	1.49	13.31%	0.45
130	2004/02/26 01:00:00	2004/02/27 01:00:00	25	1.49	13.42%	0.45
131	1963/09/17 06:00:00	1963/09/19 16:00:00	59	1.47	13.52%	0.44
132	1954/02/13 15:00:00	1954/02/14 23:00:00	33	1.46	13.62%	0.44

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
133	1998/02/14 13:00:00	1998/02/15 11:00:00	23	1.46	13.73%	0.44
134	1974/12/04 02:00:00	1974/12/05 05:00:00	28	1.42	13.83%	0.43
135	1992/01/05 09:00:00	1992/01/08 10:00:00	74	1.42	13.93%	0.43
136	1991/03/19 01:00:00	1991/03/21 16:00:00	64	1.41	14.04%	0.43
137	1975/03/10 10:00:00	1975/03/12 05:00:00	44	1.4	14.14%	0.42
138	1952/03/07 09:00:00	1952/03/08 17:00:00	33	1.38	14.24%	0.42
139	1983/09/29 12:00:00	1983/10/02 02:00:00	63	1.38	14.34%	0.42
140	2005/01/28 15:00:00	2005/01/29 08:00:00	18	1.37	14.45%	0.41
141	1967/03/13 08:00:00	1967/03/14 13:00:00	30	1.36	14.55%	0.41
142	1972/12/04 10:00:00	1972/12/05 09:00:00	24	1.36	14.65%	0.41
143	1997/01/15 18:00:00	1997/01/16 08:00:00	15	1.36	14.76%	0.41
144	1988/04/20 00:00:00	1988/04/22 10:00:00	59	1.34	14.86%	0.4
145	1951/12/28 21:00:00	1951/12/31 09:00:00	61	1.32	14.96%	0.4
146	2003/12/25 01:00:00	2003/12/26 12:00:00	36	1.31	15.07%	0.4
147	2005/01/03 06:00:00	2005/01/05 00:00:00	43	1.31	15.17%	0.4
148	2000/02/20 16:00:00	2000/02/24 04:00:00	85	1.27	15.27%	0.39
149	1964/12/27 07:00:00	1964/12/28 23:00:00	41	1.24	15.38%	0.39
150	1996/11/21 16:00:00	1996/11/23 12:00:00	45	1.24	15.48%	0.39
151	1992/03/02 07:00:00	1992/03/04 06:00:00	48	1.23	15.58%	0.38
152	1999/01/25 07:00:00	1999/01/27 11:00:00	53	1.22	15.69%	0.38
153	2004/12/31 14:00:00	2005/01/01 08:00:00	19	1.22	15.79%	0.38
154	1986/11/17 13:00:00	1986/11/18 21:00:00	33	1.21	15.89%	0.38
155	1977/12/08 15:00:00	1977/12/19 00:00:00	250	1.2	16.00%	0.37
156	1994/01/27 13:00:00	1994/01/28 04:00:00	16	1.2	16.10%	0.37
157	1994/04/25 16:00:00	1994/04/28 09:00:00	66	1.2	16.20%	0.37
158	1965/11/14 09:00:00	1965/11/18 06:00:00	94	1.15	16.31%	0.37
159	2001/11/25 12:00:00	2001/11/26 12:00:00	25	1.15	16.41%	0.37
160	1973/03/18 07:00:00	1973/03/20 13:00:00	55	1.11	16.51%	0.36
161	1979/03/27 04:00:00	1979/03/29 12:00:00	57	1.11	16.62%	0.36
162	1985/02/09 04:00:00	1985/02/10 04:00:00	25	1.09	16.72%	0.36
163	1962/02/19 10:00:00	1962/02/21 15:00:00	54	1.08	16.82%	0.36
164	1980/03/05 23:00:00	1980/03/07 05:00:00	31	1.08	16.92%	0.35
165	1995/01/23 22:00:00	1995/01/27 09:00:00	84	1.08	17.03%	0.35
166	1982/12/22 14:00:00	1982/12/23 16:00:00	27	1.07	17.13%	0.35
167	1956/04/12 22:00:00	1956/04/14 11:00:00	38	1.06	17.23%	0.35
168	1979/01/30 18:00:00	1979/02/03 05:00:00	84	1.05	17.34%	0.35
169	1973/02/06 03:00:00	1973/02/08 08:00:00	54	1.03	17.44%	0.34
170	1990/02/17 07:00:00	1990/02/18 18:00:00	36	1.02	17.54%	0.34
171	1989/02/12 17:00:00	1989/02/14 13:00:00	45	0.99	17.65%	0.34
172	1997/01/12 13:00:00	1997/01/14 16:00:00	52	0.96	17.75%	0.34
173	1957/01/07 14:00:00	1957/01/08 16:00:00	27	0.95	17.85%	0.34
174	1975/04/04 16:00:00	1975/04/09 18:00:00	123	0.95	17.96%	0.33
175	1983/04/20 03:00:00	1983/04/21 13:00:00	35	0.94	18.06%	0.33
176	1993/02/18 12:00:00	1993/02/20 22:00:00	59	0.94	18.16%	0.33
177	1988/12/21 01:00:00	1988/12/21 23:00:00	23	0.9	18.27%	0.33
178	1998/05/12 16:00:00	1998/05/14 07:00:00	40	0.9	18.37%	0.33
179	2006/03/28 21:00:00	2006/03/29 21:00:00	25	0.9	18.47%	0.32

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
180	1996/12/09 18:00:00	1996/12/12 10:00:00	65	0.89	18.58%	0.32
181	1955/01/10 06:00:00	1955/01/11 03:00:00	22	0.85	18.68%	0.32
182	1987/02/24 06:00:00	1987/02/26 12:00:00	55	0.82	18.78%	0.32
183	2006/04/04 18:00:00	2006/04/06 01:00:00	32	0.79	18.89%	0.32
184	1987/11/04 17:00:00	1987/11/06 12:00:00	44	0.77	18.99%	0.32
185	1965/12/09 07:00:00	1965/12/16 22:00:00	184	0.76	19.09%	0.31
186	1963/03/17 00:00:00	1963/03/17 18:00:00	19	0.75	19.20%	0.31
187	1983/11/20 08:00:00	1983/11/21 08:00:00	25	0.7	19.30%	0.31
188	1984/11/13 09:00:00	1984/11/14 01:00:00	17	0.69	19.40%	0.31
189	1952/01/13 03:00:00	1952/01/14 02:00:00	24	0.66	19.50%	0.31
190	1964/03/22 03:00:00	1964/03/24 11:00:00	57	0.66	19.61%	0.31
191	1961/11/20 15:00:00	1961/11/21 11:00:00	21	0.64	19.71%	0.3
192	1996/02/27 21:00:00	1996/02/28 14:00:00	18	0.64	19.81%	0.3
193	2000/02/11 18:00:00	2000/02/14 01:00:00	56	0.63	19.92%	0.3
194	2005/12/31 17:00:00	2006/01/03 11:00:00	67	0.63	20.02%	0.3
195	1953/03/01 05:00:00	1953/03/02 14:00:00	34	0.61	20.12%	0.3
196	1993/03/26 00:00:00	1993/03/28 22:00:00	71	0.61	20.23%	0.3
197	1976/03/01 11:00:00	1976/03/03 22:00:00	60	0.6	20.33%	0.29
198	1995/04/18 11:00:00	1995/04/19 08:00:00	22	0.58	20.43%	0.29
199	1978/12/17 00:00:00	1978/12/19 15:00:00	64	0.52	20.54%	0.29
200	2000/10/29 21:00:00	2000/10/30 15:00:00	19	0.47	20.64%	0.29
201	1987/10/11 14:00:00	1987/10/13 23:00:00	58	0.43	20.74%	0.29
202	1990/01/17 01:00:00	1990/01/17 23:00:00	23	0.41	20.85%	0.29
203	2008/02/22 03:00:00	2008/02/23 02:00:00	24	0.4	20.95%	0.29
204	1975/03/08 06:00:00	1975/03/09 09:00:00	28	0.37	21.05%	0.28
205	1957/10/13 23:00:00	1957/10/14 19:00:00	21	0.36	21.16%	0.28
206	1973/11/22 23:00:00	1973/11/23 17:00:00	19	0.35	21.26%	0.28
207	1958/02/19 09:00:00	1958/02/20 07:00:00	23	0.33	21.36%	0.28
208	1966/11/07 13:00:00	1966/11/08 19:00:00	31	0.31	21.47%	0.28
209	2006/03/21 00:00:00	2006/03/21 18:00:00	19	0.3	21.57%	0.28
210	1986/09/24 00:00:00	1986/09/25 22:00:00	47	0.27	21.67%	0.28
211	1987/12/04 21:00:00	1987/12/05 15:00:00	19	0.24	21.78%	0.28
212	1960/02/08 22:00:00	1960/02/10 20:00:00	47	0.23	21.88%	0.27
213	1954/03/20 10:00:00	1954/03/25 12:00:00	123	0.21	21.98%	0.27
214	1958/03/20 20:00:00	1958/03/22 18:00:00	47	0.21	22.08%	0.27
215	1982/02/09 20:00:00	1982/02/11 16:00:00	45	0.21	22.19%	0.27
216	2006/02/27 20:00:00	2006/02/28 23:00:00	28	0.21	22.29%	0.27
217	1978/03/11 07:00:00	1978/03/12 20:00:00	38	0.2	22.39%	0.27
218	1955/02/26 10:00:00	1955/02/28 11:00:00	50	0.18	22.50%	0.27
219	2005/10/16 19:00:00	2005/10/18 21:00:00	51	0.15	22.60%	0.27
220	1979/02/21 01:00:00	1979/02/23 20:00:00	68	0.12	22.70%	0.26
221	1983/12/24 19:00:00	1983/12/27 20:00:00	74	0.12	22.81%	0.26
222	1969/01/13 23:00:00	1969/01/15 12:00:00	38	0.1	22.91%	0.26
223	1996/01/31 04:00:00	1996/02/01 18:00:00	39	0.1	23.01%	0.26
224	2005/04/28 07:00:00	2005/04/29 03:00:00	21	0.1	23.12%	0.26
225	1962/02/07 21:00:00	1962/02/09 17:00:00	45	0.09	23.22%	0.26
226	1985/11/24 23:00:00	1985/11/26 03:00:00	29	0.09	23.32%	0.26

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
227	1998/05/04 13:00:00	1998/05/06 13:00:00	49	0.09	23.43%	0.26
228	1951/08/28 10:00:00	1951/08/29 14:00:00	29	0.08	23.53%	0.25
229	1952/11/30 01:00:00	1952/11/30 21:00:00	21	0.08	23.63%	0.25
230	1954/11/10 23:00:00	1954/11/12 04:00:00	30	0.08	23.74%	0.25
231	1958/03/06 10:00:00	1958/03/07 10:00:00	25	0.08	23.84%	0.25
232	1960/02/28 18:00:00	1960/03/01 22:00:00	53	0.08	23.94%	0.25
233	1960/04/27 05:00:00	1960/04/28 03:00:00	23	0.08	24.05%	0.25
234	1961/01/26 09:00:00	1961/01/27 10:00:00	26	0.08	24.15%	0.25
235	1961/03/28 03:00:00	1961/03/29 07:00:00	29	0.08	24.25%	0.25
236	1964/11/17 11:00:00	1964/11/18 13:00:00	27	0.08	24.36%	0.25
237	1965/03/31 14:00:00	1965/04/05 08:00:00	115	0.08	24.46%	0.25
238	1966/01/30 07:00:00	1966/01/31 10:00:00	28	0.08	24.56%	0.24
239	1966/02/06 11:00:00	1966/02/08 08:00:00	46	0.08	24.66%	0.24
240	1968/04/01 20:00:00	1968/04/03 20:00:00	49	0.08	24.77%	0.24
241	1974/03/02 08:00:00	1974/03/03 23:00:00	40	0.08	24.87%	0.24
242	1977/08/16 17:00:00	1977/08/18 15:00:00	47	0.08	24.97%	0.24
243	1978/09/05 18:00:00	1978/09/06 16:00:00	23	0.08	25.08%	0.24
244	1979/03/01 09:00:00	1979/03/02 06:00:00	22	0.08	25.18%	0.24
245	1979/10/20 02:00:00	1979/10/21 06:00:00	29	0.08	25.28%	0.24
246	1980/03/02 20:00:00	1980/03/04 03:00:00	32	0.08	25.39%	0.24
247	1981/02/08 17:00:00	1981/02/10 01:00:00	33	0.08	25.49%	0.24
248	1981/11/26 20:00:00	1981/11/29 13:00:00	66	0.08	25.59%	0.23
249	1983/11/11 19:00:00	1983/11/13 12:00:00	42	0.08	25.70%	0.23
250	1984/11/24 18:00:00	1984/11/25 14:00:00	21	0.08	25.80%	0.23
251	1985/11/11 05:00:00	1985/11/12 21:00:00	41	0.08	25.90%	0.23
252	1987/12/16 13:00:00	1987/12/18 00:00:00	36	0.08	26.01%	0.23
253	1988/01/17 06:00:00	1988/01/18 13:00:00	32	0.08	26.11%	0.23
254	1990/05/28 06:00:00	1990/05/29 03:00:00	22	0.08	26.21%	0.23
255	1990/11/19 23:00:00	1990/11/20 22:00:00	24	0.08	26.32%	0.23
256	1992/02/06 10:00:00	1992/02/08 01:00:00	40	0.08	26.42%	0.23
257	1998/02/17 00:00:00	1998/02/18 00:00:00	25	0.08	26.52%	0.23
258	2005/02/11 03:00:00	2005/02/13 06:00:00	52	0.08	26.63%	0.23
259	2006/10/13 23:00:00	2006/10/14 18:00:00	20	0.08	26.73%	0.22
260	1951/12/05 01:00:00	1951/12/05 20:00:00	20	0.07	26.83%	0.22
261	1952/12/17 09:00:00	1952/12/18 07:00:00	23	0.07	26.93%	0.22
262	1953/01/06 18:00:00	1953/01/08 18:00:00	49	0.07	27.04%	0.22
263	1954/01/12 00:00:00	1954/01/13 09:00:00	34	0.07	27.14%	0.22
264	1954/03/16 23:00:00	1954/03/17 19:00:00	21	0.07	27.24%	0.22
265	1954/07/13 05:00:00	1954/07/13 21:00:00	17	0.07	27.35%	0.22
266	1955/01/16 09:00:00	1955/01/17 04:00:00	20	0.07	27.45%	0.22
267	1955/04/30 21:00:00	1955/05/02 01:00:00	29	0.07	27.55%	0.22
268	1955/11/14 06:00:00	1955/11/15 00:00:00	19	0.07	27.66%	0.22
269	1957/04/20 15:00:00	1957/04/21 22:00:00	32	0.07	27.76%	0.22
270	1958/02/25 07:00:00	1958/02/26 02:00:00	20	0.07	27.86%	0.22
271	1958/03/27 13:00:00	1958/03/28 07:00:00	19	0.07	27.97%	0.21
272	1959/02/21 10:00:00	1959/02/22 11:00:00	26	0.07	28.07%	0.21
273	1962/03/18 21:00:00	1962/03/20 01:00:00	29	0.07	28.17%	0.21

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
274	1963/04/17 05:00:00	1963/04/17 23:00:00	19	0.07	28.28%	0.21
275	1968/12/25 17:00:00	1968/12/26 21:00:00	29	0.07	28.38%	0.21
276	1969/02/18 08:00:00	1969/02/20 14:00:00	55	0.07	28.48%	0.21
277	1970/02/10 01:00:00	1970/02/11 17:00:00	41	0.07	28.59%	0.21
278	1971/04/14 11:00:00	1971/04/15 05:00:00	19	0.07	28.69%	0.21
279	1972/11/11 04:00:00	1972/11/11 23:00:00	20	0.07	28.79%	0.21
280	1973/03/09 02:00:00	1973/03/10 09:00:00	32	0.07	28.90%	0.21
281	1974/10/28 09:00:00	1974/10/29 22:00:00	38	0.07	29.00%	0.21
282	1974/12/28 07:00:00	1974/12/29 22:00:00	40	0.07	29.10%	0.21
283	1975/02/03 06:00:00	1975/02/05 18:00:00	61	0.07	29.21%	0.21
284	1975/03/05 15:00:00	1975/03/07 02:00:00	36	0.07	29.31%	0.2
285	1976/04/12 16:00:00	1976/04/15 21:00:00	78	0.07	29.41%	0.2
286	1976/12/30 13:00:00	1976/12/31 23:00:00	35	0.07	29.51%	0.2
287	1977/03/25 02:00:00	1977/03/25 21:00:00	20	0.07	29.62%	0.2
288	1977/12/25 17:00:00	1977/12/30 13:00:00	117	0.07	29.72%	0.2
289	1978/03/30 21:00:00	1978/04/02 15:00:00	67	0.07	29.82%	0.2
290	1978/04/15 20:00:00	1978/04/16 17:00:00	22	0.07	29.93%	0.2
291	1979/03/15 23:00:00	1979/03/17 22:00:00	48	0.07	30.03%	0.2
292	1980/03/25 23:00:00	1980/03/26 16:00:00	18	0.07	30.13%	0.2
293	1980/12/04 10:00:00	1980/12/05 21:00:00	36	0.07	30.24%	0.2
294	1981/02/25 21:00:00	1981/02/26 15:00:00	19	0.07	30.34%	0.2
295	1981/02/28 12:00:00	1981/03/02 20:00:00	57	0.07	30.44%	0.2
296	1981/03/19 20:00:00	1981/03/20 22:00:00	27	0.07	30.55%	0.2
297	1982/01/08 09:00:00	1982/01/09 09:00:00	25	0.07	30.65%	0.2
298	1982/09/26 02:00:00	1982/09/27 04:00:00	27	0.07	30.75%	0.2
299	1982/11/09 15:00:00	1982/11/11 08:00:00	42	0.07	30.86%	0.19
300	1983/12/03 15:00:00	1983/12/04 08:00:00	18	0.07	30.96%	0.19
301	1986/01/30 04:00:00	1986/02/01 08:00:00	53	0.07	31.06%	0.19
302	1986/02/07 22:00:00	1986/02/09 02:00:00	29	0.07	31.17%	0.19
303	1988/04/14 19:00:00	1988/04/15 16:00:00	22	0.07	31.27%	0.19
304	1988/11/25 07:00:00	1988/11/26 03:00:00	21	0.07	31.37%	0.19
305	1990/01/13 07:00:00	1990/01/15 23:00:00	65	0.07	31.48%	0.19
306	1993/01/31 01:00:00	1993/01/31 17:00:00	17	0.07	31.58%	0.19
307	1993/06/05 14:00:00	1993/06/06 06:00:00	17	0.07	31.68%	0.19
308	1994/01/25 00:00:00	1994/01/26 01:00:00	26	0.07	31.79%	0.19
309	1994/02/17 11:00:00	1994/02/19 09:00:00	47	0.07	31.89%	0.19
310	1994/03/06 06:00:00	1994/03/07 21:00:00	40	0.07	31.99%	0.19
311	1994/03/19 03:00:00	1994/03/20 09:00:00	31	0.07	32.09%	0.19
312	1994/03/24 22:00:00	1994/03/25 17:00:00	20	0.07	32.20%	0.19
313	1995/04/16 07:00:00	1995/04/17 01:00:00	19	0.07	32.30%	0.19
314	1996/01/16 20:00:00	1996/01/17 14:00:00	19	0.07	32.40%	0.19
315	1996/10/30 12:00:00	1996/10/31 07:00:00	20	0.07	32.51%	0.18
316	1997/01/23 04:00:00	1997/01/24 01:00:00	22	0.07	32.61%	0.18
317	1997/09/25 05:00:00	1997/09/26 13:00:00	33	0.07	32.71%	0.18
318	1998/03/31 07:00:00	1998/04/01 09:00:00	27	0.07	32.82%	0.18
319	1998/11/08 08:00:00	1998/11/09 15:00:00	32	0.07	32.92%	0.18
320	2000/04/17 18:00:00	2000/04/18 23:00:00	30	0.07	33.02%	0.18

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
321	2004/02/02 23:00:00	2004/02/03 18:00:00	20	0.07	33.13%	0.18
322	2004/04/01 21:00:00	2004/04/02 14:00:00	18	0.07	33.23%	0.18
323	2007/01/30 22:00:00	2007/01/31 17:00:00	20	0.07	33.33%	0.18
324	2007/02/28 04:00:00	2007/02/28 20:00:00	17	0.07	33.44%	0.18
325	2008/02/03 09:00:00	2008/02/04 22:00:00	38	0.07	33.54%	0.18
326	1951/12/12 00:00:00	1951/12/12 21:00:00	22	0.06	33.64%	0.18
327	1951/12/19 08:00:00	1951/12/20 00:00:00	17	0.06	33.75%	0.18
328	1952/01/25 05:00:00	1952/01/25 23:00:00	19	0.06	33.85%	0.18
329	1953/02/23 11:00:00	1953/02/24 07:00:00	21	0.06	33.95%	0.18
330	1953/04/27 22:00:00	1953/04/28 14:00:00	17	0.06	34.06%	0.18
331	1954/03/30 04:00:00	1954/03/30 18:00:00	15	0.06	34.16%	0.18
332	1954/12/09 22:00:00	1954/12/10 15:00:00	18	0.06	34.26%	0.18
333	1955/12/01 20:00:00	1955/12/02 14:00:00	19	0.06	34.37%	0.17
334	1957/02/23 06:00:00	1957/02/24 00:00:00	19	0.06	34.47%	0.17
335	1957/03/16 09:00:00	1957/03/17 00:00:00	16	0.06	34.57%	0.17
336	1957/10/11 09:00:00	1957/10/12 00:00:00	16	0.06	34.67%	0.17
337	1959/02/08 00:00:00	1959/02/09 05:00:00	30	0.06	34.78%	0.17
338	1959/02/16 04:00:00	1959/02/17 10:00:00	31	0.06	34.88%	0.17
339	1959/04/26 04:00:00	1959/04/26 20:00:00	17	0.06	34.98%	0.17
340	1960/03/28 03:00:00	1960/03/28 18:00:00	16	0.06	35.09%	0.17
341	1960/11/12 23:00:00	1960/11/13 15:00:00	17	0.06	35.19%	0.17
342	1960/11/26 17:00:00	1960/11/27 15:00:00	23	0.06	35.29%	0.17
343	1962/01/13 00:00:00	1962/01/13 19:00:00	20	0.06	35.40%	0.17
344	1963/02/14 12:00:00	1963/02/15 03:00:00	16	0.06	35.50%	0.17
345	1963/11/15 16:00:00	1963/11/16 07:00:00	16	0.06	35.60%	0.17
346	1965/03/11 02:00:00	1965/03/11 17:00:00	16	0.06	35.71%	0.17
347	1965/07/29 22:00:00	1965/07/30 13:00:00	16	0.06	35.81%	0.17
348	1966/10/10 14:00:00	1966/10/11 05:00:00	16	0.06	35.91%	0.17
349	1969/03/21 12:00:00	1969/03/22 11:00:00	24	0.06	36.02%	0.17
350	1969/11/06 18:00:00	1969/11/07 15:00:00	22	0.06	36.12%	0.17
351	1971/05/06 05:00:00	1971/05/08 12:00:00	56	0.06	36.22%	0.17
352	1971/12/07 01:00:00	1971/12/07 15:00:00	15	0.06	36.33%	0.17
353	1973/03/04 07:00:00	1973/03/07 03:00:00	69	0.06	36.43%	0.16
354	1973/11/17 04:00:00	1973/11/19 01:00:00	46	0.06	36.53%	0.16
355	1975/03/22 07:00:00	1975/03/22 23:00:00	17	0.06	36.64%	0.16
356	1976/11/12 01:00:00	1976/11/12 23:00:00	23	0.06	36.74%	0.16
357	1978/04/06 22:00:00	1978/04/07 15:00:00	18	0.06	36.84%	0.16
358	1978/11/21 16:00:00	1978/11/22 08:00:00	17	0.06	36.95%	0.16
359	1979/03/19 04:00:00	1979/03/21 20:00:00	65	0.06	37.05%	0.16
360	1980/03/10 15:00:00	1980/03/11 07:00:00	17	0.06	37.15%	0.16
361	1983/03/17 02:00:00	1983/03/19 09:00:00	56	0.06	37.25%	0.16
362	1983/04/29 03:00:00	1983/05/01 14:00:00	60	0.06	37.36%	0.16
363	1984/12/08 00:00:00	1984/12/08 15:00:00	16	0.06	37.46%	0.16
364	1987/03/21 16:00:00	1987/03/22 08:00:00	17	0.06	37.56%	0.16
365	1988/02/02 01:00:00	1988/02/03 05:00:00	29	0.06	37.67%	0.16
366	1988/12/15 13:00:00	1988/12/16 23:00:00	35	0.06	37.77%	0.16
367	1990/04/16 20:00:00	1990/04/17 16:00:00	21	0.06	37.87%	0.16

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
368	1991/03/13 17:00:00	1991/03/14 08:00:00	16	0.06	37.98%	0.16
369	1993/02/23 18:00:00	1993/02/24 16:00:00	23	0.06	38.08%	0.16
370	1994/02/03 21:00:00	1994/02/05 13:00:00	41	0.06	38.18%	0.16
371	1994/11/10 11:00:00	1994/11/11 03:00:00	17	0.06	38.29%	0.16
372	1995/02/13 16:00:00	1995/02/15 09:00:00	42	0.06	38.39%	0.16
373	1995/03/23 10:00:00	1995/03/24 02:00:00	17	0.06	38.49%	0.16
374	1995/12/13 06:00:00	1995/12/14 13:00:00	32	0.06	38.60%	0.16
375	1996/02/20 10:00:00	1996/02/22 08:00:00	47	0.06	38.70%	0.16
376	1998/04/11 02:00:00	1998/04/11 20:00:00	19	0.06	38.80%	0.15
377	1999/04/11 23:00:00	1999/04/12 16:00:00	18	0.06	38.91%	0.15
378	2005/01/26 13:00:00	2005/01/27 12:00:00	24	0.06	39.01%	0.15
379	2005/03/22 20:00:00	2005/03/23 16:00:00	21	0.06	39.11%	0.15
380	2006/12/09 23:00:00	2006/12/10 15:00:00	17	0.06	39.22%	0.15
381	2007/04/20 15:00:00	2007/04/21 07:00:00	17	0.06	39.32%	0.15
382	2007/12/07 03:00:00	2007/12/09 05:00:00	51	0.06	39.42%	0.15
383	1951/07/25 06:00:00	1951/07/25 18:00:00	13	0.05	39.53%	0.15
384	1951/11/20 02:00:00	1951/11/20 15:00:00	14	0.05	39.63%	0.15
385	1952/02/29 19:00:00	1952/03/01 22:00:00	28	0.05	39.73%	0.15
386	1952/03/10 18:00:00	1952/03/11 16:00:00	23	0.05	39.83%	0.15
387	1952/11/22 23:00:00	1952/11/23 20:00:00	22	0.05	39.94%	0.15
388	1952/12/30 20:00:00	1952/12/31 16:00:00	21	0.05	40.04%	0.15
389	1953/11/14 18:00:00	1953/11/15 07:00:00	14	0.05	40.14%	0.15
390	1955/01/01 20:00:00	1955/01/02 12:00:00	17	0.05	40.25%	0.15
391	1955/02/16 19:00:00	1955/02/17 22:00:00	28	0.05	40.35%	0.15
392	1955/04/22 04:00:00	1955/04/22 18:00:00	15	0.05	40.45%	0.15
393	1955/11/21 13:00:00	1955/11/22 03:00:00	15	0.05	40.56%	0.15
394	1956/12/05 17:00:00	1956/12/06 15:00:00	23	0.05	40.66%	0.15
395	1957/01/09 23:00:00	1957/01/10 17:00:00	19	0.05	40.76%	0.15
396	1957/06/10 02:00:00	1957/06/10 17:00:00	16	0.05	40.87%	0.15
397	1957/11/02 22:00:00	1957/11/03 21:00:00	24	0.05	40.97%	0.15
398	1957/12/05 03:00:00	1957/12/06 09:00:00	31	0.05	41.07%	0.15
399	1958/09/24 02:00:00	1958/09/24 13:00:00	12	0.05	41.18%	0.15
400	1959/12/21 01:00:00	1959/12/21 19:00:00	19	0.05	41.28%	0.15
401	1960/11/05 21:00:00	1960/11/06 21:00:00	25	0.05	41.38%	0.15
402	1961/11/25 05:00:00	1961/11/26 08:00:00	28	0.05	41.49%	0.14
403	1962/02/15 19:00:00	1962/02/16 22:00:00	28	0.05	41.59%	0.14
404	1963/03/28 11:00:00	1963/03/29 00:00:00	14	0.05	41.69%	0.14
405	1963/04/26 03:00:00	1963/04/26 22:00:00	20	0.05	41.80%	0.14
406	1964/11/09 14:00:00	1964/11/12 13:00:00	72	0.05	41.90%	0.14
407	1967/03/31 10:00:00	1967/04/02 09:00:00	48	0.05	42.00%	0.14
408	1967/04/04 16:00:00	1967/04/05 08:00:00	17	0.05	42.11%	0.14
409	1967/11/30 13:00:00	1967/12/02 00:00:00	36	0.05	42.21%	0.14
410	1968/01/26 22:00:00	1968/01/28 07:00:00	34	0.05	42.31%	0.14
411	1969/02/15 22:00:00	1969/02/16 13:00:00	16	0.05	42.41%	0.14
412	1969/04/05 20:00:00	1969/04/06 10:00:00	15	0.05	42.52%	0.14
413	1970/01/16 06:00:00	1970/01/17 09:00:00	28	0.05	42.62%	0.14
414	1971/01/12 18:00:00	1971/01/13 10:00:00	17	0.05	42.72%	0.14

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
415	1971/03/12 12:00:00	1971/03/13 20:00:00	33	0.05	42.83%	0.14
416	1973/02/03 02:00:00	1973/02/04 06:00:00	29	0.05	42.93%	0.14
417	1973/02/28 01:00:00	1973/02/28 20:00:00	20	0.05	43.03%	0.14
418	1974/04/02 00:00:00	1974/04/02 19:00:00	20	0.05	43.14%	0.14
419	1975/02/09 06:00:00	1975/02/11 07:00:00	50	0.05	43.24%	0.14
420	1975/11/27 11:00:00	1975/11/29 04:00:00	42	0.05	43.34%	0.14
421	1977/02/23 15:00:00	1977/02/25 05:00:00	39	0.05	43.45%	0.14
422	1977/03/16 15:00:00	1977/03/17 13:00:00	23	0.05	43.55%	0.14
423	1978/01/30 11:00:00	1978/01/31 10:00:00	24	0.05	43.65%	0.14
424	1978/11/10 10:00:00	1978/11/12 11:00:00	50	0.05	43.76%	0.14
425	1979/11/07 19:00:00	1979/11/08 16:00:00	22	0.05	43.86%	0.14
426	1979/12/21 08:00:00	1979/12/22 02:00:00	19	0.05	43.96%	0.14
427	1982/03/25 22:00:00	1982/03/26 20:00:00	23	0.05	44.07%	0.14
428	1982/11/18 23:00:00	1982/11/19 20:00:00	22	0.05	44.17%	0.14
429	1983/01/19 05:00:00	1983/01/19 19:00:00	15	0.05	44.27%	0.14
430	1983/01/24 16:00:00	1983/01/25 06:00:00	15	0.05	44.38%	0.14
431	1983/02/07 02:00:00	1983/02/08 18:00:00	41	0.05	44.48%	0.14
432	1984/03/14 13:00:00	1984/03/15 00:00:00	12	0.05	44.58%	0.13
433	1984/04/19 05:00:00	1984/04/19 17:00:00	13	0.05	44.69%	0.13
434	1984/10/17 07:00:00	1984/10/17 19:00:00	13	0.05	44.79%	0.13
435	1984/12/16 04:00:00	1984/12/16 18:00:00	15	0.05	44.89%	0.13
436	1985/02/02 09:00:00	1985/02/04 12:00:00	52	0.05	44.99%	0.13
437	1985/03/27 08:00:00	1985/03/28 22:00:00	39	0.05	45.10%	0.13
438	1986/04/06 02:00:00	1986/04/06 21:00:00	20	0.05	45.20%	0.13
439	1986/10/09 20:00:00	1986/10/10 16:00:00	21	0.05	45.30%	0.13
440	1988/11/14 07:00:00	1988/11/14 21:00:00	15	0.05	45.41%	0.13
441	1989/01/04 05:00:00	1989/01/06 14:00:00	58	0.05	45.51%	0.13
442	1989/03/25 10:00:00	1989/03/26 11:00:00	26	0.05	45.61%	0.13
443	1990/01/31 01:00:00	1990/01/31 15:00:00	15	0.05	45.72%	0.13
444	1991/01/09 14:00:00	1991/01/10 03:00:00	14	0.05	45.82%	0.13
445	1992/03/26 18:00:00	1992/03/27 11:00:00	18	0.05	45.92%	0.13
446	1992/10/23 04:00:00	1992/10/23 20:00:00	17	0.05	46.03%	0.13
447	1992/12/27 21:00:00	1992/12/28 14:00:00	18	0.05	46.13%	0.13
448	1993/01/10 12:00:00	1993/01/11 02:00:00	15	0.05	46.23%	0.13
449	1993/12/11 17:00:00	1993/12/12 05:00:00	13	0.05	46.34%	0.13
450	1994/02/20 11:00:00	1994/02/21 00:00:00	14	0.05	46.44%	0.13
451	1994/12/25 01:00:00	1994/12/25 18:00:00	18	0.05	46.54%	0.13
452	1995/03/21 12:00:00	1995/03/22 01:00:00	14	0.05	46.65%	0.13
453	1995/06/15 20:00:00	1995/06/17 08:00:00	37	0.05	46.75%	0.13
454	1996/01/21 19:00:00	1996/01/22 17:00:00	23	0.05	46.85%	0.13
455	1996/02/25 09:00:00	1996/02/26 16:00:00	32	0.05	46.96%	0.13
456	1996/04/17 12:00:00	1996/04/18 16:00:00	29	0.05	47.06%	0.13
457	1996/12/27 18:00:00	1996/12/28 18:00:00	25	0.05	47.16%	0.13
458	1997/11/10 17:00:00	1997/11/11 07:00:00	15	0.05	47.27%	0.13
459	1998/02/19 14:00:00	1998/02/20 13:00:00	24	0.05	47.37%	0.13
460	1998/04/05 16:00:00	1998/04/07 01:00:00	34	0.05	47.47%	0.13
461	1999/02/04 11:00:00	1999/02/05 21:00:00	35	0.05	47.57%	0.13

