Area 4 Hydrology

Technical Data Notebook

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Registered Professional Engineer (Civil)
CERTIFICATE NO.
35895
TED W.
LEHMAN
Date Signed 8.31.06
ARIZONA U.S.A.

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ENCLOSED DATA CD INCLUDES:

- **Digital Copy of Report & Plates in PDF Format**
- **Digital Copies of DDMSW and HEC-1 Files**
- **GIS Shapefiles of Project Elements**

SECTION 1: INTRODUCTION

1.1 Purpose of Study

This study was a hydrologic modeling study done in support and in conjunction with the Sun Valley Area Drainage Master Plan (ADMP). This report is part of the overall ADMP documentation. This study covers Area 4 of the Sun Valley ADMP study area, or that portion of the study area that does not flow into the Buckeye Flood Retarding Structures. The hydrology of the Area 3 portion of the study area had been previously modeled by PBS&J as part of the Sun Valley ADMS. In addition, Alpha Engineering modeled the White Tanks Wash watershed as part of the 1996 FDS and the FCDMC modeled the Wagner Wash watershed in 1991 in conjunction with the 1991 FDS. The results are compared with the current study.

The primary purpose of the current study was to develop an HEC-1 model using methods consistent with the most recent version of the Drainage Design Manual for Maricopa County, Volume I, Hydrology of the existing and future land use conditions to serve as a basis for the alternatives formulation and evaluation for the ADMP. In addition, the existing conditions discharges to several alluvial fan apex reaches will be used in support of an approximate floodplain delineation study for those reaches. Those data are also presented separately as part of Technical Data Notebooks developed for the alluvial fan floodplain delineation studies.

1.2 Authority for Study

The current study was authorized by the Flood Control District of Maricopa County under contract FCD 2004C039 as part of the scope of services for the Sun Valley ADMP.

1.3 Location of study

Figure 1.1 shows the location of the watershed. The study area is located in western Maricopa County, Arizona. Most of the watershed is located within the Town of Buckeye. The watershed is bounded by the White Tank Mountains and Trilby Wash on the east, the Hassayampa River on the west, and the Buckeye Flood Retarding Structures on the south. The watercourses within the study area are all tributary to the Hassayampa River or the Buckeye FRSs.

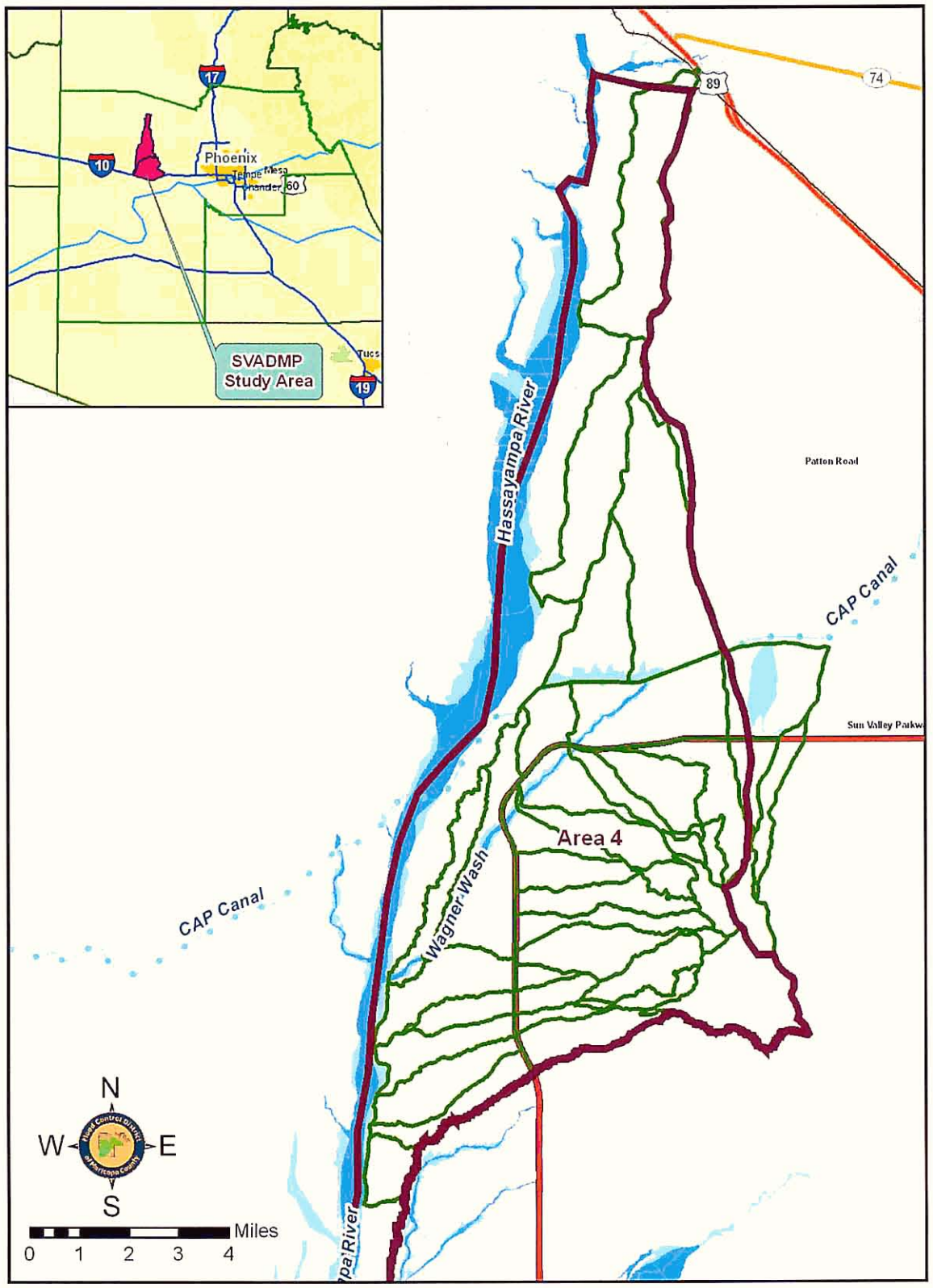

Figure 1.1 Location of Study Area

1.4 Methodology

The methods employed in this study were those outlined in the Drainage Design Manuals for Maricopa County.

1.4.1 Hydrology

The U.S. Army Corps of Engineers HEC-1 model (version 4.1) was used to compute runoff hydrographs and peak discharges. Parameters were processed into HEC-1 through the DDMSW version 3.2.8 software from the FCDMC.

1.4.2 Hydraulics

Hydraulic analyses in this study were limited to the discharge curves from storage routings within the HEC-1. For the CAP overchutes, rating curves were taken from the Wagner Wash FDS Hydrology (FCDMC, 1991). Hydraulic flow splits at diversions were qualitatively estimated from examination of aerial photographs, the 10-foot topography, and field observations.

1.5 Acknowledgements

This study was funded entirely by the Flood Control District of Maricopa County. Assistance and review from their staff was critical to the success of this project. In addition, staff at the Town of Buckeye and the Central Arizona Project supplied valuable information used in the completion of this project.

1.6 Study results

The study resulted in the development of rainfall-runoff models for the 100-year 6-hour and 100-year 24-hour duration events for the watershed.

SECTION 2: ADWR/FEMA FORMS

This portion of the study was not performed for the purposes of a floodplain delineation study. Therefore, no FEMA forms were completed. FEMA forms are included in the Technical Data Notebooks for the FDS portion of the ADMP.

SECTION 3: MAPPING AND SURVEY INFORMATION

3.1 Field Survey Information

Refer to the Flood Control District of Maricopa County for field survey information associated with the 10-foot topographic mapping used in the current study.

3.2 Mapping

The Flood Control District provided 10-foot contour mapping and DTM data for use in the hydrologic modeling. That work was done under separate contract for the County in 2000/2001. The flight dates of that mapping were 12-16-00, 12-17-00, and 12-27-00.

SECTION 4: HYDROLOGY

4.1 Method Description

The methods employed in this study were those outlined in the current Drainage Design Manual for Maricopa County, Volume I, Hydrology (1995) and 2003 draft revised Hydrology Manual. The DDMSW version 3.2.8 was used to assist in the development of the HEC-1 models. The U.S. Army Corps of Engineers HEC-1 model (version 4.1) was used to compute runoff hydrographs and peak discharges.

Rainfall losses were calculated by use of the Green and Ampt infiltration equation with an allowance for surface retention loss within HEC-1. Channel routing was performed using the normal depth Modified Puls method.

Peak discharges were estimated at various concentration points. Rainfall-runoff models were generated for the 100-year return period for the 6- and 24-hour durations.

Two land use conditions were evaluated: 1) existing conditions (c.a Aug. 2005) and 2) full build-out of watershed as master planned community style development for those areas outside the White Tanks Mountain Park.

4.2 Parameter Estimation

4.2.1 Drainage Area Boundaries

The study area watershed and hydrologic subbasins are shown on Plate 1. The total watershed area modeled is approximately 81 square miles in area. Wagner Wash represents about 41 square miles of the modeled area with about 10.2 square miles controlled by the detention area upstream of the CAP Canal. Of the remaining area, about 30 square miles drains to the Hassayampa River. Another 5.3 square miles flows to Trilby Wash off the north end of the White Tank Mountains. Finally, about 2 square miles are modeled which contribute to the pool area of Buckeye FRS No. 2 (subbasins 800 and 810). Subbasin boundaries were delineated in ArcGIS 9.1 based on examination of the 2005 0.8 ft pixel color orthorectified aerial photographs and the 10-foot topography (dated 2001). Watershed areas were computed using XTools within ArcGIS.

One of the special considerations in the delineation of the drainage area boundaries was the location of the alluvial fan apices within Area 4. The apex locations were previously identified by Ayers & Associates in conjunction with their work on the Buckeye Sun Valley ADMS (PBSJ, 2005).

Subsequent to the ADMS, JEF also conducted alluvial fan floodplain delineations for fans in Area 4 (JEF, in progress). The subbasins were delineated to the alluvial fan apices in order to provide discharges for the containment analyses associated with the floodplain studies as well as to provide a foundation for the alternatives analyses associated with the Sun Valley ADMP. The apex locations are shown on the Plates located at the back of this report.

4.2.2 Watershed work maps

Refer to Plates 1 to 6 for the watershed workmaps used for the HEC-1 modeling. Plate 1 shows the watershed boundaries. Plate 2 shows the NRCS soils data and the distribution of saturated conductivity values for the area. Plate 3 shows the existing conditions land uses, while Plate 4 shows the future conditions land use distribution used in this analysis. Plate 5 shows the flow paths and lag time paths for the models. Plate 6 shows the HEC-1 schematic layout and also provides tables summarizing the model results for the existing and future land use conditions for both the 100-year 6-hour and 100-year 24-hour models.

4.2.3 Gage data

No streamflow gage data were available for the washes in the study area. Therefore, the results of the rainfall-runoff modeling are compared with the USGS regional regression equations and previous studies in Section 4.5.

4.2.4 Statistical parameters

The only statistical data used directly in the study were the precipitation statistics obtained from the NOAA Atlas 2, Arizona. The statistics from the NOAA Atlas were analyzed to develop the rainfall depth-duration-frequency table for the watershed. The analysis was performed using the PREFRE program within DDMSW. The program output is provided in Appendix D.1.

4.2.5 Precipitation

The rainfall depths used for the HEC-1 model were obtained from the NOAA Atlas 2 maps for Arizona. Figure 4.2 shows the location of the study area on the NOAA maps for the data required for input into the PREFRE program. Copies of the NOAA maps for the entire county from the 2003 Hydrology Manual are also provided in Appendix D.1. The multiple storm option (JD records) was used to determine the critical storm at each concentration point in the HEC-1 model. The depth-area reduction factors were applied as computed by the DDMSW computer program for use with HEC-1.

Note, the point values used for the modeling were taken as the value over the mountainous area and used for the entire area. Examination of the 100-year maps shows that this is not an unreasonable assumption.

The storm duration modeled was the 6-hour storm as described in the Drainage Design Manual for Maricopa County. The temporal distributions for the 6-hour storms with the JD records were implemented via the DDMSW program.

The 24-hour storm used was the SCS Type II distribution as coded by the DDMSW as PI records for HEC-1.

Drainage areas were adjusted on the second field of the HC record to reflect the total drainage area at concentration points affected by diversions. Drainage areas for small diversion amounts (< 10%) were not included in the effective storm area.

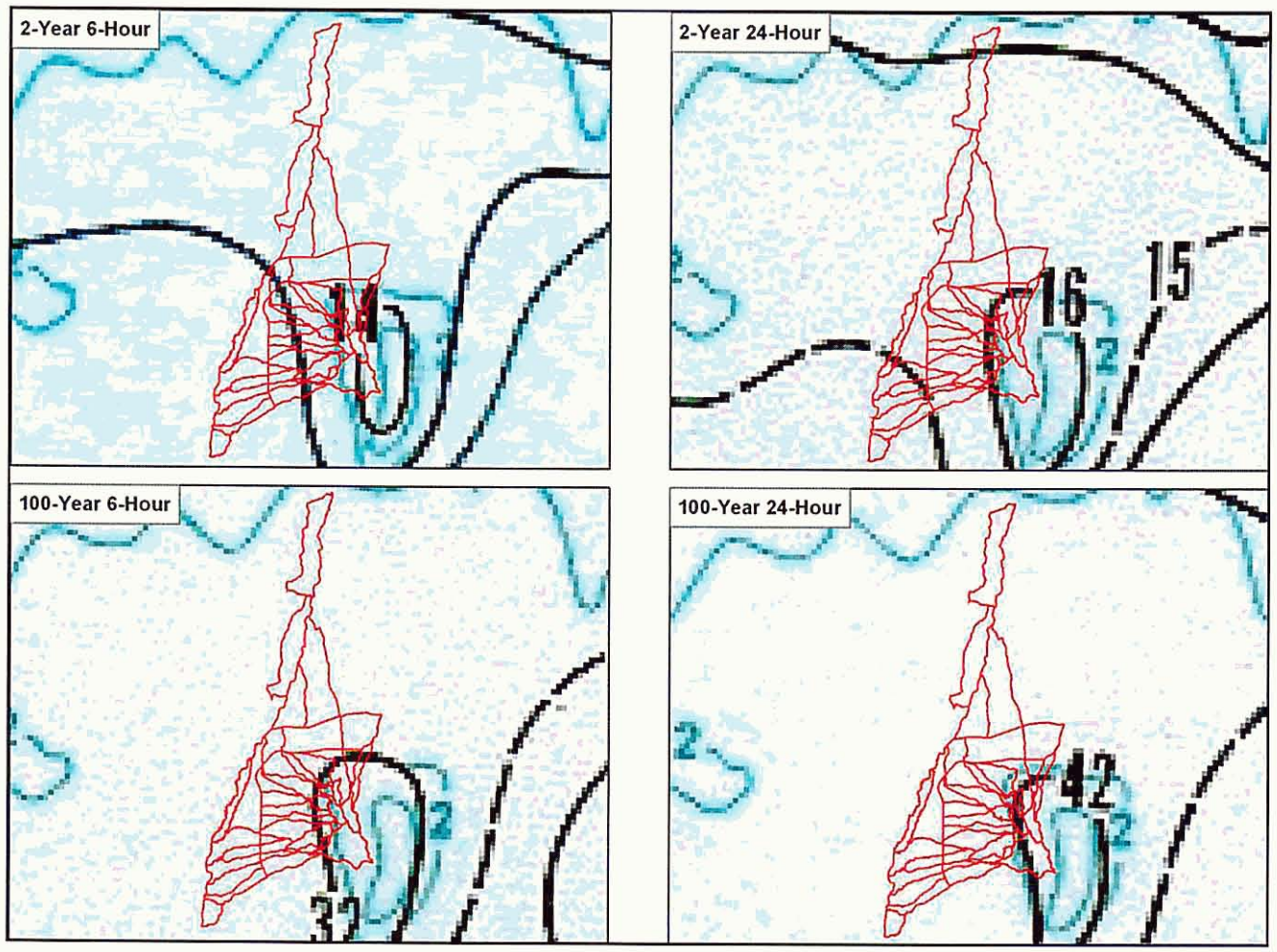

Figure 4.2.1. Watershed Location on NOAA Atlas II Maps

4.2.6 Physical parameters

Rainfall Losses

Rainfall losses were computed using the Green and Ampt method as outlined in the Drainage Design Manual for Maricopa County, Volume I, Hydrology. The County's preprocessing program for HEC-1, DDMSW, version 3.2.8 was used to perform the lumped parameter calculations and to develop the draft HEC-1 models. The development of the soils, land use, and subbasin data for use in the DDMSW is described briefly below.

Soils

The NRCS (formerly SCS) *Soil Survey of Aguila-Carefree Area* (Camp, 1986) and *Soil Survey of Maricopa County, Central Part* (Hartman, 1977) present the descriptions of the soils in the study watershed. Appendix A and B of the Drainage Design Manual provide loss rate parameters for the map units for this soil survey. The loss rates from the Appendices of the Manual are integrated into the DDMSW. Natural rock outcrop percentages from the Manual were assumed to be 50 percent effective for the purposes of computing RTIMP.

The spatial distribution of the soil map units for the watershed area is shown on Plate 2. Plate 2 also shows the saturated conductivity values (XKSAT) for the soil units in the watershed. Note these values are based on the data in the Appendices of the Drainage Design Manual. Section 4.3.1 addresses some additional questions regarding XKSAT values for the watershed.

Areas of each soil unit in each subbasin were computed using ArcMap – ArcView 9.1 software. These data were imported into the DDMSW. Average subbasin XKSAT values were then computed using logarithmic averaging as implemented in the DDMSW version 3.2.8.

The subbasin soil data and subbasin average results are provided in Appendix D.1 and D.2.

Land Use

Two land use conditions were evaluated for the ADMP – 1) existing land uses, and 2) future build-out land uses with retention of 100-year 2-hour volume as indicated in the Town of Buckeye requirements. The future conditions analysis was performed to provide a framework for development of flood control alternatives in the ADMP. Existing land use conditions were evaluated based on examination of the aerial photographs and a slope map generated from the 10-foot contour data.

Since the entire modeling area was essentially undeveloped at the time of this study, land use categories were assigned based on a range of slope observed. Guidance from the Drainage Design Manual was used to differentiate three land use categories based on slope: 1) Natural Desert Rangeland (slopes 0-5%), 2) Natural Hillslopes, Sonoran Desert (slopes 5-10%), and 3) Natural Mountain Terrain (slopes > 10%). Figure 4.2.2 shows the shaded slope map overlain with the generalized land use categories delineated for the existing conditions in this study. Existing land uses are also presented on Plate 3.

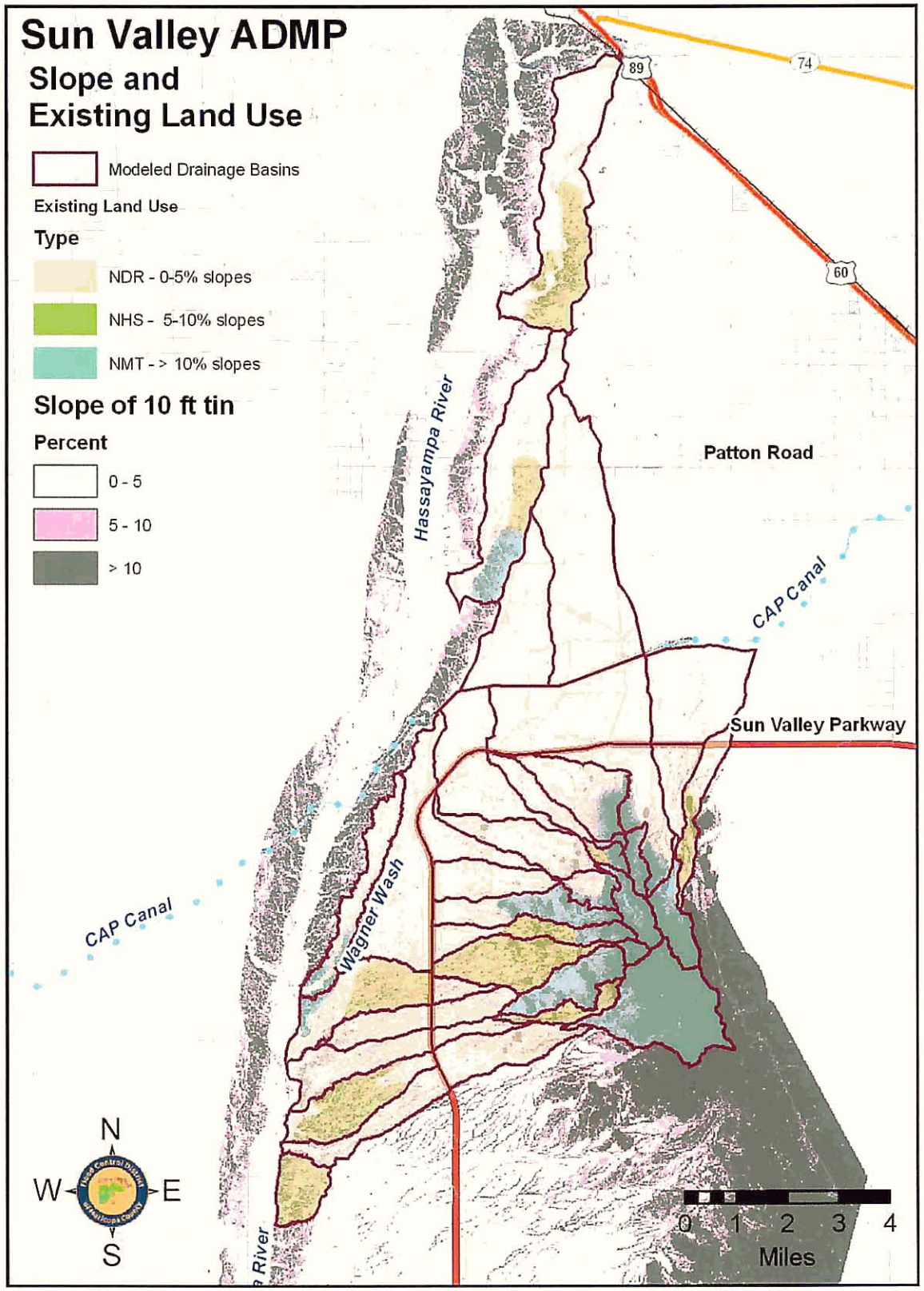

Figure 4.2.2. Slope and Assignment of Existing (Natural) Land Use Types

Future land uses were evaluated based on examination of master planned community plans collected as part of the ADMP. These maps were digitized to create a future conditions land use coverage in GIS. Areas potentially subject to development but without master plans were designated "Small Lot Residential" as described in the DDMSW land use default table. This designation was chosen as representative of the average land use intensity based on examination of the master plans that were collected and digitized. Areas within the existing boundary of White Tanks Regional Park were given the same land use category as used in the existing conditions analysis (i.e. NDR, NHS, or NMT). Existing State Land areas were also assumed to develop as a "Small Lot Residential" as representative of the average development condition. Plate 4 shows the future land use distributions for the study area.

Tables 1 and 2 summarize the hydrologic parameters related to the land use categories used in the existing and future condition analyses for estimation of rainfall excess using the Green and Ampt method and Maricopa County procedures. These parameters include surface retention loss (IA), effective impervious area (RTIMP), basin roughness (Kn), vegetation cover (%), and antecedent moisture conditions (DTHETA Condition).

The subbasin existing and future land use data are provided in Appendix D.1 and D.2 respectively.