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
462	2004/01/09 15:00:00	2004/01/10 03:00:00	13	0.05	47.68%	0.13
463	2004/03/01 23:00:00	2004/03/02 14:00:00	16	0.05	47.78%	0.13
464	2004/11/21 06:00:00	2004/11/21 19:00:00	14	0.05	47.88%	0.13
465	2004/12/05 13:00:00	2004/12/06 06:00:00	18	0.05	47.99%	0.13
466	2006/05/22 05:00:00	2006/05/22 18:00:00	14	0.05	48.09%	0.12
467	2008/01/23 21:00:00	2008/01/24 17:00:00	21	0.05	48.19%	0.12
468	2008/05/22 21:00:00	2008/05/24 04:00:00	32	0.05	48.30%	0.12
469	1951/12/02 02:00:00	1951/12/02 13:00:00	12	0.04	48.40%	0.12
470	1952/12/28 08:00:00	1952/12/28 22:00:00	15	0.04	48.50%	0.12
471	1953/04/20 11:00:00	1953/04/20 23:00:00	13	0.04	48.61%	0.12
472	1955/01/31 00:00:00	1955/01/31 11:00:00	12	0.04	48.71%	0.12
473	1956/04/01 16:00:00	1956/04/02 04:00:00	13	0.04	48.81%	0.12
474	1957/01/05 10:00:00	1957/01/05 21:00:00	12	0.04	48.92%	0.12
475	1957/04/18 02:00:00	1957/04/18 14:00:00	13	0.04	49.02%	0.12
476	1957/05/19 06:00:00	1957/05/19 18:00:00	13	0.04	49.12%	0.12
477	1957/10/30 19:00:00	1957/10/31 12:00:00	18	0.04	49.23%	0.12
478	1959/01/06 06:00:00	1959/01/06 20:00:00	15	0.04	49.33%	0.12
479	1959/09/30 07:00:00	1959/10/01 15:00:00	33	0.04	49.43%	0.12
480	1961/10/08 05:00:00	1961/10/09 03:00:00	23	0.04	49.54%	0.12
481	1962/03/06 07:00:00	1962/03/07 05:00:00	23	0.04	49.64%	0.12
482	1963/04/21 00:00:00	1963/04/21 12:00:00	13	0.04	49.74%	0.12
483	1964/04/01 05:00:00	1964/04/01 19:00:00	15	0.04	49.85%	0.12
484	1965/01/24 07:00:00	1965/01/24 19:00:00	13	0.04	49.95%	0.12
485	1965/02/06 02:00:00	1965/02/06 22:00:00	21	0.04	50.05%	0.12
486	1965/12/22 01:00:00	1965/12/22 20:00:00	20	0.04	50.15%	0.12
487	1966/03/24 18:00:00	1966/03/25 22:00:00	29	0.04	50.26%	0.12
488	1967/06/13 07:00:00	1967/06/13 19:00:00	13	0.04	50.36%	0.12
489	1968/02/12 18:00:00	1968/02/13 10:00:00	17	0.04	50.46%	0.12
490	1968/11/15 05:00:00	1968/11/16 05:00:00	25	0.04	50.57%	0.12
491	1969/03/09 04:00:00	1969/03/11 21:00:00	66	0.04	50.67%	0.12
492	1969/11/10 01:00:00	1969/11/10 14:00:00	14	0.04	50.77%	0.12
493	1970/01/09 23:00:00	1970/01/10 15:00:00	17	0.04	50.88%	0.12
494	1970/11/25 23:00:00	1970/11/26 18:00:00	20	0.04	50.98%	0.12
495	1971/02/16 21:00:00	1971/02/20 03:00:00	79	0.04	51.08%	0.12
496	1972/12/07 04:00:00	1972/12/09 18:00:00	63	0.04	51.19%	0.12
497	1973/01/09 08:00:00	1973/01/10 06:00:00	23	0.04	51.29%	0.12
498	1973/12/01 16:00:00	1973/12/02 04:00:00	13	0.04	51.39%	0.12
499	1975/03/14 02:00:00	1975/03/14 14:00:00	13	0.04	51.50%	0.12
500	1975/12/04 15:00:00	1975/12/05 04:00:00	14	0.04	51.60%	0.12
501	1977/07/23 11:00:00	1977/07/23 22:00:00	12	0.04	51.70%	0.12
502	1978/03/09 16:00:00	1978/03/10 04:00:00	13	0.04	51.81%	0.12
503	1978/11/24 05:00:00	1978/11/24 23:00:00	19	0.04	51.91%	0.12
504	1979/02/14 04:00:00	1979/02/14 16:00:00	13	0.04	52.01%	0.12
505	1980/05/10 11:00:00	1980/05/10 22:00:00	12	0.04	52.12%	0.12
506	1981/03/05 03:00:00	1981/03/06 01:00:00	23	0.04	52.22%	0.12
507	1981/04/18 13:00:00	1981/04/19 15:00:00	27	0.04	52.32%	0.11
508	1982/01/05 02:00:00	1982/01/05 18:00:00	17	0.04	52.43%	0.11

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
509	1982/12/07 20:00:00	1982/12/08 12:00:00	17	0.04	52.53%	0.11
510	1983/03/14 02:00:00	1983/03/14 14:00:00	13	0.04	52.63%	0.11
511	1983/04/18 00:00:00	1983/04/18 20:00:00	21	0.04	52.73%	0.11
512	1983/12/09 19:00:00	1983/12/10 05:00:00	11	0.04	52.84%	0.11
513	1984/11/07 12:00:00	1984/11/08 19:00:00	32	0.04	52.94%	0.11
514	1985/01/07 10:00:00	1985/01/08 13:00:00	28	0.04	53.04%	0.11
515	1985/01/28 17:00:00	1985/01/29 05:00:00	13	0.04	53.15%	0.11
516	1987/02/13 22:00:00	1987/02/14 09:00:00	12	0.04	53.25%	0.11
517	1987/03/15 03:00:00	1987/03/15 15:00:00	13	0.04	53.35%	0.11
518	1987/10/22 16:00:00	1987/10/23 13:00:00	22	0.04	53.46%	0.11
519	1987/10/31 05:00:00	1987/11/02 08:00:00	52	0.04	53.56%	0.11
520	1988/01/05 15:00:00	1988/01/06 03:00:00	13	0.04	53.66%	0.11
521	1988/12/18 13:00:00	1988/12/19 03:00:00	15	0.04	53.77%	0.11
522	1989/02/03 21:00:00	1989/02/05 02:00:00	30	0.04	53.87%	0.11
523	1990/01/02 06:00:00	1990/01/02 21:00:00	16	0.04	53.97%	0.11
524	1991/10/26 23:00:00	1991/10/27 11:00:00	13	0.04	54.08%	0.11
525	1991/12/28 02:00:00	1991/12/28 13:00:00	12	0.04	54.18%	0.11
526	1992/02/10 01:00:00	1992/02/10 18:00:00	18	0.04	54.28%	0.11
527	1992/03/07 12:00:00	1992/03/08 08:00:00	21	0.04	54.39%	0.11
528	1992/04/01 14:00:00	1992/04/02 01:00:00	12	0.04	54.49%	0.11
529	1995/01/21 03:00:00	1995/01/21 15:00:00	13	0.04	54.59%	0.11
530	1996/03/04 18:00:00	1996/03/05 16:00:00	23	0.04	54.70%	0.11
531	1996/12/22 15:00:00	1996/12/23 02:00:00	12	0.04	54.80%	0.11
532	1997/01/03 02:00:00	1997/01/03 19:00:00	18	0.04	54.90%	0.11
533	1997/11/13 12:00:00	1997/11/14 06:00:00	19	0.04	55.01%	0.11
534	1997/12/18 18:00:00	1997/12/19 06:00:00	13	0.04	55.11%	0.11
535	1998/01/03 08:00:00	1998/01/05 05:00:00	46	0.04	55.21%	0.11
536	1998/03/06 05:00:00	1998/03/06 20:00:00	16	0.04	55.31%	0.11
537	1998/11/28 08:00:00	1998/11/29 08:00:00	25	0.04	55.42%	0.11
538	1999/04/01 10:00:00	1999/04/02 05:00:00	20	0.04	55.52%	0.11
539	1999/04/07 05:00:00	1999/04/07 19:00:00	15	0.04	55.62%	0.11
540	2000/02/17 16:00:00	2000/02/18 06:00:00	15	0.04	55.73%	0.11
541	2000/03/08 17:00:00	2000/03/09 10:00:00	18	0.04	55.83%	0.11
542	2001/01/26 12:00:00	2001/01/27 06:00:00	19	0.04	55.93%	0.11
543	2001/12/10 16:00:00	2001/12/11 07:00:00	16	0.04	56.04%	0.11
544	2002/03/17 23:00:00	2002/03/18 11:00:00	13	0.04	56.14%	0.11
545	2004/04/17 13:00:00	2004/04/18 03:00:00	15	0.04	56.24%	0.11
546	2005/03/18 22:00:00	2005/03/20 01:00:00	28	0.04	56.35%	0.11
547	2005/07/23 05:00:00	2005/07/23 15:00:00	11	0.04	56.45%	0.11
548	2007/02/22 21:00:00	2007/02/23 16:00:00	20	0.04	56.55%	0.11
549	1952/01/07 05:00:00	1952/01/07 17:00:00	13	0.03	56.66%	0.11
550	1952/04/25 23:00:00	1952/04/26 08:00:00	10	0.03	56.76%	0.11
551	1953/03/20 04:00:00	1953/03/20 14:00:00	11	0.03	56.86%	0.11
552	1953/10/22 08:00:00	1953/10/22 18:00:00	11	0.03	56.97%	0.11
553	1953/12/04 10:00:00	1953/12/04 19:00:00	10	0.03	57.07%	0.11
554	1954/12/03 15:00:00	1954/12/04 09:00:00	19	0.03	57.17%	0.11
555	1955/04/26 12:00:00	1955/04/26 20:00:00	9	0.03	57.28%	0.11

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
556	1955/11/17 13:00:00	1955/11/18 00:00:00	12	0.03	57.38%	0.1
557	1956/01/31 10:00:00	1956/01/31 20:00:00	11	0.03	57.48%	0.1
558	1956/02/23 18:00:00	1956/02/24 19:00:00	26	0.03	57.59%	0.1
559	1957/05/21 04:00:00	1957/05/21 13:00:00	10	0.03	57.69%	0.1
560	1957/11/16 19:00:00	1957/11/17 05:00:00	11	0.03	57.79%	0.1
561	1958/03/11 02:00:00	1958/03/13 05:00:00	52	0.03	57.89%	0.1
562	1958/10/25 01:00:00	1958/10/25 10:00:00	10	0.03	58.00%	0.1
563	1958/11/11 06:00:00	1958/11/11 15:00:00	10	0.03	58.10%	0.1
564	1959/12/10 00:00:00	1959/12/10 10:00:00	11	0.03	58.20%	0.1
565	1960/11/03 16:00:00	1960/11/04 07:00:00	16	0.03	58.31%	0.1
566	1962/03/22 22:00:00	1962/03/23 09:00:00	12	0.03	58.41%	0.1
567	1962/05/14 10:00:00	1962/05/15 00:00:00	15	0.03	58.51%	0.1
568	1963/09/04 08:00:00	1963/09/04 21:00:00	14	0.03	58.62%	0.1
569	1963/11/06 16:00:00	1963/11/07 01:00:00	10	0.03	58.72%	0.1
570	1964/09/24 15:00:00	1964/09/25 00:00:00	10	0.03	58.82%	0.1
571	1964/10/15 13:00:00	1964/10/15 22:00:00	10	0.03	58.93%	0.1
572	1965/01/07 09:00:00	1965/01/07 19:00:00	11	0.03	59.03%	0.1
573	1965/03/06 22:00:00	1965/03/07 12:00:00	15	0.03	59.13%	0.1
574	1965/03/13 04:00:00	1965/03/14 01:00:00	22	0.03	59.24%	0.1
575	1965/03/15 04:00:00	1965/03/16 00:00:00	21	0.03	59.34%	0.1
576	1966/03/02 07:00:00	1966/03/02 17:00:00	11	0.03	59.44%	0.1
577	1967/03/04 03:00:00	1967/03/05 00:00:00	22	0.03	59.55%	0.1
578	1967/04/18 19:00:00	1967/04/20 05:00:00	35	0.03	59.65%	0.1
579	1967/04/21 13:00:00	1967/04/22 11:00:00	23	0.03	59.75%	0.1
580	1967/09/02 22:00:00	1967/09/03 07:00:00	10	0.03	59.86%	0.1
581	1967/12/13 10:00:00	1967/12/13 21:00:00	12	0.03	59.96%	0.1
582	1967/12/16 04:00:00	1967/12/17 11:00:00	32	0.03	60.06%	0.1
583	1968/12/20 09:00:00	1968/12/20 19:00:00	11	0.03	60.17%	0.1
584	1969/02/28 22:00:00	1969/03/01 17:00:00	20	0.03	60.27%	0.1
585	1969/03/13 00:00:00	1969/03/14 22:00:00	47	0.03	60.37%	0.1
586	1969/04/03 03:00:00	1969/04/03 12:00:00	10	0.03	60.47%	0.1
587	1970/01/11 16:00:00	1970/01/12 08:00:00	17	0.03	60.58%	0.1
588	1971/04/17 22:00:00	1971/04/18 09:00:00	12	0.03	60.68%	0.1
589	1971/05/28 11:00:00	1971/05/28 23:00:00	13	0.03	60.78%	0.1
590	1971/09/29 09:00:00	1971/09/29 18:00:00	10	0.03	60.89%	0.1
591	1971/10/16 08:00:00	1971/10/17 12:00:00	29	0.03	60.99%	0.1
592	1971/11/12 07:00:00	1971/11/12 20:00:00	14	0.03	61.09%	0.1
593	1971/12/03 01:00:00	1971/12/04 11:00:00	35	0.03	61.20%	0.1
594	1971/12/13 03:00:00	1971/12/13 17:00:00	15	0.03	61.30%	0.1
595	1972/04/13 06:00:00	1972/04/13 15:00:00	10	0.03	61.40%	0.1
596	1972/04/19 14:00:00	1972/04/20 03:00:00	14	0.03	61.51%	0.1
597	1972/11/08 02:00:00	1972/11/08 12:00:00	11	0.03	61.61%	0.1
598	1973/01/04 11:00:00	1973/01/04 20:00:00	10	0.03	61.71%	0.1
599	1973/01/25 21:00:00	1973/01/26 07:00:00	11	0.03	61.82%	0.1
600	1974/01/01 04:00:00	1974/01/01 15:00:00	12	0.03	61.92%	0.1
601	1974/03/27 09:00:00	1974/03/27 18:00:00	10	0.03	62.02%	0.1
602	1974/11/01 07:00:00	1974/11/02 10:00:00	28	0.03	62.13%	0.1

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
603	1975/04/16 12:00:00	1975/04/17 17:00:00	30	0.03	62.23%	0.1
604	1975/12/12 15:00:00	1975/12/13 01:00:00	11	0.03	62.33%	0.1
605	1976/09/03 19:00:00	1976/09/04 04:00:00	10	0.03	62.44%	0.1
606	1977/04/02 15:00:00	1977/04/03 00:00:00	10	0.03	62.54%	0.1
607	1977/05/12 11:00:00	1977/05/12 21:00:00	11	0.03	62.64%	0.1
608	1979/01/09 09:00:00	1979/01/09 20:00:00	12	0.03	62.75%	0.1
609	1980/01/18 02:00:00	1980/01/19 09:00:00	32	0.03	62.85%	0.1
610	1980/10/16 01:00:00	1980/10/16 16:00:00	16	0.03	62.95%	0.1
611	1981/04/02 06:00:00	1981/04/03 04:00:00	23	0.03	63.05%	0.1
612	1982/01/11 00:00:00	1982/01/11 15:00:00	16	0.03	63.16%	0.1
613	1982/01/28 17:00:00	1982/01/29 10:00:00	18	0.03	63.26%	0.1
614	1982/03/28 21:00:00	1982/03/30 09:00:00	37	0.03	63.36%	0.09
615	1982/09/16 12:00:00	1982/09/17 20:00:00	33	0.03	63.47%	0.09
616	1983/01/22 23:00:00	1983/01/23 13:00:00	15	0.03	63.57%	0.09
617	1983/02/02 11:00:00	1983/02/03 02:00:00	16	0.03	63.67%	0.09
618	1983/02/24 07:00:00	1983/02/25 04:00:00	22	0.03	63.78%	0.09
619	1983/10/07 09:00:00	1983/10/07 19:00:00	11	0.03	63.88%	0.09
620	1983/11/18 00:00:00	1983/11/18 10:00:00	11	0.03	63.98%	0.09
621	1984/04/06 06:00:00	1984/04/06 16:00:00	11	0.03	64.09%	0.09
622	1985/02/20 16:00:00	1985/02/21 04:00:00	13	0.03	64.19%	0.09
623	1985/12/02 15:00:00	1985/12/03 11:00:00	21	0.03	64.29%	0.09
624	1985/12/11 04:00:00	1985/12/11 13:00:00	10	0.03	64.40%	0.09
625	1986/02/19 13:00:00	1986/02/19 22:00:00	10	0.03	64.50%	0.09
626	1987/03/24 00:00:00	1987/03/25 05:00:00	30	0.03	64.60%	0.09
627	1987/12/19 18:00:00	1987/12/20 03:00:00	10	0.03	64.71%	0.09
628	1988/02/29 22:00:00	1988/03/02 09:00:00	36	0.03	64.81%	0.09
629	1989/02/10 18:00:00	1989/02/11 04:00:00	11	0.03	64.91%	0.09
630	1990/02/04 12:00:00	1990/02/04 23:00:00	12	0.03	65.02%	0.09
631	1990/03/05 12:00:00	1990/03/05 21:00:00	10	0.03	65.12%	0.09
632	1990/04/04 12:00:00	1990/04/04 22:00:00	11	0.03	65.22%	0.09
633	1990/04/25 01:00:00	1990/04/25 10:00:00	10	0.03	65.33%	0.09
634	1991/03/15 18:00:00	1991/03/16 05:00:00	12	0.03	65.43%	0.09
635	1991/11/29 19:00:00	1991/11/30 04:00:00	10	0.03	65.53%	0.09
636	1992/05/22 18:00:00	1992/05/23 04:00:00	11	0.03	65.63%	0.09
637	1992/10/29 10:00:00	1992/10/31 04:00:00	43	0.03	65.74%	0.09
638	1992/12/03 11:00:00	1992/12/04 20:00:00	34	0.03	65.84%	0.09
639	1993/02/26 19:00:00	1993/02/27 10:00:00	16	0.03	65.94%	0.09
640	1993/11/23 03:00:00	1993/11/23 13:00:00	11	0.03	66.05%	0.09
641	1993/11/30 05:00:00	1993/11/30 14:00:00	10	0.03	66.15%	0.09
642	1994/04/24 05:00:00	1994/04/24 15:00:00	11	0.03	66.25%	0.09
643	1994/10/04 15:00:00	1994/10/05 11:00:00	21	0.03	66.36%	0.09
644	1995/05/13 09:00:00	1995/05/13 18:00:00	10	0.03	66.46%	0.09
645	1997/01/05 09:00:00	1997/01/06 00:00:00	16	0.03	66.56%	0.09
646	1997/02/27 23:00:00	1997/02/28 08:00:00	10	0.03	66.67%	0.09
647	1998/01/19 05:00:00	1998/01/19 15:00:00	11	0.03	66.77%	0.09
648	1998/01/29 12:00:00	1998/01/29 22:00:00	11	0.03	66.87%	0.09
649	1999/02/09 20:00:00	1999/02/10 06:00:00	11	0.03	66.98%	0.09

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
650	1999/03/15 12:00:00	1999/03/15 21:00:00	10	0.03	67.08%	0.09
651	1999/03/25 15:00:00	1999/03/26 03:00:00	13	0.03	67.18%	0.09
652	1999/06/02 02:00:00	1999/06/02 12:00:00	11	0.03	67.29%	0.09
653	2000/01/31 18:00:00	2000/02/01 04:00:00	11	0.03	67.39%	0.09
654	2000/11/10 07:00:00	2000/11/11 05:00:00	23	0.03	67.49%	0.09
655	2001/04/21 05:00:00	2001/04/21 15:00:00	11	0.03	67.60%	0.09
656	2001/12/14 17:00:00	2001/12/15 05:00:00	13	0.03	67.70%	0.09
657	2001/12/31 18:00:00	2002/01/01 04:00:00	11	0.03	67.80%	0.09
658	2003/11/12 05:00:00	2003/11/13 10:00:00	30	0.03	67.91%	0.09
659	2004/01/02 20:00:00	2004/01/03 06:00:00	11	0.03	68.01%	0.09
660	2004/02/18 17:00:00	2004/02/19 04:00:00	12	0.03	68.11%	0.09
661	2004/11/28 18:00:00	2004/11/29 04:00:00	11	0.03	68.21%	0.09
662	2005/02/25 17:00:00	2005/02/26 05:00:00	13	0.03	68.32%	0.09
663	2005/09/20 03:00:00	2005/09/20 14:00:00	12	0.03	68.42%	0.09
664	2006/04/14 19:00:00	2006/04/15 10:00:00	16	0.03	68.52%	0.09
665	2006/12/16 21:00:00	2006/12/17 22:00:00	26	0.03	68.63%	0.09
666	2006/12/27 08:00:00	2006/12/27 18:00:00	11	0.03	68.73%	0.09
667	2007/02/11 13:00:00	2007/02/11 22:00:00	10	0.03	68.83%	0.09
668	2007/10/13 06:00:00	2007/10/13 17:00:00	12	0.03	68.94%	0.09
669	2007/12/19 02:00:00	2007/12/19 18:00:00	17	0.03	69.04%	0.09
670	2008/02/14 12:00:00	2008/02/15 00:00:00	13	0.03	69.14%	0.09
671	2008/02/24 08:00:00	2008/02/24 21:00:00	14	0.03	69.25%	0.09
672	1952/03/13 10:00:00	1952/03/13 23:00:00	14	0.02	69.35%	0.09
673	1952/04/08 00:00:00	1952/04/08 08:00:00	9	0.02	69.45%	0.09
674	1952/09/19 17:00:00	1952/09/20 00:00:00	8	0.02	69.56%	0.09
675	1953/01/13 22:00:00	1953/01/14 05:00:00	8	0.02	69.66%	0.09
676	1955/01/05 10:00:00	1955/01/06 20:00:00	35	0.02	69.76%	0.09
677	1955/03/11 00:00:00	1955/03/11 10:00:00	11	0.02	69.87%	0.09
678	1955/12/04 12:00:00	1955/12/04 20:00:00	9	0.02	69.97%	0.09
679	1957/01/21 01:00:00	1957/01/21 09:00:00	9	0.02	70.07%	0.09
680	1957/03/09 18:00:00	1957/03/10 04:00:00	11	0.02	70.18%	0.09
681	1957/05/11 03:00:00	1957/05/11 16:00:00	14	0.02	70.28%	0.09
682	1957/10/21 05:00:00	1957/10/21 14:00:00	10	0.02	70.38%	0.09
683	1958/05/11 11:00:00	1958/05/11 19:00:00	9	0.02	70.49%	0.09
684	1958/11/15 23:00:00	1958/11/16 06:00:00	8	0.02	70.59%	0.09
685	1960/01/25 22:00:00	1960/01/26 08:00:00	11	0.02	70.69%	0.09
686	1961/03/25 04:00:00	1961/03/25 13:00:00	10	0.02	70.79%	0.09
687	1962/03/09 22:00:00	1962/03/10 05:00:00	8	0.02	70.90%	0.08
688	1964/02/16 09:00:00	1964/02/16 17:00:00	9	0.02	71.00%	0.08
689	1964/02/29 05:00:00	1964/02/29 13:00:00	9	0.02	71.10%	0.08
690	1964/03/02 08:00:00	1964/03/02 15:00:00	8	0.02	71.21%	0.08
691	1964/10/29 14:00:00	1964/10/29 20:00:00	7	0.02	71.31%	0.08
692	1964/11/26 14:00:00	1964/11/26 20:00:00	7	0.02	71.41%	0.08
693	1965/03/24 13:00:00	1965/03/24 19:00:00	7	0.02	71.52%	0.08
694	1965/08/16 19:00:00	1965/08/17 13:00:00	19	0.02	71.62%	0.08
695	1965/09/16 19:00:00	1965/09/17 13:00:00	19	0.02	71.72%	0.08
696	1966/01/20 01:00:00	1966/01/20 07:00:00	7	0.02	71.83%	0.08

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
697	1966/01/27 06:00:00	1966/01/27 12:00:00	7	0.02	71.93%	0.08
698	1966/02/02 01:00:00	1966/02/02 08:00:00	8	0.02	72.03%	0.08
699	1966/02/25 05:00:00	1966/02/25 11:00:00	7	0.02	72.14%	0.08
700	1966/05/10 05:00:00	1966/05/10 11:00:00	7	0.02	72.24%	0.08
701	1967/01/31 03:00:00	1967/01/31 10:00:00	8	0.02	72.34%	0.08
702	1967/03/11 16:00:00	1967/03/11 22:00:00	7	0.02	72.45%	0.08
703	1967/04/15 23:00:00	1967/04/16 06:00:00	8	0.02	72.55%	0.08
704	1967/04/24 09:00:00	1967/04/24 16:00:00	8	0.02	72.65%	0.08
705	1967/04/28 22:00:00	1967/04/29 05:00:00	8	0.02	72.76%	0.08
706	1967/05/10 04:00:00	1967/05/10 10:00:00	7	0.02	72.86%	0.08
707	1967/11/06 15:00:00	1967/11/06 21:00:00	7	0.02	72.96%	0.08
708	1967/12/08 00:00:00	1967/12/08 06:00:00	7	0.02	73.07%	0.08
709	1968/03/17 02:00:00	1968/03/18 23:00:00	46	0.02	73.17%	0.08
710	1968/05/21 13:00:00	1968/05/21 19:00:00	7	0.02	73.27%	0.08
711	1968/07/07 05:00:00	1968/07/07 16:00:00	12	0.02	73.37%	0.08
712	1968/11/13 13:00:00	1968/11/13 19:00:00	7	0.02	73.48%	0.08
713	1968/12/01 11:00:00	1968/12/01 17:00:00	7	0.02	73.58%	0.08
714	1968/12/11 09:00:00	1968/12/11 15:00:00	7	0.02	73.68%	0.08
715	1968/12/16 13:00:00	1968/12/16 20:00:00	8	0.02	73.79%	0.08
716	1969/05/05 11:00:00	1969/05/06 18:00:00	32	0.02	73.89%	0.08
717	1969/12/08 23:00:00	1969/12/09 05:00:00	7	0.02	73.99%	0.08
718	1969/12/10 11:00:00	1969/12/10 18:00:00	8	0.02	74.10%	0.08
719	1970/01/14 20:00:00	1970/01/15 03:00:00	8	0.02	74.20%	0.08
720	1970/03/10 11:00:00	1970/03/10 17:00:00	7	0.02	74.30%	0.08
721	1970/04/27 11:00:00	1970/04/27 17:00:00	7	0.02	74.41%	0.08
722	1970/06/11 16:00:00	1970/06/11 22:00:00	7	0.02	74.51%	0.08
723	1970/11/03 12:00:00	1970/11/03 18:00:00	7	0.02	74.61%	0.08
724	1970/12/02 15:00:00	1970/12/02 22:00:00	8	0.02	74.72%	0.08
725	1970/12/09 12:00:00	1970/12/09 18:00:00	7	0.02	74.82%	0.08
726	1971/04/21 05:00:00	1971/04/21 12:00:00	8	0.02	74.92%	0.08
727	1971/04/25 06:00:00	1971/04/26 12:00:00	31	0.02	75.03%	0.08
728	1971/09/11 20:00:00	1971/09/12 02:00:00	7	0.02	75.13%	0.08
729	1971/10/28 17:00:00	1971/10/28 23:00:00	7	0.02	75.23%	0.08
730	1971/11/29 11:00:00	1971/11/29 17:00:00	7	0.02	75.34%	0.08
731	1972/02/05 11:00:00	1972/02/05 22:00:00	12	0.02	75.44%	0.08
732	1972/02/28 15:00:00	1972/02/28 21:00:00	7	0.02	75.54%	0.08
733	1972/05/19 02:00:00	1972/05/19 08:00:00	7	0.02	75.64%	0.08
734	1972/05/20 11:00:00	1972/05/20 18:00:00	8	0.02	75.75%	0.08
735	1972/06/07 07:00:00	1972/06/07 13:00:00	7	0.02	75.85%	0.08
736	1972/06/20 22:00:00	1972/06/21 08:00:00	11	0.02	75.95%	0.08
737	1972/09/08 10:00:00	1972/09/08 16:00:00	7	0.02	76.06%	0.08
738	1972/10/17 06:00:00	1972/10/17 12:00:00	7	0.02	76.16%	0.08
739	1972/10/19 10:00:00	1972/10/20 11:00:00	26	0.02	76.26%	0.08
740	1972/10/21 15:00:00	1972/10/21 22:00:00	8	0.02	76.37%	0.08
741	1972/11/21 13:00:00	1972/11/21 20:00:00	8	0.02	76.47%	0.08
742	1972/11/24 13:00:00	1972/11/24 20:00:00	8	0.02	76.57%	0.08
743	1973/03/11 13:00:00	1973/03/11 20:00:00	8	0.02	76.68%	0.08

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
744	1973/03/25 07:00:00	1973/03/25 14:00:00	8	0.02	76.78%	0.08
745	1973/04/01 10:00:00	1973/04/01 16:00:00	7	0.02	76.88%	0.08
746	1973/04/30 10:00:00	1973/04/30 16:00:00	7	0.02	76.99%	0.08
747	1973/05/28 11:00:00	1973/05/28 17:00:00	7	0.02	77.09%	0.08
748	1973/05/31 16:00:00	1973/05/31 23:00:00	8	0.02	77.19%	0.08
749	1973/09/25 14:00:00	1973/09/25 20:00:00	7	0.02	77.30%	0.08
750	1973/11/26 07:00:00	1973/11/26 14:00:00	8	0.02	77.40%	0.08
751	1973/12/22 05:00:00	1973/12/22 11:00:00	7	0.02	77.50%	0.08
752	1973/12/28 02:00:00	1973/12/28 09:00:00	8	0.02	77.61%	0.08
753	1974/01/20 14:00:00	1974/01/21 07:00:00	18	0.02	77.71%	0.08
754	1974/02/19 20:00:00	1974/02/20 02:00:00	7	0.02	77.81%	0.08
755	1974/05/20 14:00:00	1974/05/20 20:00:00	7	0.02	77.92%	0.08
756	1974/09/17 07:00:00	1974/09/17 13:00:00	7	0.02	78.02%	0.08
757	1974/10/26 15:00:00	1974/10/26 21:00:00	7	0.02	78.12%	0.08
758	1975/01/07 14:00:00	1975/01/09 03:00:00	38	0.02	78.22%	0.08
759	1975/01/30 16:00:00	1975/01/30 22:00:00	7	0.02	78.33%	0.08
760	1975/03/25 14:00:00	1975/03/25 21:00:00	8	0.02	78.43%	0.08
761	1975/03/31 12:00:00	1975/04/01 14:00:00	27	0.02	78.53%	0.08
762	1975/04/25 07:00:00	1975/04/25 18:00:00	12	0.02	78.64%	0.08
763	1975/05/19 09:00:00	1975/05/20 10:00:00	26	0.02	78.74%	0.08
764	1975/06/07 11:00:00	1975/06/07 17:00:00	7	0.02	78.84%	0.08
765	1975/06/17 23:00:00	1975/06/18 05:00:00	7	0.02	78.95%	0.08
766	1975/10/07 03:00:00	1975/10/07 14:00:00	12	0.02	79.05%	0.08
767	1975/10/31 09:00:00	1975/11/03 11:00:00	75	0.02	79.15%	0.08
768	1975/11/05 02:00:00	1975/11/05 09:00:00	8	0.02	79.26%	0.08
769	1975/12/07 13:00:00	1975/12/07 20:00:00	8	0.02	79.36%	0.08
770	1975/12/16 14:00:00	1975/12/16 21:00:00	8	0.02	79.46%	0.08
771	1976/03/09 22:00:00	1976/03/10 04:00:00	7	0.02	79.57%	0.08
772	1976/03/12 14:00:00	1976/03/12 21:00:00	8	0.02	79.67%	0.08
773	1976/04/04 08:00:00	1976/04/04 14:00:00	7	0.02	79.77%	0.08
774	1976/05/07 10:00:00	1976/05/07 16:00:00	7	0.02	79.88%	0.08
775	1976/05/28 02:00:00	1976/05/28 08:00:00	7	0.02	79.98%	0.08
776	1976/08/21 19:00:00	1976/08/22 01:00:00	7	0.02	80.08%	0.08
777	1976/11/27 07:00:00	1976/11/27 13:00:00	7	0.02	80.19%	0.08
778	1977/01/26 02:00:00	1977/01/26 08:00:00	7	0.02	80.29%	0.08
779	1977/01/29 13:00:00	1977/01/29 20:00:00	8	0.02	80.39%	0.07
780	1977/02/22 08:00:00	1977/02/22 14:00:00	7	0.02	80.50%	0.07
781	1977/05/24 08:00:00	1977/05/24 14:00:00	7	0.02	80.60%	0.07
782	1977/10/03 13:00:00	1977/10/03 19:00:00	7	0.02	80.70%	0.07
783	1977/10/14 15:00:00	1977/10/14 21:00:00	7	0.02	80.80%	0.07
784	1977/12/23 04:00:00	1977/12/23 11:00:00	8	0.02	80.91%	0.07
785	1978/03/07 11:00:00	1978/03/07 18:00:00	8	0.02	81.01%	0.07
786	1978/03/17 15:00:00	1978/03/17 22:00:00	8	0.02	81.11%	0.07
787	1978/03/21 14:00:00	1978/03/22 18:00:00	29	0.02	81.22%	0.07
788	1978/03/24 18:00:00	1978/03/25 01:00:00	8	0.02	81.32%	0.07
789	1978/04/04 17:00:00	1978/04/05 00:00:00	8	0.02	81.42%	0.07
790	1978/04/19 12:00:00	1978/04/19 19:00:00	8	0.02	81.53%	0.07

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
791	1978/08/09 05:00:00	1978/08/09 11:00:00	7	0.02	81.63%	0.07
792	1978/09/03 16:00:00	1978/09/03 22:00:00	7	0.02	81.73%	0.07
793	1978/09/08 10:00:00	1978/09/08 17:00:00	8	0.02	81.84%	0.07
794	1978/09/16 09:00:00	1978/09/16 15:00:00	7	0.02	81.94%	0.07
795	1978/12/09 17:00:00	1978/12/09 23:00:00	7	0.02	82.04%	0.07
796	1979/01/23 16:00:00	1979/01/23 23:00:00	8	0.02	82.15%	0.07
797	1979/01/28 13:00:00	1979/01/28 20:00:00	8	0.02	82.25%	0.07
798	1979/03/14 14:00:00	1979/03/14 20:00:00	7	0.02	82.35%	0.07
799	1979/03/31 15:00:00	1979/04/04 16:00:00	98	0.02	82.46%	0.07
800	1979/04/10 10:00:00	1979/04/10 16:00:00	7	0.02	82.56%	0.07
801	1979/06/04 13:00:00	1979/06/04 19:00:00	7	0.02	82.66%	0.07
802	1979/07/18 15:00:00	1979/07/18 21:00:00	7	0.02	82.77%	0.07
803	1979/07/20 09:00:00	1979/07/20 16:00:00	8	0.02	82.87%	0.07
804	1979/08/20 18:00:00	1979/08/21 00:00:00	7	0.02	82.97%	0.07
805	1979/12/03 13:00:00	1979/12/03 19:00:00	7	0.02	83.08%	0.07
806	1979/12/25 09:00:00	1979/12/25 16:00:00	8	0.02	83.18%	0.07
807	1979/12/30 09:00:00	1979/12/30 16:00:00	8	0.02	83.28%	0.07
808	1980/03/18 18:00:00	1980/03/19 00:00:00	7	0.02	83.38%	0.07
809	1980/04/01 12:00:00	1980/04/02 20:00:00	33	0.02	83.49%	0.07
810	1980/04/21 07:00:00	1980/04/22 19:00:00	37	0.02	83.59%	0.07
811	1980/04/24 13:00:00	1980/04/24 20:00:00	8	0.02	83.69%	0.07
812	1980/04/28 10:00:00	1980/04/30 14:00:00	53	0.02	83.80%	0.07
813	1980/10/03 18:00:00	1980/10/04 00:00:00	7	0.02	83.90%	0.07
814	1980/10/26 05:00:00	1980/10/26 16:00:00	12	0.02	84.00%	0.07
815	1980/12/07 13:00:00	1980/12/07 20:00:00	8	0.02	84.11%	0.07
816	1981/01/11 07:00:00	1981/01/11 13:00:00	7	0.02	84.21%	0.07
817	1981/01/12 17:00:00	1981/01/13 00:00:00	8	0.02	84.31%	0.07
818	1981/04/25 15:00:00	1981/04/25 21:00:00	7	0.02	84.42%	0.07
819	1981/05/20 12:00:00	1981/05/20 18:00:00	7	0.02	84.52%	0.07
820	1981/10/01 03:00:00	1981/10/01 09:00:00	7	0.02	84.62%	0.07
821	1981/10/11 08:00:00	1981/10/11 14:00:00	7	0.02	84.73%	0.07
822	1981/10/28 23:00:00	1981/10/29 05:00:00	7	0.02	84.83%	0.07
823	1982/02/08 09:00:00	1982/02/08 15:00:00	7	0.02	84.93%	0.07
824	1982/05/11 21:00:00	1982/05/12 03:00:00	7	0.02	85.04%	0.07
825	1983/02/05 18:00:00	1983/02/06 01:00:00	8	0.02	85.14%	0.07
826	1983/02/13 15:00:00	1983/02/13 22:00:00	8	0.02	85.24%	0.07
827	1983/03/06 02:00:00	1983/03/06 14:00:00	13	0.02	85.35%	0.07
828	1983/04/11 02:00:00	1983/04/12 13:00:00	36	0.02	85.45%	0.07
829	1983/07/09 14:00:00	1983/07/09 20:00:00	7	0.02	85.55%	0.07
830	1983/08/09 07:00:00	1983/08/09 13:00:00	7	0.02	85.66%	0.07
831	1983/08/16 08:00:00	1983/08/16 14:00:00	7	0.02	85.76%	0.07
832	1983/08/18 09:00:00	1983/08/18 16:00:00	8	0.02	85.86%	0.07
833	1983/10/20 13:00:00	1983/10/20 19:00:00	7	0.02	85.96%	0.07
834	1983/12/01 10:00:00	1983/12/01 16:00:00	7	0.02	86.07%	0.07
835	1984/01/13 22:00:00	1984/01/14 06:00:00	9	0.02	86.17%	0.07
836	1984/01/16 19:00:00	1984/01/17 02:00:00	8	0.02	86.27%	0.07
837	1984/12/03 12:00:00	1984/12/03 21:00:00	10	0.02	86.38%	0.07

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
838	1985/10/22 00:00:00	1985/10/22 06:00:00	7	0.02	86.48%	0.07
839	1986/07/23 10:00:00	1986/07/23 16:00:00	7	0.02	86.58%	0.07
840	1986/08/18 08:00:00	1986/08/18 14:00:00	7	0.02	86.69%	0.07
841	1987/03/06 01:00:00	1987/03/06 21:00:00	21	0.02	86.79%	0.07
842	1987/04/04 00:00:00	1987/04/04 06:00:00	7	0.02	86.89%	0.07
843	1987/04/05 17:00:00	1987/04/06 00:00:00	8	0.02	87.00%	0.07
844	1987/05/28 16:00:00	1987/05/29 00:00:00	9	0.02	87.10%	0.07
845	1987/09/13 05:00:00	1987/09/13 11:00:00	7	0.02	87.20%	0.07
846	1988/11/11 05:00:00	1988/11/11 17:00:00	13	0.02	87.31%	0.07
847	1988/12/23 00:00:00	1988/12/23 07:00:00	8	0.02	87.41%	0.07
848	1989/02/02 11:00:00	1989/02/02 18:00:00	8	0.02	87.51%	0.07
849	1989/10/22 07:00:00	1989/10/22 14:00:00	8	0.02	87.62%	0.07
850	1989/12/28 13:00:00	1989/12/28 23:00:00	11	0.02	87.72%	0.07
851	1990/03/11 03:00:00	1990/03/11 11:00:00	9	0.02	87.82%	0.07
852	1991/01/03 18:00:00	1991/01/04 19:00:00	26	0.02	87.93%	0.07
853	1991/07/31 10:00:00	1991/07/31 17:00:00	8	0.02	88.03%	0.07
854	1992/12/18 02:00:00	1992/12/18 10:00:00	9	0.02	88.13%	0.07
855	1992/12/29 16:00:00	1992/12/30 09:00:00	18	0.02	88.24%	0.07
856	1993/01/02 11:00:00	1993/01/02 19:00:00	9	0.02	88.34%	0.07
857	1994/04/09 13:00:00	1994/04/09 20:00:00	8	0.02	88.44%	0.07
858	1994/11/26 08:00:00	1994/11/26 15:00:00	8	0.02	88.54%	0.07
859	1995/01/16 00:00:00	1995/01/16 17:00:00	18	0.02	88.65%	0.07
860	1995/07/16 10:00:00	1995/07/16 17:00:00	8	0.02	88.75%	0.07
861	1996/01/25 13:00:00	1996/01/26 02:00:00	14	0.02	88.85%	0.07
862	1996/12/05 23:00:00	1996/12/06 12:00:00	14	0.02	88.96%	0.07
863	1997/02/10 22:00:00	1997/02/11 09:00:00	12	0.02	89.06%	0.07
864	1997/04/03 18:00:00	1997/04/04 04:00:00	11	0.02	89.16%	0.07
865	1997/09/15 15:00:00	1997/09/15 21:00:00	7	0.02	89.27%	0.07
866	1998/01/16 03:00:00	1998/01/16 10:00:00	8	0.02	89.37%	0.07
867	1998/01/31 22:00:00	1998/02/01 05:00:00	8	0.02	89.47%	0.07
868	1998/05/02 05:00:00	1998/05/02 11:00:00	7	0.02	89.58%	0.07
869	1998/12/19 21:00:00	1998/12/20 07:00:00	11	0.02	89.68%	0.07
870	1999/03/11 14:00:00	1999/03/11 22:00:00	9	0.02	89.78%	0.07
871	1999/06/21 21:00:00	1999/06/22 05:00:00	9	0.02	89.89%	0.07
872	2000/01/25 18:00:00	2000/01/26 02:00:00	9	0.02	89.99%	0.07
873	2000/10/26 14:00:00	2000/10/27 18:00:00	29	0.02	90.09%	0.07
874	2002/02/19 16:00:00	2002/02/20 00:00:00	9	0.02	90.20%	0.07
875	2002/03/24 03:00:00	2002/03/24 11:00:00	9	0.02	90.30%	0.07
876	2002/04/24 14:00:00	2002/04/24 22:00:00	9	0.02	90.40%	0.07
877	2004/12/08 07:00:00	2004/12/08 16:00:00	10	0.02	90.51%	0.07
878	2006/02/18 04:00:00	2006/02/19 13:00:00	34	0.02	90.61%	0.07
879	2006/07/27 01:00:00	2006/07/27 09:00:00	9	0.02	90.71%	0.07
880	2006/12/22 09:00:00	2006/12/22 18:00:00	10	0.02	90.82%	0.07
881	2007/02/13 00:00:00	2007/02/13 10:00:00	11	0.02	90.92%	0.07
882	2007/02/19 05:00:00	2007/02/19 16:00:00	12	0.02	91.02%	0.07
883	2007/08/26 12:00:00	2007/08/26 20:00:00	9	0.02	91.12%	0.07
884	2008/02/20 10:00:00	2008/02/20 19:00:00	10	0.02	91.23%	0.07

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
885	1951/10/30 01:00:00	1951/10/30 05:00:00	5	0.01	91.33%	0.07
886	1951/11/23 00:00:00	1951/11/23 04:00:00	5	0.01	91.43%	0.07
887	1952/02/18 00:00:00	1952/02/18 06:00:00	7	0.01	91.54%	0.07
888	1952/12/06 06:00:00	1952/12/06 11:00:00	6	0.01	91.64%	0.07
889	1953/11/05 13:00:00	1953/11/05 13:00:00	1	0.01	91.74%	0.07
890	1953/11/20 08:00:00	1953/11/20 14:00:00	7	0.01	91.85%	0.07
891	1954/02/18 07:00:00	1954/02/18 10:00:00	4	0.01	91.95%	0.07
892	1954/03/10 22:00:00	1954/03/10 23:00:00	2	0.01	92.05%	0.07
893	1956/04/11 13:00:00	1956/04/11 17:00:00	5	0.01	92.16%	0.07
894	1958/03/02 20:00:00	1958/03/02 21:00:00	2	0.01	92.26%	0.07
895	1959/11/02 08:00:00	1959/11/02 14:00:00	7	0.01	92.36%	0.07
896	1959/12/08 14:00:00	1959/12/08 19:00:00	6	0.01	92.47%	0.07
897	1960/03/13 09:00:00	1960/03/13 11:00:00	3	0.01	92.57%	0.07
898	1960/04/23 11:00:00	1960/04/24 02:00:00	16	0.01	92.67%	0.07
899	1961/03/04 21:00:00	1961/03/05 00:00:00	4	0.01	92.78%	0.07
900	1961/03/15 14:00:00	1961/03/15 18:00:00	5	0.01	92.88%	0.06
901	1961/12/14 17:00:00	1961/12/14 20:00:00	4	0.01	92.98%	0.06
902	1962/02/11 11:00:00	1962/02/12 17:00:00	31	0.01	93.09%	0.06
903	1962/02/25 01:00:00	1962/02/26 20:00:00	44	0.01	93.19%	0.06
904	1963/02/01 04:00:00	1963/02/01 05:00:00	2	0.01	93.29%	0.06
905	1963/03/15 07:00:00	1963/03/15 09:00:00	3	0.01	93.40%	0.06
906	1963/06/11 17:00:00	1963/06/11 22:00:00	6	0.01	93.50%	0.06
907	1963/10/16 13:00:00	1963/10/16 14:00:00	2	0.01	93.60%	0.06
908	1963/10/18 03:00:00	1963/10/18 08:00:00	6	0.01	93.70%	0.06
909	1964/01/18 22:00:00	1964/01/19 03:00:00	6	0.01	93.81%	0.06
910	1964/03/13 02:00:00	1964/03/13 06:00:00	5	0.01	93.91%	0.06
911	1964/04/28 12:00:00	1964/04/28 13:00:00	2	0.01	94.01%	0.06
912	1964/05/06 11:00:00	1964/05/07 08:00:00	22	0.01	94.12%	0.06
913	1964/06/09 13:00:00	1964/06/09 15:00:00	3	0.01	94.22%	0.06
914	1975/06/19 06:00:00	1975/06/19 13:00:00	8	0.01	94.32%	0.06
915	1984/02/10 07:00:00	1984/02/10 12:00:00	6	0.01	94.43%	0.06
916	1984/07/15 20:00:00	1984/07/16 01:00:00	6	0.01	94.53%	0.06
917	1985/03/03 01:00:00	1985/03/03 03:00:00	3	0.01	94.63%	0.06
918	1986/12/20 09:00:00	1986/12/20 17:00:00	9	0.01	94.74%	0.06
919	1987/02/18 18:00:00	1987/02/19 05:00:00	12	0.01	94.84%	0.06
920	1987/11/14 07:00:00	1987/11/14 12:00:00	6	0.01	94.94%	0.06
921	1987/11/17 23:00:00	1987/11/18 04:00:00	6	0.01	95.05%	0.06
922	1987/12/29 18:00:00	1987/12/29 23:00:00	6	0.01	95.15%	0.06
923	1988/04/23 17:00:00	1988/04/23 22:00:00	6	0.01	95.25%	0.06
924	1988/05/06 00:00:00	1988/05/06 05:00:00	6	0.01	95.36%	0.06
925	1989/03/02 19:00:00	1989/03/03 00:00:00	6	0.01	95.46%	0.06
926	1989/04/26 03:00:00	1989/04/26 05:00:00	3	0.01	95.56%	0.06
927	1989/05/10 23:00:00	1989/05/11 04:00:00	6	0.01	95.67%	0.06
928	1989/09/17 07:00:00	1989/09/17 12:00:00	6	0.01	95.77%	0.06
929	1990/11/26 05:00:00	1990/11/26 10:00:00	6	0.01	95.87%	0.06
930	1991/01/21 09:00:00	1991/01/21 14:00:00	6	0.01	95.98%	0.06
931	1991/04/01 07:00:00	1991/04/01 12:00:00	6	0.01	96.08%	0.06

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
932	1991/12/19 04:00:00	1991/12/19 13:00:00	10	0.01	96.18%	0.06
933	1992/01/03 07:00:00	1992/01/03 12:00:00	6	0.01	96.28%	0.06
934	1992/08/13 18:00:00	1992/08/14 00:00:00	7	0.01	96.39%	0.06
935	1992/12/11 18:00:00	1992/12/11 23:00:00	6	0.01	96.49%	0.06
936	1993/12/14 21:00:00	1993/12/15 02:00:00	6	0.01	96.59%	0.06
937	1994/11/18 01:00:00	1994/11/18 06:00:00	6	0.01	96.70%	0.06
938	1994/12/13 07:00:00	1994/12/13 12:00:00	6	0.01	96.80%	0.06
939	1994/12/23 00:00:00	1994/12/23 05:00:00	6	0.01	96.90%	0.06
940	1995/05/06 09:00:00	1995/05/06 16:00:00	8	0.01	97.01%	0.06
941	1995/12/23 13:00:00	1995/12/23 21:00:00	9	0.01	97.11%	0.06
942	1996/01/28 09:00:00	1996/01/28 14:00:00	6	0.01	97.21%	0.06
943	1996/02/12 12:00:00	1996/02/12 20:00:00	9	0.01	97.32%	0.06
944	1999/01/20 11:00:00	1999/01/21 12:00:00	26	0.01	97.42%	0.06
945	1999/07/16 22:00:00	1999/07/17 03:00:00	6	0.01	97.52%	0.06
946	1999/08/23 04:00:00	1999/08/23 09:00:00	6	0.01	97.63%	0.06
947	1999/09/22 13:00:00	1999/09/22 18:00:00	6	0.01	97.73%	0.06
948	1999/09/24 14:00:00	1999/09/24 19:00:00	6	0.01	97.83%	0.06
949	2000/09/22 21:00:00	2000/09/23 04:00:00	8	0.01	97.94%	0.06
950	2001/01/08 18:00:00	2001/01/09 05:00:00	12	0.01	98.04%	0.06
951	2001/01/16 03:00:00	2001/01/16 04:00:00	2	0.01	98.14%	0.06
952	2001/11/13 20:00:00	2001/11/13 22:00:00	3	0.01	98.25%	0.06
953	2001/12/21 19:00:00	2001/12/22 01:00:00	7	0.01	98.35%	0.06
954	2002/01/28 05:00:00	2002/01/29 12:00:00	32	0.01	98.45%	0.06
955	2002/03/07 13:00:00	2002/03/08 08:00:00	20	0.01	98.56%	0.06
956	2002/04/15 13:00:00	2002/04/15 17:00:00	5	0.01	98.66%	0.06
957	2003/11/16 02:00:00	2003/11/16 07:00:00	6	0.01	98.76%	0.06
958	2004/11/08 11:00:00	2004/11/08 11:00:00	1	0.01	98.86%	0.06
959	2005/03/04 16:00:00	2005/03/05 04:00:00	13	0.01	98.97%	0.06
960	2005/04/09 00:00:00	2005/04/09 05:00:00	6	0.01	99.07%	0.06
961	2005/04/24 10:00:00	2005/04/24 16:00:00	7	0.01	99.17%	0.06
962	2006/03/03 16:00:00	2006/03/03 21:00:00	6	0.01	99.28%	0.06
963	2006/03/07 05:00:00	2006/03/07 10:00:00	6	0.01	99.38%	0.06
964	2006/03/17 21:00:00	2006/03/18 02:00:00	6	0.01	99.48%	0.06
965	2006/03/26 03:00:00	2006/03/26 08:00:00	6	0.01	99.59%	0.06
966	2006/11/27 13:00:00	2006/11/27 18:00:00	6	0.01	99.69%	0.06
967	2007/01/05 02:00:00	2007/01/05 07:00:00	6	0.01	99.79%	0.06
968	2007/03/21 06:00:00	2007/03/21 14:00:00	9	0.01	99.90%	0.06
--End of Data----------						

SWMM.out file name: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Proposed Conditions\VVCC SWMM Proposed Conditions Mitigated.out
SWMM.out time stamp: 9/9/2014 10:27:46 AM

Q10: 5.813
Q5: 5.097
Q2: 4.050

Peak Flow Statistics Table Values

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
1	1995/01/03 13:00:00	1995/01/05 22:00:00	58	7.22	0.13%	58
2	1986/03/15 21:00:00	1986/03/17 14:00:00	42	6.14	0.25%	29
3	1963/02/09 17:00:00	1963/02/11 18:00:00	50	6.11	0.38%	19.33
4	1995/03/03 11:00:00	1995/03/06 22:00:00	84	6.1	0.50%	14.5
5	1978/02/05 12:00:00	1978/02/14 18:00:00	223	6.02	0.63%	11.6
6	2004/02/22 05:00:00	2004/02/24 01:00:00	45	5.77	0.76%	9.67
7	1959/02/11 10:00:00	1959/02/12 21:00:00	36	5.39	0.88%	8.29
8	1980/02/13 14:00:00	1980/02/22 11:00:00	214	5.3	1.01%	7.25
9	1980/01/07 14:00:00	1980/01/15 18:00:00	197	5.26	1.13%	6.44
10	1998/02/22 06:00:00	1998/02/25 01:00:00	68	5.21	1.26%	5.8
11	1982/03/14 08:00:00	1982/03/19 06:00:00	119	5.14	1.39%	5.27
12	1978/01/14 15:00:00	1978/01/20 04:00:00	134	5.07	1.51%	4.83
13	1980/01/27 23:00:00	1980/01/31 06:00:00	80	4.91	1.64%	4.46
14	1998/01/09 13:00:00	1998/01/11 01:00:00	37	4.91	1.76%	4.14
15	1993/01/12 19:00:00	1993/01/19 10:00:00	160	4.79	1.89%	3.87
16	1978/01/03 21:00:00	1978/01/07 03:00:00	79	4.76	2.02%	3.63
17	1973/02/11 06:00:00	1973/02/13 21:00:00	64	4.74	2.14%	3.41
18	1992/02/12 16:00:00	1992/02/14 08:00:00	41	4.62	2.27%	3.22
19	1992/02/15 12:00:00	1992/02/16 15:00:00	28	4.58	2.39%	3.05
20	1969/02/22 04:00:00	1969/02/26 18:00:00	111	4.44	2.52%	2.9
21	1965/11/21 04:00:00	1965/11/26 00:00:00	117	4.42	2.64%	2.76
22	1983/11/24 23:00:00	1983/11/25 23:00:00	25	4.36	2.77%	2.64
23	1966/12/03 09:00:00	1966/12/07 22:00:00	110	4.34	2.90%	2.52
24	1955/01/18 16:00:00	1955/01/19 19:00:00	28	4.23	3.02%	2.42
25	2007/11/30 07:00:00	2007/12/02 02:00:00	44	4.19	3.15%	2.32
26	1978/01/09 15:00:00	1978/01/11 13:00:00	47	4.16	3.27%	2.23
27	1976/09/10 04:00:00	1976/09/11 21:00:00	42	4.07	3.40%	2.15
28	1969/02/05 11:00:00	1969/02/07 12:00:00	50	4.05	3.53%	2.07
29	1995/03/11 02:00:00	1995/03/12 15:00:00	38	4.05	3.65%	2
30	1983/03/21 04:00:00	1983/03/25 07:00:00	100	4.02	3.78%	1.93
31	1990/06/09 15:00:00	1990/06/11 07:00:00	41	3.99	3.90%	1.87
32	1952/11/14 16:00:00	1952/11/17 03:00:00	60	3.9	4.03%	1.81
33	1981/01/28 06:00:00	1981/01/30 21:00:00	64	3.87	4.16%	1.76
34	1967/12/16 07:00:00	1967/12/20 11:00:00	101	3.8	4.28%	1.71
35	2004/10/17 06:00:00	2004/10/21 16:00:00	107	3.76	4.41%	1.66
36	1986/02/14 23:00:00	1986/02/16 15:00:00	41	3.68	4.53%	1.61
37	1969/01/24 01:00:00	1969/01/29 07:00:00	127	3.6	4.66%	1.57
38	1972/11/14 13:00:00	1972/11/18 04:00:00	88	3.5	4.79%	1.53

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
39	1997/12/06 08:00:00	1997/12/08 18:00:00	59	3.48	4.91%	1.49
40	1982/04/01 10:00:00	1982/04/02 12:00:00	27	3.47	5.04%	1.45
41	1983/02/26 10:00:00	1983/03/04 19:00:00	154	3.47	5.16%	1.42
42	2005/01/07 13:00:00	2005/01/12 09:00:00	117	3.47	5.29%	1.38
43	1994/02/07 11:00:00	1994/02/08 22:00:00	36	3.44	5.42%	1.35
44	1979/01/14 21:00:00	1979/01/19 03:00:00	103	3.41	5.54%	1.32
45	2005/02/18 06:00:00	2005/02/24 07:00:00	146	3.4	5.67%	1.29
46	1952/03/15 19:00:00	1952/03/17 05:00:00	35	3.31	5.79%	1.26
47	1957/01/13 02:00:00	1957/01/14 06:00:00	29	3.25	5.92%	1.23
48	1964/01/21 08:00:00	1964/01/23 08:00:00	49	3.18	6.05%	1.21
49	1983/01/27 08:00:00	1983/01/30 02:00:00	67	3.17	6.17%	1.18
50	1977/01/05 22:00:00	1977/01/08 01:00:00	52	3.11	6.30%	1.16
51	1973/01/16 19:00:00	1973/01/19 22:00:00	76	3.1	6.42%	1.14
52	1968/03/07 22:00:00	1968/03/09 09:00:00	36	3.04	6.55%	1.12
53	1970/02/28 13:00:00	1970/03/03 01:00:00	61	3.04	6.68%	1.09
54	1993/01/06 04:00:00	1993/01/09 08:00:00	77	3.02	6.80%	1.07
55	1958/03/15 17:00:00	1958/03/17 19:00:00	51	2.98	6.93%	1.06
56	2006/03/11 05:00:00	2006/03/12 04:00:00	24	2.98	7.05%	1.04
57	1963/11/20 09:00:00	1963/11/22 04:00:00	44	2.92	7.18%	1.02
58	1965/12/29 10:00:00	1966/01/01 10:00:00	73	2.91	7.30%	1
59	1991/03/25 07:00:00	1991/03/28 03:00:00	69	2.91	7.43%	0.98
60	1979/01/05 08:00:00	1979/01/07 05:00:00	46	2.89	7.56%	0.97
61	1961/12/02 01:00:00	1961/12/03 17:00:00	41	2.79	7.68%	0.95
62	1986/03/08 16:00:00	1986/03/14 14:00:00	143	2.78	7.81%	0.94
63	2008/01/27 02:00:00	2008/01/29 05:00:00	52	2.77	7.93%	0.92
64	2001/01/10 23:00:00	2001/01/12 21:00:00	47	2.76	8.06%	0.91
65	1967/01/22 16:00:00	1967/01/25 20:00:00	77	2.75	8.19%	0.89
66	1971/12/22 07:00:00	1971/12/29 05:00:00	167	2.72	8.31%	0.88
67	1996/06/01 02:00:00	1996/06/02 01:00:00	24	2.72	8.44%	0.87
68	1960/01/10 13:00:00	1960/01/13 06:00:00	66	2.7	8.56%	0.85
69	1984/12/18 14:00:00	1984/12/20 21:00:00	56	2.66	8.69%	0.84
70	1998/02/06 14:00:00	1998/02/09 17:00:00	76	2.6	8.82%	0.83
71	1962/01/20 12:00:00	1962/01/23 09:00:00	70	2.58	8.94%	0.82
72	1967/04/11 08:00:00	1967/04/12 20:00:00	37	2.55	9.07%	0.81
73	1970/11/28 21:00:00	1970/11/30 21:00:00	49	2.53	9.19%	0.8
74	1991/02/27 16:00:00	1991/03/02 14:00:00	71	2.5	9.32%	0.78
75	1985/11/29 09:00:00	1985/11/30 16:00:00	32	2.49	9.45%	0.77
76	1993/02/07 23:00:00	1993/02/09 19:00:00	45	2.47	9.57%	0.76
77	1970/12/17 02:00:00	1970/12/23 02:00:00	145	2.45	9.70%	0.75
78	1981/12/30 10:00:00	1982/01/02 23:00:00	86	2.45	9.82%	0.74
79	1960/02/01 21:00:00	1960/02/03 00:00:00	28	2.42	9.95%	0.73
80	1957/02/28 19:00:00	1957/03/02 03:00:00	33	2.41	10.08%	0.73
81	1967/11/19 06:00:00	1967/11/23 10:00:00	101	2.41	10.20%	0.72
82	2004/12/28 09:00:00	2004/12/30 08:00:00	48	2.4	10.33%	0.71
83	1987/01/04 18:00:00	1987/01/08 01:00:00	80	2.39	10.45%	0.7
84	1998/02/03 12:00:00	1998/02/05 01:00:00	38	2.34	10.58%	0.69
85	1969/01/19 00:00:00	1969/01/22 10:00:00	83	2.33	10.71%	0.68

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
86	2008/01/05 03:00:00	2008/01/08 01:00:00	71	2.31	10.83%	0.67
87	1984/12/27 01:00:00	1984/12/28 17:00:00	41	2.21	10.96%	0.67
88	2000/03/04 18:00:00	2000/03/06 16:00:00	47	2.18	11.08%	0.66
89	1958/01/25 06:00:00	1958/01/27 09:00:00	52	2.16	11.21%	0.65
90	1956/01/25 18:00:00	1956/01/28 04:00:00	59	2.15	11.34%	0.64
91	1958/04/01 11:00:00	1958/04/04 20:00:00	82	2.08	11.46%	0.64
92	1988/12/24 21:00:00	1988/12/26 13:00:00	41	2.08	11.59%	0.63
93	1978/02/27 08:00:00	1978/03/06 02:00:00	163	2.05	11.71%	0.62
94	1952/11/30 02:00:00	1952/12/03 00:00:00	71	2	11.84%	0.62
95	1974/01/04 17:00:00	1974/01/09 23:00:00	127	1.93	11.96%	0.61
96	1991/12/28 04:00:00	1991/12/30 22:00:00	67	1.93	12.09%	0.6
97	1957/12/15 08:00:00	1957/12/18 00:00:00	65	1.92	12.22%	0.6
98	1952/01/16 08:00:00	1952/01/19 04:00:00	69	1.89	12.34%	0.59
99	1977/05/07 22:00:00	1977/05/10 02:00:00	53	1.89	12.47%	0.59
100	1992/12/07 10:00:00	1992/12/08 13:00:00	28	1.89	12.59%	0.58
101	1995/01/10 14:00:00	1995/01/13 07:00:00	66	1.87	12.72%	0.57
102	1958/02/03 05:00:00	1958/02/05 11:00:00	55	1.86	12.85%	0.57
103	1954/01/24 12:00:00	1954/01/26 06:00:00	43	1.84	12.97%	0.56
104	1982/11/29 12:00:00	1982/12/01 10:00:00	47	1.83	13.10%	0.56
105	2004/10/27 03:00:00	2004/10/28 22:00:00	44	1.8	13.22%	0.55
106	1997/01/25 19:00:00	1997/01/27 16:00:00	46	1.79	13.35%	0.55
107	1959/12/24 08:00:00	1959/12/25 21:00:00	38	1.77	13.48%	0.54
108	1974/03/06 15:00:00	1974/03/09 07:00:00	65	1.76	13.60%	0.54
109	1978/11/13 20:00:00	1978/11/14 18:00:00	23	1.76	13.73%	0.53
110	1998/12/05 06:00:00	1998/12/07 00:00:00	43	1.68	13.85%	0.53
111	1958/04/06 18:00:00	1958/04/08 10:00:00	41	1.67	13.98%	0.52
112	1992/03/20 16:00:00	1992/03/24 02:00:00	83	1.64	14.11%	0.52
113	1982/01/20 05:00:00	1982/01/22 01:00:00	45	1.63	14.23%	0.51
114	1960/01/14 17:00:00	1960/01/15 23:00:00	31	1.58	14.36%	0.51
115	1984/12/11 01:00:00	1984/12/12 02:00:00	26	1.58	14.48%	0.5
116	1952/12/20 09:00:00	1952/12/21 12:00:00	28	1.57	14.61%	0.5
117	1976/02/04 06:00:00	1976/02/11 13:00:00	176	1.57	14.74%	0.5
118	1977/01/02 23:00:00	1977/01/04 02:00:00	28	1.57	14.86%	0.49
119	1952/04/10 14:00:00	1952/04/11 17:00:00	28	1.56	14.99%	0.49
120	1954/01/18 15:00:00	1954/01/20 22:00:00	56	1.53	15.11%	0.48
121	1957/01/25 01:00:00	1957/01/30 10:00:00	130	1.53	15.24%	0.48
122	1951/10/25 06:00:00	1951/10/26 18:00:00	37	1.51	15.37%	0.48
123	1996/03/12 20:00:00	1996/03/14 03:00:00	32	1.51	15.49%	0.47
124	1998/03/25 01:00:00	1998/03/29 21:00:00	117	1.5	15.62%	0.47
125	1965/04/07 08:00:00	1965/04/13 08:00:00	145	1.49	15.74%	0.46
126	1995/01/07 15:00:00	1995/01/09 05:00:00	39	1.49	15.87%	0.46
127	2004/02/26 03:00:00	2004/02/27 06:00:00	28	1.48	15.99%	0.46
128	1963/09/17 06:00:00	1963/09/19 18:00:00	61	1.46	16.12%	0.45
129	1954/02/13 16:00:00	1954/02/15 03:00:00	36	1.43	16.25%	0.45
130	1998/02/14 13:00:00	1998/02/15 18:00:00	30	1.43	16.37%	0.45
131	1992/01/05 11:00:00	1992/01/08 12:00:00	74	1.41	16.50%	0.44
132	1975/03/08 08:00:00	1975/03/12 07:00:00	96	1.4	16.62%	0.44

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
133	1991/03/19 01:00:00	1991/03/21 19:00:00	67	1.39	16.75%	0.44
134	1974/12/04 05:00:00	1974/12/05 08:00:00	28	1.38	16.88%	0.43
135	2005/01/28 15:00:00	2005/01/29 11:00:00	21	1.37	17.00%	0.43
136	1997/01/12 15:00:00	1997/01/16 10:00:00	92	1.36	17.13%	0.43
137	1952/03/07 10:00:00	1952/03/08 20:00:00	35	1.35	17.25%	0.42
138	1967/03/13 10:00:00	1967/03/14 20:00:00	35	1.35	17.38%	0.42
139	1983/09/29 14:00:00	1983/10/02 06:00:00	65	1.35	17.51%	0.42
140	1988/04/20 02:00:00	1988/04/22 12:00:00	59	1.34	17.63%	0.41
141	1972/12/04 13:00:00	1972/12/05 14:00:00	26	1.32	17.76%	0.41
142	1951/12/29 05:00:00	1951/12/31 12:00:00	56	1.31	17.88%	0.41
143	2003/12/25 04:00:00	2003/12/26 17:00:00	38	1.3	18.01%	0.41
144	2005/01/03 07:00:00	2005/01/05 02:00:00	44	1.27	18.14%	0.4
145	2000/02/20 18:00:00	2000/02/24 07:00:00	86	1.26	18.26%	0.4
146	1996/11/21 16:00:00	1996/11/23 14:00:00	47	1.25	18.39%	0.4
147	1992/03/02 11:00:00	1992/03/04 09:00:00	47	1.23	18.51%	0.4
148	1964/12/27 10:00:00	1964/12/29 02:00:00	41	1.21	18.64%	0.39
149	1999/01/25 09:00:00	1999/01/27 13:00:00	53	1.21	18.77%	0.39
150	2004/12/31 14:00:00	2005/01/01 11:00:00	22	1.21	18.89%	0.39
151	1994/01/27 13:00:00	1994/01/28 06:00:00	18	1.2	19.02%	0.38
152	1977/12/09 15:00:00	1977/12/19 02:00:00	228	1.19	19.14%	0.38
153	1986/11/17 17:00:00	1986/11/19 02:00:00	34	1.19	19.27%	0.38
154	1994/04/25 18:00:00	1994/04/28 11:00:00	66	1.19	19.40%	0.38
155	1965/11/14 14:00:00	1965/11/18 09:00:00	92	1.14	19.52%	0.37
156	1979/03/27 07:00:00	1979/03/29 15:00:00	57	1.12	19.65%	0.37
157	2001/11/25 17:00:00	2001/11/26 13:00:00	21	1.12	19.77%	0.37
158	1973/03/18 07:00:00	1973/03/20 15:00:00	57	1.1	19.90%	0.37
159	1980/03/06 01:00:00	1980/03/07 07:00:00	31	1.09	20.03%	0.37
160	1995/01/24 01:00:00	1995/01/27 12:00:00	84	1.08	20.15%	0.36
161	1985/02/09 06:00:00	1985/02/10 07:00:00	26	1.07	20.28%	0.36
162	1962/02/19 11:00:00	1962/02/21 17:00:00	55	1.06	20.40%	0.36
163	1956/04/12 23:00:00	1956/04/14 16:00:00	42	1.05	20.53%	0.36
164	1979/01/30 21:00:00	1979/02/03 07:00:00	83	1.04	20.65%	0.35
165	1982/12/22 18:00:00	1982/12/23 21:00:00	28	1.04	20.78%	0.35
166	1973/02/06 06:00:00	1973/02/08 12:00:00	55	1.03	20.91%	0.35
167	1990/02/17 09:00:00	1990/02/18 21:00:00	37	1.02	21.03%	0.35
168	1989/02/12 19:00:00	1989/02/14 16:00:00	46	0.97	21.16%	0.35
169	1975/04/05 10:00:00	1975/04/09 21:00:00	108	0.94	21.28%	0.34
170	1957/01/07 14:00:00	1957/01/08 18:00:00	29	0.92	21.41%	0.34
171	1983/04/20 05:00:00	1983/04/21 15:00:00	35	0.92	21.54%	0.34
172	1993/02/18 13:00:00	1993/02/21 01:00:00	61	0.91	21.66%	0.34
173	2006/03/28 22:00:00	2006/03/29 23:00:00	26	0.91	21.79%	0.34
174	1998/05/12 17:00:00	1998/05/14 09:00:00	41	0.9	21.91%	0.33
175	1988/12/21 03:00:00	1988/12/23 10:00:00	56	0.88	22.04%	0.33
176	1996/12/09 18:00:00	1996/12/12 12:00:00	67	0.88	22.17%	0.33
177	1955/01/10 08:00:00	1955/01/11 05:00:00	22	0.83	22.29%	0.33
178	1987/02/24 09:00:00	1987/02/26 14:00:00	54	0.81	22.42%	0.33
179	1965/12/09 07:00:00	1965/12/17 01:00:00	187	0.76	22.54%	0.32