Table 1. Existing Conditions Land Use Types and Hydrologic Parameters

Land Use Code	Description	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)*	IA (in)	Kn
910	Natural desert rangeland, slopes 0 – 5 %	Dry	30	0	0.35	0.025
920	Natural hillslopes, Sonoran desert, slopes 5 – 10 %	Dry	30	0	0.15	0.04
930	Natural Mountain Terrain, slopes > 10 %	Dry	30	0	0.25	0.05

* Note: RTIMP for natural land use types taken from soils data and assumed 50% effective

Table 2. Future Conditions Land Use Types and Hydrologic Parameters

Land Use Code	Description	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)*	IA (in)	Kn
130	Large Lot Residential	Normal	50	15	0.30	0.02
150	Small Lot Residential	Normal	50	30	0.25	0.02
180	High Density Residential	Normal	50	45	0.25	0.02
230	Commercial	Normal	75	80	0.10	0.02
300	Industrial	Normal	60	55	0.15	0.02
520	Schools	Normal	50	45	0.25	0.02
710	Open Space, Natural Mountain Terrain, slopes > 10 % (NMT)	Dry	30	0	0.25	0.05
712	Open Space, Natural desert rangeland, slopes 0-5% (NDR)	Dry	30	0	0.35	0.025
714	Open Space, Natural hillslopes, Sonoran desert, slopes 5 – 10 % (NHS)	Dry	30	0	0.15	0.04
720	Parks, Developed	Normal	80	5	0.20	0.03
730	Passive Open Space, Other	Dry	30	0	0.35	0.04

* Note: RTIMP for natural land use types taken from soils data and assumed 50% effective

Unit Hydrograph

The S-Graph unit hydrograph method as outlined in the Drainage Design Manual was used in the HEC-1 modeling of the watershed. Watershed drainage areas, lag time flow path lengths, Lca lengths, and slopes were delineated manually based on examination of the 2005 aerial photographs, and 2001 10-foot contour data for the area. Areas, lengths, and subbasin centroids were computed using ArcMap – ArcView 9.1 GIS software.

Dimensionless S-graphs were assigned based on whether the basin was predominantly mountainous terrain or not from examination of the existing land use data. Mountainous watersheds were assigned the Phoenix Mountain S-graph while the other watersheds were assigned the Desert/Rangeland S-graph as described in the Drainage Design Manual. For the future conditions, the S-graph types were not adjusted from that assigned for the existing conditions.

Surface roughness values were assigned and are shown in Tables 1 and 2 above. These values come from guidance provided in Table 5.6 and Appendix D.2, Section 2 of the 2003 Drainage Design Manual. Weighted values for each subbasin were computed based on the land use distribution within each basin. Lag times were calculated based on the geometric and land use parameters for each subbasin. Tables summarizing the lag time calculations and S-graph assignment for the existing conditions and future conditions are provided in Appendix D.1 and D.2 and are also shown on Plates 1 and 3.

Routing Parameters

Channel Routing - Routing of the model subbasin hydrographs was done using the Modified Puls normal depth channel option in HEC-1. The routing reach paths are shown on Plate 1 and Plate 5. Each route is identified by a name consisting of the upper and lower subbasin, concentration point, and/or diversion numbers defining the reach. Reach 100105, for instance, starts at the outlet of subbasin 100 at the upper end and extends to concentration point 105 at the lower end.

The routing reaches, routing parameters, and related routing information are provided in Appendix D.1 and D.2. The 10-foot topography and 2005 aerial photos were used to delineate the routing reaches and estimate the elevations at the end of each channel routing reach. Reach lengths were computed in ArcGIS.

The representative eight-point channel cross sections input to HEC-1 were estimated from examination of the 10-foot topography, interpretation of aerial photos, and field observations. Manning's n values were also estimated from examination of the aerials and limited field observations. The cross section data are provided in Appendix D.1 and D.2.

The number of routing steps for input to the HEC-1 models was computed based on an estimated channel velocity divided by the channel length and the model time interval. The HEC-1 models were then run using these values.

Channel infiltration losses were not included in the routing computations.

Reservoir Routing - Only one reservoir routing was performed within the HEC-1 model. A large detention area exists upstream of the CAP Canal controlling runoff from over 10 square miles of drainage area from the north. Outflow occurs through one of two 18-foot wide concrete overchute structures in CAP Reach 8 – one located at Sta. 181+00 and the other at Sta. 248+00. The stage-storage-discharge data were taken from KK blocks in the Wagner Wash FDS Hydrology Report

(FCDMC, 1991). The outflow was modeled as a single combined outflow which was subsequently divided in two using a diversion block for separate routing downstream. Although the invert elevations of the two overchutes are 0.5 feet different, the diversion assumed a 50-50 split.

Diversions

Split flow locations – Subbasins were delineated such that flow splits remained within an individual subbasin as much as possible (i.e. divided flow returns to common outflow point). However, in a number of cases split flows needed to be included in the model structure. The flow splits were incorporated into the HEC-1 models as diversions. The diversion rating curves were estimated by examination of the aerial photographs, the 10-foot topography, and limited field observations. All flow splits were estimated as simple percentages for the entire range of discharges. No variable stage rating curves were developed. Given the complexity and potential variation from event to event, this approach was deemed reasonable for the purposes of this study. It is anticipated that in the alternatives analysis these split flow locations will be "fixed" or removed for the purpose of reducing uncertainty associated with flood control mitigation alternatives developed as part of the ADMP.

Retention – Retention of storm water runoff from the 100-year 2-hour is supposed to be supplied for new subdivision development in Buckeye and Maricopa County. Given that the area is slated for master planned community development, it was assumed that retention would be provided for all future developed area within the study area.

Retention volumes were computed for each subbasin based on the amount of area, an assumed C factor for each land use category as shown in Table 3, and the 100-year 2-hour point rainfall taken from the DDMSW rainfall output. The retention volume was therefore computed as:

$$Vret = C * (P / 12) * A$$

Where,

Vret = volume to be retained, in acre-feet

C = Rational method runoff factor for each land use type as shown in Table 3

P = 2.63 inches (from depth-duration-frequency matrix from DDMSW)

A = developed area in acres

The retention volumes for each subbasin are presented in Appendix D.2.

The retention volumes were included in the future conditions HEC-1 models as diversion blocks. All flow up to the retention volume is diverted from the model. Once flow exceeds the set retention volume, all additional flow continues downstream. The volumes computed for each subbasin are provided in Appendix D.2.

Table 3. Future Conditions Land Use Types and Equivalent C Factors Used in Retention Volume Calculations

Land Use Code	Description	RTIMP (%)*	Equivalent C Factor
130	Large Lot Residential	15	0.56
150	Small Lot Residential	30	0.71
180	High Density Residential	45	0.88
230	Commercial	80	0.95
300	Industrial	55	0.79
520	Schools	45	0.88
710	Open Space, Natural Mountain Terrain, slopes > 10 %	0	0
712	Open Space, Natural desert rangeland, slopes 0-5%	0	0
714	Open Space, Natural hillslopes, Sonoran desert, slopes 5 – 10 %	0	0
720	Parks, Developed	5	0.25
730	Passive Open Space, Other	0	0
* Note: RTIMP for natural land use types taken from soils data and assumed 50% effective			

4.3 Problems Encountered During the Study

4.3.1 Special problems and solutions

During the course of this study, it was noted that previous modeling efforts on the east side of the White Tank Mountains has raised concerns about the "true" XKSAT value for soils with significant quantities of rock fragments. A previous study by Zhao (2000) indicated that significant rock fragments could reduce the effective XKSAT values appreciably, resulting in increased predictions of 100-year peak flows and total runoff volumes. The idea is that large rocks in the soil reduce the area of the fine-earth fraction portion of the soil column, thereby reducing the area available for infiltration to occur, and hence reduce infiltration rates. Dr. Zhao's results showed about a 24 percent increase in flow volume and a 22 percent increase in peak discharge for his model of the

White Tanks FRS No. 3 watershed. A copy of Dr. Zhao's report is provided on CD-ROM with this report for easy reference.

The effect of the adjustments to rock fragments suggested by Dr. Zhao were examined for the present study. Table 4 shows the map units that were adjusted, the assumed average percent rock fragments, and the resultant XKSAT values. These values were modified in the DDMSW default soil tables and the model subbasin parameters were recomputed. A version of the 24-hour model was executed with the adjusted XKSAT values.

Table 4. Adjusted XKSAT Values for Map Units with Significant Rock Fragments

Soil Map Unit	Name	DDM XKSAT (in/hr)	% Rock Fragments	Adj. XKSAT (in/hr)
52	Gachado-Lomitas-Rock outcrop complex	0.16	60	0.04
100	Quilotosa-Vaiva-Rock outcrop complex	0.40	70	0.07
CO	Cherioni-Rock Outcrop complex	0.29	60	0.07
RS	Rock Outcrop-Cherioni complex	0.40	60	0.10

The results indicated about a 27 percent increase in peak discharge for subbasin S500 which is comprised almost entirely of soil unit 100. The runoff volume for S500 increased by about 30 percent. Looking at the total flow for Wagner Wash (C195), peak discharge increased about 4 percent while runoff volume increased about 3 percent. Tables with the complete results from the 100-year 24-hour existing conditions model with adjusted XKSAT values is provided in Appendix D.3.

Another potentially sensitive assumption used in the modeling involved the percent effectiveness of natural rock outcrops. The mountainous areas of the watershed contain large quantities of natural rock outcroppings. Rocks can act as impervious surfaces similar to rooftops or asphalt. The modeling difficulty is determination of how much of the impervious surfaces are "directly connected to the (subbasin) outlet". In HEC-1, rainfall on the proportion of the subbasin designated as effective imperviousness (RTIMP) is all translated into runoff. That is, no abstractions or other losses are computed for the impervious fraction of the watershed.

In reality, we know that while rainfall on rocks may runoff more or less directly in its near entirety, that runoff flows on to intermediate pervious surfaces. Some if not all of that runoff has an additional opportunity for infiltration into the ground. As mentioned previously, in the current study the proportion of natural rock outcrop treated as "directly connected to the outlet" was assumed to be 50%. However, to examine the potential impact of this assumption, another set of test models was

developed. Two models were constructed: one with 0% effective rock outcrop and a second with 100% effective rock outcrop.

The results indicated about a 12 percent increase in peak discharge for S500 between the 0-percent effective model and the 100-percent effective model. The 50-percent model shows about a 6 percent difference as compared to the 100-percent effective model. The runoff volume for S500 increased by about 50 percent from the 0- to the 100-percent effect model. Again integrating over the entire Wagner Wash watershed (C195), peak discharge increased about 2 percent while runoff volume increased about 4 percent. The average for all subbasins with rock outcrop present according to the soils data was about 4 percent increase in peak discharge and a 20 percent increase in runoff volume between the 0-percent and 100-percent effective rock outcrop models. Tables with the complete results from the 100-year 24-hour existing conditions models with 0-percent and 100-percent effective rock outcrop are provided in Appendix D.4.

Various other soil-cover situations have been observed to effect the accuracy of computed infiltration estimates using Green-Ampt (Rawls et al., 1989; Hutten and Gifford, 1988; Lane, et al., 1987). Other researchers have noted the local importance of macropores (Edwards, et al., 1988; Smetten and Collis-George, 1985) and slope effects (Wilcox et al., 1988) on infiltration rates. For example, Lane et al. (1987) found that infiltration declined when canopy vegetation was removed, and that further declined when surface rock and litter were removed. In another example, Smetten and Collis-George (1985) report that one 3 mm diameter macropore per 30 cm diameter soil area contributed more to steady infiltration rate than the flow through the rest of the soil area.

Also, as reported in Zhao (2000), Wilcox et al. (1988) reported that infiltration rate is positively related to slope because interflow increases with increasing slope. The Zhao report suggests that the known increases in infiltration due to slope be ignored in the analysis because the hydrology is for the purpose of dam design. The report states that the "design will be more conservative if the (higher) runoff volume is adopted."

Because the quantification of these miscellaneous effects is difficult, the FCDMC Drainage Design Manual states that adjustment procedures such as those published by Rawls et al. (1989) "are not recommended for use in Maricopa County at this time" (Sabol, et. al, 1995). However, the Manual does allow for use of other rainfall loss methods if there is technical justification and the modified approach is approved by the Flood Control District.

Finally, the Zhao (2000) model used an adjustment method based on the volumetric quantity of rock fragments in the soil. In the recommended model, the adjustments were made using values from Table 13 (Camp, 1986) and Table 5 (Hartman, 1977). Unfortunately, the values in these tables represent percentages by weight rather than volume. While this will change the specific results computed for XKSAT, after conversion from weight to volume percentages and consideration of the range of values given in the NRCS tables for each soil, it is doubtful that the end results would be significantly affected. Such calculations were not performed by JEF as part of the test modeling reported in the current study.

While it is not recommended to adopt the results of the adjusted XKSAT models or a different percent effective rock outcrop model, it is suggested that the evaluation of the alternatives developed for the ADMP recognize the potential range of results from different hydrologic modeling assumptions. The only true way to select the best parameter set would be to have measured rainfall and runoff data for this area. Unfortunately these type of data are not available; especially for significant events like the 100-year storm. Until such specific calibration data are available, it is recommended to adhere to the guidelines outlined in the Drainage Design Manual. The range of potential flows based on model parameter uncertainty could be used to assess freeboard requirements or other safety factors associated with flood control alternatives for the Sun Valley area.

4.3.2 Modeling warning and error messages

The only warning messages in the HEC-1 models concern routed outflows greater than the defined rating curves for a few channel routings. HEC-1 extends the rating curve for flows greater than the stage-storage-discharge computed from the cross section and reach data potentially under estimating the storage volume in the reach. Therefore the model results are somewhat conservative with respect to peak discharge. Another related warning message regards potential oscillations in the hydrograph for some channel routings. Examination of the hydrographs did not reveal any such observed oscillations despite the warning messages.

4.4 Calibration

No calibration of the models was performed as part of this study. However, the results were compared to previous studies and regional regression equations and found to be reasonable. In addition, the methods used in this study have been designed for application to the area and have been found to produce reasonable results in hundreds of studies throughout Maricopa County.

4.5 Final Results

4.5.1 Hydrologic analysis results

Tables 5 - 7 show the peak discharges and total runoff volumes for the existing and future conditions for selected locations in the watershed. Table 5 shows the results for the alluvial fan apices. Table 6 shows the results for concentration points along Sun Valley Parkway. Table 7 shows the results for other selected concentration points of interest throughout the modeled area.

On average for all subbasins, before retention is diverted, the future conditions runoff is larger in peak discharge by 56% for the 24-hour storm and 60% for the 6-hour storm. Future condition runoff volumes are 104% greater for the 24-hour storm and 68% greater for the 6-hour storm. After retention is diverted, the future conditions peak discharges are 68% less on average for the 24-hour storm and 74% less for the 6-hour storm. Runoff volumes are 44% less for the 24-hour storm and 76% less for the 6-hour storm.

Table 5. 100-Year Peak Discharge and Total Runoff Volume For Fan Apices

		Existing Condition								Future Condition							
		24-hour					6-hour			24-hour					6-hour		
KKID	AREA	Q100	Time	Vol.	Vol.		Q100	Time	Vol.	Vol.	Q100	Time	Vol.	Vol.	Q100	Time	Vol.	Vol.
	(sq.mi.)	(cfs)	(hrs)	(in)	(ac-ft)		(cfs)	(hrs)	(in)	(ac-ft)	(cfs)	(hrs)	(in)	(ac-ft)	(cfs)	(hrs)	(in)	(ac-ft)
S110	0.43	532	12.17	1.422	33		662	4.25	1.640	38	554	12.17	1.462	34	688	4.17	1.671	38
D110V	0.43										554	12.17	1.358	31	688	4.17	1.566	36
S125	0.09	161	12.08	1.258	6		202	4.08	1.425	7	184	12.00	1.654	8	231	4.00	1.662	8
D125V	0.09										179	12.08	0.847	4	227	4.08	0.856	4
S150	0.77	729	12.33	1.375	57		836	4.33	1.513	62	737	12.33	1.393	58	847	4.33	1.516	63
D150V	0.77										737	12.33	1.313	54	847	4.33	1.436	59
S130	0.31	415	12.17	1.217	20		524	4.17	1.426	24	526	12.08	1.662	27	667	4.08	1.684	28
D130V	0.31										304	12.25	0.688	11	415	4.17	0.710	12
C130	0.31	438	12.17	1.566	26		553	4.17	1.824	30	344	12.25	1.021	17	437	4.17	1.089	18
S165	0.62	842	12.17	1.219	40		1008	4.17	1.417	47	1121	12.08	1.886	62	1353	4.08	1.849	61
D165V	0.62										222	12.42	0.470	15	503	4.33	0.434	14
S400	1.54	1047	12.50	1.146	94		1019	4.50	1.167	96	2031	12.17	1.964	162	1946	4.17	1.731	143
D400V	1.54										122	13.50	0.339	28	213	4.75	0.106	9
S410	0.64	526	12.42	1.203	41		638	4.42	1.416	48	945	12.17	2.103	72	1142	4.17	1.989	68
D410V	0.64										44	13.17	0.302	10	154	4.75	0.191	7
C410	2.18	1003	12.50	0.748	87		912	4.50	0.732	85	77	13.42	0.195	23	99	4.75	0.037	4
S500	3.64	2063	12.75	1.323	257		1743	4.75	1.171	227	2341	12.67	1.520	295	2018	4.67	1.324	257
D500V	3.64										2341	12.67	1.181	229	2018	4.67	0.984	191
S900	1.03	853	12.50	1.417	78		936	4.50	1.535	85	853	12.50	1.417	78	936	4.50	1.535	85
D900V	1.03										0	0.00	0.000	0	0	0.00	0.000	0

Table 6. 100-Year Peak Discharge and Total Runoff Volume at Locations Along Sun Valley Parkway

		Existing Condition								Future Condition							
		24-hour					6-hour			24-hour					6-hour		
KKID	AREA	Q100	Time	Vol.	Vol.		Q100	Time	Vol.	Vol.	Q100	Time	Vol.	Vol.	Q100	Time	Vol.	Vol.
	(sq.mi.)	(cfs)	(hrs)	(in)	(ac-ft)		(cfs)	(hrs)	(in)	(ac-ft)	(cfs)	(hrs)	(in)	(ac-ft)	(cfs)	(hrs)	(in)	(ac-ft)
C105U	14.60	3466	12.50	1.164	906		2863	4.50	1.128	878	145	14.42	0.267	208	31	6.75	0.089	69
C115U	2.68	1839	12.58	1.189	170		1730	4.67	1.175	168	1005	13.00	0.581	83	1015	5.08	0.400	57
C115D	2.68	1840	12.58	1.233	176		1731	4.67	1.219	174	1010	13.00	0.623	89	1022	5.08	0.441	63
C120	4.68	3197	12.42	1.186	296		2645	4.50	1.087	271	963	13.17	0.517	129	764	5.25	0.265	66
C160	27.44	7201	12.92	1.035	1514		4432	5.00	0.732	1072	817	13.83	0.246	360	268	5.58	0.037	55
C170	2.08	1900	12.25	1.105	123		1721	4.33	1.097	122	81	13.25	0.205	23	206	4.83	0.129	14
S175	1.80	1278	12.50	1.131	109		1203	4.50	1.166	112	2223	12.25	1.974	190	2112	4.25	1.756	169
D175V	1.80										58	13.50	0.228	22	116	5.00	0.052	5
S180	1.44	1039	12.50	1.124	86		1032	4.50	1.169	90	1666	12.25	2.031	156	1672	4.25	1.786	137
D180V	1.44										113	13.75	0.353	27	169	5.00	0.108	8
S185	2.42	1655	12.50	1.117	144		1450	4.50	1.107	143	2847	12.25	1.908	246	2460	4.25	1.643	212
D185V	2.42										96	13.33	0.256	33	55	5.00	0.020	3
C415	2.63	695	12.92	0.726	102		651	5.00	0.695	98	39	14.25	0.171	24	32	5.25	0.021	3
430440	2.34	966	12.50	0.815	102		834	4.58	0.791	99	43	15.58	0.194	24	17	5.75	0.026	3
S435	0.39	656	12.08	1.107	23		822	4.08	1.347	28	796	12.08	1.878	39	1017	4.08	1.854	39
D435V	0.39										6	14.58	0.137	3	82	4.50	0.112	2
C510	5.48	2092	12.25	1.226	358		1724	5.00	1.032	301	2157	13.00	0.879	257	1762	5.08	0.654	191
C910	2.02	1550	12.17	1.272	137		1293	4.17	1.302	140	43	12.67	0.124	13	109	4.42	0.029	3

Table 7. 100-Year Peak Discharge and Total Runoff Volume at Other Locations of Interest

		Existing Condition									Future Condition								
		24-hour					6-hour				24-hour					6-hour			
KKID	AREA	Q100	Time	Vol.	Vol.		Q100	Time	Vol.	Vol.	Q100	Time	Vol.	Vol.		Q100	Time	Vol.	Vol.
	(sq.mi.)	(cfs)	(hrs)	(in)	(ac-ft)		(cfs)	(hrs)	(in)	(ac-ft)	(cfs)	(hrs)	(in)	(ac-ft)		(cfs)	(hrs)	(in)	(ac-ft)
C102	10.23	7803	12.42	1.243	678		5993	4.50	1.089	594	1125	13.58	0.303	165		833	5.42	0.074	40
RR102	10.23	149	14.42	1.163	634		127	6.75	1.029	561	31	24.67	0.284	155		5	7.33	0.044	24
C105D	19.28	6214	12.42	1.092	1123		4019	4.50	0.863	888	631	13.33	0.247	254		584	5.00	0.049	51
C195	41.05	10728	13.25	0.976	2137		5422	5.42	0.591	1293	581	15.50	0.168	367		140	8.75	0.022	48
C420	4.40	1714	12.33	0.842	198		1228	4.33	0.726	170	61	16.67	0.188	44		6	10.42	0.006	1
C450	6.32	3321	12.67	0.945	319		2406	4.75	0.775	261	94	15.83	0.175	59		52	10.25	0.034	12
C520	6.96	1260	12.42	0.562	209		891	4.42	0.459	170	640	13.83	0.325	120		438	6.08	0.169	63
C530	7.70	1697	12.50	0.331	136		1563	4.50	0.338	139	95	14.00	0.091	38		91	8.83	0.040	17
C920	6.43	3574	12.67	1.244	427.07		3015	4.75	1.137	390.16	631	13.33	0.329	112.76		644	5.25	0.193	66.25
C102	10.23	7803	12.42	1.243	678		5993	4.50	1.089	594	1125	13.58	0.303	165		833	5.42	0.074	40
RR102	10.23	149	14.42	1.163	634		127	6.75	1.029	561	31	24.67	0.284	155		5	7.33	0.044	24
C105D	19.28	6214	12.42	1.092	1123		4019	4.50	0.863	888	631	13.33	0.247	254		584	5.00	0.049	51
C195	41.05	10728	13.25	0.976	2137		5422	5.42	0.591	1293	581	15.50	0.168	367		140	8.75	0.022	48

4.5.2 Verification of results

Figure 4.5.1 and 4.5.2 show plots of the peak discharge results for the 100-year models with the USGS regional regression equations for Region 12. The model results fall generally below the 100-year regression curve for the region. The results are closer to the regional curve for smaller drainage areas. The larger drainage areas are affected by the significant attenuation produced by the CAP detention area (RR102). The inflow from the 10.2 square mile area above the CAP Canal is 7800 cfs while the outflow from the overchutes is only 150 cfs.

Given the predominance of sandy loam textured soils in the area, these results are considered reasonable. In addition, it should be noted that the average elevation for the area (about 1600 feet) falls below the "cloud of common values" for Region 12. That is, the data used to develop the Region 12 equations did not include watersheds will average elevations below about 2000 feet. Most of the gages included in the Region 12 datasets drain higher elevation areas from the Bradshaw Mountains and along the Mogollon Rim, including the Salt-Verde River basins. Those watersheds experience higher annual precipitation amounts and have higher 100-year point rainfall statistics than the White Tank Mountains. Therefore, results falling below the regional curves are not considered surprising or unreasonable.