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
180	2006/04/04 19:00:00	2006/04/06 04:00:00	34	0.75	22.67%	0.32
181	1963/03/17 00:00:00	1963/03/18 00:00:00	25	0.74	22.80%	0.32
182	1987/11/04 17:00:00	1987/11/06 14:00:00	46	0.74	22.92%	0.32
183	1984/11/13 09:00:00	1984/11/14 04:00:00	20	0.69	23.05%	0.32
184	1983/11/20 10:00:00	1983/11/21 11:00:00	26	0.68	23.17%	0.32
185	1952/01/13 04:00:00	1952/01/14 06:00:00	27	0.65	23.30%	0.31
186	1964/03/22 12:00:00	1964/03/24 14:00:00	51	0.63	23.43%	0.31
187	1996/02/27 21:00:00	1996/02/28 16:00:00	20	0.63	23.55%	0.31
188	2000/02/11 21:00:00	2000/02/14 03:00:00	55	0.62	23.68%	0.31
189	1961/11/20 16:00:00	1961/11/21 16:00:00	25	0.61	23.80%	0.31
190	1993/03/26 02:00:00	1993/03/29 00:00:00	71	0.61	23.93%	0.31
191	2005/12/31 20:00:00	2006/01/03 13:00:00	66	0.61	24.06%	0.3
192	1953/03/01 22:00:00	1953/03/02 17:00:00	20	0.59	24.18%	0.3
193	1976/03/01 11:00:00	1976/03/04 00:00:00	62	0.57	24.31%	0.3
194	1995/04/18 11:00:00	1995/04/19 10:00:00	24	0.55	24.43%	0.3
195	1978/12/17 00:00:00	1978/12/19 18:00:00	67	0.52	24.56%	0.3
196	2000/10/29 22:00:00	2000/10/30 20:00:00	23	0.45	24.69%	0.3
197	1987/10/11 14:00:00	1987/10/14 01:00:00	60	0.4	24.81%	0.29
198	1990/01/13 15:00:00	1990/01/18 01:00:00	107	0.4	24.94%	0.29
199	2008/02/22 03:00:00	2008/02/23 05:00:00	27	0.37	25.06%	0.29
200	1957/10/14 02:00:00	1957/10/14 21:00:00	20	0.35	25.19%	0.29
201	1973/11/23 00:00:00	1973/11/23 22:00:00	23	0.33	25.31%	0.29
202	1958/02/19 09:00:00	1958/02/20 11:00:00	27	0.3	25.44%	0.29
203	2006/03/21 02:00:00	2006/03/21 20:00:00	19	0.28	25.57%	0.29
204	1966/11/07 15:00:00	1966/11/08 22:00:00	32	0.26	25.69%	0.28
205	1986/09/24 04:00:00	1986/09/26 02:00:00	47	0.25	25.82%	0.28
206	1960/02/09 00:00:00	1960/02/10 22:00:00	47	0.23	25.94%	0.28
207	1987/12/04 21:00:00	1987/12/05 20:00:00	24	0.23	26.07%	0.28
208	1954/03/20 13:00:00	1954/03/25 14:00:00	122	0.21	26.20%	0.28
209	2006/02/27 23:00:00	2006/03/01 03:00:00	29	0.21	26.32%	0.28
210	1978/03/11 10:00:00	1978/03/12 22:00:00	37	0.2	26.45%	0.28
211	1958/03/20 22:00:00	1958/03/22 20:00:00	47	0.19	26.57%	0.28
212	1982/02/09 23:00:00	1982/02/11 19:00:00	45	0.19	26.70%	0.27
213	1955/02/27 10:00:00	1955/02/28 13:00:00	28	0.17	26.83%	0.27
214	1983/12/24 19:00:00	1983/12/27 22:00:00	76	0.14	26.95%	0.27
215	2005/10/16 22:00:00	2005/10/18 23:00:00	50	0.13	27.08%	0.27
216	1969/01/14 02:00:00	1969/01/15 14:00:00	37	0.09	27.20%	0.27
217	1979/02/21 02:00:00	1979/02/23 22:00:00	69	0.09	27.33%	0.27
218	1996/01/31 06:00:00	1996/02/01 21:00:00	40	0.09	27.46%	0.27
219	1954/11/11 02:00:00	1954/11/12 07:00:00	30	0.08	27.58%	0.27
220	1958/03/06 10:00:00	1958/03/07 13:00:00	28	0.08	27.71%	0.26
221	1960/02/28 20:00:00	1960/03/02 00:00:00	53	0.08	27.83%	0.26
222	1960/04/27 06:00:00	1960/04/28 06:00:00	25	0.08	27.96%	0.26
223	1961/01/26 11:00:00	1961/01/27 13:00:00	27	0.08	28.09%	0.26
224	1961/03/28 06:00:00	1961/03/29 10:00:00	29	0.08	28.21%	0.26
225	1962/02/07 23:00:00	1962/02/09 20:00:00	46	0.08	28.34%	0.26
226	1964/11/17 15:00:00	1964/11/18 16:00:00	26	0.08	28.46%	0.26

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
227	1966/02/06 13:00:00	1966/02/08 10:00:00	46	0.08	28.59%	0.26
228	1968/04/01 20:00:00	1968/04/03 22:00:00	51	0.08	28.72%	0.25
229	1974/03/02 10:00:00	1974/03/04 02:00:00	41	0.08	28.84%	0.25
230	1977/08/16 20:00:00	1977/08/18 17:00:00	46	0.08	28.97%	0.25
231	1980/03/02 20:00:00	1980/03/04 06:00:00	35	0.08	29.09%	0.25
232	1983/11/11 23:00:00	1983/11/13 14:00:00	40	0.08	29.22%	0.25
233	1985/11/11 08:00:00	1985/11/13 00:00:00	41	0.08	29.35%	0.25
234	1985/11/25 01:00:00	1985/11/26 06:00:00	30	0.08	29.47%	0.25
235	1987/12/16 13:00:00	1987/12/18 02:00:00	38	0.08	29.60%	0.25
236	1988/01/17 11:00:00	1988/01/18 16:00:00	30	0.08	29.72%	0.25
237	2005/02/11 05:00:00	2005/02/13 08:00:00	52	0.08	29.85%	0.25
238	2005/04/28 08:00:00	2005/04/29 07:00:00	24	0.08	29.97%	0.24
239	1951/08/28 11:00:00	1951/08/29 15:00:00	29	0.07	30.10%	0.24
240	1953/01/06 19:00:00	1953/01/08 20:00:00	50	0.07	30.23%	0.24
241	1955/01/16 10:00:00	1955/01/17 07:00:00	22	0.07	30.35%	0.24
242	1958/02/25 08:00:00	1958/02/26 06:00:00	23	0.07	30.48%	0.24
243	1965/03/31 14:00:00	1965/04/05 11:00:00	118	0.07	30.60%	0.24
244	1966/01/30 07:00:00	1966/01/31 13:00:00	31	0.07	30.73%	0.24
245	1969/02/18 09:00:00	1969/02/20 16:00:00	56	0.07	30.86%	0.24
246	1974/12/28 08:00:00	1974/12/30 00:00:00	41	0.07	30.98%	0.24
247	1975/02/03 08:00:00	1975/02/05 20:00:00	61	0.07	31.11%	0.24
248	1975/03/05 19:00:00	1975/03/07 04:00:00	34	0.07	31.23%	0.23
249	1976/12/30 14:00:00	1977/01/01 01:00:00	36	0.07	31.36%	0.23
250	1977/03/25 02:00:00	1977/03/26 00:00:00	23	0.07	31.49%	0.23
251	1977/12/25 19:00:00	1977/12/30 15:00:00	117	0.07	31.61%	0.23
252	1978/09/05 18:00:00	1978/09/06 19:00:00	26	0.07	31.74%	0.23
253	1979/03/01 11:00:00	1979/03/02 07:00:00	21	0.07	31.86%	0.23
254	1979/10/20 02:00:00	1979/10/21 09:00:00	32	0.07	31.99%	0.23
255	1981/02/08 19:00:00	1981/02/10 04:00:00	34	0.07	32.12%	0.23
256	1981/02/28 15:00:00	1981/03/02 22:00:00	56	0.07	32.24%	0.23
257	1981/03/19 21:00:00	1981/03/21 01:00:00	29	0.07	32.37%	0.23
258	1981/11/26 22:00:00	1981/11/29 15:00:00	66	0.07	32.49%	0.23
259	1982/01/08 11:00:00	1982/01/09 11:00:00	25	0.07	32.62%	0.22
260	1982/09/26 05:00:00	1982/09/27 06:00:00	26	0.07	32.75%	0.22
261	1984/11/24 18:00:00	1984/11/25 16:00:00	23	0.07	32.87%	0.22
262	1990/05/28 08:00:00	1990/05/29 06:00:00	23	0.07	33.00%	0.22
263	1990/11/19 23:00:00	1990/11/21 00:00:00	26	0.07	33.12%	0.22
264	1992/02/06 13:00:00	1992/02/08 03:00:00	39	0.07	33.25%	0.22
265	1994/02/17 11:00:00	1994/02/19 11:00:00	49	0.07	33.38%	0.22
266	1994/03/07 02:00:00	1994/03/07 23:00:00	22	0.07	33.50%	0.22
267	1996/10/30 13:00:00	1996/10/31 09:00:00	21	0.07	33.63%	0.22
268	1997/01/23 05:00:00	1997/01/24 03:00:00	23	0.07	33.75%	0.22
269	1997/09/25 08:00:00	1997/09/26 15:00:00	32	0.07	33.88%	0.22
270	1998/02/17 02:00:00	1998/02/18 03:00:00	26	0.07	34.01%	0.22
271	1998/05/04 17:00:00	1998/05/06 15:00:00	47	0.07	34.13%	0.21
272	1998/11/08 08:00:00	1998/11/09 17:00:00	34	0.07	34.26%	0.21
273	2004/02/03 00:00:00	2004/02/03 22:00:00	23	0.07	34.38%	0.21

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
274	2006/10/13 23:00:00	2006/10/14 21:00:00	23	0.07	34.51%	0.21
275	1951/12/05 02:00:00	1951/12/05 22:00:00	21	0.06	34.63%	0.21
276	1951/12/12 02:00:00	1951/12/12 23:00:00	22	0.06	34.76%	0.21
277	1952/12/17 13:00:00	1952/12/18 09:00:00	21	0.06	34.89%	0.21
278	1954/01/12 04:00:00	1954/01/13 11:00:00	32	0.06	35.01%	0.21
279	1954/03/16 23:00:00	1954/03/17 21:00:00	23	0.06	35.14%	0.21
280	1954/07/13 05:00:00	1954/07/13 22:00:00	18	0.06	35.26%	0.21
281	1955/04/30 21:00:00	1955/05/02 03:00:00	31	0.06	35.39%	0.21
282	1955/11/14 08:00:00	1955/11/15 02:00:00	19	0.06	35.52%	0.21
283	1955/12/01 21:00:00	1955/12/02 15:00:00	19	0.06	35.64%	0.21
284	1957/04/20 16:00:00	1957/04/22 00:00:00	33	0.06	35.77%	0.2
285	1958/03/27 14:00:00	1958/03/28 08:00:00	19	0.06	35.89%	0.2
286	1959/02/16 04:00:00	1959/02/17 12:00:00	33	0.06	36.02%	0.2
287	1959/02/21 11:00:00	1959/02/22 13:00:00	27	0.06	36.15%	0.2
288	1960/11/26 18:00:00	1960/11/27 16:00:00	23	0.06	36.27%	0.2
289	1962/01/13 01:00:00	1962/01/13 20:00:00	20	0.06	36.40%	0.2
290	1962/03/19 01:00:00	1962/03/20 04:00:00	28	0.06	36.52%	0.2
291	1963/04/17 05:00:00	1963/04/18 00:00:00	20	0.06	36.65%	0.2
292	1968/12/25 19:00:00	1968/12/26 23:00:00	29	0.06	36.78%	0.2
293	1970/02/10 04:00:00	1970/02/11 19:00:00	40	0.06	36.90%	0.2
294	1971/04/14 11:00:00	1971/04/15 07:00:00	21	0.06	37.03%	0.2
295	1971/05/06 10:00:00	1971/05/08 14:00:00	53	0.06	37.15%	0.2
296	1972/11/11 07:00:00	1972/11/12 01:00:00	19	0.06	37.28%	0.2
297	1973/03/04 09:00:00	1973/03/07 06:00:00	70	0.06	37.41%	0.2
298	1973/03/09 05:00:00	1973/03/10 11:00:00	31	0.06	37.53%	0.2
299	1973/11/17 07:00:00	1973/11/19 03:00:00	45	0.06	37.66%	0.19
300	1974/10/28 11:00:00	1974/10/30 00:00:00	38	0.06	37.78%	0.19
301	1976/04/12 16:00:00	1976/04/13 16:00:00	25	0.06	37.91%	0.19
302	1978/03/31 01:00:00	1978/04/02 17:00:00	65	0.06	38.04%	0.19
303	1978/04/15 20:00:00	1978/04/16 19:00:00	24	0.06	38.16%	0.19
304	1979/03/16 02:00:00	1979/03/18 00:00:00	47	0.06	38.29%	0.19
305	1979/03/19 04:00:00	1979/03/21 23:00:00	68	0.06	38.41%	0.19
306	1980/03/25 23:00:00	1980/03/26 17:00:00	19	0.06	38.54%	0.19
307	1980/12/04 14:00:00	1980/12/05 23:00:00	34	0.06	38.66%	0.19
308	1981/02/25 22:00:00	1981/02/26 16:00:00	19	0.06	38.79%	0.19
309	1982/11/09 16:00:00	1982/11/11 10:00:00	43	0.06	38.92%	0.19
310	1983/04/29 06:00:00	1983/05/01 16:00:00	59	0.06	39.04%	0.19
311	1983/12/03 15:00:00	1983/12/04 10:00:00	20	0.06	39.17%	0.19
312	1986/01/30 05:00:00	1986/02/01 09:00:00	53	0.06	39.29%	0.19
313	1986/02/08 00:00:00	1986/02/09 04:00:00	29	0.06	39.42%	0.19
314	1988/04/14 19:00:00	1988/04/15 18:00:00	24	0.06	39.55%	0.19
315	1988/11/25 09:00:00	1988/11/26 05:00:00	21	0.06	39.67%	0.18
316	1993/01/31 01:00:00	1993/01/31 18:00:00	18	0.06	39.80%	0.18
317	1993/02/23 19:00:00	1993/02/24 19:00:00	25	0.06	39.92%	0.18
318	1993/06/05 14:00:00	1993/06/06 07:00:00	18	0.06	40.05%	0.18
319	1994/01/25 02:00:00	1994/01/26 03:00:00	26	0.06	40.18%	0.18
320	1994/02/04 00:00:00	1994/02/05 15:00:00	40	0.06	40.30%	0.18

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
321	1994/03/19 03:00:00	1994/03/20 03:00:00	25	0.06	40.43%	0.18
322	1994/03/24 23:00:00	1994/03/25 18:00:00	20	0.06	40.55%	0.18
323	1995/02/13 20:00:00	1995/02/15 11:00:00	40	0.06	40.68%	0.18
324	1995/04/16 10:00:00	1995/04/17 02:00:00	17	0.06	40.81%	0.18
325	1995/12/13 09:00:00	1995/12/14 16:00:00	32	0.06	40.93%	0.18
326	1996/01/16 22:00:00	1996/01/17 15:00:00	18	0.06	41.06%	0.18
327	1996/02/21 02:00:00	1996/02/22 11:00:00	34	0.06	41.18%	0.18
328	1998/03/31 07:00:00	1998/04/01 11:00:00	29	0.06	41.31%	0.18
329	2000/04/17 18:00:00	2000/04/19 01:00:00	32	0.06	41.44%	0.18
330	2004/04/01 22:00:00	2004/04/02 15:00:00	18	0.06	41.56%	0.18
331	2005/03/22 22:00:00	2005/03/23 17:00:00	20	0.06	41.69%	0.18
332	2007/01/30 23:00:00	2007/01/31 19:00:00	21	0.06	41.81%	0.18
333	2007/02/28 04:00:00	2007/02/28 22:00:00	19	0.06	41.94%	0.17
334	2007/12/07 06:00:00	2007/12/09 07:00:00	50	0.06	42.07%	0.17
335	2008/02/03 10:00:00	2008/02/05 00:00:00	39	0.06	42.19%	0.17
336	1951/12/19 10:00:00	1951/12/20 02:00:00	17	0.05	42.32%	0.17
337	1952/01/25 07:00:00	1952/01/26 00:00:00	18	0.05	42.44%	0.17
338	1952/03/10 18:00:00	1952/03/11 18:00:00	25	0.05	42.57%	0.17
339	1952/12/30 20:00:00	1952/12/31 18:00:00	23	0.05	42.70%	0.17
340	1953/02/23 13:00:00	1953/02/24 09:00:00	21	0.05	42.82%	0.17
341	1953/04/27 23:00:00	1953/04/28 15:00:00	17	0.05	42.95%	0.17
342	1954/03/30 05:00:00	1954/03/30 19:00:00	15	0.05	43.07%	0.17
343	1954/12/10 00:00:00	1954/12/10 17:00:00	18	0.05	43.20%	0.17
344	1957/02/23 08:00:00	1957/02/24 02:00:00	19	0.05	43.32%	0.17
345	1957/03/16 10:00:00	1957/03/17 02:00:00	17	0.05	43.45%	0.17
346	1957/06/10 03:00:00	1957/06/10 19:00:00	17	0.05	43.58%	0.17
347	1957/10/11 10:00:00	1957/10/12 01:00:00	16	0.05	43.70%	0.17
348	1957/11/02 22:00:00	1957/11/03 23:00:00	26	0.05	43.83%	0.17
349	1959/02/08 03:00:00	1959/02/09 08:00:00	30	0.05	43.95%	0.17
350	1959/04/26 06:00:00	1959/04/26 21:00:00	16	0.05	44.08%	0.17
351	1959/12/21 05:00:00	1959/12/21 21:00:00	17	0.05	44.21%	0.17
352	1960/03/28 03:00:00	1960/03/28 19:00:00	17	0.05	44.33%	0.17
353	1960/11/05 21:00:00	1960/11/06 23:00:00	27	0.05	44.46%	0.16
354	1960/11/13 00:00:00	1960/11/13 16:00:00	17	0.05	44.58%	0.16
355	1963/02/14 13:00:00	1963/02/15 05:00:00	17	0.05	44.71%	0.16
356	1963/11/15 17:00:00	1963/11/16 09:00:00	17	0.05	44.84%	0.16
357	1965/03/11 03:00:00	1965/03/11 19:00:00	17	0.05	44.96%	0.16
358	1965/07/29 22:00:00	1965/07/30 14:00:00	17	0.05	45.09%	0.16
359	1966/10/10 14:00:00	1966/10/11 07:00:00	18	0.05	45.21%	0.16
360	1967/04/04 16:00:00	1967/04/05 10:00:00	19	0.05	45.34%	0.16
361	1969/03/21 13:00:00	1969/03/22 12:00:00	24	0.05	45.47%	0.16
362	1969/04/05 21:00:00	1969/04/06 12:00:00	16	0.05	45.59%	0.16
363	1969/11/06 20:00:00	1969/11/07 16:00:00	21	0.05	45.72%	0.16
364	1970/01/16 09:00:00	1970/01/17 11:00:00	27	0.05	45.84%	0.16
365	1971/03/13 06:00:00	1971/03/13 22:00:00	17	0.05	45.97%	0.16
366	1971/12/07 02:00:00	1971/12/07 17:00:00	16	0.05	46.10%	0.16
367	1973/02/28 02:00:00	1973/02/28 21:00:00	20	0.05	46.22%	0.16

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
368	1974/04/02 04:00:00	1974/04/02 21:00:00	18	0.05	46.35%	0.16
369	1975/03/22 10:00:00	1975/03/23 01:00:00	16	0.05	46.47%	0.16
370	1975/11/27 17:00:00	1975/11/29 07:00:00	39	0.05	46.60%	0.16
371	1976/11/12 01:00:00	1976/11/13 01:00:00	25	0.05	46.73%	0.16
372	1977/02/23 17:00:00	1977/02/25 07:00:00	39	0.05	46.85%	0.16
373	1978/01/30 18:00:00	1978/01/31 12:00:00	19	0.05	46.98%	0.16
374	1978/04/07 01:00:00	1978/04/07 17:00:00	17	0.05	47.10%	0.16
375	1978/11/10 16:00:00	1978/11/12 13:00:00	46	0.05	47.23%	0.16
376	1978/11/21 17:00:00	1978/11/22 09:00:00	17	0.05	47.36%	0.15
377	1980/03/10 16:00:00	1980/03/11 08:00:00	17	0.05	47.48%	0.15
378	1982/11/18 23:00:00	1982/11/19 22:00:00	24	0.05	47.61%	0.15
379	1983/01/24 17:00:00	1983/01/25 09:00:00	17	0.05	47.73%	0.15
380	1983/02/07 04:00:00	1983/02/08 20:00:00	41	0.05	47.86%	0.15
381	1983/03/17 05:00:00	1983/03/19 11:00:00	55	0.05	47.98%	0.15
382	1984/12/08 01:00:00	1984/12/08 17:00:00	17	0.05	48.11%	0.15
383	1984/12/16 05:00:00	1984/12/16 19:00:00	15	0.05	48.24%	0.15
384	1985/03/27 10:00:00	1985/03/29 01:00:00	40	0.05	48.36%	0.15
385	1986/10/09 22:00:00	1986/10/10 18:00:00	21	0.05	48.49%	0.15
386	1987/03/21 17:00:00	1987/03/22 09:00:00	17	0.05	48.61%	0.15
387	1988/02/02 04:00:00	1988/02/03 07:00:00	28	0.05	48.74%	0.15
388	1988/11/14 07:00:00	1988/11/14 23:00:00	17	0.05	48.87%	0.15
389	1988/12/15 14:00:00	1988/12/17 02:00:00	37	0.05	48.99%	0.15
390	1989/01/04 08:00:00	1989/01/06 16:00:00	57	0.05	49.12%	0.15
391	1989/03/25 13:00:00	1989/03/26 13:00:00	25	0.05	49.24%	0.15
392	1990/04/16 22:00:00	1990/04/17 18:00:00	21	0.05	49.37%	0.15
393	1991/03/13 18:00:00	1991/03/14 09:00:00	16	0.05	49.50%	0.15
394	1994/11/10 12:00:00	1994/11/11 04:00:00	17	0.05	49.62%	0.15
395	1994/12/25 03:00:00	1994/12/25 20:00:00	18	0.05	49.75%	0.15
396	1995/03/23 12:00:00	1995/03/24 03:00:00	16	0.05	49.87%	0.15
397	1996/01/21 19:00:00	1996/01/22 19:00:00	25	0.05	50.00%	0.15
398	1996/02/25 11:00:00	1996/02/26 18:00:00	32	0.05	50.13%	0.15
399	1996/12/27 20:00:00	1996/12/28 20:00:00	25	0.05	50.25%	0.15
400	1998/02/19 17:00:00	1998/02/20 15:00:00	23	0.05	50.38%	0.15
401	1998/04/11 03:00:00	1998/04/11 22:00:00	20	0.05	50.50%	0.15
402	1999/04/12 01:00:00	1999/04/12 18:00:00	18	0.05	50.63%	0.14
403	2005/01/26 13:00:00	2005/01/27 14:00:00	26	0.05	50.76%	0.14
404	2006/12/10 01:00:00	2006/12/10 17:00:00	17	0.05	50.88%	0.14
405	2007/04/20 16:00:00	2007/04/21 09:00:00	18	0.05	51.01%	0.14
406	1951/11/20 03:00:00	1951/11/20 16:00:00	14	0.04	51.13%	0.14
407	1952/02/29 22:00:00	1952/03/02 00:00:00	27	0.04	51.26%	0.14
408	1952/11/23 01:00:00	1952/11/23 22:00:00	22	0.04	51.39%	0.14
409	1953/11/14 19:00:00	1953/11/15 09:00:00	15	0.04	51.51%	0.14
410	1955/01/01 23:00:00	1955/01/02 14:00:00	16	0.04	51.64%	0.14
411	1955/02/16 23:00:00	1955/02/18 00:00:00	26	0.04	51.76%	0.14
412	1955/04/22 06:00:00	1955/04/22 20:00:00	15	0.04	51.89%	0.14
413	1955/11/21 14:00:00	1955/11/22 05:00:00	16	0.04	52.02%	0.14
414	1956/12/06 02:00:00	1956/12/06 17:00:00	16	0.04	52.14%	0.14

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
415	1957/01/10 00:00:00	1957/01/10 19:00:00	20	0.04	52.27%	0.14
416	1957/12/05 05:00:00	1957/12/06 11:00:00	31	0.04	52.39%	0.14
417	1961/10/08 08:00:00	1961/10/09 05:00:00	22	0.04	52.52%	0.14
418	1961/11/25 19:00:00	1961/11/26 10:00:00	16	0.04	52.64%	0.14
419	1962/02/15 20:00:00	1962/02/17 01:00:00	30	0.04	52.77%	0.14
420	1963/03/28 11:00:00	1963/03/29 01:00:00	15	0.04	52.90%	0.14
421	1963/04/26 04:00:00	1963/04/27 00:00:00	21	0.04	53.02%	0.14
422	1964/11/09 15:00:00	1964/11/12 15:00:00	73	0.04	53.15%	0.14
423	1967/03/31 11:00:00	1967/04/02 11:00:00	49	0.04	53.27%	0.14
424	1967/11/30 13:00:00	1967/12/02 02:00:00	38	0.04	53.40%	0.14
425	1968/01/27 02:00:00	1968/01/28 09:00:00	32	0.04	53.53%	0.14
426	1968/11/15 07:00:00	1968/11/16 07:00:00	25	0.04	53.65%	0.14
427	1969/02/16 00:00:00	1969/02/16 14:00:00	15	0.04	53.78%	0.14
428	1970/11/26 02:00:00	1970/11/26 20:00:00	19	0.04	53.90%	0.14
429	1971/01/12 20:00:00	1971/01/13 12:00:00	17	0.04	54.03%	0.14
430	1973/02/03 14:00:00	1973/02/04 08:00:00	19	0.04	54.16%	0.14
431	1973/12/01 16:00:00	1973/12/02 05:00:00	14	0.04	54.28%	0.14
432	1975/02/09 10:00:00	1975/02/11 09:00:00	48	0.04	54.41%	0.13
433	1975/03/14 02:00:00	1975/03/14 15:00:00	14	0.04	54.53%	0.13
434	1977/03/16 17:00:00	1977/03/17 15:00:00	23	0.04	54.66%	0.13
435	1978/03/09 18:00:00	1978/03/10 06:00:00	13	0.04	54.79%	0.13
436	1979/11/07 19:00:00	1979/11/08 18:00:00	24	0.04	54.91%	0.13
437	1979/12/21 11:00:00	1979/12/22 04:00:00	18	0.04	55.04%	0.13
438	1981/03/05 06:00:00	1981/03/06 03:00:00	22	0.04	55.16%	0.13
439	1982/01/05 04:00:00	1982/01/05 20:00:00	17	0.04	55.29%	0.13
440	1982/03/26 02:00:00	1982/03/26 22:00:00	21	0.04	55.42%	0.13
441	1982/12/07 22:00:00	1982/12/08 14:00:00	17	0.04	55.54%	0.13
442	1983/01/19 07:00:00	1983/01/19 20:00:00	14	0.04	55.67%	0.13
443	1983/04/18 03:00:00	1983/04/18 22:00:00	20	0.04	55.79%	0.13
444	1984/04/19 05:00:00	1984/04/19 18:00:00	14	0.04	55.92%	0.13
445	1985/01/07 17:00:00	1985/01/08 15:00:00	23	0.04	56.05%	0.13
446	1985/02/02 11:00:00	1985/02/04 13:00:00	51	0.04	56.17%	0.13
447	1986/04/06 06:00:00	1986/04/06 22:00:00	17	0.04	56.30%	0.13
448	1987/10/22 16:00:00	1987/10/23 14:00:00	23	0.04	56.42%	0.13
449	1987/10/31 08:00:00	1987/11/02 10:00:00	51	0.04	56.55%	0.13
450	1990/01/02 06:00:00	1990/01/02 23:00:00	18	0.04	56.68%	0.13
451	1990/01/31 01:00:00	1990/01/31 16:00:00	16	0.04	56.80%	0.13
452	1991/01/09 14:00:00	1991/01/10 05:00:00	16	0.04	56.93%	0.13
453	1992/03/26 19:00:00	1992/03/27 13:00:00	19	0.04	57.05%	0.13
454	1992/10/23 07:00:00	1992/10/23 22:00:00	16	0.04	57.18%	0.13
455	1992/12/28 00:00:00	1992/12/28 16:00:00	17	0.04	57.30%	0.13
456	1993/01/10 12:00:00	1993/01/11 04:00:00	17	0.04	57.43%	0.13
457	1994/02/20 13:00:00	1994/02/21 03:00:00	15	0.04	57.56%	0.13
458	1995/03/21 14:00:00	1995/03/22 03:00:00	14	0.04	57.68%	0.13
459	1995/06/15 23:00:00	1995/06/17 10:00:00	36	0.04	57.81%	0.13
460	1996/03/04 21:00:00	1996/03/05 18:00:00	22	0.04	57.93%	0.13
461	1996/04/18 03:00:00	1996/04/18 17:00:00	15	0.04	58.06%	0.13

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
462	1997/11/10 19:00:00	1997/11/11 08:00:00	14	0.04	58.19%	0.13
463	1997/11/13 14:00:00	1997/11/14 08:00:00	19	0.04	58.31%	0.13
464	1999/02/04 16:00:00	1999/02/05 23:00:00	32	0.04	58.44%	0.13
465	2000/02/17 17:00:00	2000/02/18 08:00:00	16	0.04	58.56%	0.13
466	2004/01/09 15:00:00	2004/01/10 05:00:00	15	0.04	58.69%	0.12
467	2004/03/02 01:00:00	2004/03/02 16:00:00	16	0.04	58.82%	0.12
468	2004/11/21 08:00:00	2004/11/21 21:00:00	14	0.04	58.94%	0.12
469	2004/12/05 16:00:00	2004/12/06 08:00:00	17	0.04	59.07%	0.12
470	2005/03/19 14:00:00	2005/03/20 03:00:00	14	0.04	59.19%	0.12
471	2008/01/23 22:00:00	2008/01/24 19:00:00	22	0.04	59.32%	0.12
472	2008/05/22 22:00:00	2008/05/24 06:00:00	33	0.04	59.45%	0.12
473	1951/07/25 06:00:00	1951/07/25 19:00:00	14	0.03	59.57%	0.12
474	1952/12/28 09:00:00	1952/12/29 00:00:00	16	0.03	59.70%	0.12
475	1953/04/20 14:00:00	1953/04/21 00:00:00	11	0.03	59.82%	0.12
476	1955/11/17 15:00:00	1955/11/18 02:00:00	12	0.03	59.95%	0.12
477	1956/01/31 12:00:00	1956/01/31 22:00:00	11	0.03	60.08%	0.12
478	1956/04/01 18:00:00	1956/04/02 06:00:00	13	0.03	60.20%	0.12
479	1957/01/05 13:00:00	1957/01/05 22:00:00	10	0.03	60.33%	0.12
480	1957/04/18 03:00:00	1957/04/18 15:00:00	13	0.03	60.45%	0.12
481	1957/05/19 09:00:00	1957/05/19 20:00:00	12	0.03	60.58%	0.12
482	1957/10/31 02:00:00	1957/10/31 14:00:00	13	0.03	60.71%	0.12
483	1958/09/24 02:00:00	1958/09/24 14:00:00	13	0.03	60.83%	0.12
484	1959/01/06 09:00:00	1959/01/06 21:00:00	13	0.03	60.96%	0.12
485	1959/10/01 04:00:00	1959/10/01 17:00:00	14	0.03	61.08%	0.12
486	1960/11/03 21:00:00	1960/11/04 09:00:00	13	0.03	61.21%	0.12
487	1962/03/06 10:00:00	1962/03/07 07:00:00	22	0.03	61.34%	0.12
488	1962/03/23 01:00:00	1962/03/23 10:00:00	10	0.03	61.46%	0.12
489	1963/04/21 03:00:00	1963/04/21 14:00:00	12	0.03	61.59%	0.12
490	1963/09/04 11:00:00	1963/09/04 23:00:00	13	0.03	61.71%	0.12
491	1964/04/01 08:00:00	1964/04/01 21:00:00	14	0.03	61.84%	0.12
492	1965/01/24 08:00:00	1965/01/24 20:00:00	13	0.03	61.96%	0.12
493	1965/02/06 02:00:00	1965/02/07 01:00:00	24	0.03	62.09%	0.12
494	1965/03/13 04:00:00	1965/03/16 03:00:00	72	0.03	62.22%	0.12
495	1965/12/22 03:00:00	1965/12/22 22:00:00	20	0.03	62.34%	0.12
496	1966/03/24 20:00:00	1966/03/26 00:00:00	29	0.03	62.47%	0.12
497	1967/04/18 22:00:00	1967/04/20 08:00:00	35	0.03	62.59%	0.12
498	1967/04/21 17:00:00	1967/04/22 14:00:00	22	0.03	62.72%	0.12
499	1967/06/13 10:00:00	1967/06/13 21:00:00	12	0.03	62.85%	0.12
500	1968/02/12 19:00:00	1968/02/13 12:00:00	18	0.03	62.97%	0.12
501	1969/02/28 22:00:00	1969/03/01 20:00:00	23	0.03	63.10%	0.12
502	1969/03/10 09:00:00	1969/03/11 23:00:00	39	0.03	63.22%	0.12
503	1969/03/13 03:00:00	1969/03/15 00:00:00	46	0.03	63.35%	0.12
504	1969/11/10 04:00:00	1969/11/10 16:00:00	13	0.03	63.48%	0.12
505	1970/01/10 02:00:00	1970/01/10 16:00:00	15	0.03	63.60%	0.12
506	1970/01/11 18:00:00	1970/01/12 10:00:00	17	0.03	63.73%	0.12
507	1971/02/17 01:00:00	1971/02/20 05:00:00	77	0.03	63.85%	0.11
508	1971/10/17 02:00:00	1971/10/17 14:00:00	13	0.03	63.98%	0.11