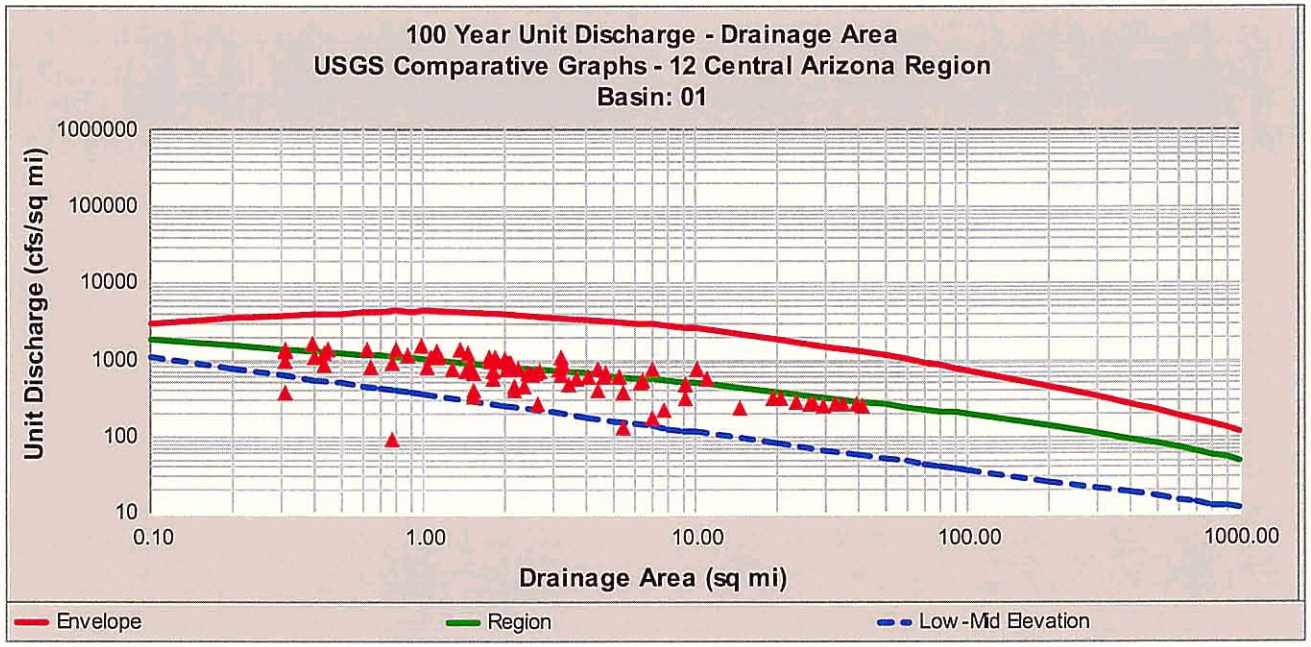

Figure 4.5.1. Comparison of 100-year 24-hour Results with USGS Regression Equations

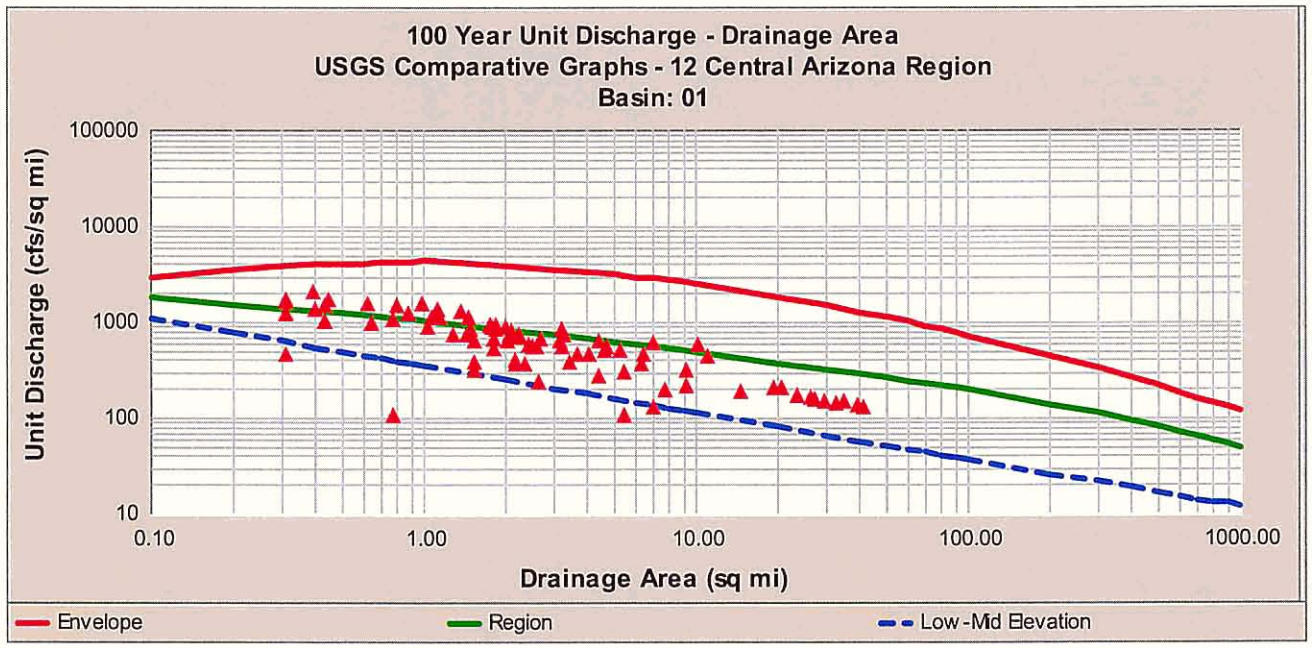

Figure 4.5.2. Comparison of 100-year 6-hour Results with USGS Regression Equations

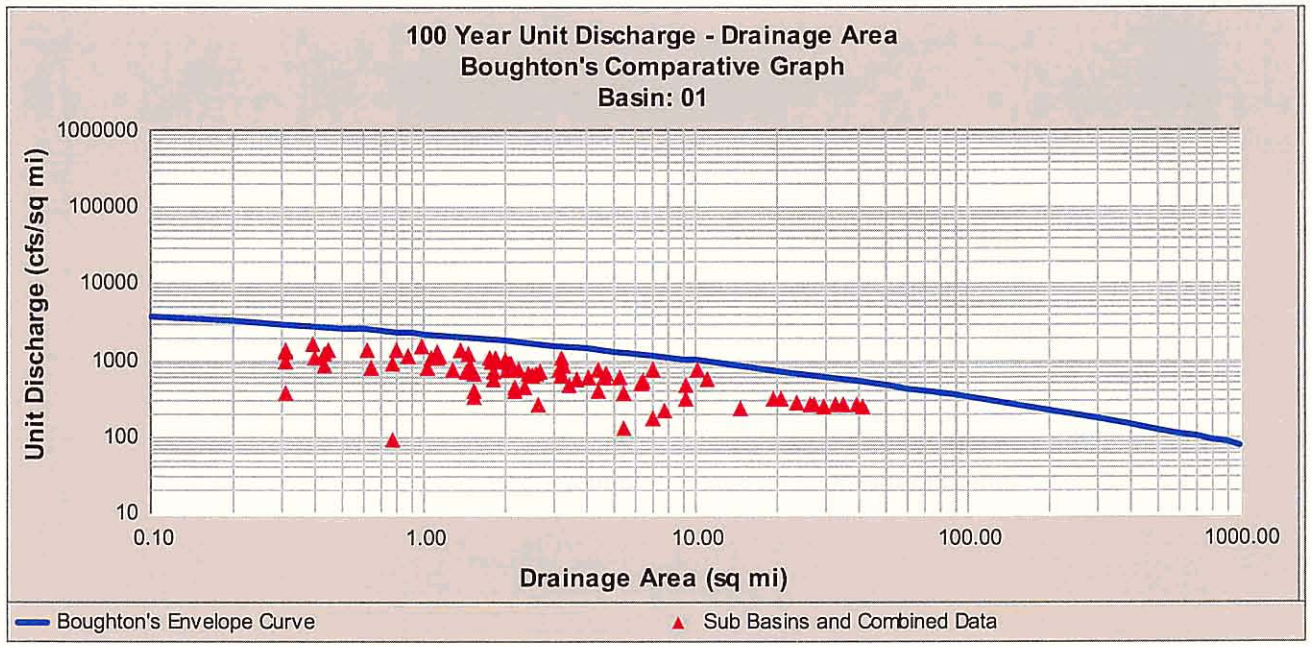

Figure 4.5.3. Comparison of 100-year 24-hour Results with Boughton Envelope Curve

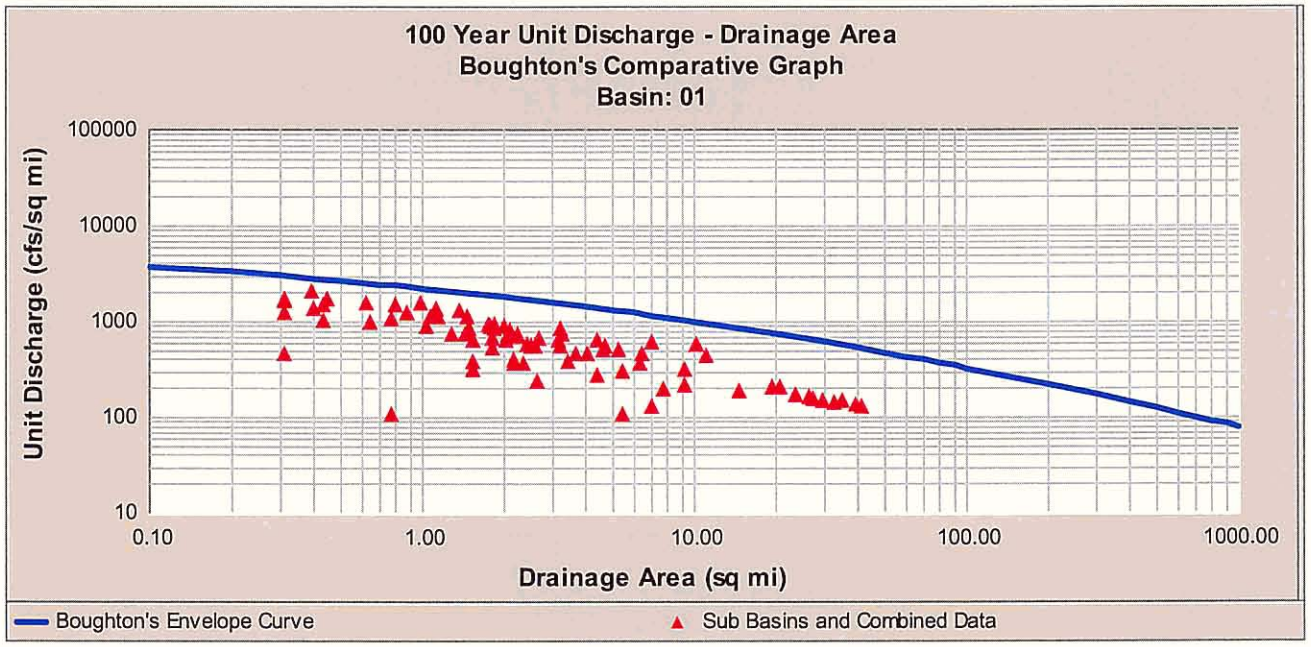

Figure 4.5.4. Comparison of 100-year 6-hour Results with Boughton Envelope Curve

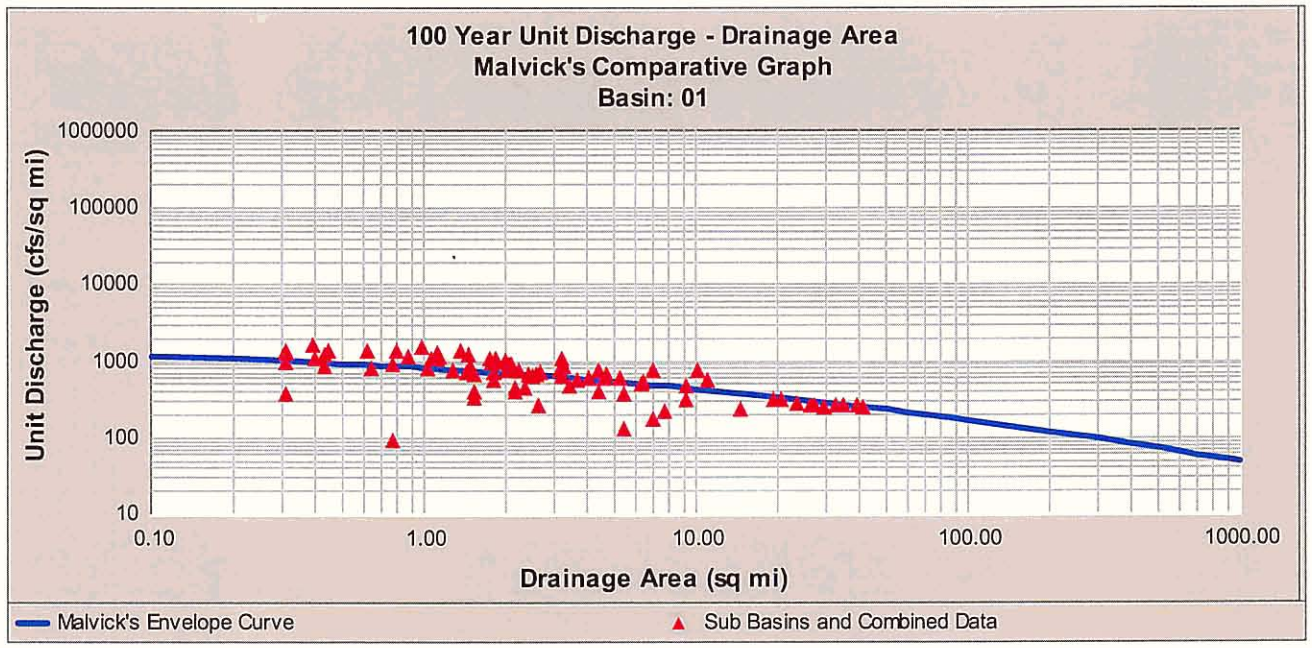

Figure 4.5.5. Comparison of 100-year 24-hour Results with Malvick Envelope Curve

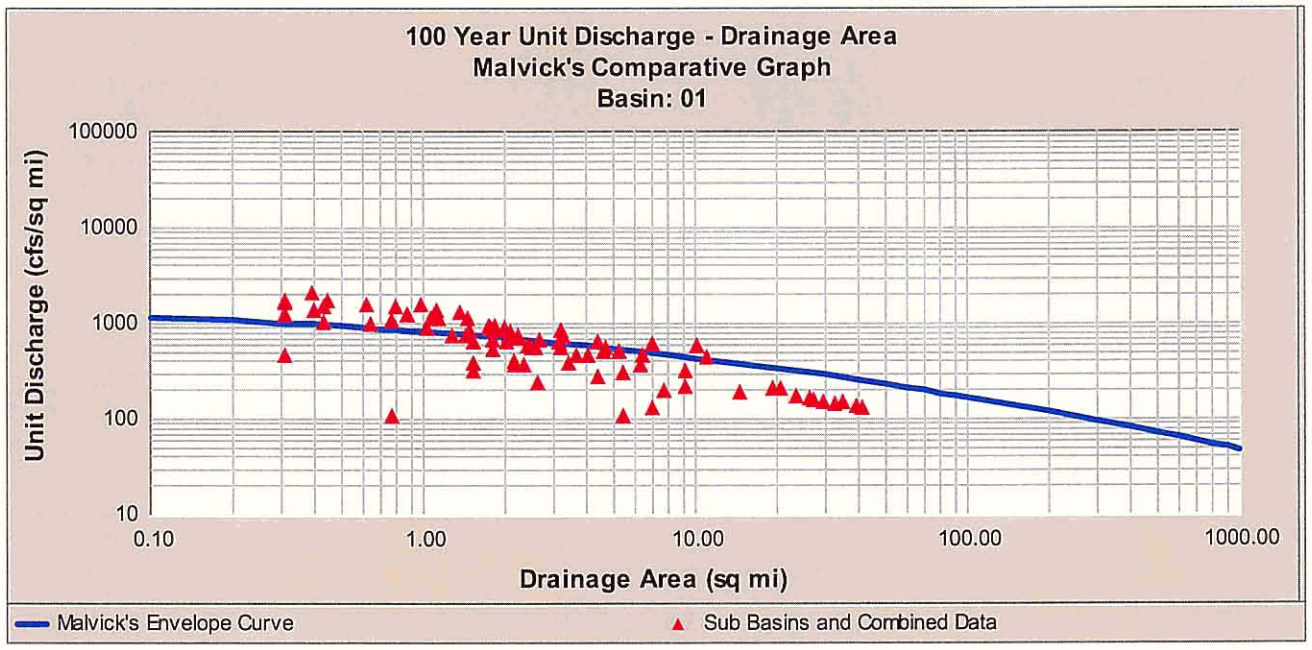

Figure 4.5.6. Comparison of 100-year 6-hour Results with Malvick Envelope Curve

4.5.3 Comparison with Previous Studies

Table 8 shows a comparison of the results of the existing condition 6-hour and 24-hour models with the previous Floodplain Delineation Study results by the District (1991). The FDS used a

6-hour storm with a combination of Clark Unit Hydrograph and Phoenix Valley S-Graphs and the Initial and Uniform Loss method for computation of rainfall excess. The rainfall data are similar to the 6-hour model for the current study. The other parameters vary depending on location. The current study results for the same duration are generally less than those computed in the FDS. Given all the differences in methods, specific rationale for the differences are difficult to pinpoint. However, it appears to be the result of a combination of different rainfall loss method and unit hydrographs.

Table 8. Comparison of 100-Year Peak Discharges with Wagner Wash FDS (FCDMC, 1991)

Location	Wagner Wash FDS	This Study 6-hour	This Study 24-hour
Total Inflow At CAP (C102)	4571	5993	7803
S150	1640	836	729
S900	1138	936	853
Wagner Wash at First Sun Valley Parkway Crossing (C105U)	3446	2863	3466
C120	3325	2645	3197
Wagner Wash at Second SVP Crossing (C160)	10358	4432	7201
C190	15384	5467	10473
Wagner Wash at Hassayampa (C195)	15747	5422	10728

SECTION 5: HYDRAULICS

This study was not performed for the purposes of a floodplain delineation study. Therefore, no hydraulic modeling is presented in this Technical Data Notebook. Hydraulic modeling performed in conjunction with the rainfall-runoff modeling is presented in Section 4 and Appendix D.

SECTION 6: SEDIMENT TRANSPORT/EROSION

No sediment transport modeling was performed as a part of the hydrology study for the ADMP.

SECTION 7: DRAFT FIS

This study was not performed for the purposes of a floodplain delineation study. Therefore, a Draft FIS is not presented.

Appendix A

References

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Appendix B

Correspondence

&

Referenced Documents

Appendix C

Mapping & Survey

The mapping used in this study was the County-wide 10-foot contour topography performed under separate contract with the Flood Control District. The flight dates for the mapping are Dec. 16, 17, & 27, 2000. Refer to the Flood Control District for more information.

Appendix D

Supporting Documentation for Hydrology

D.1. Existing Conditions

- **Summary of Results**
- **Unit Discharges**
- **PREFRE Results**

  Note: Report shows A4_EX24 as the project while the output shows the point data used for both the 6- and 24-hour models for both existing and future conditions.

- **Subbasin Data**
- **Subbasin Soil Data**
- **Subbasin Land Use Data**
- **Routing Data**
  - **Channel Routings**
  - **Storage Routing**
- **Diversion Data**

D.1.1. 100-Year 24-Hour Existing Conditions HEC-1 Model Output

D.1.2. 100-Year 6-Hour Existing Conditions HEC-1 Model Output

Existing Conditions Summary of Results

			24-hour				6-hour			
TYPE	MODELID	AREA	Q100	TIMEPK100	VOL100	VOL100AF	Q100	TIMEPK100	VOL100	VOL100AF
		(sq.mi.)	(cfs)	(hrs)	(in)	(ac-ft)	(cfs)	(hrs)	(in)	(ac-ft)
Hydrograph	S100	6.99	5214	12.58	1.282	478	4347	4.67	1.195	446
Hydrograph	S102	3.23	3434	12.33	1.207	208	2790	4.33	1.198	207
Combined	C102	10.23	7803	12.42	1.243	678	5993	4.50	1.089	594
Routed	RR102	10.23	149	14.42	1.163	634	127	6.75	1.029	561
Hydrograph	D102	10.23	75	14.42	0.581	317	63	6.75	0.515	281
Routed	100105	10.23	70	20.33	0.578	315	59	12.58	0.512	279
Hydrograph	S105	4.37	3466	12.50	1.129	263	2863	4.50	1.053	245
Routed	102105	10.23	74	15.67	0.580	316	63	8.00	0.513	280
Combined	C105U	14.60	3466	12.50	1.164	906	2863	4.50	1.128	878
Hydrograph	S110	0.43	532	12.17	1.422	33	662	4.25	1.640	38
Routed	11015I	0.43	456	12.42	1.422	33	570	4.42	1.640	38
Hydrograph	D15I	0.43	365	12.42	1.138	26	456	4.42	1.312	30
Routed	15I15R	0.43	323	12.83	1.138	26	408	4.75	1.312	30
Hydrograph	S115	2.25	1693	12.50	1.209	145	1605	4.58	1.224	147
Combined	C115U	2.68	1839	12.58	1.189	170	1730	4.67	1.175	168
Routed	15I15L	0.43	45	13.58	0.284	7	61	5.50	0.328	8
Combined	C115D	2.68	1840	12.58	1.233	176	1731	4.67	1.219	174
Routed	115120	2.68	1807	12.75	1.233	176	1699	4.75	1.219	174
Hydrograph	S120	2.00	2032	12.33	1.158	124	1838	4.33	1.189	127
Combined	C120	4.68	3197	12.42	1.186	296	2645	4.50	1.087	271
Combined	C105D	19.28	6214	12.42	1.092	1123	4019	4.50	0.863	888
Routed	120135	19.28	6209	12.50	1.092	1123	4008	4.58	0.863	888
Hydrograph	S125	0.09	161	12.08	1.258	6	202	4.08	1.425	7
Routed	12535I	0.09	136	12.17	1.258	6	174	4.17	1.425	7
Hydrograph	S150	0.77	729	12.33	1.375	57	836	4.33	1.513	62
Hydrograph	D150	0.77	73	12.33	0.137	6	84	4.33	0.151	6
Routed	150130	0.77	67	12.50	0.137	6	79	4.50	0.151	6
Hydrograph	S130	0.31	415	12.17	1.217	20	524	4.17	1.426	24
Combined	C130	0.31	438	12.17	1.566	26	553	4.17	1.824	30
Hydrograph	D130	0.31	307	12.17	1.096	18	387	4.17	1.277	21
Routed	13035I	0.31	302	12.17	1.096	18	381	4.17	1.277	21
Combined	C135I	0.40	434	12.17	1.122	24	553	4.17	1.307	28
Routed	35I135	0.40	310	12.75	1.122	24	375	4.83	1.307	28
Hydrograph	S135	0.88	1015	12.25	1.048	49	1102	4.25	1.175	55
Combined	C135L	1.28	1010	12.25	1.059	72	982	4.25	1.114	76
Combined	C135	20.56	6729	12.50	1.078	1182	4247	4.58	0.834	914
Routed	135145	20.56	5991	12.83	1.077	1181	3838	5.00	0.833	914
Hydrograph	S140	1.37	2029	12.17	1.164	85	1913	4.17	1.270	93
Routed	140145	1.37	1632	12.42	1.164	85	1623	4.42	1.270	93
Hydrograph	D1302	0.31	118	12.17	0.423	7	149	4.17	0.492	8
Routed	130145	0.31	62	13.67	0.423	7	73	5.83	0.492	8
Hydrograph	S145	1.76	1945	12.25	1.022	96	1702	4.25	1.021	96
Combined	C145L	2.07	1940	12.25	0.927	102	1600	4.25	0.900	99
Combined	C145	23.69	6627	12.83	1.056	1335	4146	4.92	0.781	987
Routed	145155	23.69	6629	12.83	1.056	1335	4141	4.92	0.781	987
Routed	150155	0.77	438	13.50	1.237	51	504	5.58	1.362	56
Routed	130155	0.31	3	15.92	0.047	1	4	7.83	0.055	1
Hydrograph	S155	1.83	1781	12.33	1.117	109	1626	4.33	1.132	111
Combined	C155L	2.61	1773	12.33	1.145	159	1455	4.33	1.100	153
Combined	C155	26.30	7183	12.83	1.046	1467	4449	4.92	0.750	1052
Routed	155160	26.30	7159	12.92	1.046	1466	4437	5.00	0.750	1052
Hydrograph	S160	1.14	1342	12.17	1.010	62	1347	4.25	1.079	66
Combined	C160	27.44	7201	12.92	1.035	1514	4432	5.00	0.732	1072
Routed	160170	27.44	7078	13.08	1.034	1514	4323	5.17	0.728	1066
Hydrograph	S165	0.62	842	12.17	1.219	40	1008	4.17	1.417	47
Routed	165170	0.62	658	12.58	1.219	40	757	4.58	1.417	47
Hydrograph	S170	1.46	1802	12.17	1.075	84	1686	4.25	1.127	88
Combined	C170	2.08	1900	12.25	1.105	123	1721	4.33	1.097	122
Routed	170R	2.08	1825	12.42	1.105	123	1637	4.50	1.097	122
Combined	C170R	29.52	7607	13.00	1.024	1613	4553	5.08	0.704	1108
Routed	170180	29.52	7502	13.25	1.024	1612	4483	5.42	0.704	1108
Hydrograph	S175	1.80	1278	12.50	1.131	109	1203	4.50	1.166	112
Routed	175R	1.80	1185	12.67	1.131	109	1140	4.67	1.166	112
Hydrograph	S180	1.44	1039	12.50	1.124	86	1032	4.50	1.169	90
Routed	180R	1.44	962	12.58	1.124	86	962	4.67	1.169	90
Combined	C180RI	3.24	2109	12.67	1.114	193	1764	4.67	1.036	179
Routed	RI180R	3.24	2021	12.75	1.114	193	1717	4.83	1.036	179