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
509	1971/12/13 06:00:00	1971/12/13 19:00:00	14	0.03	64.11%	0.11
510	1972/12/07 07:00:00	1972/12/09 21:00:00	63	0.03	64.23%	0.11
511	1973/01/09 11:00:00	1973/01/10 09:00:00	23	0.03	64.36%	0.11
512	1974/11/01 11:00:00	1974/11/02 12:00:00	26	0.03	64.48%	0.11
513	1975/04/17 05:00:00	1975/04/17 19:00:00	15	0.03	64.61%	0.11
514	1975/12/04 18:00:00	1975/12/05 06:00:00	13	0.03	64.74%	0.11
515	1976/04/14 18:00:00	1976/04/15 23:00:00	30	0.03	64.86%	0.11
516	1977/07/23 11:00:00	1977/07/23 23:00:00	13	0.03	64.99%	0.11
517	1978/11/24 08:00:00	1978/11/25 02:00:00	19	0.03	65.11%	0.11
518	1979/02/14 04:00:00	1979/02/14 17:00:00	14	0.03	65.24%	0.11
519	1980/01/18 05:00:00	1980/01/19 11:00:00	31	0.03	65.37%	0.11
520	1980/05/10 11:00:00	1980/05/10 23:00:00	13	0.03	65.49%	0.11
521	1981/04/02 10:00:00	1981/04/03 06:00:00	21	0.03	65.62%	0.11
522	1981/04/19 02:00:00	1981/04/19 17:00:00	16	0.03	65.74%	0.11
523	1982/01/11 02:00:00	1982/01/11 17:00:00	16	0.03	65.87%	0.11
524	1982/01/28 21:00:00	1982/01/29 12:00:00	16	0.03	65.99%	0.11
525	1982/03/29 01:00:00	1982/03/30 12:00:00	36	0.03	66.12%	0.11
526	1983/01/23 02:00:00	1983/01/23 15:00:00	14	0.03	66.25%	0.11
527	1983/02/02 15:00:00	1983/02/03 04:00:00	14	0.03	66.37%	0.11
528	1983/02/24 12:00:00	1983/02/25 06:00:00	19	0.03	66.50%	0.11
529	1983/03/14 02:00:00	1983/03/14 15:00:00	14	0.03	66.62%	0.11
530	1983/12/09 21:00:00	1983/12/10 07:00:00	11	0.03	66.75%	0.11
531	1984/03/14 13:00:00	1984/03/15 01:00:00	13	0.03	66.88%	0.11
532	1984/10/17 07:00:00	1984/10/17 20:00:00	14	0.03	67.00%	0.11
533	1984/11/08 09:00:00	1984/11/08 21:00:00	13	0.03	67.13%	0.11
534	1985/01/28 20:00:00	1985/01/29 06:00:00	11	0.03	67.25%	0.11
535	1985/12/02 17:00:00	1985/12/03 13:00:00	21	0.03	67.38%	0.11
536	1987/02/14 00:00:00	1987/02/14 10:00:00	11	0.03	67.51%	0.11
537	1987/03/15 06:00:00	1987/03/15 16:00:00	11	0.03	67.63%	0.11
538	1987/03/24 04:00:00	1987/03/25 07:00:00	28	0.03	67.76%	0.11
539	1988/01/05 17:00:00	1988/01/06 05:00:00	13	0.03	67.88%	0.11
540	1988/03/01 02:00:00	1988/03/02 12:00:00	35	0.03	68.01%	0.11
541	1988/12/18 13:00:00	1988/12/19 06:00:00	18	0.03	68.14%	0.11
542	1989/02/03 23:00:00	1989/02/05 04:00:00	30	0.03	68.26%	0.11
543	1991/03/15 21:00:00	1991/03/16 07:00:00	11	0.03	68.39%	0.11
544	1991/10/27 02:00:00	1991/10/27 13:00:00	12	0.03	68.51%	0.11
545	1992/02/10 01:00:00	1992/02/10 20:00:00	20	0.03	68.64%	0.11
546	1992/03/07 13:00:00	1992/03/08 10:00:00	22	0.03	68.77%	0.11
547	1992/04/01 14:00:00	1992/04/02 02:00:00	13	0.03	68.89%	0.11
548	1992/10/30 21:00:00	1992/10/31 06:00:00	10	0.03	69.02%	0.11
549	1993/12/11 17:00:00	1993/12/12 06:00:00	14	0.03	69.14%	0.11
550	1995/01/21 05:00:00	1995/01/21 17:00:00	13	0.03	69.27%	0.11
551	1996/12/22 17:00:00	1996/12/23 03:00:00	11	0.03	69.40%	0.11
552	1997/01/03 05:00:00	1997/01/03 22:00:00	18	0.03	69.52%	0.11
553	1997/01/05 12:00:00	1997/01/06 02:00:00	15	0.03	69.65%	0.11
554	1997/12/18 21:00:00	1997/12/19 08:00:00	12	0.03	69.77%	0.11
555	1998/01/03 11:00:00	1998/01/05 07:00:00	45	0.03	69.90%	0.11

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
556	1998/01/19 08:00:00	1998/01/19 17:00:00	10	0.03	70.03%	0.1
557	1998/03/06 08:00:00	1998/03/06 22:00:00	15	0.03	70.15%	0.1
558	1998/04/05 16:00:00	1998/04/07 03:00:00	36	0.03	70.28%	0.1
559	1998/11/28 11:00:00	1998/11/29 10:00:00	24	0.03	70.40%	0.1
560	1999/04/01 19:00:00	1999/04/02 07:00:00	13	0.03	70.53%	0.1
561	1999/04/07 05:00:00	1999/04/07 21:00:00	17	0.03	70.65%	0.1
562	2000/03/08 18:00:00	2000/03/09 11:00:00	18	0.03	70.78%	0.1
563	2001/01/26 15:00:00	2001/01/27 08:00:00	18	0.03	70.91%	0.1
564	2001/12/10 18:00:00	2001/12/11 08:00:00	15	0.03	71.03%	0.1
565	2001/12/14 19:00:00	2001/12/15 07:00:00	13	0.03	71.16%	0.1
566	2002/03/18 01:00:00	2002/03/18 12:00:00	12	0.03	71.28%	0.1
567	2003/11/12 09:00:00	2003/11/13 12:00:00	28	0.03	71.41%	0.1
568	2004/04/17 16:00:00	2004/04/18 05:00:00	14	0.03	71.54%	0.1
569	2005/02/25 18:00:00	2005/02/26 07:00:00	14	0.03	71.66%	0.1
570	2006/05/22 05:00:00	2006/05/22 19:00:00	15	0.03	71.79%	0.1
571	2007/02/23 00:00:00	2007/02/23 18:00:00	19	0.03	71.91%	0.1
572	2007/12/19 05:00:00	2007/12/19 20:00:00	16	0.03	72.04%	0.1
573	1951/12/02 05:00:00	1951/12/02 15:00:00	11	0.02	72.17%	0.1
574	1952/01/07 07:00:00	1952/01/07 19:00:00	13	0.02	72.29%	0.1
575	1952/03/13 13:00:00	1952/03/14 01:00:00	13	0.02	72.42%	0.1
576	1952/04/26 02:00:00	1952/04/26 09:00:00	8	0.02	72.54%	0.1
577	1953/03/20 08:00:00	1953/03/20 16:00:00	9	0.02	72.67%	0.1
578	1954/12/04 02:00:00	1954/12/04 11:00:00	10	0.02	72.80%	0.1
579	1955/01/06 14:00:00	1955/01/06 23:00:00	10	0.02	72.92%	0.1
580	1955/01/31 03:00:00	1955/01/31 12:00:00	10	0.02	73.05%	0.1
581	1956/02/23 20:00:00	1956/02/24 22:00:00	27	0.02	73.17%	0.1
582	1957/05/21 04:00:00	1957/05/21 15:00:00	12	0.02	73.30%	0.1
583	1957/11/16 22:00:00	1957/11/17 06:00:00	9	0.02	73.43%	0.1
584	1958/03/11 06:00:00	1958/03/13 07:00:00	50	0.02	73.55%	0.1
585	1958/10/25 04:00:00	1958/10/25 11:00:00	8	0.02	73.68%	0.1
586	1959/12/10 03:00:00	1959/12/10 12:00:00	10	0.02	73.80%	0.1
587	1964/09/24 18:00:00	1964/09/25 01:00:00	8	0.02	73.93%	0.1
588	1964/10/15 16:00:00	1964/10/15 23:00:00	8	0.02	74.06%	0.1
589	1965/01/07 12:00:00	1965/01/07 20:00:00	9	0.02	74.18%	0.1
590	1965/03/07 01:00:00	1965/03/07 14:00:00	14	0.02	74.31%	0.1
591	1965/08/17 00:00:00	1965/08/17 15:00:00	16	0.02	74.43%	0.1
592	1965/09/17 00:00:00	1965/09/17 15:00:00	16	0.02	74.56%	0.1
593	1966/03/02 10:00:00	1966/03/02 18:00:00	9	0.02	74.69%	0.1
594	1967/03/04 16:00:00	1967/03/05 02:00:00	11	0.02	74.81%	0.1
595	1967/12/13 13:00:00	1967/12/13 23:00:00	11	0.02	74.94%	0.1
596	1968/12/20 12:00:00	1968/12/20 21:00:00	10	0.02	75.06%	0.1
597	1971/04/18 01:00:00	1971/04/18 11:00:00	11	0.02	75.19%	0.1
598	1971/05/28 14:00:00	1971/05/29 00:00:00	11	0.02	75.31%	0.1
599	1971/11/12 10:00:00	1971/11/12 21:00:00	12	0.02	75.44%	0.1
600	1971/12/03 05:00:00	1971/12/04 14:00:00	34	0.02	75.57%	0.1
601	1972/04/13 09:00:00	1972/04/13 16:00:00	8	0.02	75.69%	0.1
602	1972/04/19 18:00:00	1972/04/20 04:00:00	11	0.02	75.82%	0.1

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
603	1972/11/08 05:00:00	1972/11/08 12:00:00	8	0.02	75.94%	0.1
604	1973/01/26 00:00:00	1973/01/26 08:00:00	9	0.02	76.07%	0.1
605	1974/01/01 07:00:00	1974/01/01 17:00:00	11	0.02	76.20%	0.1
606	1974/01/20 20:00:00	1974/01/21 09:00:00	14	0.02	76.32%	0.1
607	1975/04/01 02:00:00	1975/04/01 17:00:00	16	0.02	76.45%	0.1
608	1975/12/12 18:00:00	1975/12/13 03:00:00	10	0.02	76.57%	0.1
609	1976/09/03 22:00:00	1976/09/04 05:00:00	8	0.02	76.70%	0.1
610	1977/04/02 15:00:00	1977/04/03 01:00:00	11	0.02	76.83%	0.1
611	1977/05/12 14:00:00	1977/05/12 22:00:00	9	0.02	76.95%	0.1
612	1979/01/09 12:00:00	1979/01/09 22:00:00	11	0.02	77.08%	0.1
613	1980/10/16 06:00:00	1980/10/16 18:00:00	13	0.02	77.20%	0.1
614	1982/09/16 16:00:00	1982/09/17 22:00:00	31	0.02	77.33%	0.09
615	1983/03/06 05:00:00	1983/03/06 16:00:00	12	0.02	77.46%	0.09
616	1983/04/12 02:00:00	1983/04/12 15:00:00	14	0.02	77.58%	0.09
617	1983/10/07 13:00:00	1983/10/07 20:00:00	8	0.02	77.71%	0.09
618	1983/11/18 03:00:00	1983/11/18 12:00:00	10	0.02	77.83%	0.09
619	1985/02/20 20:00:00	1985/02/21 06:00:00	11	0.02	77.96%	0.09
620	1985/12/11 07:00:00	1985/12/11 15:00:00	9	0.02	78.09%	0.09
621	1986/02/19 16:00:00	1986/02/20 00:00:00	9	0.02	78.21%	0.09
622	1987/03/06 07:00:00	1987/03/06 23:00:00	17	0.02	78.34%	0.09
623	1987/12/19 20:00:00	1987/12/20 05:00:00	10	0.02	78.46%	0.09
624	1989/02/10 18:00:00	1989/02/11 05:00:00	12	0.02	78.59%	0.09
625	1990/02/04 14:00:00	1990/02/05 01:00:00	12	0.02	78.72%	0.09
626	1990/04/04 15:00:00	1990/04/04 23:00:00	9	0.02	78.84%	0.09
627	1990/04/25 01:00:00	1990/04/25 11:00:00	11	0.02	78.97%	0.09
628	1991/01/03 22:00:00	1991/01/04 21:00:00	24	0.02	79.09%	0.09
629	1992/05/22 21:00:00	1992/05/23 06:00:00	10	0.02	79.22%	0.09
630	1992/12/03 15:00:00	1992/12/04 22:00:00	32	0.02	79.35%	0.09
631	1992/12/18 05:00:00	1992/12/18 12:00:00	8	0.02	79.47%	0.09
632	1993/01/02 13:00:00	1993/01/02 21:00:00	9	0.02	79.60%	0.09
633	1993/02/26 21:00:00	1993/02/27 12:00:00	16	0.02	79.72%	0.09
634	1994/10/05 04:00:00	1994/10/05 13:00:00	10	0.02	79.85%	0.09
635	1996/01/25 15:00:00	1996/01/26 04:00:00	14	0.02	79.97%	0.09
636	1998/01/29 15:00:00	1998/01/29 23:00:00	9	0.02	80.10%	0.09
637	1999/02/09 22:00:00	1999/02/10 07:00:00	10	0.02	80.23%	0.09
638	1999/03/15 14:00:00	1999/03/15 22:00:00	9	0.02	80.35%	0.09
639	2000/01/31 20:00:00	2000/02/01 06:00:00	11	0.02	80.48%	0.09
640	2000/10/27 13:00:00	2000/10/27 20:00:00	8	0.02	80.60%	0.09
641	2000/11/10 11:00:00	2000/11/11 07:00:00	21	0.02	80.73%	0.09
642	2001/04/21 08:00:00	2001/04/21 16:00:00	9	0.02	80.86%	0.09
643	2001/12/31 21:00:00	2002/01/01 06:00:00	10	0.02	80.98%	0.09
644	2004/01/02 23:00:00	2004/01/03 08:00:00	10	0.02	81.11%	0.09
645	2004/02/18 20:00:00	2004/02/19 05:00:00	10	0.02	81.23%	0.09
646	2004/11/28 21:00:00	2004/11/29 05:00:00	9	0.02	81.36%	0.09
647	2004/12/08 09:00:00	2004/12/08 19:00:00	11	0.02	81.49%	0.09
648	2005/07/23 05:00:00	2005/07/23 16:00:00	12	0.02	81.61%	0.09
649	2005/09/20 07:00:00	2005/09/20 15:00:00	9	0.02	81.74%	0.09

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
650	2006/02/19 08:00:00	2006/02/19 15:00:00	8	0.02	81.86%	0.09
651	2006/04/14 23:00:00	2006/04/15 12:00:00	14	0.02	81.99%	0.09
652	2006/12/17 00:00:00	2006/12/18 00:00:00	25	0.02	82.12%	0.09
653	2006/12/22 12:00:00	2006/12/22 20:00:00	9	0.02	82.24%	0.09
654	2006/12/27 08:00:00	2006/12/27 19:00:00	12	0.02	82.37%	0.09
655	2007/02/11 16:00:00	2007/02/11 23:00:00	8	0.02	82.49%	0.09
656	2007/02/13 03:00:00	2007/02/13 12:00:00	10	0.02	82.62%	0.09
657	2007/10/13 10:00:00	2007/10/13 18:00:00	9	0.02	82.75%	0.09
658	2008/02/14 17:00:00	2008/02/15 01:00:00	9	0.02	82.87%	0.09
659	2008/02/24 11:00:00	2008/02/24 23:00:00	13	0.02	83.00%	0.09
660	1951/11/23 03:00:00	1951/11/23 06:00:00	4	0.01	83.12%	0.09
661	1952/04/08 04:00:00	1952/04/08 06:00:00	3	0.01	83.25%	0.09
662	1952/12/06 09:00:00	1952/12/06 13:00:00	5	0.01	83.38%	0.09
663	1953/01/14 01:00:00	1953/01/14 07:00:00	7	0.01	83.50%	0.09
664	1953/10/22 12:00:00	1953/10/22 20:00:00	9	0.01	83.63%	0.09
665	1953/12/04 13:00:00	1953/12/04 20:00:00	8	0.01	83.75%	0.09
666	1955/03/11 06:00:00	1955/03/11 11:00:00	6	0.01	83.88%	0.09
667	1955/04/26 15:00:00	1955/04/26 21:00:00	7	0.01	84.01%	0.09
668	1955/12/04 15:00:00	1955/12/04 22:00:00	8	0.01	84.13%	0.09
669	1957/01/21 04:00:00	1957/01/21 10:00:00	7	0.01	84.26%	0.09
670	1957/03/09 23:00:00	1957/03/10 05:00:00	7	0.01	84.38%	0.09
671	1957/05/11 12:00:00	1957/05/11 17:00:00	6	0.01	84.51%	0.09
672	1957/10/21 11:00:00	1957/10/21 14:00:00	4	0.01	84.63%	0.09
673	1958/05/11 15:00:00	1958/05/11 20:00:00	6	0.01	84.76%	0.09
674	1958/11/11 10:00:00	1958/11/11 15:00:00	6	0.01	84.89%	0.09
675	1958/11/16 02:00:00	1958/11/16 08:00:00	7	0.01	85.01%	0.09
676	1960/01/26 01:00:00	1960/01/26 09:00:00	9	0.01	85.14%	0.09
677	1960/04/24 00:00:00	1960/04/24 01:00:00	2	0.01	85.26%	0.09
678	1961/03/25 08:00:00	1961/03/25 13:00:00	6	0.01	85.39%	0.09
679	1962/02/11 13:00:00	1962/02/12 19:00:00	31	0.01	85.52%	0.09
680	1962/02/26 01:00:00	1962/02/26 22:00:00	22	0.01	85.64%	0.09
681	1962/03/10 02:00:00	1962/03/10 05:00:00	4	0.01	85.77%	0.09
682	1962/05/14 14:00:00	1962/05/14 19:00:00	6	0.01	85.89%	0.09
683	1963/11/06 19:00:00	1963/11/07 01:00:00	7	0.01	86.02%	0.09
684	1964/02/16 14:00:00	1964/02/16 14:00:00	1	0.01	86.15%	0.09
685	1964/02/29 09:00:00	1964/02/29 12:00:00	4	0.01	86.27%	0.09
686	1964/03/02 11:00:00	1964/03/02 17:00:00	7	0.01	86.40%	0.09
687	1966/02/02 04:00:00	1966/02/02 10:00:00	7	0.01	86.52%	0.08
688	1967/01/31 07:00:00	1967/01/31 10:00:00	4	0.01	86.65%	0.08
689	1967/04/24 13:00:00	1967/04/24 17:00:00	5	0.01	86.78%	0.08
690	1967/09/03 01:00:00	1967/09/03 07:00:00	7	0.01	86.90%	0.08
691	1967/12/08 03:00:00	1967/12/08 06:00:00	4	0.01	87.03%	0.08
692	1968/03/18 05:00:00	1968/03/19 01:00:00	21	0.01	87.15%	0.08
693	1968/07/07 12:00:00	1968/07/07 17:00:00	6	0.01	87.28%	0.08
694	1968/12/16 17:00:00	1968/12/16 21:00:00	5	0.01	87.41%	0.08
695	1969/04/03 06:00:00	1969/04/03 13:00:00	8	0.01	87.53%	0.08
696	1969/05/06 14:00:00	1969/05/06 19:00:00	6	0.01	87.66%	0.08

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
697	1969/12/10 14:00:00	1969/12/10 20:00:00	7	0.01	87.78%	0.08
698	1970/01/14 23:00:00	1970/01/15 05:00:00	7	0.01	87.91%	0.08
699	1970/12/02 18:00:00	1970/12/03 00:00:00	7	0.01	88.04%	0.08
700	1970/12/09 16:00:00	1970/12/09 17:00:00	2	0.01	88.16%	0.08
701	1971/04/26 08:00:00	1971/04/26 14:00:00	7	0.01	88.29%	0.08
702	1971/09/29 12:00:00	1971/09/29 18:00:00	7	0.01	88.41%	0.08
703	1972/02/05 16:00:00	1972/02/05 23:00:00	8	0.01	88.54%	0.08
704	1972/05/20 14:00:00	1972/05/20 19:00:00	6	0.01	88.66%	0.08
705	1972/06/21 03:00:00	1972/06/21 10:00:00	8	0.01	88.79%	0.08
706	1972/10/19 14:00:00	1972/10/20 13:00:00	24	0.01	88.92%	0.08
707	1972/10/21 18:00:00	1972/10/22 00:00:00	7	0.01	89.04%	0.08
708	1972/11/21 17:00:00	1972/11/21 21:00:00	5	0.01	89.17%	0.08
709	1972/11/24 17:00:00	1972/11/24 22:00:00	6	0.01	89.29%	0.08
710	1973/01/04 14:00:00	1973/01/04 22:00:00	9	0.01	89.42%	0.08
711	1973/03/11 16:00:00	1973/03/11 22:00:00	7	0.01	89.55%	0.08
712	1973/11/26 11:00:00	1973/11/26 15:00:00	5	0.01	89.67%	0.08
713	1973/12/28 06:00:00	1973/12/28 09:00:00	4	0.01	89.80%	0.08
714	1974/03/27 12:00:00	1974/03/27 19:00:00	8	0.01	89.92%	0.08
715	1975/01/08 23:00:00	1975/01/09 05:00:00	7	0.01	90.05%	0.08
716	1975/03/25 18:00:00	1975/03/25 21:00:00	4	0.01	90.18%	0.08
717	1975/04/25 12:00:00	1975/04/25 19:00:00	8	0.01	90.30%	0.08
718	1975/05/19 14:00:00	1975/05/20 12:00:00	23	0.01	90.43%	0.08
719	1975/06/19 09:00:00	1975/06/19 14:00:00	6	0.01	90.55%	0.08
720	1975/10/07 09:00:00	1975/10/07 16:00:00	8	0.01	90.68%	0.08
721	1975/11/01 08:00:00	1975/11/03 13:00:00	54	0.01	90.81%	0.08
722	1975/11/05 05:00:00	1975/11/05 11:00:00	7	0.01	90.93%	0.08
723	1975/12/07 16:00:00	1975/12/07 22:00:00	7	0.01	91.06%	0.08
724	1975/12/16 17:00:00	1975/12/16 23:00:00	7	0.01	91.18%	0.08
725	1976/03/12 18:00:00	1976/03/12 21:00:00	4	0.01	91.31%	0.08
726	1977/01/29 16:00:00	1977/01/29 21:00:00	6	0.01	91.44%	0.08
727	1977/12/23 08:00:00	1977/12/23 12:00:00	5	0.01	91.56%	0.08
728	1978/03/07 15:00:00	1978/03/07 19:00:00	5	0.01	91.69%	0.08
729	1978/03/22 14:00:00	1978/03/22 20:00:00	7	0.01	91.81%	0.08
730	1978/03/24 22:00:00	1978/03/25 02:00:00	5	0.01	91.94%	0.08
731	1978/04/04 21:00:00	1978/04/05 00:00:00	4	0.01	92.07%	0.08
732	1978/09/08 14:00:00	1978/09/08 18:00:00	5	0.01	92.19%	0.08
733	1979/01/23 20:00:00	1979/01/24 00:00:00	5	0.01	92.32%	0.08
734	1979/01/28 17:00:00	1979/01/28 21:00:00	5	0.01	92.44%	0.08
735	1979/03/31 19:00:00	1979/04/04 18:00:00	96	0.01	92.57%	0.08
736	1979/07/20 13:00:00	1979/07/20 15:00:00	3	0.01	92.70%	0.08
737	1979/12/25 12:00:00	1979/12/25 18:00:00	7	0.01	92.82%	0.08
738	1979/12/30 13:00:00	1979/12/30 17:00:00	5	0.01	92.95%	0.08
739	1980/04/02 16:00:00	1980/04/02 22:00:00	7	0.01	93.07%	0.08
740	1980/04/22 15:00:00	1980/04/22 20:00:00	6	0.01	93.20%	0.08
741	1980/04/24 17:00:00	1980/04/24 21:00:00	5	0.01	93.32%	0.08
742	1980/04/29 13:00:00	1980/04/30 16:00:00	28	0.01	93.45%	0.08
743	1980/10/26 10:00:00	1980/10/26 17:00:00	8	0.01	93.58%	0.08

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
744	1980/12/07 16:00:00	1980/12/07 22:00:00	7	0.01	93.70%	0.08
745	1981/01/12 20:00:00	1981/01/13 02:00:00	7	0.01	93.83%	0.08
746	1983/02/05 21:00:00	1983/02/06 03:00:00	7	0.01	93.95%	0.08
747	1983/02/13 20:00:00	1983/02/13 21:00:00	2	0.01	94.08%	0.08
748	1983/08/18 13:00:00	1983/08/18 15:00:00	3	0.01	94.21%	0.08
749	1984/01/16 21:00:00	1984/01/17 04:00:00	8	0.01	94.33%	0.08
750	1984/04/06 10:00:00	1984/04/06 17:00:00	8	0.01	94.46%	0.08
751	1984/12/03 16:00:00	1984/12/03 22:00:00	7	0.01	94.58%	0.08
752	1986/02/13 15:00:00	1986/02/13 19:00:00	5	0.01	94.71%	0.08
753	1987/02/18 23:00:00	1987/02/19 07:00:00	9	0.01	94.84%	0.08
754	1987/04/05 21:00:00	1987/04/06 01:00:00	5	0.01	94.96%	0.08
755	1987/05/28 20:00:00	1987/05/29 00:00:00	5	0.01	95.09%	0.08
756	1988/11/11 10:00:00	1988/11/11 18:00:00	9	0.01	95.21%	0.08
757	1989/12/28 19:00:00	1989/12/28 23:00:00	5	0.01	95.34%	0.08
758	1990/03/05 16:00:00	1990/03/05 20:00:00	5	0.01	95.47%	0.08
759	1990/03/11 07:00:00	1990/03/11 12:00:00	6	0.01	95.59%	0.08
760	1991/11/29 23:00:00	1991/11/30 04:00:00	6	0.01	95.72%	0.08
761	1992/01/03 12:00:00	1992/01/03 13:00:00	2	0.01	95.84%	0.08
762	1992/10/29 15:00:00	1992/10/29 16:00:00	2	0.01	95.97%	0.08
763	1992/12/11 21:00:00	1992/12/12 01:00:00	5	0.01	96.10%	0.08
764	1992/12/30 02:00:00	1992/12/30 12:00:00	11	0.01	96.22%	0.08
765	1993/11/23 07:00:00	1993/11/23 14:00:00	8	0.01	96.35%	0.08
766	1993/11/30 08:00:00	1993/11/30 15:00:00	8	0.01	96.47%	0.08
767	1993/12/15 00:00:00	1993/12/15 03:00:00	4	0.01	96.60%	0.08
768	1994/04/24 09:00:00	1994/04/24 16:00:00	8	0.01	96.73%	0.08
769	1995/01/16 02:00:00	1995/01/16 19:00:00	18	0.01	96.85%	0.08
770	1995/05/13 12:00:00	1995/05/13 18:00:00	7	0.01	96.98%	0.08
771	1996/01/28 12:00:00	1996/01/28 16:00:00	5	0.01	97.10%	0.08
772	1996/12/06 04:00:00	1996/12/06 14:00:00	11	0.01	97.23%	0.08
773	1997/02/11 02:00:00	1997/02/11 11:00:00	10	0.01	97.36%	0.08
774	1997/02/28 02:00:00	1997/02/28 09:00:00	8	0.01	97.48%	0.08
775	1997/04/03 22:00:00	1997/04/04 04:00:00	7	0.01	97.61%	0.08
776	1998/01/16 07:00:00	1998/01/16 10:00:00	4	0.01	97.73%	0.08
777	1998/02/01 01:00:00	1998/02/01 07:00:00	7	0.01	97.86%	0.08
778	1998/12/20 03:00:00	1998/12/20 07:00:00	5	0.01	97.98%	0.08
779	1999/03/11 18:00:00	1999/03/11 22:00:00	5	0.01	98.11%	0.07
780	1999/03/25 19:00:00	1999/03/26 04:00:00	10	0.01	98.24%	0.07
781	1999/06/02 05:00:00	1999/06/02 13:00:00	9	0.01	98.36%	0.07
782	1999/06/22 01:00:00	1999/06/22 05:00:00	5	0.01	98.49%	0.07
783	2000/01/25 23:00:00	2000/01/26 00:00:00	2	0.01	98.61%	0.07
784	2002/01/29 12:00:00	2002/01/29 13:00:00	2	0.01	98.74%	0.07
785	2002/03/08 06:00:00	2002/03/08 08:00:00	3	0.01	98.87%	0.07
786	2002/03/24 07:00:00	2002/03/24 11:00:00	5	0.01	98.99%	0.07
787	2002/04/24 17:00:00	2002/04/24 21:00:00	5	0.01	99.12%	0.07
788	2003/11/16 06:00:00	2003/11/16 08:00:00	3	0.01	99.24%	0.07
789	2005/03/05 03:00:00	2005/03/05 03:00:00	1	0.01	99.37%	0.07
790	2006/07/27 05:00:00	2006/07/27 09:00:00	5	0.01	99.50%	0.07

Rank	Start Date	End Date	Duration	Peak	Frequency	Return Period
791	2007/02/19 09:00:00	2007/02/19 19:00:00	11	0.01	99.62%	0.07
792	2007/08/26 17:00:00	2007/08/26 19:00:00	3	0.01	99.75%	0.07
793	2008/02/20 14:00:00	2008/02/20 20:00:00	7	0.01	99.87%	0.07
-End of Data----------						

Development of the Flow Duration Statistics

Similar to the Peak Flow Statistics, the flow duration statistics are also developed directly from the SWMM binary output file. It should be noted right from the start that the "durations" that we are talking about in this section have nothing to do with the "storm durations" presented in the peak flow statistics section. Other than using the same sequence of letters for the word, the two concepts have nothing to do with each other and the reader is cautioned not to confuse the two. The goal of the flow duration statistics is to determine, for the flow rates that fall within the hydromorphologicaly significant range, the length of time that each of those flow rates occur. Since the amount of sediment transported by a river or stream is proportional to the velocity of the water flowing and the length of time that velocity of flow acts on the sediment, knowing the velocity and length of time for each flow rate is very useful.

Methodology

The methodology for determining the flow duration curves comes from a document developed by the U.S. Geological Survey (USGS). The first stop on the journey to find this document was a link to the USGS water site (http://www.usgs.gov/water/). This link is found in Appendix E (SDHMP Continuous Simulation Modeling Primer), found in the County Hydromodification Management Plan[1]. On this web site a search for "Flow Duration Curves" leads to USGS Publication 1542-A, Flow-duration curves, by James K. Searcy 1959 (http://pubs.er.usgs.gov/publication/wsp1542A). In this publication the development of the flow duration curves is discussed in detail.

In Pub 1542-A, beginning on page 7 an example problem is used to illustrate the compilation of data used to create the flow duration plots. On page 8 a completed form 9-217-c form shows the monthly tabulation of flow rates for Bowie Creek near Hattiesburg, Miss. For each flow range the number of readings is tabulated and then the total number of each flow rate is totaled for the year. It should be noted that while this example is for a stream with a minimum flow rate of 100cfs, for the purposes of run-off studies in Southern California the minimum flow rate of zero (0) cfs is the common low flow value. Once each of the year's data has been compiled the summary numbers from each year are transferred to form 9-217-d. On this form the total number of each flow rate is again totaled and the percentage of time exceeded calculated (as will be explained later under the discussion of our calculations). Once the data has been compiled a graph of Discharge Rate vs. Percent Time Exceeded is developed. As will be explained in the next section, the use of these curves leads to the amount of time each particular flow can be expected to occur (based on historical data).

How to Read the Graphs[2]

Figure 1 shows a flow duration curve for a hypothetical development. The three curves show what percentage of the time a range of flow rates are exceeded for three different conditions: pre-project, post-project and post-project with storm water mitigation. Under pre-project conditions the minimum geomorphically significant flow rate is 0.10cfs (assumed) and as read from the graph, flows would equal or exceed this value about 0.14% of the time (or about 12 hours per year) (0.0014 x 365days x 24

[1] FINAL HYDROMODIFICATION MANAGEMENT PLAN, Prepared for County of San Diego, California, March 2011, by Brown and Caldwell Engineering of San Diego. (http://www.projectcleanwater.org/images/stories/Docs/LDS/HMP/0311_SD_HMP_wAppendices.pdf)

[2] The graph and the explanation were taken directly from Appendix E of the Hydromodification Plan

hour/day). For post-project conditions, this flow rate would occur more often – about 0.38% of the time (or about 33 hours per year) (0.0038 x 365days x 24 hour/day). This increase in the duration of the geomorphically significant flow after development illustrates why duration control is closely linked to protecting creeks from accelerated erosion.

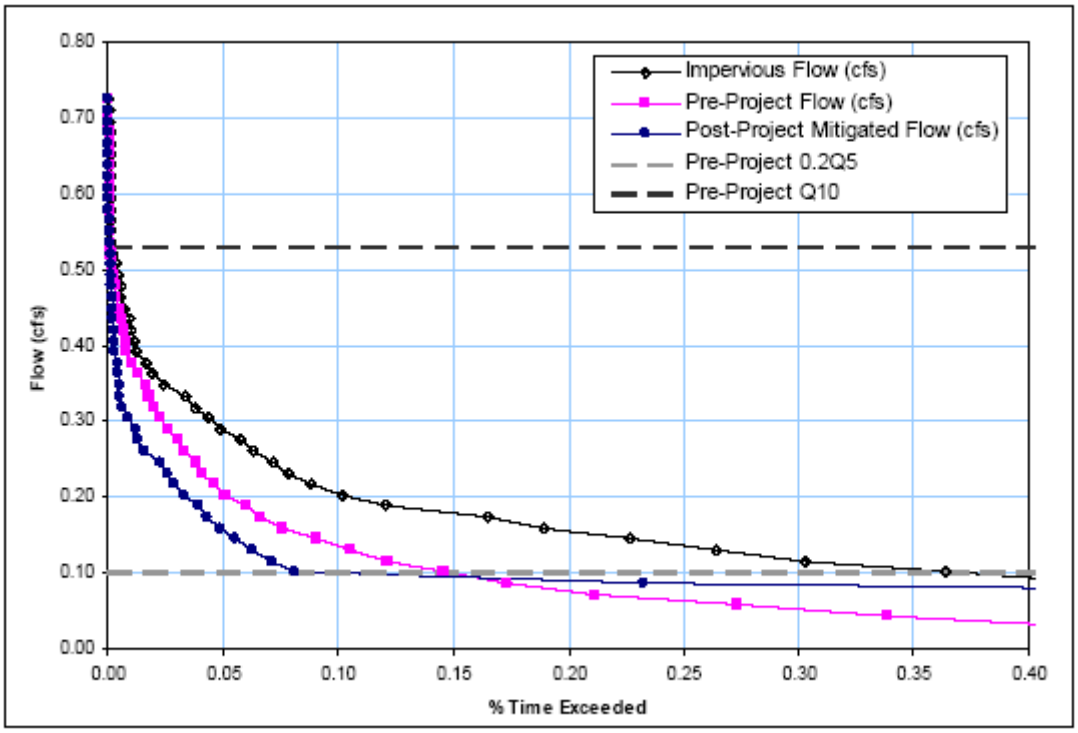


Figure 1. Flow Duration Series Statistics for a Hypothetical Development Scenario

Development of Flow Duration Curves

The first step in developing the flow duration curves is to count the number of occurrences of each flow rate. This is done by first rounding every non-zero flow value to an appropriate number of decimal places (say two places). This in effect groups each flow into closely related values or "bins" as they are referred to in publication 9-217d. Then the entire runoff record is queried for each value and the number of each value counted. The next step is to enter the results of the query into a grid patterned after form 9-217d. The data is entered in ascending order starting with the lowest flow first. The grid is composed of four columns. They are (from left to right) Discharge Rate, Number of Periods (count), Total Periods Exceeding (the total number of periods equal to or exceeding this value), and Percent Time Exceeded. Starting at the top row (row 1), the flow rate (which is often times zero) is entered with the corresponding number of times that value was found. The next column is the total number of values greater than or equal to that flow rate. For the first flow rate point, by definition all flow rate values are greater than or equal to this value, therefore the total number of runoff records of the rainfall record is entered here. The final column which is the percent of time exceeded is calculated by dividing the total periods exceeded by the total number of periods in the study. For the first row this number should be 100%

For the next row (row 2), the flow rate, and the flow rate count are entered. The total number of periods exceeding for row 2 is calculated by subtracting Number of Periods of row 1 from the Total

Periods Exceeding of line 1. This result is entered in the Total Periods Exceeding on row 2. As was the case for line 1, the final column is calculated by dividing the total periods exceeded by the total number of periods in the study. For the second row this number should be something less than 100% and continually decrease as we move down the chart. If all the calculations are correct, then everything should zero out on the last line of the calculations.

The final step in developing the flow duration curves is to make a plot of the Discharge Rate vs. the Percent Time Exceeded. For the purposes of this report, the first value corresponding to the zero flow rate is not plotted allowing the graph to be focused on the actual flow rate values.

The Flow Duration Analysis

The Peak Flow Statistics analysis is composed of the following series of files:

1. The Flow Duration Plot
2. Comparison of the Un-Mitigated Flow Duration Curve to the Pre-Development Curve (Pass/Fail)
3. Comparison of the Mitigated Flow Duration Curve to the Pre-Development Curve (Pass/Fail)
4. The calculations for the Pre-Development flow duration curve development (USGS9217d)
5. The calculations for the Post-Development flow duration curve development (USGS9217d)
6. The calculations for the Mitigated flow duration curve development (USGS9217d)

The Flow Duration Plot

The Flow Duration Curves Plot is the plotting of all three (pre, un-mitigated and mitigated) sets of Discharge Rate vs. the Percent Time Exceeded data point pair lists. In addition to these curves horizontal lines are plotted corresponding to the Q_{10} and Q_{lf} (low flow threshold) values. Within the geomorphically significant range ($Q_{10} – Q_{lf}$) one can see a visual representation of the relative positions of the flow duration curves. The flow duration curves are compared in an East/West (horizontal) direction to compare post development Discharge Rates to pre-development Discharge Rates. The pre-development curve is plotted in blue, the unmitigated curve is plotted in red, and the mitigated curve is plotted in green. As long as the post development curve lies to the left of the pre-development curve (mostly[3]), the project meets the peak flow hydromodification requirements.

Pass/Fail comparison of the curves

The next two sets of data are the point by point comparison of the post-development curve(s) and the pre-development curve. The Pass/Fail table is helpful in determining compliance since the plotted lines can be difficult to see at the scales suitable for use in a report. Each point on the post- development curve has a corresponding “Y” value (Flow Rate), and “X” value (% Time Exceeded). For each point on the post development curve, the “Y” value is used to interpolate the corresponding Percent Time Exceeded (X) value from the pre-development curve. Then the Post-development Percent Time Exceeded value is compared to the pre-development Percent Time Exceeded value. Based on the relative values of each point, pass/fail criteria are determined point by point.

[3] See hydromodification limits for exceedance of pre-development values

For each set of data, the upper right hand header value shows the name of the file being displayed (ex. flowDurationPassFailMitigated.TXT). The first line of the file shows the name of the SWMM output file (*.out). The next line shows the time stamp of the SWMM file that is being analyzed. The time stamps of all of the report files should be within a minute or two of each other, otherwise there may have been tampering with the files. Each report run creates and prints all of the files and reports at one time so all the time stamps should be very close.

The first column is the zero based number of the point. The next two columns show the post development "X" and "Y" values. The next column shows the value interpolated between the two bounding points on the pre-development curve. The next three columns show the true or false values of the comparison of the two "X" values. The last column shows the resultant pass or fail status of the point. There are three ways a point can pass. They are:

1. Q_{post} being outside of the geomorphically significant range Q_{lf} to Q_{10}
2. Q_{post} being less than Q_{pre}
3. Q_{post} being less than 110% of the value of Q_{pre} if the point is between Q_{lf} and Q_{10}

There are two ways that a point can fail. They are:

1. Q_{post} being greater than 110% of Q_{pre} if the point is between Q_{lf} and Q_{10}
2. If more than 10% of the points are between 100% and 110% of Q_{pre} for the points between Q_{lf} and Q_{10}

A quick scan down the last column will quickly tell if there are any points that fail.

At the bottom of each set of data are the date stamp of the report to the left, and to the right is the page number/number of pages for the specific set of data (not the pages of the report!). Each new set of data has its own page numbering. Between the file name in the header row and the page numbering in the footer row, the engineer can readily scan the document for the data of interest.

Plan Check Suggestions

As was described under the peak flow section, is the responsibility of the reviewing agency to confirm that the data sets presented are valid results from consistent calculations, and that any and all results can be duplicated by manual methods and achieve the same results. In light of these goals, the plan checker is invited to consider the following tasks as part of the plan check process.

Compare the Data Stamps for Each of the Statistics Files Used In This Analysis.

As was described in the Peak Flows section, all report files should have time stamps that are nearly identical. If the time values are more than a few minutes apart then the potential for inconsistent results files should be investigated.

Verify the Flow Rate Counts

For each of the pre, un-mitigate and mitigated flow duration tables, a few randomly selected flow value counts should be checked against the values taken directly from the SWMM file. This can be done by opening the corresponding SWMM file, selecting the outfall node, selecting Report>Table>By Object, Setting the time format to Date/Time, selecting the appropriate node value, and clicking the OK button to generate a table of the date/time/Total Inflow values. Next step is to click in the left most header

row of the SWMM table which will select the entire table. Now from the main menu select Edit>Copy To>Clipboard. Now open a new blank sheet in MS Excel (or suitable spread sheet program) select cell A1 and paste the results from the clipboard into the spread sheet. Now sort the values based on the Total Inflow column. This will group all the flow values together enabling the number of occurrences of each value to be counted. At this point the a few (or all) of the counts on the various USGS9217d.txt files can be verified.

Manually Verify That the Percent Exceeded Values (form USGS9217d) are Correctly Calculated

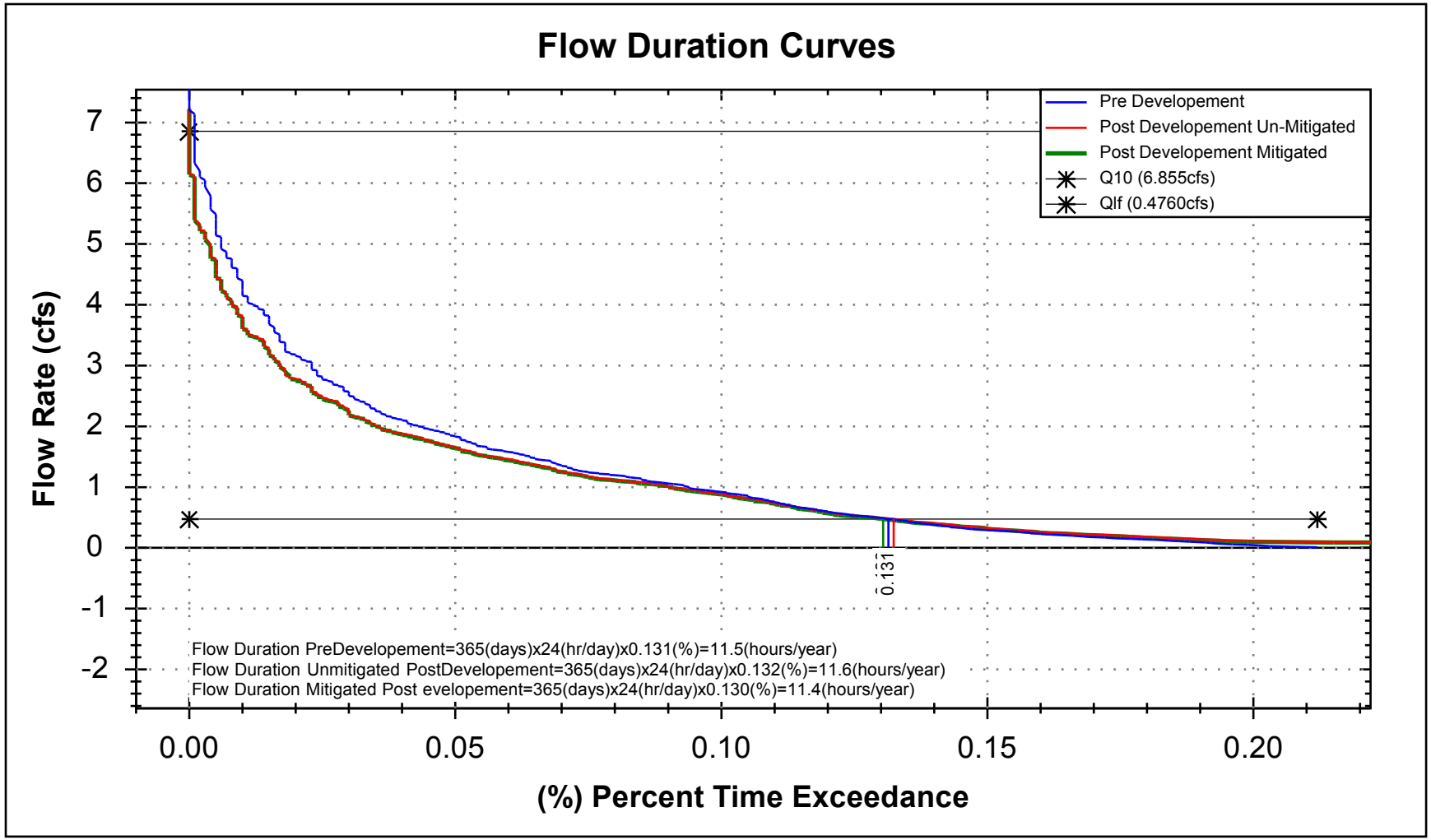
The discharge rates and counts are confirmed as was described above. The top row should be the smallest runoff value (0.00cfs usually). Total Periods Exceeding of the first line should be the total number of rainfall records in the study. The percentage of Time Exceeding should be the total periods Exceeding divided by the total number of rainfall records in the study (100% for the first line). For each successive discharge rate, the total periods exceeding for the current line should be the total periods exceeding from the line above minus the number of periods from the line above. The number of periods and the number of periods exceeding should zero out at the last line.

Compare Plotted Curves to Table Data

Randomly check a few of the plotted points against the values verified above.

Verify by Observation that the plotted values of $Q_{10\,a}$nd Q_{lf} are reasonable.

Verify that the correct values for each of these return periods are plotted correctly on the graph.


Flow Duration Curves
Pre Developement
Post Developement Un-Mitigated
Post Developement Mitigated
Q10 (6.855cfs)
Qlf (0.4760cfs)
Flow Rate (cfs)
7
6
5
4
3
2
1
0
-1
-2
0.131
Flow Duration PreDevelopement=365(days)x24(hr/day)x0.131(%)=11.5(hours/year)
Flow Duration Unmitigated PostDevelopement=365(days)x24(hr/day)x0.132(%)=11.6(hours/year)
Flow Duration Mitigated Post evelopement=365(days)x24(hr/day)x0.130(%)=11.4(hours/year)
0.00
0.05
0.10
0.15
0.20
(%) Percent Time Exceedance

Compare Post-Developement Curve to Pre-Developement Curve

post-developement SWMM file: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Proposed Conditions\VVCC SWMM Proposed Conditions UNmitigated.out
post-developement time stamp: 9/9/2014 10:27:31 AM
Compared to:
pre-developement SWMM file: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Existing Conditions\VVCC SWMM exisiting Conditions-SWMM.out
pre-developement time stamp: 9/9/2014 2:52:07 AM

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
0	0.01	4.66	0.21	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
1	0.02	3.14	0.21	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
2	0.03	2.34	0.20	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
3	0.04	1.76	0.20	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
4	0.05	1.29	0.20	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
5	0.06	0.94	0.20	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
6	0.07	0.67	0.19	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
7	0.08	0.40	0.19	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
8	0.09	0.23	0.19	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
9	0.10	0.21	0.19	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
10	0.11	0.20	0.19	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
11	0.12	0.20	0.18	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
12	0.13	0.19	0.18	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
13	0.14	0.19	0.18	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
14	0.15	0.19	0.18	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
15	0.16	0.19	0.17	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
16	0.17	0.18	0.17	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
17	0.18	0.18	0.17	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
18	0.19	0.18	0.17	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
19	0.20	0.18	0.17	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
20	0.21	0.17	0.16	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
21	0.22	0.17	0.16	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
22	0.23	0.17	0.16	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
23	0.24	0.16	0.16	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
24	0.25	0.16	0.16	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
25	0.26	0.16	0.16	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
26	0.27	0.16	0.16	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
27	0.28	0.16	0.15	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
28	0.29	0.16	0.15	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
29	0.30	0.15	0.15	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
30	0.31	0.15	0.15	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
31	0.32	0.15	0.15	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
32	0.33	0.15	0.15	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
33	0.34	0.15	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
34	0.35	0.15	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
35	0.36	0.15	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
36	0.37	0.14	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
37	0.38	0.14	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
38	0.39	0.14	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
39	0.40	0.14	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
40	0.41	0.14	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
41	0.42	0.14	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
42	0.43	0.14	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
43	0.44	0.14	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
44	0.45	0.14	0.13	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
45	0.46	0.13	0.13	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
46	0.47	0.13	0.13	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
47	0.48	0.13	0.13	FALSE	TRUE	FALSE	Pass: Post Duration <10% Over Pre Duration
48	0.49	0.13	0.13	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
49	0.50	0.13	0.13	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
50	0.51	0.13	0.13	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
51	0.52	0.13	0.13	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
52	0.53	0.13	0.13	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
53	0.54	0.13	0.12	FALSE	TRUE	FALSE	Pass: Post Duration <10% Over Pre Duration
54	0.55	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
55	0.56	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
56	0.57	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
57	0.58	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
58	0.59	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
59	0.60	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
60	0.61	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
61	0.62	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
62	0.63	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
63	0.64	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
64	0.65	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
65	0.66	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
66	0.67	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
67	0.68	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
68	0.69	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
69	0.70	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
70	0.71	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
71	0.72	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
72	0.73	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
73	0.75	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
74	0.76	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
75	0.77	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
76	0.78	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
77	0.79	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
78	0.80	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
79	0.81	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
80	0.82	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
81	0.83	0.10	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
82	0.84	0.10	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
83	0.85	0.10	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
84	0.86	0.10	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
85	0.87	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
86	0.88	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
87	0.89	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
88	0.90	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
89	0.91	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
90	0.92	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
91	0.94	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
92	0.95	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
93	0.96	0.09	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
94	0.97	0.09	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
95	0.98	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
96	0.99	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
97	1.00	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
98	1.02	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
99	1.03	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
100	1.04	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
101	1.05	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
102	1.06	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
103	1.07	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
104	1.08	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
105	1.09	0.08	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
106	1.10	0.08	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
107	1.11	0.08	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
108	1.12	0.08	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
109	1.13	0.08	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
110	1.14	0.08	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
111	1.15	0.08	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
112	1.16	0.08	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
113	1.17	0.08	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
114	1.18	0.08	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
115	1.20	0.07	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
116	1.21	0.07	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
117	1.22	0.07	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
118	1.23	0.07	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
119	1.24	0.07	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
120	1.25	0.07	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
121	1.26	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
122	1.27	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
123	1.28	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
124	1.29	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
125	1.30	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
126	1.31	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
127	1.32	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
128	1.33	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
129	1.34	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
130	1.35	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
131	1.36	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
132	1.37	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
133	1.38	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
134	1.39	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
135	1.40	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
136	1.41	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
137	1.42	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
138	1.43	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
139	1.44	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
140	1.45	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
141	1.46	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
142	1.47	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
143	1.48	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
144	1.49	0.06	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
145	1.50	0.06	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
146	1.51	0.06	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
147	1.52	0.06	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
148	1.53	0.06	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
149	1.54	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
150	1.56	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
151	1.57	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
152	1.58	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
153	1.59	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
154	1.60	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
155	1.61	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
156	1.62	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
157	1.64	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
158	1.65	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
159	1.66	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
160	1.67	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
161	1.68	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
162	1.69	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
163	1.70	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
164	1.71	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
165	1.72	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
166	1.73	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
167	1.74	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
168	1.76	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
169	1.77	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
170	1.79	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
171	1.80	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
172	1.81	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
173	1.82	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
174	1.83	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
175	1.84	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
176	1.85	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
177	1.86	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
178	1.88	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
179	1.89	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
180	1.90	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
181	1.91	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
182	1.92	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
183	1.93	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
184	1.94	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
185	1.95	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
186	1.97	0.04	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
187	1.98	0.04	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
188	1.99	0.04	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
189	2.01	0.04	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
190	2.02	0.04	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
191	2.03	0.04	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
192	2.05	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
193	2.07	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
194	2.09	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
195	2.10	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
196	2.11	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
197	2.12	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
198	2.14	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
199	2.15	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
200	2.16	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
201	2.17	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
202	2.18	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
203	2.19	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
204	2.20	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
205	2.22	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
206	2.28	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
207	2.32	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
208	2.33	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
209	2.34	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
210	2.35	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
211	2.40	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
212	2.41	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
213	2.42	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
214	2.43	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
215	2.44	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
216	2.45	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
217	2.46	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
218	2.47	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
219	2.48	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
220	2.49	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
221	2.50	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
222	2.52	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
223	2.53	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
224	2.56	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
225	2.57	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
226	2.60	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
227	2.64	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
228	2.66	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
229	2.67	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
230	2.71	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
231	2.72	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
232	2.74	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
233	2.75	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
234	2.77	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
235	2.78	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
236	2.79	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
237	2.80	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
238	2.81	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
239	2.82	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
240	2.83	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
241	2.88	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
242	2.92	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
243	2.94	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
244	2.95	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
245	2.98	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
246	3.00	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
247	3.03	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
248	3.05	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
249	3.06	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
250	3.09	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
251	3.13	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
252	3.14	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
253	3.19	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
254	3.22	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
255	3.27	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
256	3.28	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
257	3.33	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
258	3.39	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
259	3.43	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
260	3.44	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
261	3.45	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
262	3.46	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
263	3.47	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
264	3.48	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
265	3.49	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
266	3.52	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
267	3.59	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
268	3.60	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
269	3.65	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
270	3.69	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
271	3.75	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
272	3.82	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
273	3.84	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
274	3.88	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
275	3.91	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
276	3.97	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
277	3.99	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
278	4.04	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
279	4.06	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
280	4.07	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
281	4.08	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
282	4.12	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
283	4.15	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
284	4.18	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
285	4.19	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
286	4.25	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
287	4.35	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
288	4.39	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
289	4.41	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
290	4.42	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
291	4.44	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
292	4.52	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
293	4.61	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
294	4.63	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
295	4.76	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
296	4.79	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
297	4.91	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
298	4.92	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
299	4.99	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
300	5.11	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
301	5.12	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
302	5.14	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
303	5.19	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
304	5.21	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
305	5.23	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
306	5.24	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
307	5.27	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
308	5.29	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
309	5.32	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
310	5.41	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
311	5.79	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
312	6.03	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
313	6.11	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
314	6.12	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
315	6.15	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
316	7.23	0.00	0.00	TRUE	FALSE	FALSE	Pass- Qpost Above Flow Control Upper Limit

Compare Post-Developement Curve to Pre-Developement Curve

post-developement SWMM file: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Proposed Conditions\VVCC SWMM Proposed Conditions Mitigated.out
post-developement time stamp: 9/9/2014 10:27:46 AM
Compared to:
pre-developement SWMM file: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Existing Conditions\VVCC SWMM exisiting Conditions-SWMM.out
pre-developement time stamp: 9/9/2014 2:52:07 AM

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
0	0.01	4.40	0.21	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
1	0.02	3.00	0.21	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
2	0.03	2.33	0.20	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
3	0.04	1.81	0.20	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
4	0.05	1.39	0.20	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
5	0.06	1.04	0.20	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
6	0.07	0.78	0.19	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
7	0.08	0.51	0.19	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
8	0.09	0.22	0.19	FALSE	FALSE	TRUE	Pass- Qpost Below Flow Control Threshold
9	0.10	0.20	0.19	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
10	0.11	0.20	0.19	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
11	0.12	0.19	0.18	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
12	0.13	0.19	0.18	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
13	0.14	0.19	0.18	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
14	0.15	0.19	0.18	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
15	0.16	0.18	0.17	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
16	0.17	0.18	0.17	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
17	0.18	0.18	0.17	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
18	0.19	0.18	0.17	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
19	0.20	0.17	0.17	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
20	0.21	0.17	0.16	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
21	0.22	0.17	0.16	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
22	0.23	0.17	0.16	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
23	0.24	0.16	0.16	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
24	0.25	0.16	0.16	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
25	0.26	0.16	0.16	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
26	0.27	0.16	0.16	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
27	0.28	0.16	0.15	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
28	0.29	0.15	0.15	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
29	0.30	0.15	0.15	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
30	0.31	0.15	0.15	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
31	0.32	0.15	0.15	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
32	0.33	0.15	0.15	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
33	0.34	0.15	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
34	0.35	0.15	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
35	0.36	0.14	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
36	0.37	0.14	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
37	0.38	0.14	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
38	0.39	0.14	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
39	0.40	0.14	0.14	FALSE	TRUE	FALSE	Pass- Qpost Below Flow Control Threshold
40	0.41	0.14	0.14	TRUE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
41	0.42	0.14	0.14	TRUE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
42	0.43	0.14	0.14	TRUE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
43	0.44	0.13	0.14	TRUE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
44	0.45	0.13	0.13	TRUE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
45	0.46	0.13	0.13	TRUE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
46	0.47	0.13	0.13	TRUE	FALSE	FALSE	Pass- Qpost Below Flow Control Threshold
47	0.48	0.13	0.13	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
48	0.49	0.13	0.13	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
49	0.50	0.13	0.13	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
50	0.51	0.13	0.13	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
51	0.52	0.13	0.13	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
52	0.53	0.12	0.13	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
53	0.54	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
54	0.55	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
55	0.56	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
56	0.57	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
57	0.58	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
58	0.59	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
59	0.60	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
60	0.61	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
61	0.62	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
62	0.63	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
63	0.64	0.12	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
64	0.65	0.11	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
65	0.66	0.11	0.12	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
66	0.68	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
67	0.69	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
68	0.70	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
69	0.71	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
70	0.72	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
71	0.73	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
72	0.74	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
73	0.75	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
74	0.76	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
75	0.77	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
76	0.78	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
77	0.79	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
78	0.80	0.11	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
79	0.81	0.10	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
80	0.82	0.10	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
81	0.83	0.10	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
82	0.84	0.10	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
83	0.85	0.10	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
84	0.86	0.10	0.11	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
85	0.87	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
86	0.88	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
87	0.89	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
88	0.90	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
89	0.91	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
90	0.92	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
91	0.93	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
92	0.94	0.09	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
93	0.95	0.09	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
94	0.96	0.09	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
95	0.97	0.09	0.10	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
96	0.98	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
97	0.99	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
98	1.00	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
99	1.01	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
100	1.02	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
101	1.03	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
102	1.04	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
103	1.05	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
104	1.06	0.09	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
105	1.07	0.08	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
106	1.08	0.08	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
107	1.09	0.08	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
108	1.10	0.08	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
109	1.11	0.08	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
110	1.12	0.08	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
111	1.13	0.08	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
112	1.14	0.08	0.09	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
113	1.15	0.08	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
114	1.16	0.08	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
115	1.17	0.08	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
116	1.18	0.07	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
117	1.19	0.07	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
118	1.20	0.07	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
119	1.21	0.07	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
120	1.22	0.07	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
121	1.23	0.07	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
122	1.24	0.07	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
123	1.25	0.07	0.08	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
124	1.26	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
125	1.27	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
126	1.29	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
127	1.30	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
128	1.31	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
129	1.32	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
130	1.33	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
131	1.34	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
132	1.35	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
133	1.36	0.07	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
134	1.37	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
135	1.38	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
136	1.39	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
137	1.40	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
138	1.41	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
139	1.42	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
140	1.43	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
141	1.44	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
142	1.45	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
143	1.46	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
144	1.48	0.06	0.07	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
145	1.49	0.06	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
146	1.50	0.06	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
147	1.51	0.06	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
148	1.52	0.06	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
149	1.53	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
150	1.56	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
151	1.57	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
152	1.58	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
153	1.59	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
154	1.60	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
155	1.62	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
156	1.63	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
157	1.64	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
158	1.66	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
159	1.67	0.05	0.06	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
160	1.68	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
161	1.69	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
162	1.70	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
163	1.71	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
164	1.72	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
165	1.73	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
166	1.74	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
167	1.76	0.05	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
168	1.77	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
169	1.79	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
170	1.80	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
171	1.81	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
172	1.83	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
173	1.84	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
174	1.85	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
175	1.86	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
176	1.87	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
177	1.88	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
178	1.89	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
179	1.90	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
180	1.91	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
181	1.92	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
182	1.93	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
183	1.94	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
184	1.95	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
185	1.96	0.04	0.05	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
186	1.98	0.04	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
187	1.99	0.04	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
188	2.00	0.04	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
189	2.02	0.04	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
190	2.03	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
191	2.05	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
192	2.06	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
193	2.08	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
194	2.10	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
195	2.12	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
196	2.13	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
197	2.14	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
198	2.15	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
199	2.16	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
200	2.18	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
201	2.19	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
202	2.21	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
203	2.26	0.03	0.04	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
204	2.30	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
205	2.31	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
206	2.33	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
207	2.34	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
208	2.37	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
209	2.39	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
210	2.40	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
211	2.41	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
212	2.42	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
213	2.45	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
214	2.47	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
215	2.48	0.03	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
216	2.49	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
217	2.50	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
218	2.52	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
219	2.53	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
220	2.54	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
221	2.55	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
222	2.56	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
223	2.58	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
224	2.60	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
225	2.66	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
226	2.67	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
227	2.70	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
228	2.71	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
229	2.72	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
230	2.73	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
231	2.74	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
232	2.75	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
233	2.76	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
234	2.77	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
235	2.78	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
236	2.79	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
237	2.81	0.02	0.03	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
238	2.82	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
239	2.89	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
240	2.91	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
241	2.92	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
242	2.98	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
243	3.02	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
244	3.04	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
245	3.08	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
246	3.10	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
247	3.11	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
248	3.13	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
249	3.14	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
250	3.17	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
251	3.18	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
252	3.22	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
253	3.25	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
254	3.27	0.02	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
255	3.31	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
256	3.33	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
257	3.34	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
258	3.40	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
259	3.41	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
260	3.43	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
261	3.44	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
262	3.45	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
263	3.46	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
264	3.47	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
265	3.48	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
266	3.50	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
267	3.58	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
268	3.60	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
269	3.62	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
270	3.68	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
271	3.76	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
272	3.80	0.01	0.02	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
273	3.83	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
274	3.87	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
275	3.89	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
276	3.90	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
277	3.95	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
278	3.99	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
279	4.02	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
280	4.05	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
281	4.07	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
282	4.12	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
283	4.14	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
284	4.15	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
285	4.16	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
286	4.19	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
287	4.23	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
288	4.34	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
289	4.36	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
290	4.40	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
291	4.42	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
292	4.44	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
293	4.50	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
294	4.58	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
295	4.62	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
296	4.74	0.01	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
297	4.76	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
298	4.79	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
299	4.91	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
300	4.97	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
301	5.07	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
302	5.11	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
303	5.14	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
304	5.15	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
305	5.20	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
306	5.21	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
307	5.22	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
308	5.26	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
309	5.29	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
310	5.30	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
311	5.39	0.00	0.01	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration

Post PT #	Flow Rate	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
312	5.77	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
313	6.02	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
314	6.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
315	6.11	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
316	6.14	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration < Pre Duration
317	7.22	0.00	0.00	TRUE	FALSE	FALSE	Pass- Qpost Above Flow Control Upper Limit

Duration Table Summary at Project Discharge Point

file name: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Existing Conditions\VVCC SWMM exisiting Conditions-
time stamp: 9/9/2014 2:52:07 AM

DISCHARGE	Number of periods when discharge was equal to or greater than DISCHARGE column but less		
Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
0.00	497207	498263	100.0000
0.01	27	1056	0.2120
0.02	20	1029	0.2070
0.03	9	1009	0.2030
0.04	9	1000	0.2010
0.05	13	991	0.1990
0.06	16	978	0.1960
0.07	5	962	0.1930
0.08	7	957	0.1920
0.09	12	950	0.1910
0.10	13	938	0.1880
0.11	9	925	0.1860
0.12	8	916	0.1840
0.13	16	908	0.1820
0.14	10	892	0.1790
0.15	17	882	0.1770
0.16	9	865	0.1740
0.17	12	856	0.1720
0.18	9	844	0.1690
0.19	10	835	0.1680
0.20	10	825	0.1660
0.21	9	815	0.1640
0.22	10	806	0.1620
0.23	8	796	0.1600
0.24	3	788	0.1580
0.25	7	785	0.1580
0.26	6	778	0.1560
0.27	9	772	0.1550
0.28	10	763	0.1530
0.29	16	753	0.1510
0.30	7	737	0.1480
0.31	5	730	0.1470
0.32	5	725	0.1460
0.33	8	720	0.1450
0.34	1	712	0.1430
0.35	3	711	0.1430
0.36	5	708	0.1420
0.37	4	703	0.1410
0.38	7	699	0.1400
0.39	6	692	0.1390
0.40	5	686	0.1380
0.41	2	681	0.1370
0.42	5	679	0.1360
0.43	3	674	0.1350
0.44	5	671	0.1350
0.45	3	666	0.1340
0.46	7	663	0.1330
0.47	5	656	0.1320
0.48	5	651	0.1310
0.49	4	646	0.1300
0.50	6	642	0.1290
0.51	4	636	0.1280
0.52	7	632	0.1270
0.53	6	625	0.1250

Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
0.54	3	619	0.1240
0.55	3	616	0.1240
0.56	5	613	0.1230
0.57	4	608	0.1220
0.58	5	604	0.1210
0.59	1	599	0.1200
0.60	6	598	0.1200
0.61	4	592	0.1190
0.62	2	588	0.1180
0.63	3	586	0.1180
0.64	6	583	0.1170
0.65	5	577	0.1160
0.66	3	572	0.1150
0.67	2	569	0.1140
0.68	3	567	0.1140
0.69	2	564	0.1130
0.70	2	562	0.1130
0.71	1	560	0.1120
0.72	6	559	0.1120
0.73	2	553	0.1110
0.74	1	551	0.1110
0.75	3	550	0.1100
0.76	3	547	0.1100
0.77	2	544	0.1090
0.78	3	542	0.1090
0.79	3	539	0.1080
0.80	5	536	0.1080
0.81	5	531	0.1070
0.82	2	526	0.1060
0.84	2	524	0.1050
0.85	1	522	0.1050
0.86	3	521	0.1050
0.87	7	518	0.1040
0.88	3	511	0.1030
0.89	5	508	0.1020
0.90	2	503	0.1010
0.91	2	501	0.1010
0.92	8	499	0.1000
0.93	5	491	0.0990
0.94	4	486	0.0980
0.95	6	482	0.0970
0.96	5	476	0.0960
0.97	2	471	0.0950
0.98	1	469	0.0940
0.99	1	468	0.0940
1.00	4	467	0.0940
1.02	2	463	0.0930
1.03	4	461	0.0930
1.04	6	457	0.0920
1.05	4	451	0.0910
1.06	4	447	0.0900
1.07	7	443	0.0890
1.08	3	436	0.0880
1.09	4	433	0.0870
1.10	1	429	0.0860
1.11	3	428	0.0860
1.12	1	425	0.0850
1.13	1	424	0.0850
1.14	6	423	0.0850
1.15	1	417	0.0840

Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
1.16	5	416	0.0830
1.17	2	411	0.0820
1.18	7	409	0.0820
1.19	6	402	0.0810
1.20	2	396	0.0790
1.21	8	394	0.0790
1.22	4	386	0.0770
1.23	7	382	0.0770
1.24	3	375	0.0750
1.25	3	372	0.0750
1.26	3	369	0.0740
1.27	4	366	0.0730
1.28	2	362	0.0730
1.29	1	360	0.0720
1.30	2	359	0.0720
1.31	2	357	0.0720
1.32	2	355	0.0710
1.33	1	353	0.0710
1.34	3	352	0.0710
1.35	2	349	0.0700
1.36	2	347	0.0700
1.38	2	345	0.0690
1.39	3	343	0.0690
1.41	2	340	0.0680
1.42	1	338	0.0680
1.43	3	337	0.0680
1.44	3	334	0.0670
1.45	5	331	0.0660
1.46	1	326	0.0650
1.47	2	325	0.0650
1.48	2	323	0.0650
1.49	2	321	0.0640
1.50	2	319	0.0640
1.51	4	317	0.0640
1.52	1	313	0.0630
1.53	1	312	0.0630
1.54	4	311	0.0620
1.55	2	307	0.0620
1.56	2	305	0.0610
1.57	2	303	0.0610
1.58	5	301	0.0600
1.59	4	296	0.0590
1.60	4	292	0.0590
1.61	3	288	0.0580
1.62	5	285	0.0570
1.63	1	280	0.0560
1.64	1	279	0.0560
1.65	1	278	0.0560
1.66	3	277	0.0560
1.67	3	274	0.0550
1.68	2	271	0.0540
1.69	1	269	0.0540
1.70	1	268	0.0540
1.71	2	267	0.0540
1.72	3	265	0.0530
1.74	1	262	0.0530
1.75	1	261	0.0520
1.76	3	260	0.0520
1.77	2	257	0.0520
1.78	1	255	0.0510

Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
1.79	1	254	0.0510
1.80	1	253	0.0510
1.82	1	252	0.0510
1.83	4	251	0.0500
1.84	2	247	0.0500
1.85	2	245	0.0490
1.86	1	243	0.0490
1.87	2	242	0.0490
1.88	1	240	0.0480
1.89	2	239	0.0480
1.90	1	237	0.0480
1.91	2	236	0.0470
1.92	3	234	0.0470
1.93	2	231	0.0460
1.94	3	229	0.0460
1.95	4	226	0.0450
1.96	2	222	0.0450
1.97	1	220	0.0440
1.98	2	219	0.0440
1.99	3	217	0.0440
2.00	2	214	0.0430
2.01	1	212	0.0430
2.02	2	211	0.0420
2.03	3	209	0.0420
2.05	1	206	0.0410
2.08	2	205	0.0410
2.09	2	203	0.0410
2.10	4	201	0.0400
2.11	4	197	0.0400
2.12	1	193	0.0390
2.13	2	192	0.0390
2.14	2	190	0.0380
2.15	1	188	0.0380
2.16	3	187	0.0380
2.17	2	184	0.0370
2.19	3	182	0.0370
2.21	1	179	0.0360
2.23	1	178	0.0360
2.24	2	177	0.0360
2.25	1	175	0.0350
2.26	2	174	0.0350
2.29	1	172	0.0350
2.30	1	171	0.0340
2.31	2	170	0.0340
2.34	1	168	0.0340
2.35	1	167	0.0340
2.37	1	166	0.0330
2.38	1	165	0.0330
2.39	2	164	0.0330
2.40	1	162	0.0330
2.41	2	161	0.0320
2.42	2	159	0.0320
2.43	3	157	0.0320
2.45	1	154	0.0310
2.46	1	153	0.0310
2.49	3	152	0.0310
2.50	1	149	0.0300
2.54	1	148	0.0300
2.57	1	147	0.0300
2.58	1	146	0.0290

Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
2.62	2	145	0.0290
2.65	3	143	0.0290
2.66	1	140	0.0280
2.68	2	139	0.0280
2.69	2	137	0.0270
2.70	1	135	0.0270
2.71	1	134	0.0270
2.73	1	133	0.0270
2.75	3	132	0.0260
2.76	3	129	0.0260
2.77	2	126	0.0250
2.79	1	124	0.0250
2.82	1	123	0.0250
2.83	1	122	0.0240
2.86	2	121	0.0240
2.91	1	119	0.0240
2.92	1	118	0.0240
2.93	1	117	0.0230
2.94	1	116	0.0230
2.95	1	115	0.0230
3.04	1	114	0.0230
3.06	1	113	0.0230
3.07	2	112	0.0220
3.08	3	110	0.0220
3.10	2	107	0.0210
3.12	1	105	0.0210
3.13	1	104	0.0210
3.14	1	103	0.0210
3.16	1	102	0.0200
3.17	3	101	0.0200
3.18	2	98	0.0200
3.19	3	96	0.0190
3.21	1	93	0.0190
3.23	2	92	0.0180
3.30	1	90	0.0180
3.37	1	89	0.0180
3.38	1	88	0.0180
3.39	2	87	0.0170
3.44	1	85	0.0170
3.48	1	84	0.0170
3.51	1	83	0.0170
3.55	2	82	0.0160
3.59	2	80	0.0160
3.63	1	78	0.0160
3.68	1	77	0.0150
3.71	2	76	0.0150
3.76	1	74	0.0150
3.82	1	73	0.0150
3.83	2	72	0.0140
3.89	2	70	0.0140
3.92	1	68	0.0140
3.93	1	67	0.0130
3.95	1	66	0.0130
3.96	2	65	0.0130
3.97	1	63	0.0130
3.99	2	62	0.0120
4.00	2	60	0.0120
4.01	1	58	0.0120
4.03	2	57	0.0110
4.04	1	55	0.0110

Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
4.07	1	54	0.0110
4.14	1	53	0.0110
4.15	1	52	0.0100
4.23	1	51	0.0100
4.25	1	50	0.0100
4.26	1	49	0.0100
4.40	1	48	0.0100
4.44	1	47	0.0090
4.47	1	46	0.0090
4.49	1	45	0.0090
4.51	1	44	0.0090
4.60	1	43	0.0090
4.61	1	42	0.0080
4.69	1	41	0.0080
4.70	1	40	0.0080
4.73	1	39	0.0080
4.76	3	38	0.0080
4.77	1	35	0.0070
4.79	1	34	0.0070
4.87	1	33	0.0070
4.92	1	32	0.0060
5.03	1	31	0.0060
5.07	1	30	0.0060
5.11	1	29	0.0060
5.12	1	28	0.0060
5.14	1	27	0.0050
5.23	1	26	0.0050
5.40	1	25	0.0050
5.41	1	24	0.0050
5.49	1	23	0.0050
5.57	1	22	0.0040
5.60	1	21	0.0040
5.70	1	20	0.0040
5.71	1	19	0.0040
5.79	1	18	0.0040
5.94	2	17	0.0030
5.97	1	15	0.0030
6.04	1	14	0.0030
6.05	1	13	0.0030
6.10	1	12	0.0020
6.11	1	11	0.0020
6.12	1	10	0.0020
6.15	1	9	0.0020
6.20	1	8	0.0020
6.33	1	7	0.0010
6.81	1	6	0.0010
7.07	1	5	0.0010
7.13	1	4	0.0010
7.14	1	3	0.0010
7.20	1	2	0.0000
8.43	1	1	0.0000
----------End of Data----------			

Duration Table Summary at Project Discharge Point

file name: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Proposed Conditions\VVCC SWMM Proposed Conditio
time stamp: 9/9/2014 10:27:31 AM

DISCHARGE	Number of periods when discharge was equal to or greater than DISCHARGE column but less		
Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
0.00	475046	498263	100.0000
0.01	7577	23217	4.6600
0.02	3959	15640	3.1390
0.03	2919	11681	2.3440
0.04	2336	8762	1.7590
0.05	1766	6426	1.2900
0.06	1329	4660	0.9350
0.07	1349	3331	0.6690
0.08	848	1982	0.3980
0.09	106	1134	0.2280
0.10	37	1028	0.2060
0.11	18	991	0.1990
0.12	8	973	0.1950
0.13	17	965	0.1940
0.14	13	948	0.1900
0.15	14	935	0.1880
0.16	11	921	0.1850
0.17	8	910	0.1830
0.18	13	902	0.1810
0.19	13	889	0.1780
0.20	14	876	0.1760
0.21	22	862	0.1730
0.22	9	840	0.1690
0.23	12	831	0.1670
0.24	10	819	0.1640
0.25	12	809	0.1620
0.26	3	797	0.1600
0.27	11	794	0.1590
0.28	6	783	0.1570
0.29	9	777	0.1560
0.30	10	768	0.1540
0.31	7	758	0.1520
0.32	5	751	0.1510
0.33	8	746	0.1500
0.34	6	738	0.1480
0.35	9	732	0.1470
0.36	5	723	0.1450
0.37	3	718	0.1440
0.38	7	715	0.1430
0.39	7	708	0.1420
0.40	6	701	0.1410
0.41	7	695	0.1390
0.42	9	688	0.1380
0.43	3	679	0.1360
0.44	3	676	0.1360
0.45	5	673	0.1350
0.46	5	668	0.1340
0.47	7	663	0.1330
0.48	7	656	0.1320
0.49	6	649	0.1300
0.50	6	643	0.1290
0.51	8	637	0.1280
0.52	4	629	0.1260
0.53	4	625	0.1250

Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
0.54	6	621	0.1250
0.55	7	615	0.1230
0.56	3	608	0.1220
0.57	3	605	0.1210
0.58	4	602	0.1210
0.59	3	598	0.1200
0.60	2	595	0.1190
0.61	7	593	0.1190
0.62	2	586	0.1180
0.63	4	584	0.1170
0.64	4	580	0.1160
0.65	2	576	0.1160
0.66	5	574	0.1150
0.67	2	569	0.1140
0.68	3	567	0.1140
0.69	4	564	0.1130
0.70	5	560	0.1120
0.71	2	555	0.1110
0.72	5	553	0.1110
0.73	3	548	0.1100
0.75	3	545	0.1090
0.76	6	542	0.1090
0.77	2	536	0.1080
0.78	2	534	0.1070
0.79	6	532	0.1070
0.80	4	526	0.1060
0.81	1	522	0.1050
0.82	3	521	0.1050
0.83	5	518	0.1040
0.84	3	513	0.1030
0.85	5	510	0.1020
0.86	1	505	0.1010
0.87	3	504	0.1010
0.88	2	501	0.1010
0.89	4	499	0.1000
0.90	11	495	0.0990
0.91	4	484	0.0970
0.92	4	480	0.0960
0.94	4	476	0.0960
0.95	6	472	0.0950
0.96	5	466	0.0940
0.97	4	461	0.0930
0.98	2	457	0.0920
0.99	6	455	0.0910
1.00	1	449	0.0900
1.02	6	448	0.0900
1.03	2	442	0.0890
1.04	2	440	0.0880
1.05	3	438	0.0880
1.06	7	435	0.0870
1.07	5	428	0.0860
1.08	9	423	0.0850
1.09	5	414	0.0830
1.10	5	409	0.0820
1.11	7	404	0.0810
1.12	4	397	0.0800
1.13	7	393	0.0790
1.14	4	386	0.0770
1.15	5	382	0.0770
1.16	1	377	0.0760

Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
1.17	3	376	0.0750
1.18	3	373	0.0750
1.20	6	370	0.0740
1.21	1	364	0.0730
1.22	5	363	0.0730
1.23	3	358	0.0720
1.24	6	355	0.0710
1.25	2	349	0.0700
1.26	1	347	0.0700
1.27	1	346	0.0690
1.28	1	345	0.0690
1.29	1	344	0.0690
1.30	2	343	0.0690
1.31	4	341	0.0680
1.32	2	337	0.0680
1.33	3	335	0.0670
1.34	2	332	0.0670
1.35	1	330	0.0660
1.36	5	329	0.0660
1.37	3	324	0.0650
1.38	4	321	0.0640
1.39	1	317	0.0640
1.40	3	316	0.0630
1.41	2	313	0.0630
1.42	4	311	0.0620
1.43	2	307	0.0620
1.44	3	305	0.0610
1.45	3	302	0.0610
1.46	7	299	0.0600
1.47	2	292	0.0590
1.48	1	290	0.0580
1.49	6	289	0.0580
1.50	4	283	0.0570
1.51	3	279	0.0560
1.52	3	276	0.0550
1.53	3	273	0.0550
1.54	1	270	0.0540
1.56	2	269	0.0540
1.57	2	267	0.0540
1.58	3	265	0.0530
1.59	3	262	0.0530
1.60	1	259	0.0520
1.61	4	258	0.0520
1.62	1	254	0.0510
1.64	3	253	0.0510
1.65	3	250	0.0500
1.66	4	247	0.0500
1.67	1	243	0.0490
1.68	2	242	0.0490
1.69	2	240	0.0480
1.70	3	238	0.0480
1.71	1	235	0.0470
1.72	1	234	0.0470
1.73	3	233	0.0470
1.74	4	230	0.0460
1.76	1	226	0.0450
1.77	5	225	0.0450
1.79	1	220	0.0440
1.80	2	219	0.0440
1.81	4	217	0.0440

Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
1.82	1	213	0.0430
1.83	3	212	0.0430
1.84	2	209	0.0420
1.85	3	207	0.0420
1.86	5	204	0.0410
1.88	4	199	0.0400
1.89	3	195	0.0390
1.90	1	192	0.0390
1.91	4	191	0.0380
1.92	1	187	0.0380
1.93	3	186	0.0370
1.94	3	183	0.0370
1.95	1	180	0.0360
1.97	1	179	0.0360
1.98	1	178	0.0360
1.99	1	177	0.0360
2.01	2	176	0.0350
2.02	2	174	0.0350
2.03	1	172	0.0350
2.05	3	171	0.0340
2.07	1	168	0.0340
2.09	2	167	0.0340
2.10	2	165	0.0330
2.11	1	163	0.0330
2.12	1	162	0.0330
2.14	3	161	0.0320
2.15	3	158	0.0320
2.16	1	155	0.0310
2.17	3	154	0.0310
2.18	1	151	0.0300
2.19	1	150	0.0300
2.20	1	149	0.0300
2.22	1	148	0.0300
2.28	1	147	0.0300
2.32	1	146	0.0290
2.33	2	145	0.0290
2.34	1	143	0.0290
2.35	3	142	0.0280
2.40	1	139	0.0280
2.41	3	138	0.0280
2.42	2	135	0.0270
2.43	1	133	0.0270
2.44	3	132	0.0260
2.45	1	129	0.0260
2.46	2	128	0.0260
2.47	1	126	0.0250
2.48	1	125	0.0250
2.49	1	124	0.0250
2.50	1	123	0.0250
2.52	3	122	0.0240
2.53	1	119	0.0240
2.56	1	118	0.0240
2.57	1	117	0.0230
2.60	2	116	0.0230
2.64	1	114	0.0230
2.66	1	113	0.0230
2.67	1	112	0.0220
2.71	2	111	0.0220
2.72	2	109	0.0220
2.74	2	107	0.0210

Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
2.75	2	105	0.0210
2.77	3	103	0.0210
2.78	4	100	0.0200
2.79	1	96	0.0190
2.80	1	95	0.0190
2.81	1	94	0.0190
2.82	1	93	0.0190
2.83	1	92	0.0180
2.88	1	91	0.0180
2.92	1	90	0.0180
2.94	1	89	0.0180
2.95	1	88	0.0180
2.98	1	87	0.0170
3.00	1	86	0.0170
3.03	1	85	0.0170
3.05	1	84	0.0170
3.06	1	83	0.0170
3.09	1	82	0.0160
3.13	2	81	0.0160
3.14	2	79	0.0160
3.19	2	77	0.0150
3.22	1	75	0.0150
3.27	1	74	0.0150
3.28	1	73	0.0150
3.33	3	72	0.0140
3.39	1	69	0.0140
3.43	2	68	0.0140
3.44	1	66	0.0130
3.45	1	65	0.0130
3.46	1	64	0.0130
3.47	1	63	0.0130
3.48	3	62	0.0120
3.49	4	59	0.0120
3.52	2	55	0.0110
3.59	1	53	0.0110
3.60	1	52	0.0100
3.65	1	51	0.0100
3.69	1	50	0.0100
3.75	1	49	0.0100
3.82	1	48	0.0100
3.84	1	47	0.0090
3.88	2	46	0.0090
3.91	1	44	0.0090
3.97	1	43	0.0090
3.99	1	42	0.0080
4.04	1	41	0.0080
4.06	1	40	0.0080
4.07	1	39	0.0080
4.08	1	38	0.0080
4.12	1	37	0.0070
4.15	2	36	0.0070
4.18	1	34	0.0070
4.19	1	33	0.0070
4.25	1	32	0.0060
4.35	1	31	0.0060
4.39	1	30	0.0060
4.41	1	29	0.0060
4.42	1	28	0.0060
4.44	1	27	0.0050
4.52	1	26	0.0050

Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
4.61	1	25	0.0050
4.63	1	24	0.0050
4.76	1	23	0.0050
4.79	2	22	0.0040
4.91	1	20	0.0040
4.92	1	19	0.0040
4.99	1	18	0.0040
5.11	1	17	0.0030
5.12	1	16	0.0030
5.14	1	15	0.0030
5.19	1	14	0.0030
5.21	1	13	0.0030
5.23	1	12	0.0020
5.24	1	11	0.0020
5.27	1	10	0.0020
5.29	1	9	0.0020
5.32	1	8	0.0020
5.41	1	7	0.0010
5.79	1	6	0.0010
6.03	1	5	0.0010
6.11	1	4	0.0010
6.12	1	3	0.0010
6.15	1	2	0.0000
7.23	1	1	0.0000
----------End of Data----------			

Duration Table Summary at Project Discharge Point

file name: Q:\13\13008\GPIP\GPIP1\SWMP (rev 2)\working files\DMA-Map\Proposed Conditions\VVCC SWMM Proposed Conditio
time stamp: 9/9/2014 10:27:46 AM

DISCHARGE	Number of periods when discharge was equal to or greater than DISCHARGE column but less		
Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
0.00	476345	498263	100.0000
0.01	6955	21918	4.3990
0.02	3356	14963	3.0030
0.03	2592	11607	2.3290
0.04	2084	9015	1.8090
0.05	1734	6931	1.3910
0.06	1320	5197	1.0430
0.07	1337	3877	0.7780
0.08	1467	2540	0.5100
0.09	83	1073	0.2150
0.10	20	990	0.1990
0.11	13	970	0.1950
0.12	13	957	0.1920
0.13	10	944	0.1890
0.14	11	934	0.1870
0.15	19	923	0.1850
0.16	10	904	0.1810
0.17	10	894	0.1790
0.18	14	884	0.1770
0.19	14	870	0.1750
0.20	12	856	0.1720
0.21	11	844	0.1690
0.22	9	833	0.1670
0.23	16	824	0.1650
0.24	12	808	0.1620
0.25	4	796	0.1600
0.26	8	792	0.1590
0.27	8	784	0.1570
0.28	10	776	0.1560
0.29	9	766	0.1540
0.30	8	757	0.1520
0.31	1	749	0.1500
0.32	8	748	0.1500
0.33	8	740	0.1490
0.34	8	732	0.1470
0.35	5	724	0.1450
0.36	7	719	0.1440
0.37	10	712	0.1430
0.38	2	702	0.1410
0.39	5	700	0.1400
0.40	11	695	0.1390
0.41	6	684	0.1370
0.42	4	678	0.1360
0.43	5	674	0.1350
0.44	6	669	0.1340
0.45	7	663	0.1330
0.46	4	656	0.1320
0.47	6	652	0.1310
0.48	3	646	0.1300
0.49	4	643	0.1290
0.50	9	639	0.1280
0.51	9	630	0.1260
0.52	8	621	0.1250
0.53	6	613	0.1230

Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
0.54	3	607	0.1220
0.55	3	604	0.1210
0.56	2	601	0.1210
0.57	6	599	0.1200
0.58	2	593	0.1190
0.59	2	591	0.1190
0.60	1	589	0.1180
0.61	6	588	0.1180
0.62	4	582	0.1170
0.63	4	578	0.1160
0.64	4	574	0.1150
0.65	2	570	0.1140
0.66	3	568	0.1140
0.68	4	565	0.1130
0.69	7	561	0.1130
0.70	1	554	0.1110
0.71	5	553	0.1110
0.72	2	548	0.1100
0.73	1	546	0.1100
0.74	4	545	0.1090
0.75	4	541	0.1090
0.76	8	537	0.1080
0.77	1	529	0.1060
0.78	2	528	0.1060
0.79	4	526	0.1060
0.80	3	522	0.1050
0.81	5	519	0.1040
0.82	1	514	0.1030
0.83	3	513	0.1030
0.84	4	510	0.1020
0.85	3	506	0.1020
0.86	1	503	0.1010
0.87	4	502	0.1010
0.88	6	498	0.1000
0.89	6	492	0.0990
0.90	4	486	0.0980
0.91	4	482	0.0970
0.92	6	478	0.0960
0.93	2	472	0.0950
0.94	5	470	0.0940
0.95	3	465	0.0930
0.96	2	462	0.0930
0.97	7	460	0.0920
0.98	1	453	0.0910
0.99	3	452	0.0910
1.00	1	449	0.0900
1.01	1	448	0.0900
1.02	7	447	0.0900
1.03	3	440	0.0880
1.04	5	437	0.0880
1.05	6	432	0.0870
1.06	5	426	0.0850
1.07	3	421	0.0840
1.08	5	418	0.0840
1.09	11	413	0.0830
1.10	4	402	0.0810
1.11	6	398	0.0800
1.12	7	392	0.0790
1.13	5	385	0.0770
1.14	3	380	0.0760

Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
1.15	1	377	0.0760
1.16	1	376	0.0750
1.17	5	375	0.0750
1.18	2	370	0.0740
1.19	3	368	0.0740
1.20	4	365	0.0730
1.21	5	361	0.0720
1.22	1	356	0.0710
1.23	2	355	0.0710
1.24	3	353	0.0710
1.25	5	350	0.0700
1.26	3	345	0.0690
1.27	2	342	0.0690
1.29	1	340	0.0680
1.30	2	339	0.0680
1.31	4	337	0.0680
1.32	4	333	0.0670
1.33	2	329	0.0660
1.34	1	327	0.0660
1.35	4	326	0.0650
1.36	2	322	0.0650
1.37	3	320	0.0640
1.38	4	317	0.0640
1.39	2	313	0.0630
1.40	3	311	0.0620
1.41	2	308	0.0620
1.42	1	306	0.0610
1.43	6	305	0.0610
1.44	4	299	0.0600
1.45	2	295	0.0590
1.46	4	293	0.0590
1.48	6	289	0.0580
1.49	2	283	0.0570
1.50	3	281	0.0560
1.51	4	278	0.0560
1.52	3	274	0.0550
1.53	5	271	0.0540
1.56	3	266	0.0530
1.57	3	263	0.0530
1.58	4	260	0.0520
1.59	1	256	0.0510
1.60	1	255	0.0510
1.62	2	254	0.0510
1.63	3	252	0.0510
1.64	3	249	0.0500
1.66	3	246	0.0490
1.67	2	243	0.0490
1.68	4	241	0.0480
1.69	4	237	0.0480
1.70	1	233	0.0470
1.71	1	232	0.0470
1.72	2	231	0.0460
1.73	2	229	0.0460
1.74	2	227	0.0460
1.76	5	225	0.0450
1.77	1	220	0.0440
1.79	4	219	0.0440
1.80	4	215	0.0430
1.81	2	211	0.0420
1.83	4	209	0.0420

Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
1.84	3	205	0.0410
1.85	1	202	0.0410
1.86	4	201	0.0400
1.87	1	197	0.0400
1.88	4	196	0.0390
1.89	3	192	0.0390
1.90	1	189	0.0380
1.91	1	188	0.0380
1.92	1	187	0.0380
1.93	4	186	0.0370
1.94	1	182	0.0370
1.95	2	181	0.0360
1.96	1	179	0.0360
1.98	1	178	0.0360
1.99	2	177	0.0360
2.00	3	175	0.0350
2.02	1	172	0.0350
2.03	1	171	0.0340
2.05	1	170	0.0340
2.06	3	169	0.0340
2.08	3	166	0.0330
2.10	1	163	0.0330
2.12	3	162	0.0330
2.13	2	159	0.0320
2.14	3	157	0.0320
2.15	2	154	0.0310
2.16	1	152	0.0310
2.18	2	151	0.0300
2.19	1	149	0.0300
2.21	1	148	0.0300
2.26	1	147	0.0300
2.30	2	146	0.0290
2.31	2	144	0.0290
2.33	2	142	0.0280
2.34	1	140	0.0280
2.37	1	139	0.0280
2.39	2	138	0.0280
2.40	2	136	0.0270
2.41	4	134	0.0270
2.42	3	130	0.0260
2.45	3	127	0.0250
2.47	1	124	0.0250
2.48	1	123	0.0250
2.49	1	122	0.0240
2.50	1	121	0.0240
2.52	1	120	0.0240
2.53	1	119	0.0240
2.54	1	118	0.0240
2.55	1	117	0.0230
2.56	1	116	0.0230
2.58	1	115	0.0230
2.60	1	114	0.0230
2.66	2	113	0.0230
2.67	1	111	0.0220
2.70	1	110	0.0220
2.71	2	109	0.0220
2.72	2	107	0.0210
2.73	1	105	0.0210
2.74	2	104	0.0210
2.75	2	102	0.0200

Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
2.76	1	100	0.0200
2.77	2	99	0.0200
2.78	2	97	0.0190
2.79	1	95	0.0190
2.81	1	94	0.0190
2.82	2	93	0.0190
2.89	1	91	0.0180
2.91	2	90	0.0180
2.92	1	88	0.0180
2.98	2	87	0.0170
3.02	1	85	0.0170
3.04	2	84	0.0170
3.08	1	82	0.0160
3.10	1	81	0.0160
3.11	1	80	0.0160
3.13	1	79	0.0160
3.14	1	78	0.0160
3.17	1	77	0.0150
3.18	1	76	0.0150
3.22	1	75	0.0150
3.25	1	74	0.0150
3.27	1	73	0.0150
3.31	1	72	0.0140
3.33	1	71	0.0140
3.34	1	70	0.0140
3.40	1	69	0.0140
3.41	1	68	0.0140
3.43	2	67	0.0130
3.44	1	65	0.0130
3.45	1	64	0.0130
3.46	1	63	0.0130
3.47	4	62	0.0120
3.48	3	58	0.0120
3.50	2	55	0.0110
3.58	1	53	0.0110
3.60	1	52	0.0100
3.62	1	51	0.0100
3.68	1	50	0.0100
3.76	1	49	0.0100
3.80	1	48	0.0100
3.83	1	47	0.0090
3.87	1	46	0.0090
3.89	1	45	0.0090
3.90	1	44	0.0090
3.95	1	43	0.0090
3.99	1	42	0.0080
4.02	1	41	0.0080
4.05	2	40	0.0080
4.07	1	38	0.0080
4.12	1	37	0.0070
4.14	1	36	0.0070
4.15	1	35	0.0070
4.16	1	34	0.0070
4.19	1	33	0.0070
4.23	1	32	0.0060
4.34	1	31	0.0060
4.36	1	30	0.0060
4.40	1	29	0.0060
4.42	1	28	0.0060
4.44	1	27	0.0050

Discharge Rate	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
4.50	1	26	0.0050
4.58	1	25	0.0050
4.62	1	24	0.0050
4.74	1	23	0.0050
4.76	1	22	0.0040
4.79	1	21	0.0040
4.91	2	20	0.0040
4.97	1	18	0.0040
5.07	1	17	0.0030
5.11	1	16	0.0030
5.14	1	15	0.0030
5.15	1	14	0.0030
5.20	1	13	0.0030
5.21	1	12	0.0020
5.22	1	11	0.0020
5.26	1	10	0.0020
5.29	1	9	0.0020
5.30	1	8	0.0020
5.39	1	7	0.0010
5.77	1	6	0.0010
6.02	1	5	0.0010
6.10	1	4	0.0010
6.11	1	3	0.0010
6.14	1	2	0.0000
7.22	1	1	0.0000
----------End of Data----------			

END OF STATISTICS ANALYSIS

Map Scale: 1:1,830 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 25 50 100 150

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

Saturated Hydraulic Conductivity (Ksat)—San Diego County Area, California
(13008r2)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- <= 1.5877
- > 1.5877 and <= 9.0000
- > 9.0000 and <= 28.0000
- Not rated or not available

Soil Rating Lines
- <= 1.5877
- > 1.5877 and <= 9.0000
- > 9.0000 and <= 28.0000
- Not rated or not available

Soil Rating Points
- <= 1.5877
- > 1.5877 and <= 9.0000
- > 9.0000 and <= 28.0000
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Diego County Area, California
Survey Area Data: Version 7, Nov 15, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 3, 2010—Jun 19, 2010

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.

Saturated Hydraulic Conductivity (Ksat)

Saturated Hydraulic Conductivity (Ksat)— Summary by Map Unit — San Diego County Area, California (CA638)				
Map unit symbol	**Map unit name**	**Rating (micrometers per second)**	**Acres in AOI**	**Percent of AOI**
EsE2	Escondido very fine sandy loam, 15 to 30 percent slopes , eroded	9.0000	5.7	57.3%
FxG	Friant rocky fine sandy loam, 30 to 70 percent slopes	28.0000	1.8	18.6%
PeD2	Placentia sandy loam, 9 to 15 percent slopes, eroded	1.5877	2.4	24.1%
Totals for Area of Interest			**9.9**	**100.0%**

Description

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Rating Options

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Component" returns the attribute value associated with the component with the highest percent composition in the map unit. If more than one component shares the highest percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher attribute value should be returned in the case of a percent composition tie. The result returned by this aggregation method may or may not represent the dominant condition throughout the map unit.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Fastest

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Interpret Nulls as Zero: No

This option indicates if a null value for a component should be converted to zero before aggregation occurs. This will be done only if a map unit has at least one component where this value is not null.

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

For an attribute of a soil horizon, a depth qualification must be specified. In most cases it is probably most appropriate to specify a fixed depth range, either in centimeters or inches. The Bottom Depth must be greater than the Top Depth, and the Top Depth can be greater than zero. The choice of "inches" or "centimeters" only applies to the depth of soil to be evaluated. It has no influence on the units of measure the data are presented in.

When "Surface Layer" is specified as the depth qualifier, only the surface layer or horizon is considered when deriving a value for a component, but keep in mind that the thickness of the surface layer varies from component to component.

When "All Layers" is specified as the depth qualifier, all layers recorded for a component are considered when deriving the value for that component.

Whenever more than one layer or horizon is considered when deriving a value for a component, and the attribute being aggregated is a numeric attribute, a weighted average value is returned, where the weighting factor is the layer or horizon thickness.

Hydrologic Soil Group—San Diego County Area, California
(13008r2)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Diego County Area, California
Survey Area Data: Version 7, Nov 15, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 3, 2010—Jun 19, 2010

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.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — San Diego County Area, California (CA638)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
EsE2	Escondido very fine sandy loam, 15 to 30 percent slopes , eroded	C	5.7	57.3%
FxG	Friant rocky fine sandy loam, 30 to 70 percent slopes	D	1.8	18.6%
PeD2	Placentia sandy loam, 9 to 15 percent slopes, eroded	D	2.4	24.1%
Totals for Area of Interest			**9.9**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.0 (Build 5.0.022)

Vista Valley Country Club Pool House Pre-Developement Conditions

****
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
****

****
Analysis Options
****
Flow Units ..... CFS
Process Models:
  Rainfall/Runoff ..... YES
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... NO
  Water Quality ..... NO
Infiltration Method ..... GREEN_AMPT
Starting Date JUL-25-1951 00:00:00
Ending Date MAY-26-2008 23:00:00
Antecedent Dry Days 0.0
Report Time Step 01:00:00
Wet Time Step 01:00:00
Dry Time Step 01:00:00

****
Element Count
****
Number of rain gages 1
Number of subcatchments ... 1
Number of nodes 1
Number of links 0
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
Fallbrook	R:\Rain gage dat\Fallbrook ALERT Station.dat		

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
SC-01	9.88	1001.00	0.00	45.0000	Fallbrook	Project-Discharge-Point

****
Node Summary
****

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
Project-Discharge-Point	OUTFALL	0.00	0.00	0.0	

****
Rainfall File Summary
****

Station ID	First Date	Last Date	Recording Frequency	Periods w/Precip	Periods Missing	Periods Malfunc.
Fallbrook	JUL-25-1951	MAY-26-2008	60 min	8771	0	0

****
Control Actions Taken
****

Runoff Quantity Continuity	Volume acre-feet	Depth inches
Total Precipitation	712.324	865.433
Evaporation Loss	10.273	12.481
Infiltration Loss	616.427	748.924
Surface Runoff	108.340	131.627
Final Surface Storage	0.000	0.000
Continuity Error (%)	-3.189	

Flow Routing Continuity	Volume acre-feet	Volume 10^6 gal
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	108.303	35.292
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	108.303	35.292
Internal Outflow	0.000	0.000
Storage Losses	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip in	Total Runon in	Total Evap in	Total Infil in	Total Runoff in	Total Runoff	Peak Runoff	Runoff Coeff

10^6 gal CFS

SC-01	865.43	0.00	12.48	748.92	131.63	35.30	8.43	0.152

Analysis begun on: Tue Sep 09 02:50:01 2014
Analysis ended on: Tue Sep 09 02:52:07 2014
Total elapsed time: 00:02:06

```
EPA STORM WATER MANAGEMENT MODEL - VERSION 5.0 (Build 5.0.022)
--------------------------------------------------------------

Vista Valley Country Club Pool House Post-Developement Conditions

***********************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
***********************************************************

****************
Analysis Options
****************
Flow Units ............... CFS
Process Models:
  Rainfall/Runoff ........ YES
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ NO
  Water Quality .......... NO
Infiltration Method ...... GREEN_AMPT
Flow Routing Method ...... KINWAVE
Starting Date ............ JUL-25-1951 00:00:00
Ending Date .............. MAY-26-2008 23:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 01:00:00
Wet Time Step ............ 01:00:00
Dry Time Step ............ 01:00:00
Routing Time Step ........ 60.00 sec


WARNING 04: minimum elevation drop used for Conduit SC-43-Drain

WARNING 04: minimum elevation drop used for Conduit SC-41-Drain

WARNING 04: minimum elevation drop used for Conduit SC-42-Drain

WARNING 08: elevation drop exceeds length for Conduit SC-40-Drain

*************
Element Count
*************
Number of rain gages ...... 1
Number of subcatchments ... 52
Number of nodes ........... 9
Number of links ........... 12
Number of pollutants ...... 0
Number of land uses ....... 0


****************
Raingage Summary
****************
                                          Data        Recording
Name                Data Source           Type        Interval
----------------------------------------------------------------
Fallbrook           R:\Rain gage dat\Fallbrook ALERT Station.dat


********************
```

Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
SC-01	0.00	4.50	0.00	50.0000	Fallbrook	SC-02
SC-02	0.00	32.80	100.00	50.0000	Fallbrook	SC-03
SC-03	0.06	20.60	100.00	10.0000	Fallbrook	SC-52
SC-04	0.06	87.50	100.00	50.0000	Fallbrook	SC-05
SC-05	0.10	370.00	100.00	0.5000	Fallbrook	SC-40
SC-06	0.07	256.30	100.00	0.5000	Fallbrook	SC-05
SC-07	0.00	9.70	100.00	0.5000	Fallbrook	SC-09
SC-08	0.07	244.70	100.00	0.5000	Fallbrook	SC-06
SC-09	0.02	90.20	100.00	0.5000	Fallbrook	SC-10
SC-10	0.02	86.70	100.00	0.5000	Fallbrook	SC-27
SC-11	0.03	60.30	100.00	50.0000	Fallbrook	SC-10
SC-12	0.06	123.50	100.00	50.0000	Fallbrook	SC-13
SC-13	0.06	228.60	100.00	0.5000	Fallbrook	SC-10
SC-14	0.02	86.90	100.00	1.0000	Fallbrook	SC-16
SC-15	0.04	17.90	100.00	1.0000	Fallbrook	SC-16
SC-16	0.13	78.80	100.00	2.0000	Fallbrook	SC-41
SC-17	0.33	164.60	100.00	2.0000	Fallbrook	SC-43
SC-18	0.03	14.10	100.00	9.0000	Fallbrook	SC-42
SC-19	0.01	49.00	0.00	1.0000	Fallbrook	SC-05
SC-20	0.01	27.70	0.00	1.0000	Fallbrook	SC-05
SC-21	0.00	72.80	0.00	1.0000	Fallbrook	SC-05
SC-22	0.07	80.50	0.00	1.0000	Fallbrook	Project-Discharge-Point
SC-23	0.01	14.80	0.00	1.0000	Fallbrook	SC-09
SC-24	0.00	71.20	0.00	1.0000	Fallbrook	SC-09
SC-25	0.01	27.70	0.00	1.0000	Fallbrook	SC-09
SC-26	0.01	48.00	0.00	1.0000	Fallbrook	SC-10
SC-27	0.01	13.50	0.00	1.0000	Fallbrook	SC-42
SC-28	0.01	36.70	0.00	1.0000	Fallbrook	SC-10

SC-29	0.02	34.10	0.00	1.0000	Fallbrook
SC-13					
SC-30	0.01	54.60	0.00	50.0000	Fallbrook
SC-42					
SC-31	0.04	65.30	0.00	50.0000	Fallbrook
SC-40					
SC-32	0.02	49.10	0.00	50.0000	Fallbrook
SC-16					
SC-33	0.00	21.40	0.00	50.0000	Fallbrook
SC-16					
SC-34	0.04	79.40	0.00	50.0000	Fallbrook
SC-18					
SC-35	0.05	64.10	0.00	50.0000	Fallbrook
SC-17					
SC-36	0.02	56.00	0.00	50.0000	Fallbrook
SC-17					
SC-37	0.01	14.10	0.00	50.0000	Fallbrook
SC-41					
SC-38	0.01	23.80	0.00	50.0000	Fallbrook
SC-41					
SC-39	0.08	64.80	0.00	50.0000	Fallbrook
SC-43					
SC-40	0.03	33.60	100.00	1.0000	Fallbrook
SC-40-Storage-Level					
SC-41	0.01	16.70	100.00	1.0000	Fallbrook
SC-41-Storage-Level					
SC-42	0.02	35.60	100.00	1.0000	Fallbrook
SC-42-Storage-Level					
SC-44	0.10	197.60	0.00	50.0000	Fallbrook
Project-Discharge-Point					
SC-45	0.05	197.20	0.00	50.0000	Fallbrook
Project-Discharge-Point					
SC-46	0.04	60.10	0.00	50.0000	Fallbrook
Project-Discharge-Point					
SC-47	0.02	20.20	0.00	50.0000	Fallbrook
Project-Discharge-Point					
SC-48	0.06	65.00	0.00	50.0000	Fallbrook
Project-Discharge-Point					
SC-43	0.03	80.20	100.00	1.0000	Fallbrook
SC-43-Storage-Level					
SC-49	0.13	137.90	0.00	50.0000	Fallbrook
Project-Discharge-Point					
SC-50	0.01	63.50	0.00	50.0000	Fallbrook
Project-Discharge-Point					
SC-51	7.83	1001.00	0.00	45.0000	Fallbrook
Project-Discharge-Point					
SC-52	0.00	15.00	0.00	1.0000	Fallbrook
Project-Discharge-Point					

****
Node Summary
****

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
SC-43-Discharge	JUNCTION	0.00	1.00	0.0	
SC-41-Discharge	JUNCTION	0.00	1.00	0.0	
SC-42-Discharge	JUNCTION	0.00	1.00	0.0	
SC-40-Discharge	JUNCTION	462.08	462.50	0.0	
Project-Discharge-Point	OUTFALL	0.00	1.00	0.0	
SC-43-Storage-Level	STORAGE	435.33	0.50	0.0	
SC-41-Storage-Level	STORAGE	454.73	0.50	0.0	

SC-42-Storage-Level	STORAGE	456.33	0.50	0.0
SC-40-Storage-Level	STORAGE	462.33	0.50	0.0

****
Link Summary
****

Name	From Node	To Node	Type	Length	%Slope	Roughness
SC-43-Drain	SC-43-Discharge	Project-Discharge-Point	CONDUIT	400.0	0.0003	0.0100
SC-41-Drain	SC-41-Discharge	Project-Discharge-Point	CONDUIT	400.0	0.0003	0.0100
SC-42-Drain	SC-42-Discharge	Project-Discharge-Point	CONDUIT	400.0	0.0003	0.0100
SC-40-Drain	SC-40-Discharge	Project-Discharge-Point	CONDUIT	400.0	115.5208	0.0100
SC-43-Orifice	SC-43-Storage-Level	SC-43-Discharge	ORIFICE			
SC-41-Orifice	SC-41-Storage-Level	SC-41-Discharge	ORIFICE			
SC-42-Orifice	SC-42-Storage-Level	SC-42-Discharge	ORIFICE			
SC-40-Orifice	SC-40-Storage-Level	SC-40-Discharge	ORIFICE			
SC-43-Weir	SC-43-Storage-Level	SC-43-Discharge	WEIR			
SC-41-Weir	SC-41-Storage-Level	SC-41-Discharge	WEIR			
SC-42-Weir	SC-42-Storage-Level	SC-42-Discharge	WEIR			
SC-40-Weir	SC-40-Storage-Level	SC-40-Discharge	WEIR			

****
Cross Section Summary
****

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
SC-43-Drain	CIRCULAR	1.00	0.79	0.25	1.00	1	0.07
SC-41-Drain	CIRCULAR	1.00	0.79	0.25	1.00	1	0.07
SC-42-Drain	CIRCULAR	1.00	0.79	0.25	1.00	1	0.07
SC-40-Drain	CIRCULAR	1.00	0.79	0.25	1.00	1	49.78

****
Rainfall File Summary
****

Station ID	First Date	Last Date	Recording Frequency	Periods w/Precip	Periods Missing	Periods Malfunc.
Fallbrook	JUL-25-1951	MAY-26-2008	60 min	8771	0	0

****
Control Actions Taken
****

Runoff Quantity Continuity	Volume acre-feet	Depth inches
Total Precipitation	712.348	865.433
Evaporation Loss	22.502	27.338
Infiltration Loss	542.624	659.234
Surface Runoff	175.460	213.167
Final Surface Storage	0.000	0.000
Continuity Error (%)	-3.964	

Flow Routing Continuity	Volume acre-feet	Volume 10^6 gal
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	175.430	57.166
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	156.993	51.158
Internal Outflow	16.984	5.535
Storage Losses	1.479	0.482
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	-0.015	

Highest Flow Instability Indexes

All links are stable.