Existing Conditions Summary of Results

			24-hour				6-hour			
TYPE	MODELID	AREA	Q100	TIMEPK100	VOL100	VOL100AF	Q100	TIMEPK100	VOL100	VOL100AF
		(sq.mi.)	(cfs)	(hrs)	(in)	(ac-ft)	(cfs)	(hrs)	(in)	(ac-ft)
Combined	C180R	32.76	8650	13.08	1.012	1769	4924	5.25	0.671	1173
Routed	180185	32.76	8637	13.17	1.012	1769	4911	5.33	0.671	1173
Hydrograph	S185	2.42	1655	12.50	1.117	144	1450	4.50	1.107	143
Routed	185R	2.42	1411	12.92	1.117	144	1302	4.92	1.107	143
Combined	C185R	35.19	9648	13.08	1.005	1885	5280	5.25	0.650	1220
Routed	185190	35.19	9631	13.17	1.004	1885	5261	5.33	0.650	1220
Hydrograph	S190	4.05	2590	12.58	1.027	222	2084	4.58	0.896	194
Combined	C190	39.24	10473	13.08	0.984	2060	5467	5.25	0.608	1272
Routed	190195	39.24	10353	13.25	0.984	2060	5351	5.42	0.608	1272
Hydrograph	S195	1.81	1039	12.67	1.041	100	1001	4.67	1.046	101
Combined	C195	41.05	10728	13.25	0.976	2137	5422	5.42	0.591	1293
Hydrograph	S400	1.54	1047	12.50	1.146	94	1019	4.50	1.167	96
Hydrograph	D400	1.54	524	12.50	0.573	47	510	4.50	0.583	48
Hydrograph	S410	0.64	526	12.42	1.203	41	638	4.42	1.416	48
Combined	C410	2.18	1003	12.50	0.748	87	912	4.50	0.732	85
Hydrograph	D410	2.18	903	12.50	0.673	78	820	4.50	0.659	77
Routed	410415	2.18	681	12.92	0.673	78	654	5.00	0.659	77
Hydrograph	S415	0.45	624	12.17	1.032	25	791	4.17	1.256	30
Combined	C415	2.63	695	12.92	0.726	102	651	5.00	0.695	98
Routed	415420	2.63	613	13.75	0.726	102	582	5.75	0.685	96
Hydrograph	S420	1.77	1740	12.33	1.043	98	1576	4.33	1.050	99
Combined	C420	4.40	1714	12.33	0.842	198	1228	4.33	0.726	170
Combined	C40010	1.54	624	12.50	0.679	56	610	4.50	0.693	57
Routed	400430	1.54	581	12.75	0.679	56	579	4.75	0.693	57
Hydrograph	S430	0.80	1090	12.17	1.109	47	1207	4.17	1.281	54
Combined	C430	2.34	1080	12.17	0.815	102	856	4.25	0.791	99
Routed	430440	2.34	966	12.50	0.815	102	834	4.58	0.791	99
Hydrograph	S440	1.07	1205	12.25	1.040	59	1237	4.25	1.129	64
Combined	C440	3.41	1702	12.42	0.874	159	1335	4.42	0.792	144
Routed	440450	3.41	1460	12.67	0.874	159	1190	4.75	0.792	144
Hydrograph	S450	2.52	1624	12.58	1.058	142	1467	4.58	1.028	138
Hydrograph	S435	0.39	656	12.08	1.107	23	822	4.08	1.347	28
Routed	435450	0.39	378	12.83	1.107	23	443	4.92	1.347	28
Combined	C450	6.32	3321	12.67	0.945	319	2406	4.75	0.775	261
Combined	ALL400	9.18	4390	12.67	1.045	511	2967	4.75	0.790	387
Hydrograph	S500	3.64	2063	12.75	1.323	257	1743	4.75	1.171	227
Routed	500510	3.64	1911	13.08	1.323	257	1680	5.08	1.171	227
Hydrograph	S510	1.84	2099	12.25	1.074	105	1844	4.25	1.093	107
Combined	C510	5.48	2092	12.25	1.226	358	1724	5.00	1.032	301
Hydrograph	D510	5.48	732	12.25	0.429	125	603	5.00	0.361	105
Routed	510520	5.48	631	13.75	0.429	125	557	5.75	0.361	105
Hydrograph	S520	1.48	1288	12.42	1.091	86	1272	4.42	1.152	91
Combined	C520	6.96	1260	12.42	0.562	209	891	4.42	0.459	170
Hydrograph	S530	2.23	1697	12.50	1.074	127	1563	4.50	1.076	128
Routed	510530	2.18	52	13.92	0.075	9	52	5.92	0.073	9
Combined	C530	7.70	1697	12.50	0.331	136	1563	4.50	0.338	139
Combined	ALL500	9.19	2900	12.42	0.694	340	1976	4.50	0.540	265
Hydrograph	S700	5.24	3186	12.67	1.139	318	2698	4.75	1.042	291
Hydrograph	S720	4.63	2742	12.67	1.144	282	2391	4.75	1.068	264
Hydrograph	S740	1.13	1506	12.25	1.264	76	1576	4.25	1.459	88
Combined	ALL700	11.00	6188	12.67	1.126	661	4813	4.67	0.930	545
Hydrograph	S900	1.03	853	12.50	1.417	78	936	4.50	1.535	85
Routed	900910	1.03	696	13.00	1.417	78	782	5.00	1.535	85
Hydrograph	S910	0.98	1512	12.17	1.151	60	1585	4.17	1.307	69
Combined	C910	2.02	1550	12.17	1.272	137	1293	4.17	1.302	140
Routed	910915	2.02	1277	12.33	1.272	137	1129	4.33	1.302	140
Hydrograph	S915	1.13	1210	12.42	1.431	86	1308	4.42	1.626	98
Combined	C915	3.14	2439	12.33	1.313	220	2053	4.42	1.316	221
Routed	915920	3.14	1786	12.92	1.313	220	1677	5.00	1.316	221
Hydrograph	S920	3.29	2794	12.50	1.210	212	2439	4.50	1.198	210
Combined	C920	6.43	3574	12.67	1.244	427	3015	4.75	1.137	390

Existing Condition Unit Discharges

		24-hour		6-hour	
MODELID	AREA	Q100	Unit Q	Q100	Unit Q
	(sq.mi.)	(cfs)	(cfs/sq.mi.)	(cfs)	(cfs/sq.mi.)
S100	6.99	5214	746	4347	102
S102	3.23	3434	1063	2790	12
C102	10.23	7803	763	5993	30
RR102	10.23	149	15	127	1
D102	10.23	75	7	63	4
100105	10.23	70	7	59	2
S105	4.37	3466	793	2863	3
102105	10.23	74	7	63	1
C105U	14.60	3466	237	2863	27
S110	0.43	532	1237	662	3
11015I	0.43	456	1060	570	28
D15I	0.43	365	849	456	161
15I15R	0.43	323	751	408	89
S115	2.25	1693	752	1605	16
C115U	2.68	1839	686	1730	13
15I15L	0.43	45	105	61	67
C115D	2.68	1840	687	1731	11
115120	2.68	1807	674	1699	76
S120	2.00	2032	1016	1838	18
C120	4.68	3197	683	2645	12
C105D	19.28	6214	322	4019	0
120135	19.28	6209	322	4008	3
S125	0.09	161	1789	202	700
12535I	0.09	136	1511	174	2048
S150	0.77	729	947	836	30
D150	0.77	73	95	84	86
150130	0.77	67	87	79	66
S130	0.31	415	1339	524	69
C130	0.31	438	1413	553	27
D130	0.31	307	990	387	14
13035I	0.31	302	974	381	14
C135I	0.40	434	1085	553	156
35I135	0.40	310	775	375	148
S135	0.88	1015	1153	1102	7
C135L	1.28	1010	789	982	5
C135	20.56	6729	327	4247	1
135145	20.56	5991	291	3838	1
S140	1.37	2029	1481	1913	13
140145	1.37	1632	1191	1623	9
D1302	0.31	118	381	149	41
130145	0.31	62	200	73	54
S145	1.76	1945	1105	1702	10
C145L	2.07	1940	937	1600	44
C145	23.69	6627	280	4146	0
145155	23.69	6629	280	4141	1
150155	0.77	438	569	504	34
130155	0.31	3	10	4	83
S155	1.83	1781	973	1626	83
C155L	2.61	1773	679	1455	3

Existing Condition Unit Discharges

		24-hour		6-hour	
MODELID	AREA	Q100	Unit Q	Q100	Unit Q
	(sq.mi.)	(cfs)	(cfs/sq.mi.)	(cfs)	(cfs/sq.mi.)
C155	26.30	7183	273	4449	0
155160	26.30	7159	272	4437	0
S160	1.14	1342	1177	1347	4
C160	27.44	7201	262	4432	7
160170	27.44	7078	258	4323	0
S165	0.62	842	1358	1008	20
165170	0.62	658	1061	757	43
S170	1.46	1802	1234	1686	18
C170	2.08	1900	913	1721	26
170R	2.08	1825	877	1637	0
C170R	29.52	7607	258	4553	5
170180	29.52	7502	254	4483	1
S175	1.80	1278	710	1203	35
175R	1.80	1185	658	1140	30
S180	1.44	1039	722	1032	38
180R	1.44	962	668	962	76
C180RI	3.24	2109	651	1764	1
RI180R	3.24	2021	624	1717	17
C180R	32.76	8650	264	4924	2
180185	32.76	8637	264	4911	2
S185	2.42	1655	684	1450	6
185R	2.42	1411	583	1302	6
C185R	35.19	9648	274	5280	4
185190	35.19	9631	274	5261	0
S190	4.05	2590	640	2084	4
C190	39.24	10473	267	5467	0
190195	39.24	10353	264	5351	1
S195	1.81	1039	574	1001	29
C195	41.05	10728	261	5422	4
S400	1.54	1047	680	1019	3
D400	1.54	524	340	510	3
S410	0.64	526	822	638	215
C410	2.18	1003	460	912	4
D410	2.18	903	414	820	4
410415	2.18	681	312	654	3
S415	0.45	624	1387	791	1
C415	2.63	695	264	651	20
415420	2.63	613	233	582	19
S420	1.77	1740	983	1576	120
C420	4.40	1714	390	1228	1
C40010	1.54	624	405	610	2
400430	1.54	581	377	579	33
S430	0.80	1090	1363	1207	62
C430	2.34	1080	462	856	153
430440	2.34	966	413	834	8
S440	1.07	1205	1126	1237	47
C440	3.41	1702	499	1335	14
440450	3.41	1460	428	1190	44
S450	2.52	1624	644	1467	2

Existing Condition Unit Discharges

		24-hour		6-hour	
MODELID	AREA	Q100	Unit Q	Q100	Unit Q
	(sq.mi.)	(cfs)	(cfs/sq.mi.)	(cfs)	(cfs/sq.mi.)
S435	0.39	656	1682	822	123
435450	0.39	378	969	443	365
C450	6.32	3321	525	2406	1
ALL400	9.18	4390	478	2967	0
S500	3.64	2063	567	1743	19
500510	3.64	1911	525	1680	2
S510	1.84	2099	1141	1844	2
C510	5.48	2092	382	1724	1
D510	5.48	732	134	603	1
510520	5.48	631	115	557	9
S520	1.48	1288	870	1272	2
C520	6.96	1260	181	891	0
S530	2.23	1697	761	1563	1
510530	2.18	52	24	52	71
C530	7.70	1697	220	1563	1
ALL500	9.19	2900	316	1976	0
S700	5.24	3186	608	2698	1
S720	4.63	2742	592	2391	1
S740	1.13	1506	1333	1576	65
ALL700	11.00	6188	563	4813	1
S900	1.03	853	828	936	5
900910	1.03	696	676	782	3
S910	0.98	1512	1543	1585	99
C910	2.02	1550	767	1293	3
910915	2.02	1277	632	1129	2
S915	1.13	1210	1071	1308	1
C915	3.14	2439	777	2053	62
915920	3.14	1786	569	1677	1
S920	3.29	2794	849	2439	12
C920	6.43	3574	556	3015	0

FCDMC
Drainage Design Management System
RAINFALL DATA
Project Reference: A4_EX24

 6/16/2006

Duration	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Rainfall Method: NOAA						
5 MIN	0.39	0.46	0.51	0.58	0.64	0.70
10 MIN	0.58	0.69	0.77	0.89	0.98	1.07
15 MIN	0.71	0.86	0.97	1.13	1.25	1.38
30 MIN	0.94	1.15	1.30	1.52	1.70	1.87
1 HOUR	1.14	1.42	1.62	1.90	2.12	2.33
2 HOUR	1.23	1.56	1.79	2.12	2.38	2.63
3 HOUR	1.29	1.66	1.91	2.27	2.55	2.83
6 HOUR	1.40	1.83	2.13	2.55	2.88	3.20
12 HOUR	1.50	2.04	2.41	2.91	3.31	3.70
24 HOUR	1.60	2.25	2.68	3.28	3.74	4.20

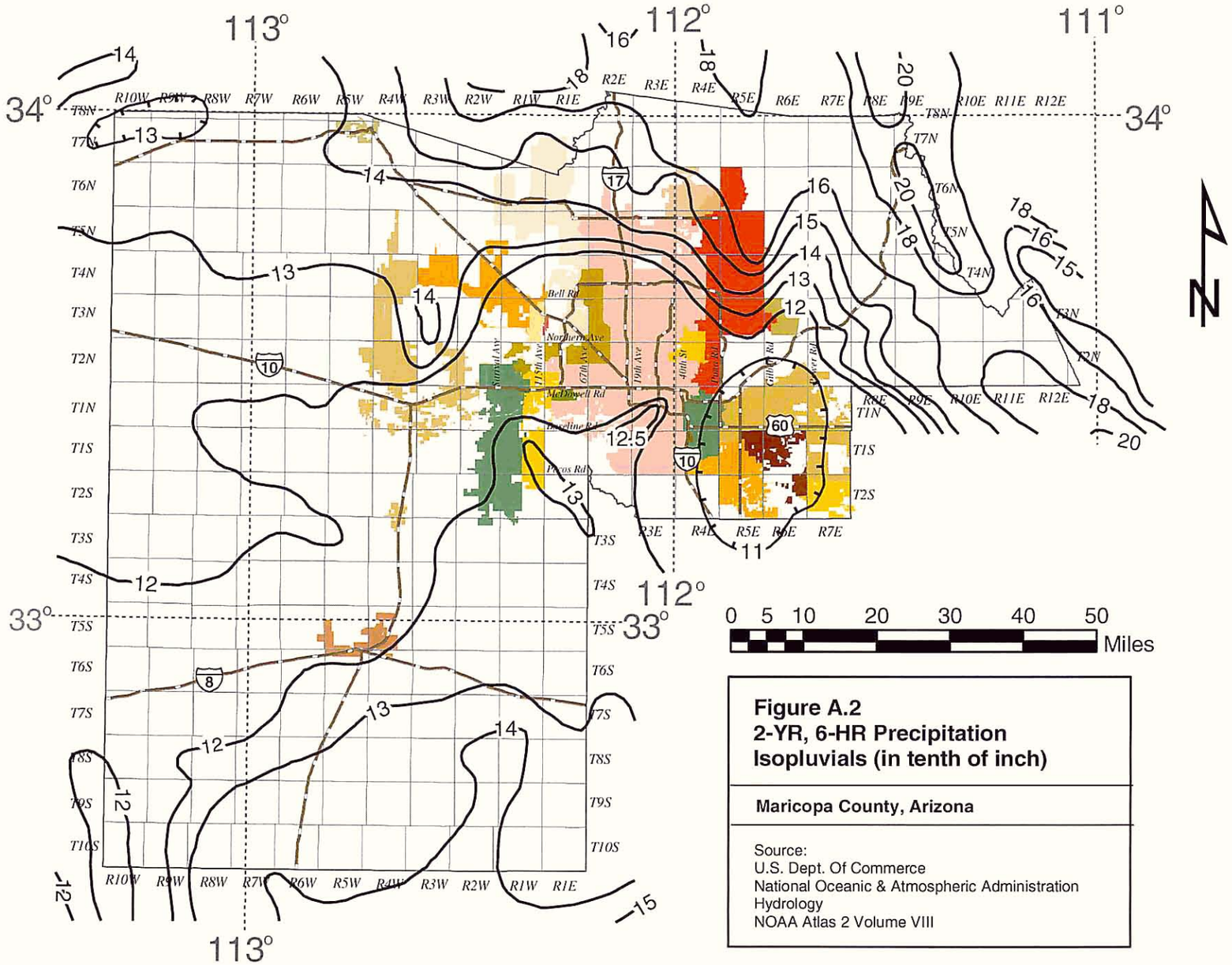

Figure A.2
2-YR, 6-HR Precipitation Isopluvials (in tenth of inch)

Maricopa County, Arizona

Source:
U.S. Dept. Of Commerce
National Oceanic & Atmospheric Administration
Hydrology
NOAA Atlas 2 Volume VIII

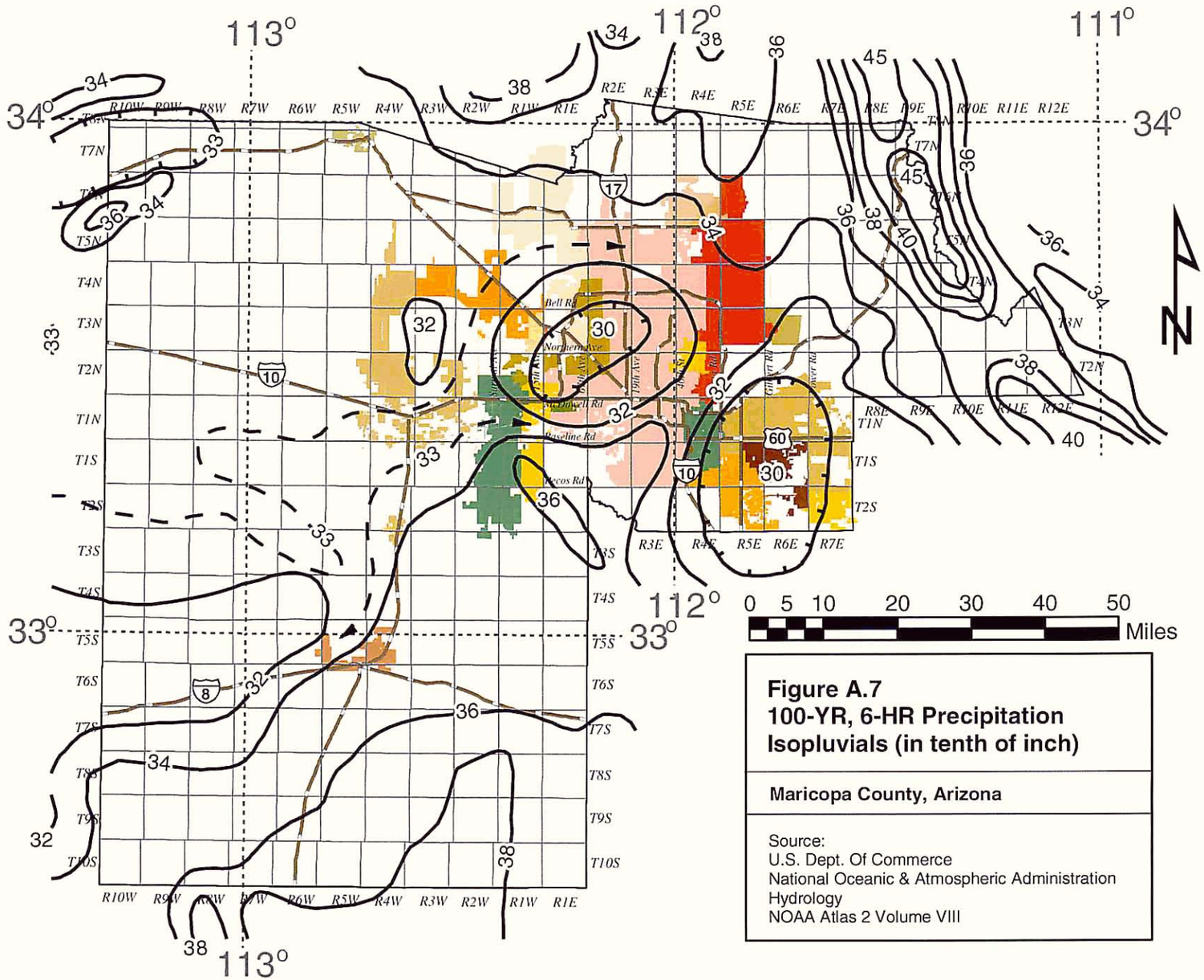

Figure A.7
100-YR, 6-HR Precipitation Isopluvials (in tenth of inch)

Maricopa County, Arizona

Source:
U.S. Dept. Of Commerce
National Oceanic & Atmospheric Administration
Hydrology
NOAA Atlas 2 Volume VIII

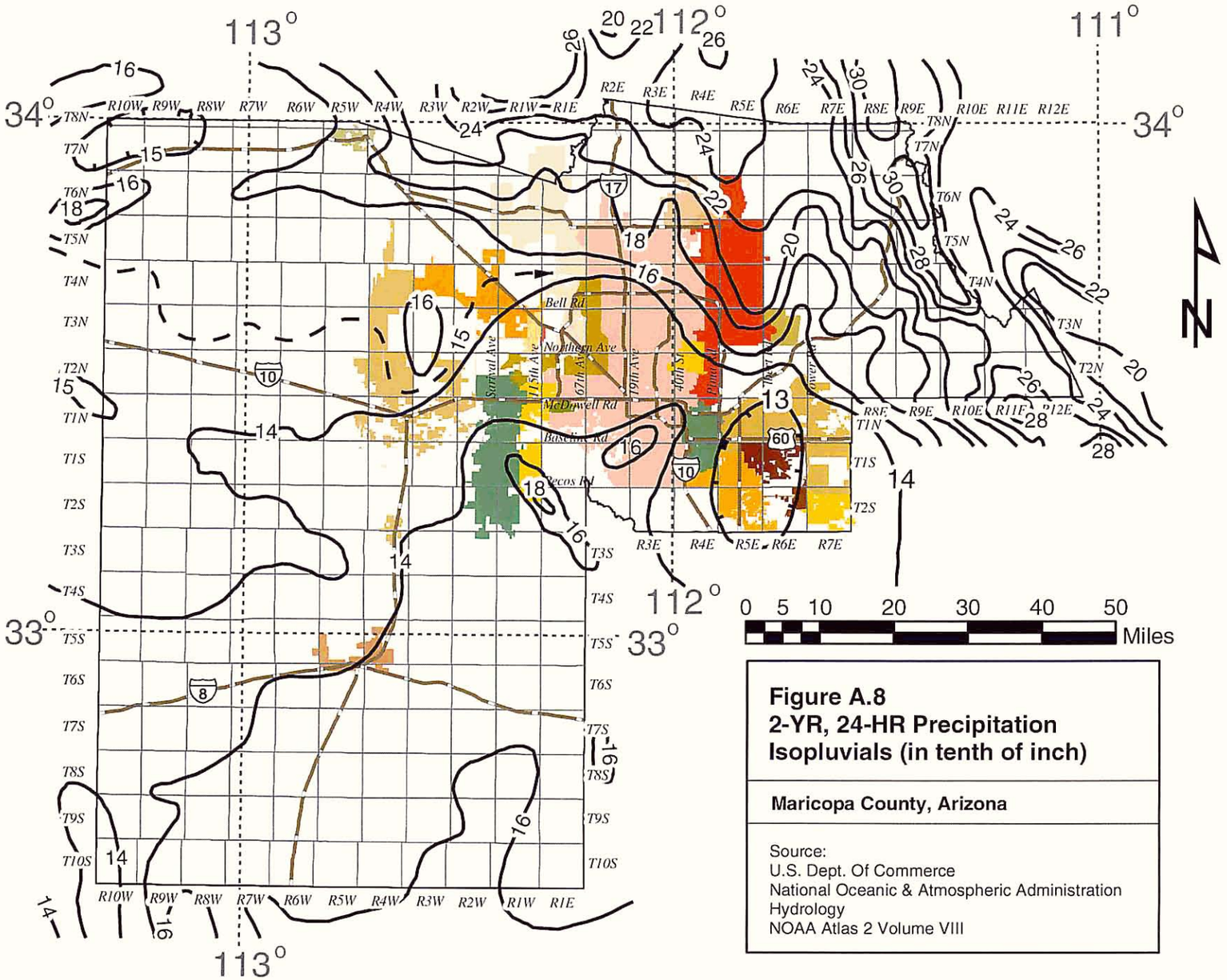

Figure A.8
2-YR, 24-HR Precipitation Isopluvials (in tenth of inch)

Maricopa County, Arizona

Source:
U.S. Dept. Of Commerce
National Oceanic & Atmospheric Administration
Hydrology
NOAA Atlas 2 Volume VIII

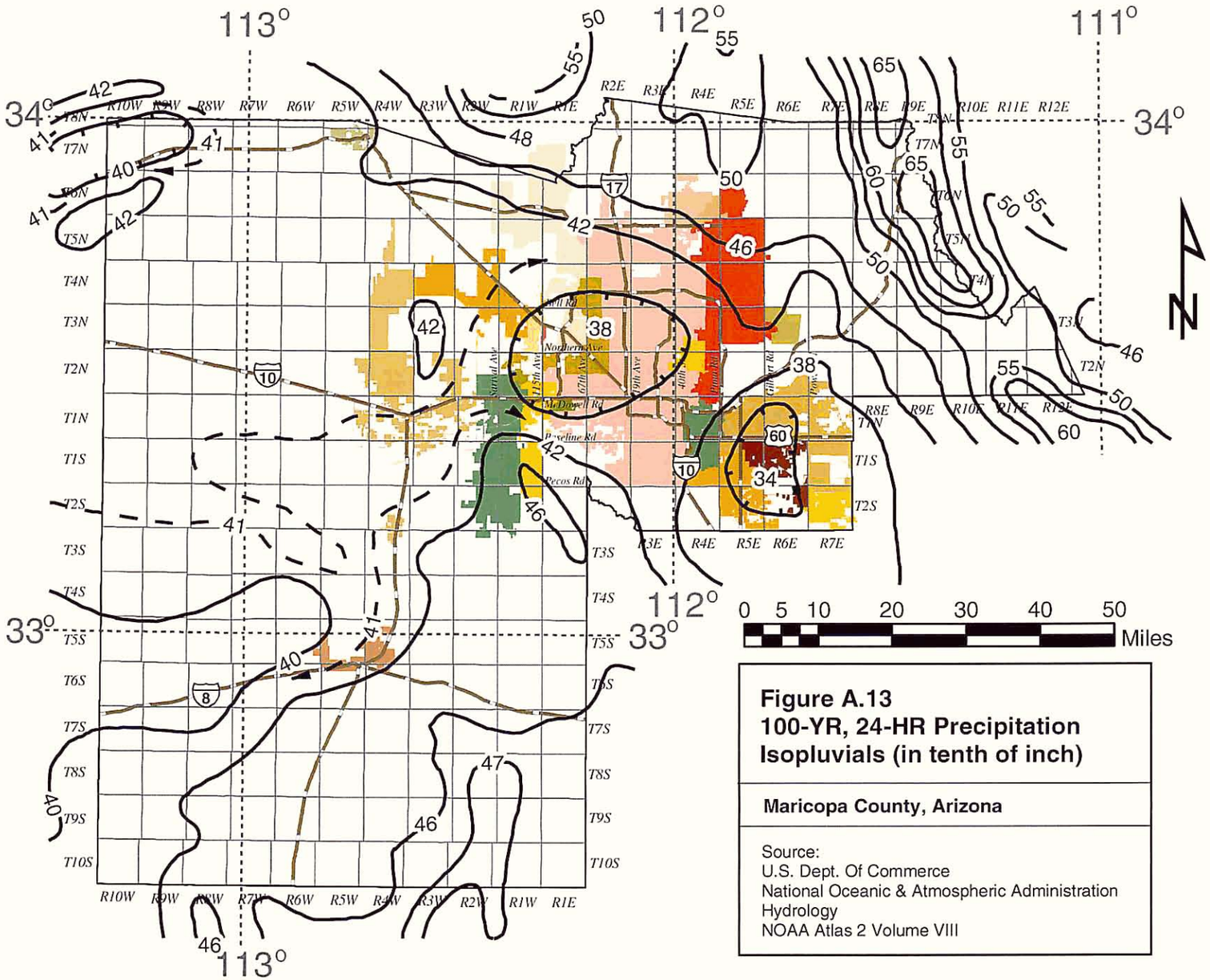

Figure A.13
100-YR, 24-HR Precipitation Isopluvials (in tenth of inch)

Maricopa County, Arizona

Source:
U.S. Dept. Of Commerce
National Oceanic & Atmospheric Administration
Hydrology
NOAA Atlas 2 Volume VIII

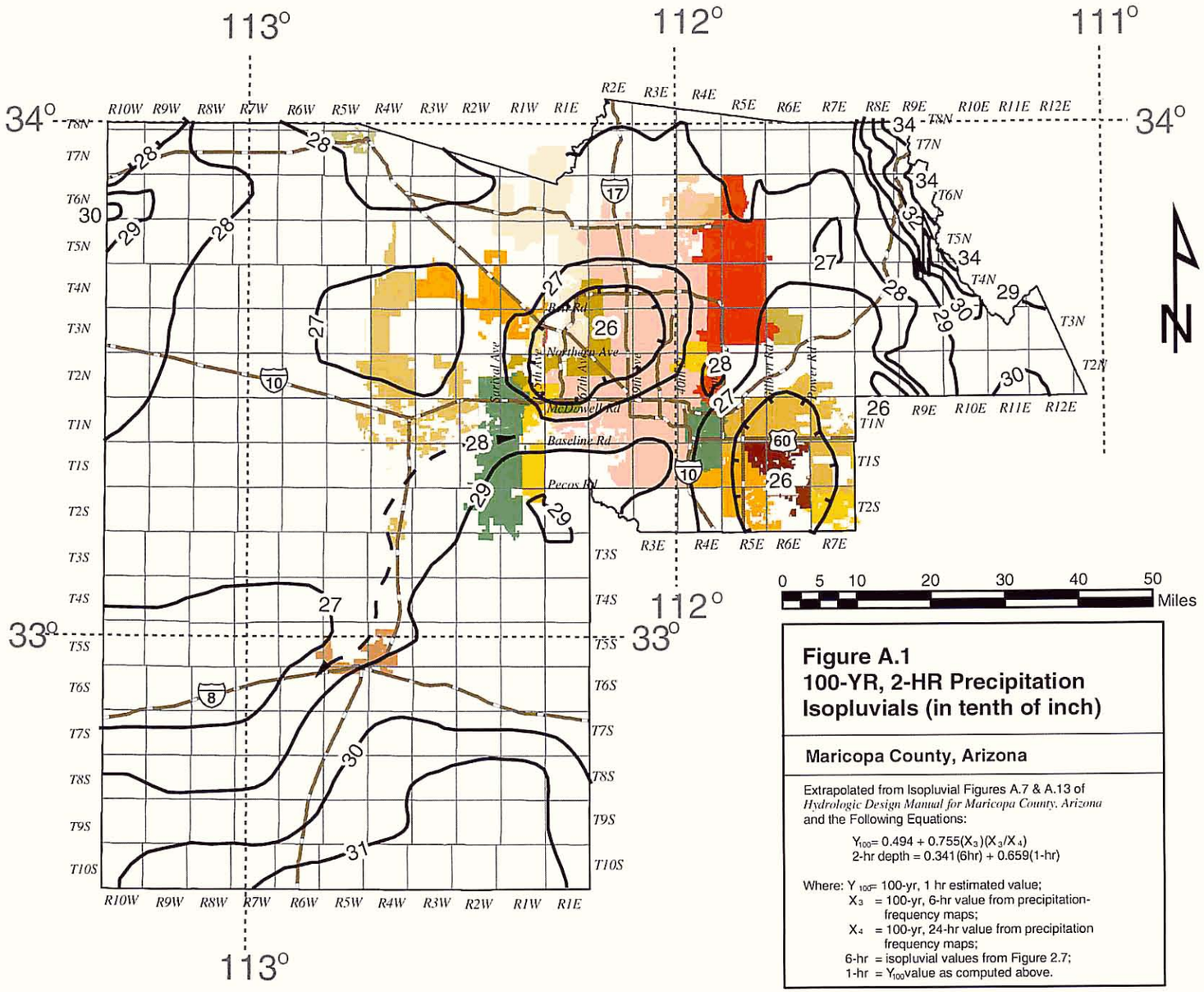

Figure A.1
100-YR, 2-HR Precipitation Isopluvials (in tenth of inch)

Maricopa County, Arizona

Extrapolated from Isopluvial Figures A.7 & A.13 of *Hydrologic Design Manual for Maricopa County, Arizona* and the Following Equations:

$$Y_{100} = 0.494 + 0.755(X_3)(X_3/X_4)$$
$$\text{2-hr depth} = 0.341(\text{6hr}) + 0.659(\text{1-hr})$$

Where: Y_{100} = 100-yr, 1 hr estimated value;
X_3 = 100-yr, 6-hr value from precipitation-frequency maps;
X_4 = 100-yr, 24-hr value from precipitation frequency maps;
6-hr = isopluvial values from Figure 2.7;
1-hr = Y_{100} value as computed above.

Existing Conditions Sub-basin Data

	Sub Basin Parameters									Rainfall Losses				
Area ID	Area	Length	Slope	Slope	S-Graph	Lca	Lag	Velocity	Kn	IA	DTHETA	PSIF	XKSAT	RTIMP
	(sq mi)	(mi)	(ft/mi)	(%)		(mi)	(min)	(ft/s)		(in)		(in)	(in/hr)	(%)
S100	6.994	6.15	33.2	0.63	DESERT/RANGELAND	2.48	52	6.5	0.025	0.35	0.38	6.40	0.16	
S102	3.234	3.46	32.4	0.61	DESERT/RANGELAND	1.26	33	5.9	0.025	0.35	0.38	5.60	0.22	
S105	4.370	5.07	34.5	0.65	DESERT/RANGELAND	1.81	43	6.5	0.025	0.35	0.35	4.80	0.30	
S110	0.430	1.72	430.3	8.15	MOUNTAIN	0.82	26	3.6	0.050	0.25	0.37	5.20	0.25	6
S115	2.247	5.42	188.2	3.56	DESERT/RANGELAND	2.88	47	6.4	0.031	0.32	0.35	4.80	0.30	2
S120	2.004	3.47	265.5	5.03	DESERT/RANGELAND	2.04	33	5.9	0.031	0.33	0.35	4.65	0.32	1
S125	0.093	0.75	783.4	14.84	MOUNTAIN	0.43	13	3.1	0.050	0.25	0.35	4.15	0.44	5
S135	0.879	2.87	92.9	1.76	DESERT/RANGELAND	1.36	26	6.2	0.025	0.35	0.35	4.25	0.42	
S130	0.310	1.26	360.3	6.82	MOUNTAIN	0.63	20	3.5	0.046	0.21	0.35	4.20	0.43	4
S140	1.373	1.47	40.3	0.76	DESERT/RANGELAND	0.94	20	4.0	0.025	0.35	0.36	5.00	0.28	
S145	1.756	3.24	75.4	1.43	DESERT/RANGELAND	1.15	26	6.8	0.025	0.35	0.35	4.15	0.44	
S150	0.774	2.44	404.4	7.66	MOUNTAIN	1.39	37	3.7	0.050	0.25	0.35	4.65	0.32	7
S155	1.832	3.65	99.2	1.88	DESERT/RANGELAND	2.16	33	6.1	0.025	0.35	0.35	4.50	0.36	1
S160	1.144	2.85	73.9	1.40	DESERT/RANGELAND	0.96	23	6.7	0.025	0.35	0.35	4.00	0.47	
S165	0.616	1.59	371.6	7.04	MOUNTAIN	0.83	20	4.4	0.038	0.30	0.35	4.55	0.35	3
S170	1.464	2.60	85.2	1.61	DESERT/RANGELAND	1.15	23	6.1	0.025	0.35	0.35	4.40	0.38	
S175	1.802	4.35	173.6	3.29	MOUNTAIN	1.87	48	5.0	0.040	0.29	0.35	4.50	0.36	1
S180	1.443	4.66	215.0	4.07	MOUNTAIN	2.04	45	5.7	0.037	0.25	0.35	4.25	0.42	2
S185	2.421	4.99	254.4	4.82	MOUNTAIN	1.99	49	5.6	0.041	0.16	0.35	4.35	0.40	1
S190	4.054	5.88	39.1	0.74	DESERT/RANGELAND	2.47	50	6.5	0.025	0.35	0.35	3.81	0.44	
S195	1.808	5.15	45.2	0.86	DESERT/RANGELAND	2.64	57	5.0	0.030	0.33	0.35	4.25	0.42	
S400	1.544	3.30	249.2	4.72	MOUNTAIN	1.75	49	3.7	0.050	0.25	0.35	4.20	0.43	3
S410	0.639	3.28	204.6	3.88	MOUNTAIN	1.70	40	4.5	0.040	0.15	0.35	3.85	0.43	3
S415	0.451	2.20	84.2	1.59	DESERT/RANGELAND	0.84	20	6.2	0.025	0.35	0.35	3.64	0.49	
S420	1.767	3.43	68.5	1.30	DESERT/RANGELAND	1.59	31	6.1	0.025	0.35	0.35	4.30	0.41	
S430	0.795	2.16	74.5	1.41	DESERT/RANGELAND	1.03	22	5.5	0.025	0.35	0.35	4.55	0.35	
S435	0.393	1.57	72.1	1.37	DESERT/RANGELAND	0.61	16	5.5	0.025	0.35	0.35	4.45	0.37	
S440	1.068	2.51	67.7	1.28	DESERT/RANGELAND	1.39	26	5.3	0.025	0.35	0.35	4.20	0.43	
S450	2.521	3.80	59.2	1.12	DESERT/RANGELAND	1.90	51	4.1	0.036	0.23	0.35	4.25	0.42	
S500	3.638	4.48	359.1	6.80	MOUNTAIN	3.39	66	3.7	0.050	0.25	0.35	3.92	0.41	9
S510	1.840	3.49	107.1	2.03	DESERT/RANGELAND	1.32	27	7.2	0.025	0.35	0.35	3.95	0.40	
S520	1.481	3.91	61.9	1.17	DESERT/RANGELAND	2.21	37	5.8	0.025	0.35	0.35	4.50	0.36	
S530	2.226	3.43	66.5	1.26	DESERT/RANGELAND	1.40	42	4.4	0.036	0.20	0.35	4.30	0.41	
S700	5.240	6.91	47.9	0.91	DESERT/RANGELAND	3.20	58	6.5	0.026	0.34	0.36	5.00	0.28	
S720	4.626	6.41	48.1	0.91	DESERT/RANGELAND	2.78	60	5.9	0.029	0.33	0.36	5.00	0.28	
S740	1.132	1.48	73.5	1.39	DESERT/RANGELAND	0.66	25	3.2	0.040	0.15	0.37	5.30	0.24	
S900	1.035	3.21	420.5	7.96	MOUNTAIN	1.94	46	3.9	0.050	0.25	0.37	5.30	0.24	6

Existing Conditions Sub-basin Data

	Sub Basin Parameters									Rainfall Losses				
Area ID	Area	Length	Slope	Slope	S-Graph	Lca	Lag	Velocity	Kn	IA	DTHETA	PSIF	XKSAT	RTIMP
	(sq mi)	(mi)	(ft/mi)	(%)		(mi)	(min)	(ft/s)		(in)		(in)	(in/hr)	(%)
S910	0.983	2.07	105.2	1.99	DESERT/RANGELAND	0.82	18	6.3	0.025	0.35	0.35	4.70	0.31	
S915	1.126	4.08	127.5	2.41	DESERT/RANGELAND	1.54	37	6.1	0.032	0.25	0.37	6.60	0.14	1
S920	3.291	3.63	40.2	0.76	DESERT/RANGELAND	2.65	42	4.7	0.025	0.35	0.38	5.60	0.22	

FCDMC
Drainage Design Management System
SOILS
Project Reference: A4_EX24

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S100	64522	0.015	0.20	0.04	-	50
	64522	0.020	0.30	0.04	-	50
	64522	0.036	0.50	0.04	-	50
	64522	0.043	0.60	0.04	-	50
	64522	0.263	3.80	0.04	-	50
	64553	0.001	0.00	0.02	-	50
	64553	2.237	32.00	0.02	-	50
	64553	0.003	0.00	0.02	-	50
	64553	0.004	0.10	0.02	-	50
	64553	0.005	0.10	0.02	-	50
	64575	0.024	0.30	0.23	-	50
	64576	0.005	0.10	0.23	-	50
	64576	0.007	0.10	0.23	-	50
	64576	0.012	0.20	0.23	-	50
	64576	0.018	0.30	0.23	-	50
	64576	0.023	0.30	0.23	-	50
	64576	0.045	0.60	0.23	-	50
	64576	0.206	2.90	0.23	-	50
	64577	0.001	0.00	0.05	-	50
	64577	0.002	0.00	0.05	-	50
	64577	0.057	0.80	0.05	-	50
	64580	0.079	1.10	0.08	-	50
	645112	0.033	0.50	0.39	-	50
	645112	0.056	0.80	0.39	-	50
	645112	0.428	6.10	0.39	-	50
	645112	1.226	17.50	0.39	-	50
	645112	1.838	26.30	0.39	-	50
	645113	0.074	1.10	0.39	-	50
	645113	0.075	1.10	0.39	-	50
	645113	0.151	2.20	0.39	-	50
	645119	0.006	0.10	0.14	-	50

* Non default value

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S102	64553	0.032	1.00	0.02	-	50
	64553	0.124	3.80	0.02	-	50
	64553	0.721	22.30	0.02	-	50
	645112	0.934	28.90	0.39	-	50
	645113	0.041	1.30	0.39	-	50
	645113	0.075	2.30	0.39	-	50
	645113	0.192	5.90	0.39	-	50
	645113	0.309	9.60	0.39	-	50
	645113	0.807	25.00	0.39	-	50
	645119	0.001	0.00	0.14	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S105	6453	0.070	1.60	0.58	-	50
	64522	0.006	0.10	0.04	-	50
	64529	0.040	0.90	0.34	-	50
	64552	0.024	0.50	0.16	20.00	50
	64553	0.056	1.30	0.02	-	50
	64553	0.242	5.50	0.02	-	50
	64555	0.120	2.70	0.27	-	50
	64575	0.097	2.20	0.23	-	50
	64575	0.852	19.50	0.23	-	50
	64576	0.030	0.70	0.23	-	50
	64576	0.030	0.70	0.23	-	50
	64576	0.044	1.00	0.23	-	50
	64576	0.063	1.40	0.23	-	50
	64576	0.075	1.70	0.23	-	50
	64577	0.011	0.20	0.05	-	50
	64577	0.036	0.80	0.05	-	50
	64577	0.084	1.90	0.05	-	50
	64577	0.099	2.30	0.05	-	50
	64598	0.086	2.00	0.37	-	50
	645113	0.029	0.70	0.39	-	50
	645113	0.053	1.20	0.39	-	50
	645113	0.061	1.40	0.39	-	50
	645113	0.069	1.60	0.39	-	50
	645113	0.090	2.10	0.39	-	50
	645113	0.145	3.30	0.39	-	50
	645113	0.200	4.60	0.39	-	50
	645113	0.425	9.70	0.39	-	50
	645124	1.233	28.20	0.39	-	50
S110	64548	0.036	8.30	0.06	-	50
	64549	0.041	9.60	0.06	-	50
	645100	0.242	56.30	0.40	20.00	50
	645110	0.111	25.90	0.13	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S115	6453	0.499	22.20	0.58	-	50
	64545	0.001	0.00	0.03	-	50
	64548	0.476	21.20	0.06	-	50
	64549	0.001	0.00	0.06	-	50
	64549	0.060	2.60	0.06	-	50
	64549	0.084	3.70	0.06	-	50
	64598	0.269	12.00	0.37	-	50
	645100	0.010	0.40	0.40	20.00	50
	645100	0.031	1.40	0.40	20.00	50
	645100	0.425	18.90	0.40	20.00	50
	645110	0.046	2.00	0.13	-	50
	645113	0.025	1.10	0.39	-	50
	645113	0.088	3.90	0.39	-	50
	645115	0.039	1.70	0.39	-	50
	645124	0.195	8.70	0.39	-	50
S120	6453	0.001	0.10	0.58	-	50
	6453	0.010	0.50	0.58	-	50
	64529	0.109	5.40	0.34	-	50
	64545	0.203	10.10	0.03	-	50
	64552	0.018	0.90	0.16	20.00	50
	64598	0.458	22.90	0.37	-	50
	645100	0.003	0.20	0.40	20.00	50
	645100	0.006	0.30	0.40	20.00	50
	645100	0.014	0.70	0.40	20.00	50
	645100	0.224	11.20	0.40	20.00	50
	645110	0.183	9.10	0.13	-	50
	645113	0.235	11.70	0.39	-	50
	645115	0.001	0.10	0.39	-	50
	645115	0.453	22.60	0.39	-	50
	645123	0.013	0.60	0.37	-	50
	645123	0.016	0.80	0.37	-	50
	645123	0.055	2.70	0.37	-	50
	645124	0.001	0.10	0.39	-	50
S125	64529	0.039	41.70	0.34	-	50
	645100	0.045	48.80	0.40	20.00	50
	645115	0.009	9.60	0.39	-	50