Routing Time Step Summary

Minimum Time Step	:	60.00 sec
Average Time Step	:	60.00 sec
Maximum Time Step	:	60.00 sec
Percent in Steady State	:	0.00
Average Iterations per Step	:	1.01

Subcatchment Runoff Summary

Subcatchment	Total Precip in	Total Runon in	Total Evap in	Total Infil in	Total Runoff in	Total Runoff 10^6 gal	Peak Runoff CFS	Runoff Coeff
SC-01	865.43	0.00	11.71	736.04	152.32	0.00	0.00	0.176

SC-02			865.43	9.67	143.29	0.00	807.80
0.10	0.00	0.923					
SC-03			865.43	67.83	150.36	0.00	851.96
1.29	0.06	0.913					
SC-04			865.43	0.00	19.26	0.00	853.60
1.30	0.05	0.986					
SC-05			865.43	1573.22	165.48	0.00	2339.89
6.47	0.24	0.960					
SC-06			865.43	761.44	153.79	0.00	1543.57
2.96	0.11	0.949					
SC-07			865.43	0.00	146.22	0.00	798.58
0.06	0.00	0.923					
SC-08			865.43	0.00	146.20	0.00	798.19
1.46	0.06	0.922					
SC-09			865.43	184.74	150.28	0.00	968.55
0.65	0.03	0.922					
SC-10			865.43	6365.88	167.85	0.00	7130.42
4.61	0.20	0.986					
SC-11			865.43	0.00	16.01	0.00	855.55
0.64	0.03	0.989					
SC-12			865.43	0.00	16.00	0.00	855.55
1.32	0.05	0.989					
SC-13			865.43	821.30	159.37	0.00	1600.36
2.74	0.11	0.949					
SC-14			865.43	0.00	145.76	0.00	798.28
0.37	0.02	0.922					
SC-15			865.43	0.00	147.75	0.00	794.24
0.78	0.03	0.918					
SC-16			865.43	354.70	154.17	0.00	1135.77
3.96	0.17	0.931					
SC-17			865.43	33.69	147.05	0.00	829.08
7.32	0.35	0.922					
SC-18			865.43	193.55	146.32	0.00	990.15
0.87	0.06	0.935					
SC-19			865.43	0.00	12.06	741.64	146.20
0.05	0.01	0.169					
SC-20			865.43	0.00	12.03	741.29	146.64
0.03	0.01	0.169					
SC-21			865.43	0.00	11.85	737.97	150.55
0.02	0.00	0.174					
SC-22			865.43	0.00	12.35	746.51	137.30
0.28	0.06	0.159					
SC-23			865.43	0.00	12.17	743.31	143.59
0.02	0.01	0.166					
SC-24			865.43	0.00	11.85	737.97	150.56
0.02	0.00	0.174					
SC-25			865.43	0.00	12.03	741.32	146.60
0.03	0.01	0.169					
SC-26			865.43	0.00	11.95	739.85	148.49
0.03	0.01	0.172					
SC-27			865.43	27374.46	86.13	2341.65	26087.70
4.39	0.20	0.924					
SC-28			865.43	0.00	12.16	743.13	143.94
0.06	0.01	0.166					
SC-29			865.43	0.00	12.30	745.44	139.89
0.09	0.02	0.162					
SC-30			865.43	0.00	11.74	736.44	152.00
0.03	0.01	0.176					
SC-31			865.43	0.00	11.87	738.58	149.88
0.15	0.03	0.173					
SC-32			865.43	0.00	11.84	737.72	150.83
0.07	0.01	0.174					
SC-33			865.43	0.00	11.80	737.14	151.38

0.02	0.00	0.175					
SC-34			865.43	0.00	11.87	738.42	150.06
0.17	0.04	0.173					
SC-35			865.43	0.00	11.92	739.37	149.05
0.21	0.04	0.172					
SC-36			865.43	0.00	11.85	737.90	150.62
0.09	0.02	0.174					
SC-37			865.43	0.00	11.85	737.89	150.63
0.02	0.00	0.174					
SC-38			865.43	0.00	11.89	738.74	149.71
0.06	0.01	0.173					
SC-39			865.43	0.00	11.97	740.43	147.81
0.31	0.07	0.171					
SC-40			865.43	9312.90	173.49	0.00	10069.35
7.16	0.28	0.989					
SC-41			865.43	17728.58	160.46	0.00	18497.78
4.22	0.19	0.995					
SC-42			865.43	9938.47	178.53	0.00	10687.92
5.69	0.23	0.989					
SC-44			865.43	0.00	11.87	738.42	150.06
0.43	0.09	0.173					
SC-45			865.43	0.00	11.81	737.26	151.25
0.20	0.04	0.175					
SC-46			865.43	0.00	11.90	738.91	149.54
0.16	0.03	0.173					
SC-47			865.43	0.00	11.95	739.88	148.46
0.08	0.02	0.172					
SC-48			865.43	0.00	11.93	739.51	148.90
0.22	0.05	0.172					
SC-43			865.43	8481.63	153.15	0.00	9262.11
8.32	0.42	0.991					
SC-49			865.43	0.00	11.94	739.82	148.52
0.54	0.11	0.172					
SC-50			865.43	0.00	11.79	737.01	151.48
0.05	0.01	0.175					
SC-51			865.43	0.00	12.40	747.87	134.53
28.61	6.69	0.155					
SC-52			865.43	9635.32	58.41	1810.63	8977.10
1.20	0.06	0.855					

****
Node Depth Summary
****

Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Time of Max Occurrence days hr:min
SC-43-Discharge	JUNCTION	0.01	0.35	0.35	34 12:39
SC-41-Discharge	JUNCTION	0.01	0.35	0.35	34 12:01
SC-42-Discharge	JUNCTION	0.01	0.35	0.35	34 14:45
SC-40-Discharge	JUNCTION	0.00	0.02	462.10	34 13:24
Project-Discharge-Point	OUTFALL	0.01	0.35	0.35	4218 03:13
SC-43-Storage-Level	STORAGE	0.01	0.50	435.83	34 12:47
SC-41-Storage-Level	STORAGE	0.01	0.50	455.23	34 12:09
SC-42-Storage-Level	STORAGE	0.01	0.50	456.83	34 14:54
SC-40-Storage-Level	STORAGE	0.01	0.50	462.83	34 13:32

****
Node Inflow Summary

****

Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal
SC-43-Discharge	JUNCTION	0.00	0.02	34 12:39	0.000	6.032
SC-41-Discharge	JUNCTION	0.00	0.02	34 12:01	0.000	3.397
SC-42-Discharge	JUNCTION	0.00	0.02	34 14:45	0.000	4.437
SC-40-Discharge	JUNCTION	0.00	0.02	34 13:24	0.000	5.516
Project-Discharge-Point	OUTFALL	7.15	7.23	15869 20:00	31.764	51.155
SC-43-Storage-Level	STORAGE	0.42	0.42	15869 21:00	8.326	8.326
SC-41-Storage-Level	STORAGE	0.19	0.19	15869 21:00	4.220	4.220
SC-42-Storage-Level	STORAGE	0.23	0.23	15869 22:00	5.689	5.689
SC-40-Storage-Level	STORAGE	0.28	0.28	15869 21:00	7.164	7.164

****
Node Surcharge Summary
****

No nodes were surcharged.

****
Node Flooding Summary
****

Flooding refers to all water that overflows a node, whether it ponds or not.

Node	Hours Flooded	Maximum Rate CFS	Time of Max Occurrence days hr:min	Total Flood Volume 10^6 gal	Maximum Ponded Volume 1000 ft3
SC-43-Storage-Level	1295.12	0.40	15869 21:00	2.096	0.000
SC-41-Storage-Level	1099.42	0.17	15869 21:00	0.796	0.000
SC-42-Storage-Level	1170.12	0.21	15869 22:00	1.152	0.000
SC-40-Storage-Level	1369.10	0.26	15869 21:00	1.489	0.000

****
Storage Volume Summary
****

Storage Unit	Average Volume 1000 ft3	Avg Pcnt Full	E&I Pcnt Loss	Maximum Volume 1000 ft3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
SC-43-Storage-Level	0.011	2	2	0.601	100	34 12:08	0.02
SC-41-Storage-Level	0.001	1	1	0.141	100	34 11:29	0.02
SC-42-Storage-Level	0.005	1	2	0.355	100	34 14:15	0.02
SC-40-Storage-Level	0.008	2	2	0.488	100	34 12:53	0.02

****
Outfall Loading Summary
****

Outfall Node	Flow Freq. Pcnt.	Avg. Flow CFS	Max. Flow CFS	Total Volume 10^6 gal
Project-Discharge-Point	6.73	0.06	7.23	51.155
System	6.73	0.06	7.23	51.155

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
SC-43-Drain	CONDUIT	0.02	11474 01:13	0.08	0.26	0.35
SC-41-Drain	CONDUIT	0.02	4218 03:13	0.09	0.27	0.35
SC-42-Drain	CONDUIT	0.02	4218 05:12	0.08	0.27	0.35
SC-40-Drain	CONDUIT	0.02	177 05:14	7.43	0.00	0.02
SC-43-Orifice	ORIFICE	0.02	34 12:39			0.00
SC-41-Orifice	ORIFICE	0.02	34 12:01			0.00
SC-42-Orifice	ORIFICE	0.02	34 14:45			0.00
SC-40-Orifice	ORIFICE	0.02	34 13:24			0.00
SC-43-Weir	WEIR	0.00	0 00:00			0.00
SC-41-Weir	WEIR	0.00	0 00:00			0.00
SC-42-Weir	WEIR	0.00	0 00:00			0.00
SC-40-Weir	WEIR	0.00	0 00:00			0.00

****
Conduit Surcharge Summary
****

No conduits were surcharged.

Analysis begun on: Tue Sep 09 10:23:58 2014
Analysis ended on: Tue Sep 09 10:27:31 2014
Total elapsed time: 00:03:33

```
EPA STORM WATER MANAGEMENT MODEL - VERSION 5.0 (Build 5.0.022)
--------------------------------------------------------------

Vista Valley Country Club Pool House Post-Developement Conditions

***********************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
***********************************************************

****************
Analysis Options
****************
Flow Units ............... CFS
Process Models:
  Rainfall/Runoff ........ YES
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ NO
  Water Quality .......... NO
Infiltration Method ...... GREEN_AMPT
Flow Routing Method ...... KINWAVE
Starting Date ............ JUL-25-1951 00:00:00
Ending Date .............. MAY-26-2008 23:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 01:00:00
Wet Time Step ............ 01:00:00
Dry Time Step ............ 01:00:00
Routing Time Step ........ 60.00 sec


WARNING 04: minimum elevation drop used for Conduit SC-43-Drain

WARNING 04: minimum elevation drop used for Conduit SC-41-Drain

WARNING 04: minimum elevation drop used for Conduit SC-42-Drain

WARNING 08: elevation drop exceeds length for Conduit SC-40-Drain

*************
Element Count
*************
Number of rain gages ...... 1
Number of subcatchments ... 52
Number of nodes ........... 9
Number of links ........... 12
Number of pollutants ...... 0
Number of land uses ....... 0


****************
Raingage Summary
****************
                                          Data        Recording
Name                Data Source           Type        Interval
----------------------------------------------------------------
Fallbrook           R:\Rain gage dat\Fallbrook ALERT Station.dat


********************
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Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
SC-01	0.00	4.50	0.00	50.0000	Fallbrook	SC-02
SC-02	0.00	32.80	100.00	50.0000	Fallbrook	SC-03
SC-03	0.06	20.60	100.00	10.0000	Fallbrook	SC-52
SC-04	0.06	87.50	100.00	50.0000	Fallbrook	SC-05
SC-05	0.10	370.00	100.00	0.5000	Fallbrook	SC-40
SC-06	0.07	256.30	100.00	0.5000	Fallbrook	SC-05
SC-07	0.00	9.70	100.00	0.5000	Fallbrook	SC-09
SC-08	0.07	244.70	100.00	0.5000	Fallbrook	SC-06
SC-09	0.02	90.20	100.00	0.5000	Fallbrook	SC-10
SC-10	0.02	86.70	100.00	0.5000	Fallbrook	SC-27
SC-11	0.03	60.30	100.00	50.0000	Fallbrook	SC-10
SC-12	0.06	123.50	100.00	50.0000	Fallbrook	SC-13
SC-13	0.06	228.60	100.00	0.5000	Fallbrook	SC-10
SC-14	0.02	86.90	100.00	1.0000	Fallbrook	SC-16
SC-15	0.04	17.90	100.00	1.0000	Fallbrook	SC-16
SC-16	0.13	78.80	100.00	2.0000	Fallbrook	SC-41
SC-17	0.33	164.60	100.00	2.0000	Fallbrook	SC-43
SC-18	0.03	14.10	100.00	9.0000	Fallbrook	SC-42
SC-19	0.01	49.00	0.00	1.0000	Fallbrook	SC-05
SC-20	0.01	27.70	0.00	1.0000	Fallbrook	SC-05
SC-21	0.00	72.80	0.00	1.0000	Fallbrook	SC-05
SC-22	0.07	80.50	0.00	1.0000	Fallbrook	Project-Discharge-Point
SC-23	0.01	14.80	0.00	1.0000	Fallbrook	SC-09
SC-24	0.00	71.20	0.00	1.0000	Fallbrook	SC-09
SC-25	0.01	27.70	0.00	1.0000	Fallbrook	SC-09
SC-26	0.01	48.00	0.00	1.0000	Fallbrook	SC-10
SC-27	0.01	13.50	0.00	1.0000	Fallbrook	SC-42
SC-28	0.01	36.70	0.00	1.0000	Fallbrook	SC-10

SC-29	0.02	34.10	0.00	1.0000	Fallbrook
SC-13					
SC-30	0.01	54.60	0.00	50.0000	Fallbrook
SC-42					
SC-31	0.04	65.30	0.00	50.0000	Fallbrook
SC-40					
SC-32	0.02	49.10	0.00	50.0000	Fallbrook
SC-16					
SC-33	0.00	21.40	0.00	50.0000	Fallbrook
SC-16					
SC-34	0.04	79.40	0.00	50.0000	Fallbrook
SC-18					
SC-35	0.05	64.10	0.00	50.0000	Fallbrook
SC-17					
SC-36	0.02	56.00	0.00	50.0000	Fallbrook
SC-17					
SC-37	0.01	14.10	0.00	50.0000	Fallbrook
SC-41					
SC-38	0.01	23.80	0.00	50.0000	Fallbrook
SC-41					
SC-39	0.08	64.80	0.00	50.0000	Fallbrook
SC-43					
SC-40	0.03	33.60	100.00	1.0000	Fallbrook
SC-40-Storage-Level					
SC-41	0.01	16.70	100.00	1.0000	Fallbrook
SC-41-Storage-Level					
SC-42	0.02	35.60	100.00	1.0000	Fallbrook
SC-42-Storage-Level					
SC-43	0.03	80.20	100.00	1.0000	Fallbrook
SC-43-Storage-Level					
SC-44	0.10	197.60	0.00	50.0000	Fallbrook
Project-Discharge-Point					
SC-45	0.05	197.20	0.00	50.0000	Fallbrook
Project-Discharge-Point					
SC-46	0.04	60.10	0.00	50.0000	Fallbrook
Project-Discharge-Point					
SC-47	0.02	20.20	0.00	50.0000	Fallbrook
Project-Discharge-Point					
SC-48	0.06	65.00	0.00	50.0000	Fallbrook
Project-Discharge-Point					
SC-49	0.13	137.90	0.00	50.0000	Fallbrook
Project-Discharge-Point					
SC-50	0.01	63.50	0.00	50.0000	Fallbrook
Project-Discharge-Point					
SC-51	7.83	1001.00	0.00	45.0000	Fallbrook
Project-Discharge-Point					
SC-52	0.00	15.00	0.00	1.0000	Fallbrook
Project-Discharge-Point					

****
LID Control Summary
****

Subcatchment	LID Control	No. of Units	Unit Area	Unit Width	% Area Covered	% Imperv Treated
SC-40	Bioretention	1	1141.27	0.00	100.00	0.00
SC-41	Bioretention	1	365.90	0.00	100.00	

SC-42	Bioretention	1	853.78	0.00	100.00	0.00
SC-43	Bioretention	1	1441.84	0.00	100.00	0.00
SC-52	Bioretention	1	100.00	0.00	46.47	0.00

****
Node Summary
****

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
SC-43-Discharge	JUNCTION	0.00	1.00	0.0	
SC-41-Discharge	JUNCTION	0.00	1.00	0.0	
SC-42-Discharge	JUNCTION	0.00	1.00	0.0	
SC-40-Discharge	JUNCTION	462.08	462.50	0.0	
Project-Discharge-Point	OUTFALL	0.00	1.00	0.0	
SC-43-Storage-Level	STORAGE	435.33	0.50	0.0	
SC-41-Storage-Level	STORAGE	454.73	0.50	0.0	
SC-42-Storage-Level	STORAGE	456.33	0.50	0.0	
SC-40-Storage-Level	STORAGE	462.33	0.50	0.0	

****
Link Summary
****

Name	From Node	To Node	Type	Length	%Slope	Roughness
SC-43-Drain	SC-43-Discharge	Project-Discharge-Point	CONDUIT	400.0	0.0003	0.0100
SC-41-Drain	SC-41-Discharge	Project-Discharge-Point	CONDUIT	400.0	0.0003	0.0100
SC-42-Drain	SC-42-Discharge	Project-Discharge-Point	CONDUIT	400.0	0.0003	0.0100
SC-40-Drain	SC-40-Discharge	Project-Discharge-Point	CONDUIT	400.0	115.5208	0.0100
SC-43-Orifice	SC-43-Storage-Level	SC-43-Discharge	ORIFICE			
SC-41-Orifice	SC-41-Storage-Level	SC-41-Discharge	ORIFICE			
SC-42-Orifice	SC-42-Storage-Level	SC-42-Discharge	ORIFICE			
SC-40-Orifice	SC-40-Storage-Level	SC-40-Discharge	ORIFICE			
SC-43-Weir	SC-43-Storage-Level	SC-43-Discharge	WEIR			
SC-41-Weir	SC-41-Storage-Level	SC-41-Discharge	WEIR			
SC-42-Weir	SC-42-Storage-Level	SC-42-Discharge	WEIR			
SC-40-Weir	SC-40-Storage-Level	SC-40-Discharge	WEIR			

****
Cross Section Summary
****

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
SC-43-Drain	CIRCULAR	1.00	0.79	0.25	1.00	1	

0.07						
SC-41-Drain	CIRCULAR	1.00	0.79	0.25	1.00	1
0.07						
SC-42-Drain	CIRCULAR	1.00	0.79	0.25	1.00	1
0.07						
SC-40-Drain	CIRCULAR	1.00	0.79	0.25	1.00	1
49.78						

****
Rainfall File Summary
****

Station ID	First Date	Last Date	Recording Frequency	Periods w/Precip	Periods Missing	Periods Malfunc.
Fallbrook	JUL-25-1951	MAY-26-2008	60 min	8771	0	0

****
Control Actions Taken
****

Runoff Quantity Continuity	Volume acre-feet	Depth inches
Total Precipitation	712.348	865.433
Evaporation Loss	27.793	33.765
Infiltration Loss	542.273	658.809
Surface Runoff	171.488	208.341
Final Surface Storage	0.003	0.004
Continuity Error (%)	-4.100	

Flow Routing Continuity	Volume acre-feet	Volume 10^6 gal
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	171.466	55.875
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	156.310	50.936
Internal Outflow	13.819	4.503
Storage Losses	1.326	0.432
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.007	

****
Highest Flow Instability Indexes
****
All links are stable.

****
Routing Time Step Summary
****
Minimum Time Step : 60.00 sec
Average Time Step : 60.00 sec
Maximum Time Step : 60.00 sec

Percent in Steady State : 0.00
Average Iterations per Step : 1.00

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip in	Total Runon in	Total Evap in	Total Infil in	Total Runoff in	Total Runoff 10^6 gal	Peak Runoff CFS	Runoff Coeff
SC-01	865.43	0.00	11.71	736.04	152.32	0.00	0.00	0.176
SC-02	865.43	9.67	143.29	0.00	807.80	0.10	0.00	0.923
SC-03	865.43	67.83	150.36	0.00	851.96	1.29	0.06	0.913
SC-04	865.43	0.00	19.26	0.00	853.60	1.30	0.05	0.986
SC-05	865.43	1573.22	165.48	0.00	2339.89	6.47	0.24	0.960
SC-06	865.43	761.44	153.79	0.00	1543.57	2.96	0.11	0.949
SC-07	865.43	0.00	146.22	0.00	798.58	0.06	0.00	0.923
SC-08	865.43	0.00	146.20	0.00	798.19	1.46	0.06	0.922
SC-09	865.43	184.74	150.28	0.00	968.55	0.65	0.03	0.922
SC-10	865.43	6365.88	167.85	0.00	7130.42	4.61	0.20	0.986
SC-11	865.43	0.00	16.01	0.00	855.55	0.64	0.03	0.989
SC-12	865.43	0.00	16.00	0.00	855.55	1.32	0.05	0.989
SC-13	865.43	821.30	159.37	0.00	1600.36	2.74	0.11	0.949
SC-14	865.43	0.00	145.76	0.00	798.28	0.37	0.02	0.922
SC-15	865.43	0.00	147.75	0.00	794.24	0.78	0.03	0.918
SC-16	865.43	354.70	154.17	0.00	1135.77	3.96	0.17	0.931
SC-17	865.43	33.69	147.05	0.00	829.08	7.32	0.35	0.922
SC-18	865.43	193.55	146.32	0.00	990.15	0.87	0.06	0.935
SC-19	865.43	0.00	12.06	741.64	146.20	0.05	0.01	0.169
SC-20	865.43	0.00	12.03	741.29	146.64	0.03	0.01	0.169
SC-21	865.43	0.00	11.85	737.97	150.55	0.02	0.00	0.174
SC-22	865.43	0.00	12.35	746.51	137.30			

0.28	0.06	0.159					
SC-23			865.43	0.00	12.17	743.31	143.59
0.02	0.01	0.166					
SC-24			865.43	0.00	11.85	737.97	150.56
0.02	0.00	0.174					
SC-25			865.43	0.00	12.03	741.32	146.60
0.03	0.01	0.169					
SC-26			865.43	0.00	11.95	739.85	148.49
0.03	0.01	0.172					
SC-27			865.43	27374.46	86.13	2341.65	26087.70
4.39	0.20	0.924					
SC-28			865.43	0.00	12.16	743.13	143.94
0.06	0.01	0.166					
SC-29			865.43	0.00	12.30	745.44	139.89
0.09	0.02	0.162					
SC-30			865.43	0.00	11.74	736.44	152.00
0.03	0.01	0.176					
SC-31			865.43	0.00	11.87	738.58	149.88
0.15	0.03	0.173					
SC-32			865.43	0.00	11.84	737.72	150.83
0.07	0.01	0.174					
SC-33			865.43	0.00	11.80	737.14	151.38
0.02	0.00	0.175					
SC-34			865.43	0.00	11.87	738.42	150.06
0.17	0.04	0.173					
SC-35			865.43	0.00	11.92	739.37	149.05
0.21	0.04	0.172					
SC-36			865.43	0.00	11.85	737.90	150.62
0.09	0.02	0.174					
SC-37			865.43	0.00	11.85	737.89	150.63
0.02	0.00	0.174					
SC-38			865.43	0.00	11.89	738.74	149.71
0.06	0.01	0.173					
SC-39			865.43	0.00	11.97	740.43	147.81
0.31	0.07	0.171					
SC-40			865.43	9312.90	883.09	0.00	9438.20
6.71	0.26	0.927					
SC-41			865.43	17728.58	881.38	0.00	18188.05
4.15	0.17	0.978					
SC-42			865.43	9938.47	864.89	0.00	10100.36
5.38	0.23	0.935					
SC-43			865.43	8481.63	863.77	0.00	8686.21
7.81	0.38	0.929					
SC-44			865.43	0.00	11.87	738.42	150.06
0.43	0.09	0.173					
SC-45			865.43	0.00	11.81	737.26	151.25
0.20	0.04	0.175					
SC-46			865.43	0.00	11.90	738.91	149.54
0.16	0.03	0.173					
SC-47			865.43	0.00	11.95	739.88	148.46
0.08	0.02	0.172					
SC-48			865.43	0.00	11.93	739.51	148.90
0.22	0.05	0.172					
SC-49			865.43	0.00	11.94	739.82	148.52
0.54	0.11	0.172					
SC-50			865.43	0.00	11.79	737.01	151.48
0.05	0.01	0.175					
SC-51			865.43	0.00	12.40	747.87	134.53
28.61	6.69	0.155					
SC-52			865.43	9635.32	435.40	959.39	9390.95
1.26	0.05	0.894					

****
LID Performance Summary
****

Subcatchment	LID Control	Drain Outflow in	Init. Storage in	Final Storage in	Pcnt. Error	Total Inflow in	Evap Loss in	Infil Loss in	Surface Outflow in
SC-40	Bioretention	9049.51	0.00	0.51	-1.41	10178.33	883.13	0.00	389.05
SC-41	Bioretention	14975.72	0.00	0.47	-2.56	18594.01	881.42	0.00	3213.20
SC-42	Bioretention	9465.42	0.00	0.46	-1.50	10803.91	864.91	0.00	635.26
SC-43	Bioretention	8201.49	0.00	0.43	-2.18	9347.07	863.79	0.00	485.02
SC-52	Bioretention	9403.63	0.00	0.44	-2.26	10500.76	871.09	0.00	463.21

****
Node Depth Summary
****

Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Time of Max Occurrence days hr:min
SC-43-Discharge	JUNCTION	0.01	0.35	0.35	34 16:47
SC-41-Discharge	JUNCTION	0.01	0.35	0.35	158 02:53
SC-42-Discharge	JUNCTION	0.01	0.35	0.35	93 02:28
SC-40-Discharge	JUNCTION	0.00	0.02	462.10	34 17:15
Project-Discharge-Point	OUTFALL	0.01	0.35	0.35	11756 11:13
SC-43-Storage-Level	STORAGE	0.01	0.50	435.83	34 16:55
SC-41-Storage-Level	STORAGE	0.01	0.50	455.23	158 03:01
SC-42-Storage-Level	STORAGE	0.01	0.50	456.83	93 02:37
SC-40-Storage-Level	STORAGE	0.01	0.50	462.83	34 17:24

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal

SC-43-Discharge	JUNCTION	0.00	0.02	34	16:47	0.000	5.798
SC-41-Discharge	JUNCTION	0.00	0.02	158	02:53	0.000	3.638
SC-42-Discharge	JUNCTION	0.00	0.02	93	02:28	0.000	4.366
SC-40-Discharge	JUNCTION	0.00	0.02	34	17:15	0.000	5.314
Project-Discharge-Point	OUTFALL	7.15	7.22	15869	20:00	31.819	50.932
SC-43-Storage-Level	STORAGE	0.38	0.38	15869	21:00	7.809	7.809
SC-41-Storage-Level	STORAGE	0.17	0.17	15869	21:00	4.149	4.149
SC-42-Storage-Level	STORAGE	0.23	0.23	15869	22:00	5.376	5.376
SC-40-Storage-Level	STORAGE	0.26	0.26	15869	21:00	6.717	6.717

****
Node Surcharge Summary
****

No nodes were surcharged.

****
Node Flooding Summary
****

Flooding refers to all water that overflows a node, whether it ponds or not.

Node	Hours Flooded	Maximum Rate CFS	Time of Max Occurrence days	hr:min	Total Flood Volume 10^6 gal	Maximum Ponded Volume 1000 ft3
SC-43-Storage-Level	1910.97	0.36	15869	21:00	1.833	0.000
SC-41-Storage-Level	664.67	0.15	15869	21:01	0.483	0.000
SC-42-Storage-Level	1478.93	0.21	15869	22:01	0.925	0.000
SC-40-Storage-Level	1714.70	0.24	15869	21:01	1.262	0.000

****
Storage Volume Summary
****

Storage Unit	Average Volume 1000 ft3	Avg Pcnt Full	E&I Pcnt Loss	Maximum Volume 1000 ft3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
SC-43-Storage-Level	0.010	2	2	0.601	100	34 16:17	

0.02							
SC-41-Storage-Level	0.001	1	1	0.141	100	158	02:21
0.02							
SC-42-Storage-Level	0.005	1	2	0.355	100	93	01:58
0.02							
SC-40-Storage-Level	0.008	2	2	0.488	100	34	16:45
0.02							

****
Outfall Loading Summary
****

Outfall Node	Flow Freq. Pcnt.	Avg. Flow CFS	Max. Flow CFS	Total Volume 10^6 gal
Project-Discharge-Point	6.56	0.06	7.22	50.932
System	6.56	0.06	7.22	50.932

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
SC-43-Drain	CONDUIT	0.02	11756 11:13	0.08	0.26	0.35
SC-41-Drain	CONDUIT	0.02	19453 10:16	0.09	0.26	0.35
SC-42-Drain	CONDUIT	0.02	5739 19:56	0.08	0.26	0.35
SC-40-Drain	CONDUIT	0.02	93 01:02	7.43	0.00	0.02
SC-43-Orifice	ORIFICE	0.02	34 16:47			0.00
SC-41-Orifice	ORIFICE	0.02	158 02:53			0.00
SC-42-Orifice	ORIFICE	0.02	93 02:28			0.00
SC-40-Orifice	ORIFICE	0.02	34 17:15			0.00
SC-43-Weir	WEIR	0.00	0 00:00			0.00
SC-41-Weir	WEIR	0.00	0 00:00			0.00
SC-42-Weir	WEIR	0.00	0 00:00			0.00
SC-40-Weir	WEIR	0.00	0 00:00			0.00

****
Conduit Surcharge Summary
****

No conduits were surcharged.

Analysis begun on: Tue Sep 09 10:24:06 2014
Analysis ended on: Tue Sep 09 10:27:46 2014
Total elapsed time: 00:03:40

STUDY RESULTS

Based on the results from the Statistc portion of the report, the assumed value of C is acceptable with respect to Hydromodification requirements. Based on this value, and using orifice sizing equation previously derived in this report, and converting to the correct units, each basin area solved for orifice area is tablulated below.

BIORETENTION ORIFICE SIZES

	area of pond (sf)	assumed C	factor	area (sf)	area (in^2)	diameter of orifice (in)	top area (sf)	WQV area (sf)	bottom area (sf)	max flow (cfs)	full depth (in)
see note:	[a]	[b]	[c]	[d]	[e]	[f]	[g]	[h]	[i]	[j]	[k]
SC-40	1143.8	1.44	2.39814E-05	0.027	3.950	2.24	1143.8	876.9	753.5	0.13	12
SC-41	372.3	1.44	2.39814E-05	0.009	1.286	1.28	372.3	227.6	167.4	0.04	12
SC-42	853	1.44	2.39814E-05	0.020	2.946	1.94	853.0	624.2	519.2	0.10	12
SC-43	1443.3	1.44	2.39814E-05	0.035	4.984	2.52	1443.3	1056.8	873.6	0.17	12
SC-52	215.2	1.44	2.39814E-05	0.005	0.743	0.97	215.2	114.9	76.1	0.02	12

note [a] plan view area of the bioretention unit
note [b] from equation: Ao=Ap*C
note [c] factor = (assumed C)/(0.6*(2*32.2*3600^2*12)^0.5) [assume orifce discharge coeficent of 0.6]
note [d] [a]*[d] (sf)
note [e] convert to (sq-in)
note [g] contour area
note [h] contour area
note [i] contour area
note [j] flow rate out of underdrain orifce
note [k] depth to riser rim

STUDY RESULTS

Based on the results of the above calculations, the project meets hydromodification requirements.