* Non default value

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S130	64529	0.197	63.30	0.34	-	50
	645100	0.111	35.70	0.40	20.00	50
	645115	0.003	1.00	0.39	-	50
S135	6453	0.015	1.70	0.58	-	50
	64529	0.004	0.50	0.34	-	50
	64529	0.008	0.90	0.34	-	50
	64552	0.006	0.70	0.16	20.00	50
	64598	0.184	20.90	0.37	-	50
	645100	0.004	0.50	0.40	20.00	50
	645110	0.006	0.70	0.13	-	50
	645110	0.077	8.70	0.13	-	50
	645113	0.007	0.80	0.39	-	50
	645113	0.376	42.80	0.39	-	50
	645115	0.182	20.70	0.39	-	50
	645124	0.010	1.10	0.39	-	50
S140	64552	0.004	0.30	0.16	20.00	50
	64552	0.016	1.20	0.16	20.00	50
	64553	0.050	3.60	0.02	-	50
	64553	0.083	6.10	0.02	-	50
	64553	0.093	6.80	0.02	-	50
	64571	0.007	0.50	0.36	-	50
	64577	0.014	1.00	0.05	-	50
	64577	0.015	1.10	0.05	-	50
	645113	1.091	79.50	0.39	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S145	6453	0.149	8.50	0.58	-	50
	64529	0.024	1.40	0.34	-	50
	64552	0.011	0.60	0.16	20.00	50
	64553	0.002	0.10	0.02	-	50
	64553	0.006	0.40	0.02	-	50
	64553	0.010	0.60	0.02	-	50
	64555	0.012	0.70	0.27	-	50
	64555	0.030	1.70	0.27	-	50
	64577	0.012	0.70	0.05	-	50
	64577	0.022	1.30	0.05	-	50
	645100	0.013	0.80	0.40	20.00	50
	645110	0.011	0.60	0.13	-	50
	645112	0.076	4.30	0.39	-	50
	645112	0.320	18.20	0.39	-	50
	645113	0.003	0.20	0.39	-	50
	645113	0.090	5.10	0.39	-	50
	645113	0.180	10.30	0.39	-	50
	645115	0.409	23.30	0.39	-	50
	645124	0.376	21.40	0.39	-	50
S150	64514	0.029	3.80	1.04	-	50
	64529	0.066	8.50	0.34	-	50
	64547	0.002	0.30	0.11	-	50
	64549	0.161	20.80	0.06	-	50
	645100	0.513	66.20	0.40	20.00	50
	645110	0.003	0.40	0.13	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S155	6453	0.014	0.80	0.58	-	50
	64514	0.004	0.20	1.04	-	50
	64529	0.053	2.90	0.34	-	50
	64547	0.026	1.40	0.11	-	50
	64552	0.024	1.30	0.16	20.00	50
	64552	0.034	1.90	0.16	20.00	50
	64552	0.049	2.60	0.16	20.00	50
	64555	0.010	0.60	0.27	-	50
	64598	0.005	0.30	0.37	-	50
	64598	0.252	13.70	0.37	-	50
	645100	0.019	1.00	0.40	20.00	50
	645100	0.033	1.80	0.40	20.00	50
	645100	0.051	2.80	0.40	20.00	50
	645110	0.316	17.20	0.13	-	50
	645112	0.022	1.20	0.39	-	50
	645112	0.218	11.90	0.39	-	50
	645113	0.022	1.20	0.39	-	50
	645115	0.557	30.40	0.39	-	50
	645123	0.122	6.70	0.37	-	50
S160	6453	0.037	3.20	0.58	-	50
	64555	0.065	5.70	0.27	-	50
	64598	0.175	15.30	0.37	-	50
	645112	0.730	63.80	0.39	-	50
	645113	0.123	10.70	0.39	-	50
	645115	0.014	1.20	0.39	-	50
S165	64514	0.012	1.90	1.04	-	50
	64529	0.002	0.40	0.34	-	50
	64547	0.140	22.70	0.11	-	50
	64598	0.002	0.30	0.37	-	50
	645100	0.160	25.90	0.40	20.00	50
	645115	0.001	0.10	0.39	-	50
	645123	0.300	48.70	0.37	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S170	64515	0.453	30.90	0.54	-	50
	64598	0.344	23.50	0.37	-	50
	645106	0.506	34.60	0.18	-	50
	645110	0.048	3.30	0.13	-	50
	645112	0.089	6.10	0.39	-	50
	645123	0.023	1.60	0.37	-	50
S175	64515	0.167	9.30	0.54	-	50
	645100	0.102	5.60	0.40	20.00	50
	645106	0.102	5.70	0.18	-	50
	645107	0.525	29.10	0.18	-	50
	645123	0.906	50.30	0.37	-	50
S180	64515	0.347	24.00	0.54	-	50
	645100	0.221	15.30	0.40	20.00	50
	645107	0.346	24.00	0.18	-	50
	645123	0.530	36.70	0.37	-	50
S185	64515	0.025	1.00	0.54	-	50
	64571	0.768	31.70	0.36	-	50
	645100	0.204	8.40	0.40	20.00	50
	645107	0.167	6.90	0.18	-	50
	645107	0.280	11.60	0.18	-	50
	645123	0.977	40.40	0.37	-	50
S190	6452	0.007	0.20	0.41	-	50
	6453	0.142	3.50	0.58	-	50
	64510	0.228	5.60	0.94	-	50
	64515	1.971	48.60	0.54	-	50
	64553	0.089	2.20	0.02	-	50
	64555	0.071	1.70	0.27	-	50
	64571	0.004	0.10	0.36	-	50
	64571	0.025	0.60	0.36	-	50
	64598	0.014	0.30	0.37	-	50
	64598	0.931	23.00	0.37	-	50
	645107	0.066	1.60	0.18	-	50
	645112	0.174	4.30	0.39	-	50
	645113	0.332	8.20	0.39	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S195	64510	0.110	6.10	0.94	-	50
	64571	0.091	5.10	0.36	-	50
	64571	0.197	10.90	0.36	-	50
	64577	0.092	5.10	0.05	-	50
	64598	0.001	0.00	0.37	-	50
	64598	1.317	72.80	0.37	-	50
S400	64515	0.001	0.00	0.54	-	50
	64571	0.003	0.20	0.36	-	50
	645100	0.527	34.10	0.40	20.00	50
	645107	0.148	9.60	0.18	-	50
	645123	0.866	56.10	0.37	-	50
S410	64515	0.342	53.50	0.54	-	50
	645100	0.184	28.70	0.40	20.00	50
	645107	0.075	11.70	0.18	-	50
	645123	0.039	6.10	0.37	-	50
S415	64515	0.338	75.00	0.54	-	50
	64571	0.112	25.00	0.36	-	50
S420	6452	0.038	2.10	0.41	-	50
	64515	0.263	14.90	0.54	-	50
	64520	0.012	0.70	0.19	-	50
	64520	0.050	2.80	0.19	-	50
	64520	0.204	11.50	0.19	-	50
	64555	0.185	10.50	0.27	-	50
	64571	1.016	57.50	0.36	-	50
S430	64571	0.554	69.70	0.36	-	50
	645107	0.241	30.30	0.18	-	50
S435	64571	0.313	79.70	0.36	-	50
	645107	0.080	20.30	0.18	-	50
S440	64520	0.015	1.40	0.19	-	50
	64555	0.007	0.60	0.27	-	50
	64571	1.047	98.00	0.36	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S450	6452	0.012	0.50	0.41	-	50
	6452	0.239	9.50	0.41	-	50
	64515	0.133	5.30	0.54	-	50
	64520	0.012	0.50	0.19	-	50
	64520	0.052	2.00	0.19	-	50
	64555	0.339	13.40	0.27	-	50
	64571	0.206	8.20	0.36	-	50
	64571	1.321	52.40	0.36	-	50
	64598	0.210	8.30	0.37	-	50
S500	64515	0.082	2.20	0.54	-	50
	64569	0.001	0.00	0.63	-	50
	64592	0.070	1.90	0.93	-	50
	64598	0.142	3.90	0.37	-	50
	645100	0.002	0.10	0.40	20.00	50
	645100	3.341	91.80	0.40	20.00	50
S510	64515	0.503	27.40	0.54	-	50
	64569	0.277	15.00	0.63	-	50
	64592	0.281	15.30	0.93	-	50
	645107	0.658	35.70	0.18	-	50
	645123	0.122	6.60	0.37	-	50
S520	6452	0.151	10.20	0.41	-	50
	64515	0.105	7.10	0.54	-	50
	64520	0.076	5.10	0.19	-	50
	64520	0.147	9.90	0.19	-	50
	64555	0.010	0.70	0.27	-	50
	64571	0.613	41.40	0.36	-	50
	645102	0.121	8.20	0.40	-	50
	645107	0.259	17.50	0.18	-	50
S530	6452	0.178	8.00	0.41	-	50
	64515	0.232	10.40	0.54	-	50
	64520	0.087	3.90	0.19	-	50
	64520	0.242	10.90	0.19	-	50
	64555	0.061	2.70	0.27	-	50
	64571	1.425	64.00	0.36	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S700	64522	0.003	0.10	0.04	-	50
	64522	0.360	6.90	0.04	-	50
	64529	0.541	10.30	0.34	-	50
	64544	0.001	0.00	0.03	-	50
	64545	0.011	0.20	0.03	-	50
	64546	0.007	0.10	0.03	-	50
	64546	0.097	1.80	0.03	-	50
	64553	0.001	0.00	0.02	-	50
	64553	0.013	0.20	0.02	-	50
	64560	0.015	0.30	0.26	-	50
	64570	0.003	0.10	0.36	-	50
	64570	1.585	30.30	0.36	-	50
	64574	0.350	6.70	0.08	-	50
	64575	0.006	0.10	0.23	-	50
	64575	0.692	13.20	0.23	-	50
	64576	0.009	0.20	0.23	-	50
	64576	0.028	0.50	0.23	-	50
	64580	0.205	3.90	0.08	-	50
	64598	0.035	0.70	0.37	-	50
	64598	0.298	5.70	0.37	-	50
	64598	0.338	6.40	0.37	-	50
	645110	0.005	0.10	0.13	-	50
	645110	0.016	0.30	0.13	-	50
	645110	0.026	0.50	0.13	-	50
	645110	0.031	0.60	0.13	-	50
	645115	0.206	3.90	0.39	-	50
	645116	0.176	3.40	0.23	-	50
	645119	0.075	1.40	0.14	-	50
	645125	0.108	2.10	0.43	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S720	6451	0.070	1.50	0.41	-	50
	6451	0.085	1.80	0.41	-	50
	6454	0.133	2.90	0.58	-	50
	64553	0.013	0.30	0.02	-	50
	64553	0.202	4.40	0.02	-	50
	64570	0.030	0.60	0.36	-	50
	64571	0.883	19.10	0.36	-	50
	64574	0.035	0.80	0.08	-	50
	64575	0.039	0.80	0.23	-	50
	64575	0.149	3.20	0.23	-	50
	64575	0.163	3.50	0.23	-	50
	64576	0.004	0.10	0.23	-	50
	64576	0.038	0.80	0.23	-	50
	64576	0.084	1.80	0.23	-	50
	645112	0.327	7.10	0.39	-	50
	645113	0.926	20.00	0.39	-	50
	645119	0.001	0.00	0.14	-	50
	645119	0.162	3.50	0.14	-	50
	645119	1.282	27.70	0.14	-	50
S740	6452	0.012	1.10	0.41	-	50
	64511	0.023	2.00	0.94	-	50
	64520	1.091	96.40	0.19	-	50
	645102	0.006	0.50	0.40	-	50
S900	64548	0.140	13.50	0.06	-	50
	64549	0.238	23.00	0.06	-	50
	645100	0.002	0.20	0.40	20.00	50
	645100	0.632	61.10	0.40	20.00	50
	645115	0.002	0.20	0.39	-	50
	645115	0.021	2.10	0.39	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S910	6453	0.008	0.80	0.58	-	50
	6453	0.014	1.50	0.58	-	50
	6453	0.134	13.70	0.58	-	50
	64548	0.033	3.30	0.06	-	50
	64548	0.198	20.10	0.06	-	50
	64549	0.013	1.30	0.06	-	50
	645113	0.511	52.00	0.39	-	50
	645115	0.006	0.60	0.39	-	50
	645115	0.013	1.30	0.39	-	50
	645124	0.053	5.40	0.39	-	50
S915	6453	0.000	0.00	0.58	-	50
	64529	0.000	0.00	0.34	-	50
	64529	0.000	0.00	0.34	-	50
	64529	0.142	12.60	0.34	-	50
	64529	0.155	13.70	0.34	-	50
	64548	0.000	0.00	0.06	-	50
	64548	0.002	0.20	0.06	-	50
	64548	0.023	2.00	0.06	-	50
	64548	0.268	23.80	0.06	-	50
	64548	0.333	29.60	0.06	-	50
	64549	0.004	0.40	0.06	-	50
	64549	0.042	3.70	0.06	-	50
	64550	0.001	0.10	0.26	-	50
	645100	0.021	1.80	0.40	20.00	50
	645100	0.068	6.00	0.40	20.00	50
	645113	0.010	0.90	0.39	-	50
	645115	0.001	0.10	0.39	-	50
	645115	0.022	2.00	0.39	-	50
	645115	0.034	3.00	0.39	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S920	6452	0.008	0.20	0.41	-	50
	6452	0.013	0.40	0.41	-	50
	6453	0.019	0.60	0.58	-	50
	6453	0.027	0.80	0.58	-	50
	6453	0.036	1.10	0.58	-	50
	64522	0.274	8.30	0.04	-	50
	64529	0.004	0.10	0.34	-	50
	64548	0.002	0.10	0.06	-	50
	64548	0.019	0.60	0.06	-	50
	64550	0.002	0.10	0.26	-	50
	64550	0.030	0.90	0.26	-	50
	64550	0.033	1.00	0.26	-	50
	64550	0.036	1.10	0.26	-	50
	64550	0.059	1.80	0.26	-	50
	64550	0.091	2.80	0.26	-	50
	64550	0.365	11.10	0.26	-	50
	64553	0.030	0.90	0.02	-	50
	64553	0.050	1.50	0.02	-	50
	64575	0.030	0.90	0.23	-	50
	64575	0.048	1.50	0.23	-	50
	64575	0.050	1.50	0.23	-	50
	64575	0.053	1.60	0.23	-	50
	64575	0.053	1.60	0.23	-	50
	64575	0.065	2.00	0.23	-	50
	64575	0.412	12.50	0.23	-	50
	64576	0.014	0.40	0.23	-	50
	64576	0.018	0.50	0.23	-	50
	64576	0.025	0.80	0.23	-	50
	64576	0.108	3.30	0.23	-	50
	64576	0.134	4.10	0.23	-	50
	64577	0.008	0.30	0.05	-	50
	64577	0.042	1.30	0.05	-	50
	64577	0.044	1.30	0.05	-	50
	64577	0.051	1.50	0.05	-	50
	64577	0.068	2.10	0.05	-	50
	64577	0.185	5.60	0.05	-	50
	645113	0.022	0.70	0.39	-	50
	645113	0.047	1.40	0.39	-	50
	645113	0.065	2.00	0.39	-	50

* Non default value

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S920	645113	0.324	9.90	0.39	-	50
	645124	0.329	10.00	0.39	-	50

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
S100	910	6.994	100.0	0.35	0	30.0	DRY	0.03
		6.994	**100.0**					
S102	910	3.234	100.0	0.35	0	30.0	DRY	0.03
		3.234	**100.0**					
S105	910	4.370	100.0	0.35	0	30.0	DRY	0.03
		4.370	**100.0**					
S110	930	0.430	100.0	0.25	0	30.0	DRY	0.05
		0.430	**100.0**					
S115	910	1.671	74.4	0.35	0	30.0	DRY	0.03
	930	0.259	11.5	0.25	0	30.0	DRY	0.05
	930	0.317	14.1	0.25	0	30.0	DRY	0.05
		2.247	**100.0**					
S120	910	1.524	76.0	0.35	0	30.0	DRY	0.03
	930	0.480	24.0	0.25	0	30.0	DRY	0.05
		2.004	**100.0**					
S125	930	0.093	100.0	0.25	0	30.0	DRY	0.05
		0.093	**100.0**					
S130	920	0.136	43.7	0.15	0	30.0	DRY	0.04
	930	0.175	56.3	0.25	0	30.0	DRY	0.05
		0.310	**100.0**					
S135	910	0.879	100.0	0.35	0	30.0	DRY	0.03
		0.879	**100.0**					
S140	910	1.373	100.0	0.35	0	30.0	DRY	0.03
		1.373	**100.0**					
S145	910	1.756	100.0	0.35	0	30.0	DRY	0.03

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
		1.756	**100.0**					
S150	930	0.774	100.0	0.25	0	30.0	DRY	0.05
		0.774	**100.0**					
S155	910	1.832	100.0	0.35	0	30.0	DRY	0.03
		1.832	**100.0**					
S160	910	1.144	100.0	0.35	0	30.0	DRY	0.03
		1.144	**100.0**					
S165	910	0.294	47.7	0.35	0	30.0	DRY	0.03
	930	0.322	52.3	0.25	0	30.0	DRY	0.05
		0.616	**100.0**					
S170	910	1.464	100.0	0.35	0	30.0	DRY	0.03
		1.464	**100.0**					
S175	910	0.720	40.0	0.35	0	30.0	DRY	0.03
	930	1.082	60.0	0.25	0	30.0	DRY	0.05
		1.802	**100.0**					
S180	910	0.547	37.9	0.35	0	30.0	DRY	0.03
	920	0.509	35.3	0.15	0	30.0	DRY	0.04
	930	0.388	26.8	0.25	0	30.0	DRY	0.05
		1.443	**100.0**					
S185	920	2.217	91.6	0.15	0	30.0	DRY	0.04
	930	0.204	8.4	0.25	0	30.0	DRY	0.05
		2.421	**100.0**					
S190	910	4.054	100.0	0.35	0	30.0	DRY	0.03
		4.054	**100.0**					
S195	910	1.459	80.7	0.35	0	30.0	DRY	0.03
	930	0.104	5.7	0.25	0	30.0	DRY	0.05

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
S195	930	0.106	5.9	0.25	0	30.0	DRY	0.05
	930	0.139	7.7	0.25	0	30.0	DRY	0.05
		1.808	**100.0**					
S400	930	1.544	100.0	0.25	0	30.0	DRY	0.05
		1.544	**100.0**					
S410	920	0.640	100.0	0.15	0	30.0	DRY	0.04
		0.640	**100.0**					
S415	910	0.451	100.0	0.35	0	30.0	DRY	0.03
		0.451	**100.0**					
S420	910	1.767	100.0	0.35	0	30.0	DRY	0.03
		1.767	**100.0**					
S430	910	0.795	100.0	0.35	0	30.0	DRY	0.03
		0.795	**100.0**					
S435	910	0.393	100.0	0.35	0	30.0	DRY	0.03
		0.393	**100.0**					
S440	910	1.068	100.0	0.35	0	30.0	DRY	0.03
		1.068	**100.0**					
S450	910	0.923	36.6	0.35	0	30.0	DRY	0.03
	920	1.348	53.5	0.15	0	30.0	DRY	0.04
	930	0.250	9.9	0.25	0	30.0	DRY	0.05
		2.521	**100.0**					
S500	930	3.638	100.0	0.25	0	30.0	DRY	0.05
		3.638	**100.0**					
S510	910	1.840	100.0	0.35	0	30.0	DRY	0.03
		1.840	**100.0**					

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
S520	910	1.482	100.0	0.35	0	30.0	DRY	0.03
		1.482	**100.0**					
S530	910	0.210	9.5	0.35	0	30.0	DRY	0.03
	910	0.367	16.5	0.35	0	30.0	DRY	0.03
	920	1.649	74.1	0.15	0	30.0	DRY	0.04
		2.226	**100.1**					
S700	910	1.697	32.4	0.35	0	30.0	DRY	0.03
	910	3.322	63.4	0.35	0	30.0	DRY	0.03
	920	0.221	4.2	0.15	0	30.0	DRY	0.04
		5.240	**100.0**					
S720	910	0.680	14.7	0.35	0	30.0	DRY	0.03
	910	3.124	67.5	0.35	0	30.0	DRY	0.03
	930	0.822	17.8	0.25	0	30.0	DRY	0.05
		4.626	**100.0**					
S740	920	1.132	100.0	0.15	0	30.0	DRY	0.04
		1.132	**100.0**					
S900	930	1.035	100.0	0.25	0	30.0	DRY	0.05
		1.035	**100.0**					
S910	910	0.983	100.0	0.35	0	30.0	DRY	0.03
		0.983	**100.0**					
S915	910	0.574	51.0	0.35	0	30.0	DRY	0.03
	920	0.552	49.0	0.15	0	30.0	DRY	0.04
		1.126	**100.0**					
S920	910	3.291	100.0	0.35	0	30.0	DRY	0.03
		3.291	**100.0**					

Route ID	LOB N	Chan N	ROB N	Length (ft)	Slope (ft/ft)	Max Elev (ft)		1.	2.	3.	4.	5.	6.	7.	8.
NORMAL DEPTH															
Major Basin 01															
100105	0.035	0.055	0.035	11,235.00	0.0045	105.00	X:	-	120.00	240.00	250.00	590.00	600.00	720.00	840.00
							Y:	105.00	102.50	100.00	100.00	100.00	100.00	102.50	105.00
102105	0.045	0.050	0.045	7,656.00	0.0065	104.00	X:	-	40.00	120.00	130.00	250.00	260.00	340.00	380.00
							Y:	104.00	102.00	101.00	100.00	100.00	101.00	102.00	104.00
11015I	0.045	0.035	0.045	3,783.00	0.0267	102.00	X:	-	50.00	100.00	110.00	120.00	130.00	180.00	230.00
							Y:	102.00	101.50	101.00	100.00	100.00	101.00	101.50	102.00
115120	0.030	0.025	0.030	4,077.00	0.0093	105.00	X:	-	30.00	75.00	80.00	105.00	110.00	155.00	190.00
							Y:	105.00	101.50	101.00	100.00	100.00	101.00	101.50	105.00
120135	0.045	0.035	0.045	951.00	0.0074	110.00	X:	-	225.00	450.00	455.00	485.00	490.00	615.00	840.00
							Y:	110.00	105.00	102.00	100.00	100.00	102.00	102.00	110.00
12535I	0.055	0.040	0.055	2,207.00	0.0254	103.00	X:	-	50.00	100.00	101.00	151.00	152.00	202.00	252.00
							Y:	103.00	102.00	101.00	100.00	100.00	101.00	102.00	103.00
130145	0.045	0.045	0.045	18,285.00	0.0149	102.00	X:	-	50.00	100.00	103.00	113.00	116.00	166.00	216.00
							Y:	102.00	101.50	101.00	100.00	100.00	101.00	101.50	102.00
130155	0.045	0.040	0.045	14,782.00	0.0156	102.00	X:	-	100.00	200.00	203.00	253.00	256.00	356.00	456.00
							Y:	102.00	101.50	101.00	100.00	100.00	101.00	101.50	102.00
13035I	0.045	0.035	0.045	1,202.00	0.0241	103.00	X:	-	50.00	100.00	101.00	151.00	152.00	202.00	252.00
							Y:	103.00	102.00	101.00	100.00	100.00	101.00	102.00	103.00
135145	0.045	0.035	0.045	7,938.00	0.0042	110.00	X:	-	300.00	400.00	406.00	506.00	512.00	612.00	912.00
							Y:	110.00	102.50	102.00	100.00	100.00	102.00	102.50	110.00
140145	0.040	0.050	0.040	3,656.00	0.0074	103.00	X:	-	70.00	140.00	150.00	250.00	260.00	330.00	400.00
							Y:	102.00	101.00	100.00	100.00	100.00	100.00	101.00	102.00
145155	0.045	0.035	0.055	631.00	0.0032	110.00	X:	-	150.00	300.00	309.00	379.00	388.00	538.00	838.00
							Y:	110.00	106.50	103.00	100.00	100.00	103.00	106.50	110.00
150130	0.045	0.035	0.045	3,758.00	0.0300	104.00	X:	-	10.00	60.00	66.00	86.00	92.00	142.00	152.00
							Y:	104.00	103.00	102.00	100.00	100.00	102.00	103.00	104.00
150155	0.045	0.040	0.045	19,261.00	0.0188	102.00	X:	-	100.00	200.00	203.00	253.00	256.00	356.00	456.00
							Y:	102.00	101.50	101.00	100.00	100.00	101.00	101.50	102.00
155160	0.035	0.035	0.035	2,291.00	0.0052	110.00	X:	-	200.00	400.00	406.00	506.00	512.00	712.00	912.00
							Y:	110.00	106.50	103.00	100.00	100.00	103.00	106.50	110.00
15I15L	0.045	0.045	0.045	12,775.00	0.0168	104.00	X:	-	50.00	100.00	130.00	170.00	200.00	250.00	300.00
							Y:	104.00	103.00	102.00	100.00	100.00	102.00	103.00	104.00

Route ID	LOB N	Chan N	ROB N	Length (ft)	Slope (ft/ft)	Max Elev (ft)		1.	2.	3.	4.	5.	6.	7.	8.
15I15R	0.035	0.030	0.035	14,128.00	0.0151	105.00	X:	-	25.00	58.00	65.00	85.00	92.00	125.00	150.00
							Y:	105.00	102.50	102.00	100.00	100.00	102.00	102.50	105.00
160170	0.040	0.030	0.040	5,248.00	0.0057	108.00	X:	-	200.00	400.00	406.00	606.00	612.00	812.00	1,012.00
							Y:	108.00	103.00	102.00	100.00	100.00	102.00	103.00	108.00
165170	0.050	0.035	0.050	13,704.00	0.0161	104.00	X:	-	50.00	100.00	106.00	131.00	137.00	187.00	237.00
							Y:	104.00	103.00	102.00	100.00	100.00	102.00	103.00	104.00
170180	0.045	0.035	0.045	6,770.00	0.0065	110.00	X:	-	200.00	400.00	406.00	606.00	612.00	812.00	1,012.00
							Y:	110.00	103.00	102.00	100.00	100.00	102.00	103.00	110.00
170R	0.045	0.045	0.045	3,986.00	0.0115	104.00	X:	-	50.00	100.00	103.00	113.00	116.00	166.00	216.00
							Y:	103.00	102.00	101.00	100.00	100.00	101.00	102.00	103.00
175R	0.045	0.045	0.045	3,217.00	0.0134	103.00	X:	-	50.00	100.00	103.00	153.00	156.00	216.00	266.00
							Y:	103.00	102.00	101.00	100.00	100.00	101.00	102.00	103.00
180185	0.045	0.035	0.045	3,450.00	0.0075	106.00	X:	-	100.00	200.00	206.00	406.00	412.00	512.00	612.00
							Y:	106.00	104.00	102.00	100.00	100.00	102.00	104.00	106.00
180R	0.045	0.045	0.045	2,965.00	0.0128	103.00	X:	-	50.00	100.00	103.00	128.00	131.00	181.00	231.00
							Y:	103.00	102.00	101.00	100.00	100.00	101.00	102.00	103.00
185190	0.045	0.040	0.045	2,700.00	0.0119	106.00	X:	-	80.00	160.00	166.00	416.00	422.00	502.00	582.00
							Y:	106.00	103.00	102.00	100.00	100.00	102.00	103.00	106.00
185R	0.045	0.035	0.045	8,534.00	0.0120	104.00	X:	-	30.00	100.00	106.00	156.00	162.00	232.00	262.00
							Y:	104.00	102.00	102.00	100.00	100.00	102.00	102.00	104.00
190195	0.045	0.035	0.045	4,941.00	0.0107	110.00	X:	-	50.00	200.00	206.00	356.00	366.00	516.00	566.00
							Y:	110.00	103.00	102.00	100.00	100.00	102.00	103.00	110.00
35I135	0.050	0.035	0.050	12,580.00	0.0168	102.00	X:	-	100.00	200.00	203.00	253.00	256.00	356.00	456.00
							Y:	102.00	101.50	101.00	100.00	100.00	101.00	101.50	102.00
400430	0.045	0.040	0.045	8,383.00	0.0130	105.00	X:	-	12.00	25.00	31.00	61.00	67.00	80.00	92.00
							Y:	105.00	104.00	103.00	100.00	100.00	103.00	104.00	105.00
410415	0.045	0.035	0.045	6,871.00	0.0143	103.00	X:	-	30.00	200.00	203.00	253.00	256.00	426.00	456.00
							Y:	103.00	101.00	101.00	100.00	100.00	101.00	101.00	103.00
415420	0.045	0.035	0.045	18,114.00	0.0130	104.00	X:	-	30.00	60.00	66.00	96.00	102.00	132.00	162.00
							Y:	104.00	102.00	102.00	100.00	100.00	102.00	102.00	104.00
430440	0.035	0.035	0.035	13,256.00	0.0128	106.00	X:	-	16.00	32.00	38.00	68.00	74.00	90.00	106.00
							Y:	106.00	104.50	103.00	100.00	100.00	103.00	104.50	106.00
435450	0.045	0.035	0.045	18,781.00	0.0119	105.00	X:	-	40.00	120.00	126.00	146.00	152.00	232.00	272.00
							Y:	105.00	103.00	102.00	100.00	100.00	102.00	103.00	105.00

Route ID	LOB N	Chan N	ROB N	Length (ft)	Slope (ft/ft)	Max Elev (ft)		1.	2.	3.	4.	5.	6.	7.	8.
440450	0.035	0.040	0.035	4,154.00	0.0104	103.00	X:	-	150.00	300.00	303.00	333.00	336.00	486.00	636.00
							Y:	102.00	101.50	101.00	100.00	100.00	101.00	101.50	102.00
500510	0.045	0.035	0.045	14,544.00	0.0186	104.00	X:	-	20.00	100.00	106.00	206.00	212.00	292.00	312.00
							Y:	104.00	103.00	102.00	100.00	100.00	102.00	103.00	104.00
510520	0.045	0.035	0.045	20,653.00	0.0117	105.00	X:	-	20.00	120.00	126.00	156.00	166.00	266.00	286.00
							Y:	105.00	103.00	102.00	100.00	100.00	102.00	103.00	105.00
510530	0.045	0.040	0.045	18,095.00	0.0126	106.00	X:	-	20.00	80.00	86.00	121.00	127.00	187.00	207.00
							Y:	106.00	102.00	102.00	100.00	100.00	102.00	102.00	106.00
900910	0.045	0.035	0.045	10,207.00	0.0192	103.00	X:	-	80.00	160.00	163.00	178.00	181.00	261.00	341.00
							Y:	103.00	102.00	101.00	100.00	100.00	101.00	102.00	103.00
910915	0.045	0.035	0.045	2,998.00	0.0110	103.00	X:	-	100.00	200.00	203.00	223.00	226.00	326.00	426.00
							Y:	103.00	102.00	101.00	100.00	100.00	101.00	102.00	103.00
915920	0.045	0.035	0.045	9,456.00	0.0103	104.00	X:	-	100.00	200.00	203.00	223.00	226.00	326.00	426.00
							Y:	103.00	102.00	101.00	100.00	100.00	101.00	102.00	103.00
RI180R	0.045	0.040	0.045	3,866.00	0.0122	104.00	X:	-	50.00	100.00	106.00	156.00	166.00	216.00	266.00
							Y:	104.00	103.00	102.00	100.00	100.00	102.00	103.00	104.00

FCDMC
Drainage Design Management System
HEC-1 STORAGE FACILITIES
Project Reference: A4_EX24

6/14/2006

Basin ID		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
RR102	Elevation Top of Dam: 1,556.00			Length of Dam: 1,320.00		Discharge Coefficient: 3.20			Weir Coefficient:1.50		
	Volume (ac-ft)		553.00	1,148.00	2,316.00	2,705.00					
	Discharge (cfs)			128	587	600					
	Elevation (ft)	1,543.0	1,550.0	1,552.0	1,555.0	1,556.0	-	-	-	-	-
		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year				
	Peak Volume (ac-ft)						1,270.00				
	Peak Stage (ft)						1,552.31				

Diversion ID/ DT Card ID	Maximum Volume (ac-ft)	Maximum Diversion (cfs)		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
D15I			**Inflow (cfs)**		100	1,000	10,000						
			Diversion (cfs)		20	200	2,000						
D400			**Inflow (cfs)**		100	1,000	10,000						
			Diversion (cfs)		50	500	5,000						
D150			**Inflow (cfs)**		100	1,000	10,000						
			Diversion (cfs)		90	900	9,000						
D410			**Inflow (cfs)**		100	1,000	10,000						
			Diversion (cfs)		10	100	1,000						
D130			**Inflow (cfs)**		100	1,000	10,000						
			Diversion (cfs)		30	300	3,000						
D510			**Inflow (cfs)**		100	1,000	10,000						
			Diversion (cfs)		65	650	6,500						
D1302			**Inflow (cfs)**		100	1,000	10,000						
			Diversion (cfs)		10	100	1,000						
D102			**Inflow (cfs)**		100	1,000	10,000						
			Diversion (cfs)		50	500	5,000						

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*             JUN   1998               *
*           VERSION 4.1                *
*                                      *
*  RUN DATE   16JUN06  TIME  07:56:19  *
*                                      *
****************************************
```

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

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

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

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

```
1                                    HEC-1 INPUT                                    PAGE  1

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

    1           ID   SUN VALLEY AREA DRAINAGE MASTER PLAN (SVADMP) - FCD 2004C049
    2           ID    JE FULLER / HYDROLOGY & GEOMORPHOLOGY, INC.
    3           ID    FILENAME: A4_EX24.DAT
    4           ID    DATE: JUNE 16, 2006
    5           ID
    6           ID    100-YEAR 24-HOUR MODEL
    7           ID    EXISTING CONDITIONS
    8           ID    AREA 4 WATERSHED AREA = 90.5 SQ. MILES
    9           ID           MODELED AREA = 76.8 SQ. MILES
   10           ID
   11           ID    GREEN-AMPT LOSS METHOD
   12           ID    S-GRAPH UNIT HYDROGRAPHS
   13           ID     - MOUNTAIN
   14           ID     - DESERT/RANGELAND
   15           ID    NORMAL-DEPTH CHANNEL ROUTING
   16           ID    LAND USE DATA FROM EXAMINATION OF SLOPE FROM 10-FT DTM TO DISTINGUISH
   17           ID     - UNDEVELOPED DESERT RANGELAND (NDR) - SLOPES < 5 %
   18           ID     - HILLSLOPES, SONORAN DESERT (NHS) - SLOPES 5 - 10 %
   19           ID     - MOUNTAIN TERRAIN (NMT) - SLOPES > 10 %
   20           ID   SOILS DATA FROM FCDMC GIS DATABASE (RECEIVED FROM FCDMC JULY 2005)
   21           ID
   22           IT       5  1JAN99    1200    2000
   23           IN      15
   24           IO       5
                *DIAGRAM
                *
   25           JD   4.198  0.1000
   26           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
   27           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
   28           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
   29           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
   30           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
   31           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
   32           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
   33           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
   34           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
   35           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
   36           JD   3.990    10.0
   37           JD   3.780    30.0
   38           JD   3.654    60.0
   39           JD   3.578    90.0
                *

   40           KK    S100   BASIN
   41           BA   6.994
   42           LG    0.35    0.38    6.40    0.16       0
   43           UI     449     455     964    1717    2422    3046    3616    4050    4275    4281
   44           UI    4178    3867    3211    2766    2319    1968    1698    1387    1198     990
   45           UI     848     715     635     476     471     313     309     309     204     110
   46           UI     109     111     110     109     111     109     110     111       0       0
   47           UI       0       0       0       0       0       0       0       0       0       0
   48           KM        Compute runoff from subbasin 100
                *
1                                    HEC-1 INPUT                                    PAGE  2

  LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
 49          KK    S102   BASIN
 50          BA   3.234
 51          LG    0.35    0.38    5.60    0.22       0
 52          UI     333     657    1539    2292    2943    3178    3083    2643    1985    1523
 53          UI    1179     890     674     542     377     300     232     193      81      82
 54          UI      81      81      83       0       0       0       0       0       0       0
 55          UI       0       0       0       0       0       0       0       0       0       0
 56          UI       0       0       0       0       0       0       0       0       0       0
 57          KM        Compute runoff from subbasin 102
             *

 58          KK    C102 COMBINE
 59          HC       2
 60          KM        Combine total inflow to detention area behind (north) of CAP Canal
             *

 61          KK   RR102 STORAGE
 62          KO
 63          RS       1    STOR      -1
 64          SV          553.00 1148.00 2316.00 2705.00
 65          SQ                  128.00  587.00  600.00
 66          SE  1543.0 1550.00 1552.00 1555.00 1556.00
 67          ST  1556.0  1320.0     3.2     1.5
 68          KM        Route flows through storage area behind CAP Canal
 69          KM        Stage-storage-discharge data from Wagner Wash FDS Hydrology (1991)
             *

 70          KK    D102  DIVERT
 71          DT    CF02     0.0     0.0
 72          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 73          DQ     0.0    50.0   500.0  5000.0     0.0     0.0     0.0     0.0     0.0     0.0
 74          KM        Divide flow evenly over the two 18-foot wide CAP overchutes
 75          KM        although the inverts are 0.5 feet different in elevation
             *

 76          KK  100105   ROUTE
 77          RS       9    FLOW      -1
 78          RC   0.035   0.055   0.035   11235  0.0045  105.00
 79          RX    0.00  120.00  240.00  250.00  590.00  600.00  720.00  840.00
 80          RY  105.00  102.50  100.00  100.00  100.00  100.00  102.50  105.00
 81          KM        Route outflows from east CAP overchute to Sun Valley Parkway.
 82          KM        Slope = (1550-1500) / 11235
             *

 83          KK    S105   BASIN
 84          BA   4.370
 85          LG    0.35    0.35    4.80    0.30       0

 86          UI     345     380    1112    1723    2334    2867    3143    3344    3176    2865
 87          UI    2374    1903    1555    1291    1018     832     685     564     458     369
 88          UI     288     235     238     126      83      85      84      84      84      84
 89          UI      84       0       0       0       0       0       0       0       0       0
 90          UI       0       0       0       0       0       0       0       0       0       0
 91          KM        Compute runoff from subbasin 105
             *
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1 HEC-1 INPUT PAGE 3

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

 92          KK    CF02RETRIEVE
 93          DR    CF02
 94          KM        Retrieve flow from west CAP overchute.
             *

 95          KK  102105   ROUTE
 96          RS       6    FLOW      -1
 97          RC   0.045   0.050   0.045    7656  0.0065  104.00
 98          RX    0.00   40.00  120.00  130.00  250.00  260.00  340.00  380.00
 99          RY  104.00  102.00  101.00  100.00  100.00  101.00  102.00  104.00
100          KM        Route retrieved flow from west overchute to C105.
101          KM        Slope = (1550 - 1500) / 7656
             *

102          KK   C105U COMBINE
103          HC       3  14.598
104          KM        Combine runoff from S105 with routed flow from 100105 and 102105
105          KM        (CAP overchute flows). This is the total flow in Wagner Wash upstream
106          KM        of Sun Valley Parkway.
             *

107          KK    S110   BASIN
108          BA   0.430
109          LG    0.25    0.37    5.20    0.25       6
110          UI      56     166     335     449     587     358     291     241     188     140
111          UI     121      86      68      56      43      32      27      22      11      11
112          UI      10      11      11       0       0       0       0       0       0       0
113          UI       0       0       0       0       0       0       0       0       0       0
114          UI       0       0       0       0       0       0       0       0       0       0
115          KM        Compute runoff from subbasin 110
             *

116          KK  11015I   ROUTE
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117          RS       2    FLOW      -1
118          RC   0.045   0.035   0.045    3783  0.0267  102.00
119          RX    0.00   50.00  100.00  110.00  120.00  130.00  180.00  230.00
120          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
121          KM        Route flow from C105 through subbasin 110 to C115.
122          KM        Slope = (1847-1746) / 3783
             *

123          KK    D15I  DIVERT
124          DT    CF5I     0.0     0.0
125          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
126          DQ     0.0    20.0   200.0  2000.0     0.0     0.0     0.0     0.0     0.0     0.0
127          KM        Divert flows to the left into S120
             *


128          KK  15I15R   ROUTE
129          RS       8    FLOW      -1
130          RC   0.035   0.030   0.035   14128  0.0151  105.00
131          RX    0.00   25.00   58.00   65.00   85.00   92.00  125.00  150.00
132          RY  105.00  102.50  102.00  100.00  100.00  102.00  102.50  105.00
133          KM        Route flows from split through S115 to C115.
```



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

134          KM        Slope = (1746-1532) / 14128
             *

135          KK    S115   BASIN
136          BA   2.247
137          LG    0.32    0.35    4.80    0.30       2
138          UI     160     163     434     709     984    1212    1401    1530    1539    1465
139          UI    1351    1100     918     773     632     528     444     351     304     252
140          UI     203     170     140     110     110      85      39      39      40      39
141          UI      39      39      40      39       0       0       0       0       0       0
142          UI       0       0       0       0       0       0       0       0       0       0
143          KM        Compute runoff from subbasin 115
             *

144          KK   C115U COMBINE
145          HC       2   2.677
146          KM        Combine runoff from S115 with routed flow.
             *

147          KK    CF5IRETRIEVE
148          DR    CF5I
149          KM        Retrieve diverted flow from D15I
             *

150          KK  15I15L   ROUTE
151          RS       7    FLOW      -1
152          RC   0.045   0.045   0.045   12775  0.0168  104.00
153          RX    0.00   50.00  100.00  130.00  170.00  200.00  250.00  300.00
154          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
155          KM        Route flows from split through S120 to C115.
156          KM        Slope =(1746-1532) / 12775
             *

157          KK   C115D COMBINE
158          HC       2   2.677
159          KM        Combine routed flows from split with remainder of flows in SVP channel
160          KM        just D/S of C115.
             *

161          KK  115120   ROUTE
162          RS       2    FLOW      -1
163          RC   0.030   0.025   0.030    4077  0.0093  105.00
164          RX    0.00   30.00   75.00   80.00  105.00  110.00  155.00  190.00
165          RY  105.00  101.50  101.00  100.00  100.00  101.00  101.50  105.00
166          KM        Route total flows from C115 to C120. Slope =(1532-1494) / 4077
             *

167          KK    S120   BASIN
168          BA   2.004
169          LG    0.33    0.35    4.65    0.32       1

170          UI     206     408     954    1419    1824    1969    1911    1637    1230     944
171          UI     731     551     418     336     234     186     143     120      50      51
172          UI      50      51      51       0       0       0       0       0       0       0
173          UI       0       0       0       0       0       0       0       0       0       0
174          UI       0       0       0       0       0       0       0       0       0       0
```



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

175          KM        Compute runoff from subbasin 120
             *

176          KK    C120 COMBINE
177          HC       2   4.681
178          KM        Combine flows at Wagner Wash at outlet of channel along SVP
             *

179          KK   C105D COMBINE
```

```
180          HC       2  19.279
181          KM        Combine flows from C105 and C120 just D/S of Sun Valley Parkway
             *

182          KK  120135   ROUTE
183          RS       1    FLOW      -1
184          RC   0.045   0.035   0.045     951  0.0074  110.00
185          RX    0.00  225.00  450.00  455.00  485.00  490.00  615.00  840.00
186          RY  110.00  105.00  102.00  100.00  100.00  102.00  102.00  110.00
187          KM        Route flows in Wagner Wash from Sun Valley Parkway to C135.
188          KM        Slope = (1494-1487) / 951
             *

189          KK    S125   BASIN
190          BA   0.093
191          LG    0.25    0.35    4.15    0.44       5
192          UI      46     164     204     116      73      46      28      17      12       4
193          UI       5       4       0       0       0       0       0       0       0       0
194          UI       0       0       0       0       0       0       0       0       0       0
195          UI       0       0       0       0       0       0       0       0       0       0
196          UI       0       0       0       0       0       0       0       0       0       0
197          KM        Compute runoff from subbasin 125
             *

198          KK  12535I   ROUTE
199          RS       1    FLOW      -1
200          RC   0.055   0.040   0.055    2207  0.0254  103.00
201          RX    0.00   50.00  100.00  101.00  151.00  152.00  202.00  252.00
202          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
203          KM        Route flows from S125 to intermediate combination point in S135.
204          KM        Slope = (1754-1698) / 2207
             *

205          KK    S150   BASIN
206          BA   0.774
207          LG    0.25    0.35    4.65    0.32       7
208          UI      71     115     270     425     531     672     746     480     406     356
209          UI     312     262     212     181     159     132     106      89      77      65
210          UI      54      47      35      35      35      14      14      13      14      14
211          UI      13      14      14       0       0       0       0       0       0       0
212          UI       0       0       0       0       0       0       0       0       0       0
213          KM        Compute runoff from subbasin 150
             *
```



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

214          KK    D150  DIVERT
215          DT    CF50     0.0     0.0
216          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
217          DQ     0.0    90.0   900.0  9000.0     0.0     0.0     0.0     0.0     0.0     0.0
218          KM        Divert flows continuing west to apex of S150.
219          KM        Continuing flows exit S150 to S130 via small natural channel.
             *

220          KK  150130   ROUTE
221          RS       2    FLOW      -1
222          RC   0.045   0.035   0.045    3758  0.0300  104.00
223          RX    0.00   10.00   60.00   66.00   86.00   92.00  142.00  152.00
224          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
225          KM        Route flow through S130.  Slope = (1840 - 1727) / 3758
             *

226          KK    S130   BASIN
227          BA   0.310
228          LG    0.21    0.35    4.20    0.43       4
229          UI      61     239     399     514     313     240     176     128      94      64
230          UI      49      36      26      19      10      10      10      10       0       0
231          UI       0       0       0       0       0       0       0       0       0       0
232          UI       0       0       0       0       0       0       0       0       0       0
233          UI       0       0       0       0       0       0       0       0       0       0
234          KM        Compute runoff from subbasin 130
             *

235          KK    C130 COMBINE
236          HC       2    0.31
237          KM        Combine runoff from S130 with diverted flow from S150.
238          KM        Adjust drainage area to just that from S130 for JD.
             *

239          KK    D130  DIVERT
240          DT    CF30     0.0     0.0
241          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
242          DQ     0.0    30.0   300.0  3000.0     0.0     0.0     0.0     0.0     0.0     0.0
243          KM        Divert flow to the left into S155
             *

244          KK  13035I   ROUTE
245          RS       1    FLOW      -1
246          RC   0.045   0.035   0.045    1202  0.0241  103.00
247          RX    0.00   50.00  100.00  101.00  151.00  152.00  202.00  252.00
248          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
249          KM        Route continuing flow to intermediate point in S135.
250          KM        Slope = (1727-1698) / 1202
```

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

 251            KK   C135I COMBINE
 252            HC       2   0.403
 253            KM        Combine routed flow from C130 and S125
                *

 254            KK  35I135   ROUTE
 255            RS       8    FLOW      -1
 256            RC   0.050   0.035   0.050   12580  0.0168  102.00
 257            RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
 258            RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 259            KM        Route combined flows to C135 at Wagner Wash.
 260            KM        Slope = (1698-1487) / 12580
                *

 261            KK    S135   BASIN
 262            BA   0.879
 263            LG    0.35    0.35    4.25    0.42       0
 264            UI     115     362     709     992    1126     989     736     527     370     260
 265            UI     194     128      89      76      28      28      29      28       0       0
 266            UI       0       0       0       0       0       0       0       0       0       0
 267            UI       0       0       0       0       0       0       0       0       0       0
 268            UI       0       0       0       0       0       0       0       0       0       0
 269            KM        Compute runoff from subbasin 135
                *

 270            KK   C135L COMBINE
 271            HC       2   1.282
 272            KM        Combine all piedmont runoff inflow to Wagner Wash at C135
                *

 273            KK    C135 COMBINE
 274            HC       2  20.561
 275            KM        Combine all flows in Wagner Wash at C135
                *

 276            KK  135145   ROUTE
 277            RS       4    FLOW      -1
 278            RC   0.045   0.035   0.045    7938  0.0042  110.00
 279            RX    0.00  300.00  400.00  406.00  506.00  512.00  612.00  912.00
 280            RY  110.00  102.50  102.00  100.00  100.00  102.00  102.50  110.00
 281            KM        Route flow in Wagner Wash to C145.  Slope = (1487-1454) / 7938
                *

 282            KK    S140   BASIN
 283            BA   1.373
 284            LG    0.35    0.36    5.00    0.28       0
 285            UI     260    1034    1801    2168    1890    1235     809     517     339     211
 286            UI     157      56      55      57       0       0       0       0       0       0
 287            UI       0       0       0       0       0       0       0       0       0       0
 288            UI       0       0       0       0       0       0       0       0       0       0
 289            UI       0       0       0       0       0       0       0       0       0       0
 290            KM        Compute runoff from subbasin 140
                *
```



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

 291            KK  140145   ROUTE
 292            RS       3    FLOW      -1
 293            RC   0.040   0.050   0.040    3656  0.0074  103.00
 294            RX    0.00   70.00  140.00  150.00  250.00  260.00  330.00  400.00
 295            RY  102.00  101.00  100.00  100.00  100.00  100.00  101.00  102.00
 296            KM        Route runoff from S140 to C145 at Wagner Wash.
 297            KM        Slope = (1481-1454) / 3656
                *

 298            KK    CF30RETRIEVE
 299            DR    CF30
 300            KM        Retrieve diverted flow from C130
                *

 301            KK   D1302  DIVERT
 302            DT   CF302     0.0     0.0
 303            DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 304            DQ     0.0    10.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0
 305            KM        Divert flow continuing through S155 from flow entering S145
                *

 306            KK  130145   ROUTE
 307            RS      15    FLOW      -1
 308            RC   0.045   0.045   0.045   18285  0.0149  102.00
 309            RX    0.00   50.00  100.00  103.00  113.00  116.00  166.00  216.00
 310            RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 311            KM        Route flow to Wagner Wash through S145 to C145.
 312            KM        Slope = (1727 - 1454) / 18285
                *

 313            KK    S145   BASIN
```

```
 314          BA   1.756
 315          LG    0.35    0.35    4.15    0.44       0
 316          UI     226     672    1369    1903    2167    2003    1508    1085     777     544
 317          UI     399     279     198     157      80      55      56      54      55       0
 318          UI       0       0       0       0       0       0       0       0       0       0
 319          UI       0       0       0       0       0       0       0       0       0       0
 320          UI       0       0       0       0       0       0       0       0       0       0
 321          KM        Compute runoff from subbasin 145
              *

 322          KK   C145L COMBINE
 323          HC       2   2.066
 324          KM        Combine runoff from S145 with routed flows C130.
 325          KM        Adjust BA for JD (S130 + S145)
              *

 326          KK    C145 COMBINE
 327          HC       3   23.69
 328          KM        Combine all flows in Wagner Wash at C145
              *
1                                          HEC-1 INPUT                                          PAGE  9

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

 329          KK  145155   ROUTE
 330          RS       1    FLOW      -1
 331          RC   0.045   0.035   0.055     631  0.0032  110.00
 332          RX    0.00  150.00  300.00  309.00  379.00  388.00  538.00  838.00
 333          RY  110.00  106.50  103.00  100.00  100.00  103.00  106.50  110.00
 334          KM        Route flows in Wagner Wash form C145 to C155. Slope = (1454-1452)/631
              *

 335          KK    CF50RETRIEVE
 336          DR    CF50
 337          KM        Retrieve diverted flow from S150
              *

 338          KK  150155   ROUTE
 339          RS      12    FLOW      -1
 340          RC   0.045   0.040   0.045   19261  0.0188  102.00
 341          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
 342          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 343          KM        Route flow from S150 to Wagner Wash .  Slope = (1814 - 1452) / 19261
              *

 344          KK   CF302RETRIEVE
 345          DR   CF302
 346          KM        Retrieve diverted flow from C130
              *

 347          KK  130155   ROUTE
 348          RS      12    FLOW      -1
 349          RC   0.045   0.040   0.045   14782  0.0156  102.00
 350          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
 351          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 352          KM        Route retrieved flow to Wagner Wash.  Slope = (1682 - 1452) / 14782
              *

 353          KK    S155   BASIN
 354          BA   1.832
 355          LG    0.35    0.35    4.50    0.36       1
 356          UI     187     361     846    1266    1637    1771    1735    1497    1161     879
 357          UI     681     519     385     314     228     181     130     126      46      46
 358          UI      45      46      46      45       0       0       0       0       0       0
 359          UI       0       0       0       0       0       0       0       0       0       0
 360          UI       0       0       0       0       0       0       0       0       0       0
 361          KM        Compute runoff from subbasin 155
              *

 362          KK   C155L COMBINE
 363          HC       3   2.606
 364          KM        Combine runoff from S155 with routed flows at Wagner Wash.
 365          KM        Adjust BA for JD (S150 + S155).
              *
1                                          HEC-1 INPUT                                          PAGE 10

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

 366          KK    C155 COMBINE
 367          HC       2  26.296
 368          KM        Combine all flows at Wagner Wash at C155
              *

 369          KK  155160   ROUTE
 370          RS       5    FLOW      -1
 371          RC   0.035   0.035   0.035    2291  0.0052  110.00
 372          RX    0.00  200.00  400.00  406.00  506.00  512.00  712.00  912.00
 373          RY  110.00  106.50  103.00  100.00  100.00  103.00  106.50  110.00
 374          KM        Route flow in Wagner Wash to C160 (Sun Valley Parkway).
 375          KM        Slope = (1452-1440) / 2291
              *

 376          KK    S160   BASIN
```

```
377          BA   1.144
378          LG    0.35    0.35    4.00    0.47       0
379          UI     165     599    1121    1501    1557    1233     844     593     394     281
380          UI     190     122      93      40      40      40      41       0       0       0
381          UI       0       0       0       0       0       0       0       0       0       0
382          UI       0       0       0       0       0       0       0       0       0       0
383          UI       0       0       0       0       0       0       0       0       0       0
384          KM        Compute runoff from subbasin 160
             *

385          KK    C160 COMBINE
386          HC       2   27.44
387          KM        Combine flows at Sun Valley Parkway
             *

388          KK  160170   ROUTE
389          RS       3    FLOW      -1
390          RC   0.040   0.030   0.040    5248  0.0057  108.00
391          RX    0.00  200.00  400.00  406.00  606.00  612.00  812.00 1012.00
392          RY  108.00  103.00  102.00  100.00  100.00  102.00  103.00  108.00
393          KM        Route flows from Sun Valley Parkway to C170R. Slope = (1440-1410)/5248
             *

394          KK    S165   BASIN
395          BA   0.616
396          LG    0.30    0.35    4.55    0.35       3
397          UI     121     477     809    1022     617     474     347     254     185     127
398          UI      96      69      52      36      20      20      20      20       0       0
399          UI       0       0       0       0       0       0       0       0       0       0
400          UI       0       0       0       0       0       0       0       0       0       0
401          UI       0       0       0       0       0       0       0       0       0       0
402          KM        Compute runoff from subbasin 165
             *
```



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

403          KK  165170   ROUTE
404          RS       8    FLOW      -1
405          RC   0.050   0.035   0.050   13704  0.0161  104.00
406          RX    0.00   50.00  100.00  106.00  131.00  137.00  187.00  237.00
407          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
408          KM        Route runoff from S165 to Sun Valley Parkway (C170).
409          KM        Slope = (1677-1456) / 13704
             *

410          KK    S170   BASIN
411          BA   1.464
412          LG    0.35    0.35    4.40    0.38       0
413          UI     209     755    1427    1917    1973    1590    1086     762     513     360
414          UI     246     160     123      52      51      51      52       0       0       0
415          UI       0       0       0       0       0       0       0       0       0       0
416          UI       0       0       0       0       0       0       0       0       0       0
417          UI       0       0       0       0       0       0       0       0       0       0
418          KM        Compute runoff from subbasin 170
             *

419          KK    C170 COMBINE
420          HC       2
421          KM        Combine runoff from S170 with routed flow from S165
             *

422          KK    170R   ROUTE
423          RS       3    FLOW      -1
424          RC   0.045   0.045   0.045    3986  0.0115  104.00
425          RX    0.00   50.00  100.00  103.00  113.00  116.00  166.00  216.00
426          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
427          KM        Route flow from C170 to Wagner Wash.  Slope = (1456-1410) / 3986
             *

428          KK   C170R COMBINE
429          HC       2
430          KM        Combine routed flows from C170 and C160 in Wagner Wash
             *

431          KK  170180   ROUTE
432          RS       4    FLOW      -1
433          RC   0.045   0.035   0.045    6770  0.0065  110.00
434          RX    0.00  200.00  400.00  406.00  606.00  612.00  812.00 1012.00
435          RY  110.00  103.00  102.00  100.00  100.00  102.00  103.00  110.00
436          KM        Route flows in Wagner Wash to C180R.  Slope = (1410-1366) / 6770
             *

437          KK    S175   BASIN
438          BA   1.802
439          LG    0.29    0.35    4.50    0.36       1
440          UI     126     127     317     525     763     877    1013    1295    1376     895
441          UI     771     703     622     572     507     439     372     318     296     274
442          UI     227     192     163     148     138     116      96      97      73      62
443          UI      62      63      55      24      25      24      24      24      24      25
444          UI      24      24      24      25       0       0       0       0       0       0
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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445          KM        Compute runoff from subbasin 175
             *

446          KK    175R   ROUTE
447          RS       2    FLOW      -1
448          RC   0.045   0.045   0.045    3217  0.0134  103.00
449          RX    0.00   50.00  100.00  103.00  153.00  156.00  216.00  266.00
450          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
451          KM        Route runoff from S175 to intermediate point in S190 (C180RI).
452          KM        Slope = (1456 - 1413) / 3217
             *

453          KK    S180   BASIN
454          BA   1.443
455          LG    0.25    0.35    4.25    0.42       2
456          UI     107     108     311     490     677     785     927    1258     896     684
457          UI     622     547     497     440     379     315     275     250     228     185
458          UI     154     138     120     115      82      83      73      52      53      52
459          UI      50      21      20      21      20      21      21      20      21      21
460          UI      20       0       0       0       0       0       0       0       0       0
461          KM        Compute runoff from subbasin 180
             *

462          KK    180R   ROUTE
463          RS       2    FLOW      -1
464          RC   0.045   0.045   0.045    2965  0.0128  103.00
465          RX    0.00   50.00  100.00  103.00  128.00  131.00  181.00  231.00
466          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
467          KM        Route runoff from S180 to intermediate point in S190 (C180RI).
468          KM        Slope = (1451 - 1413) / 2965
             *

469          KK  C180RI COMBINE
470          HC       2
471          KM        Combine routed flows from S175 and S180
             *

472          KK  RI180R   ROUTE
473          RS       3    FLOW      -1
474          RC   0.045   0.040   0.045    3866  0.0122  104.00
475          RX    0.00   50.00  100.00  106.00  156.00  166.00  216.00  266.00
476          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
477          KM        Route combined flows to Wagner Wash.  Slope = (1413 - 1366) / 3866
             *

478          KK   C180R COMBINE
479          HC       2
480          KM        Combine flows in Wagner Wash
             *
1                                        HEC-1 INPUT                                          PAGE 13

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

481          KK  180185   ROUTE
482          RS       3    FLOW      -1
483          RC   0.045   0.035   0.045    3450  0.0075  106.00
484          RX    0.00  100.00  200.00  206.00  406.00  412.00  512.00  612.00
485          RY  106.00  104.00  102.00  100.00  100.00  102.00  104.00  106.00
486          KM        Route flows in Wagner Wash from C180R to C185R.
487          KM        Slope = (1366 - 1340) / 3450
             *

488          KK    S185   BASIN
489          BA   2.421
490          LG    0.16    0.35    4.35    0.40       1
491          UI     165     166     391     668     960    1130    1281    1613    1908    1239
492          UI    1060     936     847     785     677     614     534     438     399     375
493          UI     338     271     230     210     183     183     133     126     127      85
494          UI      80      82      81      67      32      31      32      32      31      32
495          UI      32      31      32      32      32       0       0       0       0       0
496          KM        Compute runoff from subbasin 185
             *

497          KK    185R   ROUTE
498          RS       5    FLOW      -1
499          RC   0.045   0.035   0.045    8534  0.0120  104.00
500          RX    0.00   30.00  100.00  106.00  156.00  162.00  232.00  262.00
501          RY  104.00  102.00  102.00  100.00  100.00  102.00  102.00  104.00
502          KM        Route runoff from S185 to Wagner Wash.  Slope = (1442-1340) / 8534
             *

503          KK   C185R COMBINE
504          HC       2
505          KM        Combine flows in Wagner Wash
             *

506          KK  185190   ROUTE
507          RS       2    FLOW      -1
508          RC   0.045   0.040   0.045    2700  0.0119  106.00
509          RX    0.00   80.00  160.00  166.00  416.00  422.00  502.00  582.00
510          RY  106.00  103.00  102.00  100.00  100.00  102.00  103.00  106.00
511          KM        Route flow in Wagner Wash to C190.  Slope = (1340-1308) / 2700
             *
```

```
 512          KK    S190   BASIN
 513          BA   4.054
 514          LG    0.35    0.35    3.81    0.44       0
 515          UI     274     278     647    1125    1573    1918    2319    2540    2637    2574
 516          UI    2467    2112    1787    1506    1256    1044     891     745     605     522
 517          UI     432     370     293     266     188     191     188      78      68      66
 518          UI      67      67      67      67      67      67       0       0       0       0
 519          UI       0       0       0       0       0       0       0       0       0       0
 520          KM        Compute runoff from subbasin 190
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 521          KK    C190 COMBINE
 522          HC       2   39.24
 523          KM        Combine all flow in Wagner Wash at C190
              *

 524          KK  190195   ROUTE
 525          RS       2    FLOW      -1
 526          RC   0.045   0.035   0.045    4941  0.0107  110.00
 527          RX    0.00   50.00  200.00  206.00  356.00  366.00  516.00  566.00
 528          RY  110.00  103.00  102.00  100.00  100.00  102.00  103.00  110.00
 529          KM        Route flow from C190 to the Hassayampa River. Slope = (1308-1255)/4941
              *

 530          KK    S195   BASIN
 531          BA   1.808
 532          LG    0.33    0.35    4.25    0.42       0
 533          UI     107     108     188     366     523     660     786     925     975    1026
 534          UI    1044     975     915     778     674     571     496     419     359     313
 535          UI     260     223     202     165     146     115     114      76      74      74
 536          UI      67      27      26      26      26      26      26      27      26      26
 537          UI      27       0       0       0       0       0       0       0       0       0
 538          KM        Compute runoff from subbasin 195
              *

 539          KK    C195 COMBINE
 540          HC       2   41.05
 541          KM        Combine all flows in Wagner Wash at the Hassayampa River
              *

 542          KK    S400   BASIN
 543          BA   1.544
 544          LG    0.25    0.35    4.20    0.43       3
 545          UI     106     106     252     429     616     729     819    1050    1206     793
 546          UI     665     601     543     493     440     385     339     276     254     239
 547          UI     212     174     144     133     116     116      82      81      81      52
 548          UI      51      53      51      39      21      20      20      21      20      20
 549          UI      20      21      20      20      20       0       0       0       0       0
 550          KM        Compute runoff from subbasin 400
              *

 551          KK    D400  DIVERT
 552          DT    CF00     0.0     0.0
 553          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 554          DQ     0.0    50.0   500.0  5000.0     0.0     0.0     0.0     0.0     0.0     0.0
 555          KM        Divert flow to the right into S430
              *

 556          KK    S410   BASIN
 557          BA   0.639
 558          LG    0.15    0.35    3.85    0.43       3
 559          UI      53      70     177     290     367     429     593     473     342     300
 560          UI     268     232     202     173     136     126     115      89      72      65
 561          UI      58      47      41      38      26      26      26      19      11      10
 562          UI      10      10      11      10      10      10      11       0       0       0
1                                          HEC-1 INPUT                                          PAGE 15

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

 563          UI       0       0       0       0       0       0       0       0       0       0
 564          KM        Compute runoff from subbasin 410
              *

 565          KK    C410 COMBINE
 566          HC       2
 567          KM        Combine runoff from S400 and S410
              *

 568          KK    D410  DIVERT
 569          DT    CF10     0.0     0.0
 570          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 571          DQ     0.0    10.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0
 572          KM        Divert additional flow to the right into S430
              *

 573          KK  410415   ROUTE
 574          RS       4    FLOW      -1
 575          RC   0.045   0.035   0.045    6871  0.0143  103.00
 576          RX    0.00   30.00  200.00  203.00  253.00  256.00  426.00  456.00
 577          RY  103.00  101.00  101.00  100.00  100.00  101.00  101.00  103.00
```

```
578          KM        Route combined flows to Sun Valley Parkway. Slope = (1528-1430)/6871
             *

579          KK    S415   BASIN
580          BA   0.451
581          LG    0.35    0.35    3.64    0.49       0
582          UI      92     356     623     728     617     389     253     161     101      65
583          UI      44      18      19      19       0       0       0       0       0       0
584          UI       0       0       0       0       0       0       0       0       0       0
585          UI       0       0       0       0       0       0       0       0       0       0
586          UI       0       0       0       0       0       0       0       0       0       0
587          KM        Compute runoff from subbasin 415
             *

588          KK    C415 COMBINE
589          HC       2
590          KM        Combine runoff at Sun Valley Parkway
             *

591          KK  415420   ROUTE
592          RS      10    FLOW      -1
593          RC   0.045   0.035   0.045   18114  0.0130  104.00
594          RX    0.00   30.00   60.00   66.00   96.00  102.00  132.00  162.00
595          RY  104.00  102.00  102.00  100.00  100.00  102.00  102.00  104.00
596          KM        Route flow from Sun Valley Parkway to Hassayampa River.
597          KM        Slope = (1430-1195) / 18114
             *

598          KK    S420   BASIN
599          BA   1.767
600          LG    0.35    0.35    4.30    0.41       0
601          UI     193     427     964    1407    1752    1846    1712    1346    1015     760
602          UI     582     417     328     242     183     132     115      47      47      48
603          UI      47      47       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 16

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

604          UI       0       0       0       0       0       0       0       0       0       0
605          UI       0       0       0       0       0       0       0       0       0       0
606          KM        Compute runoff from subbasin 420
             *

607          KK    C420 COMBINE
608          HC       2
609          KM        Combine flows from S400, S410, S415, and S420 at Hassayampa River
             *

610          KK    CF00RETRIEVE
611          DR    CF00
612          KM        Retrieve diverted flows from S400
             *

613          KK    CF10RETRIEVE
614          DR    CF10
615          KM        Retrieve diverted flows from S410
             *

616          KK  C40010 COMBINE
617          HC       2   1.544
618          KM        Combine retrieved diverted flows
             *

619          KK  400430   ROUTE
620          RS       5    FLOW      -1
621          RC   0.045   0.040   0.045    8383  0.0130  105.00
622          RX    0.00   12.00   25.00   31.00   61.00   67.00   80.00   92.00
623          RY  105.00  104.00  103.00  100.00  100.00  103.00  104.00  105.00
624          KM        Route combined flows to Sun Valley Parkway. Slope = (1539-1430)/8383
             *

625          KK    S430   BASIN
626          BA   0.795
627          LG    0.35    0.35    4.55    0.35       0
628          UI     127     515     918    1163    1116     779     521     349     228     153
629          UI     100      72      30      30      30       0       0       0       0       0
630          UI       0       0       0       0       0       0       0       0       0       0
631          UI       0       0       0       0       0       0       0       0       0       0
632          UI       0       0       0       0       0       0       0       0       0       0
633          KM        Compute runoff from subbasin 430
             *

634          KK    C430 COMBINE
635          HC       2
636          KM        Combine runoff from S430 with routed flows at Sun Valley Parkway
             *

637          KK  430440   ROUTE
638          RS       7    FLOW      -1
639          RC   0.035   0.035   0.035   13256  0.0128  106.00
640          RX    0.00   16.00   32.00   38.00   68.00   74.00   90.00  106.00
641          RY  106.00  104.50  103.00  100.00  100.00  103.00  104.50  106.00
642          KM        Route flows from Sun Valley Parkway through S440.
1                                          HEC-1 INPUT                                          PAGE 17
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 643          KM        Slope = (1430-1260) / 13256
              *

 644          KK    S440   BASIN
 645          BA   1.068
 646          LG    0.35    0.35    4.20    0.43       0
 647          UI     137     414     838    1167    1323    1221     910     657     468     330
 648          UI     240     168     118      95      46      33      35      33      34       0
 649          UI       0       0       0       0       0       0       0       0       0       0
 650          UI       0       0       0       0       0       0       0       0       0       0
 651          UI       0       0       0       0       0       0       0       0       0       0
 652          KM        Compute runoff from subbasin 440
              *

 653          KK    C440 COMBINE
 654          HC       2
 655          KM        Combine runoff from S440 with routed flows from Sun Valley Parkway.
              *

 656          KK  440450   ROUTE
 657          RS       3    FLOW      -1
 658          RC   0.035   0.040   0.035    4154  0.0104  103.00
 659          RX    0.00  150.00  300.00  303.00  333.00  336.00  486.00  636.00
 660          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 661          KM        Route combined flows to the Hassayampa River.
 662          KM        Slope = (1260-1217) / 4154
              *

 663          KK    S450   BASIN
 664          BA   2.521
 665          LG    0.23    0.35    4.25    0.42       0
 666          UI     167     169     381     664     938    1152    1392    1514    1599    1599
 667          UI    1528    1333    1142     951     803     683     567     481     395     336
 668          UI     287     255     184     177     130     116     115      88      41      41
 669          UI      41      41      41      41      41      40      41       0       0       0
 670          UI       0       0       0       0       0       0       0       0       0       0
 671          KM        Compute runoff from subbasin 450
              *

 672          KK    S435   BASIN
 673          BA   0.393
 674          LG    0.35    0.35    4.45    0.37       0
 675          UI     130     505     775     686     414     231     134      75      42      20
 676          UI      20       0       0       0       0       0       0       0       0       0
 677          UI       0       0       0       0       0       0       0       0       0       0
 678          UI       0       0       0       0       0       0       0       0       0       0
 679          UI       0       0       0       0       0       0       0       0       0       0
 680          KM        Compute runoff from subbasin 435
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 681          KK  435450   ROUTE
 682          RS      10    FLOW      -1
 683          RC   0.045   0.035   0.045   18781  0.0119  105.00

 684          RX    0.00   40.00  120.00  126.00  146.00  152.00  232.00  272.00
 685          RY  105.00  103.00  102.00  100.00  100.00  102.00  103.00  105.00
 686          KM        Route runoff from S435 at Sun Valley Parkway to Hassayampa River.
 687          KM        Slope = (1440 - 1217) / 18781
              *

 688          KK    C450 COMBINE
 689          HC       3
 690          KM        Combine flows from S430, S435, S440, and S450 at Hassayampa River
              *

 691          KK  ALL400 COMBINE
 692          HC       29.178000
 693          KM        Dummy combine of all 400 series hydrographs at the Hassayampa
              *

 694          KK    S500   BASIN
 695          BA   3.638
 696          LG    0.25    0.35    3.92    0.41       9
 697          UI     184     186     184     515     713     935    1143    1294    1413    1581
 698          UI    1968    2186    1462    1252    1119    1051     979     907     837     769
 699          UI     716     629     568     487     456     435     408     387     311     297
 700          UI     237     239     212     201     204     146     142     143     141      94
 701          UI      91      90      90      92      90      51      35      36      35      36
 702          KM        Compute runoff from subbasin 500
              *

 703          KK  500510   ROUTE
 704          RS       7    FLOW      -1
 705          RC   0.045   0.035   0.045   14544  0.0186  104.00
 706          RX    0.00   20.00  100.00  106.00  206.00  212.00  292.00  312.00
 707          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
 708          KM        Route runoff from S500 to Sun Valley Parkway.
 709          KM        Slope = (1690-1420) / 14544
              *
```

```
 710          KK    S510   BASIN
 711          BA   1.840
 712          LG    0.35    0.35    3.95    0.40       0
 713          UI     232     677    1390    1950    2228    2094    1604    1165     828     599
 714          UI     433     307     220     160     106      57      58      56      57       0
 715          UI       0       0       0       0       0       0       0       0       0       0
 716          UI       0       0       0       0       0       0       0       0       0       0
 717          UI       0       0       0       0       0       0       0       0       0       0
 718          KM        Compute runoff from subbasin 510
              *
1                                          HEC-1 INPUT                                          PAGE 19

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


 719          KK    C510 COMBINE
 720          HC       2
 721          KM        Combine flows at Sun Valley Parkway
              *

 722          KK    D510  DIVERT
 723          DT    CF10     0.0     0.0
 724          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 725          DQ     0.0    65.0   650.0  6500.0     0.0     0.0     0.0     0.0     0.0     0.0

 726          KM        Divert flow to the right into S530
              *

 727          KK  510520   ROUTE
 728          RS      10    FLOW      -1
 729          RC   0.045   0.035   0.045   20653  0.0117  105.00
 730          RX    0.00   20.00  120.00  126.00  156.00  166.00  266.00  286.00
 731          RY  105.00  103.00  102.00  100.00  100.00  102.00  103.00  105.00
 732          KM        Route continuing flows from Sun Valley Parkway to Hassayampa River.
 733          KM        Slope = (1420-1178) / 20653
              *

 734          KK    S520   BASIN
 735          BA   1.481
 736          LG    0.35    0.35    4.50    0.36       0
 737          UI     133     206     510     780    1043    1196    1285    1241    1061     847
 738          UI     672     531     420     330     262     210     159     135      91      93
 739          UI      54      33      33      32      33      32      33       0       0       0
 740          UI       0       0       0       0       0       0       0       0       0       0
 741          UI       0       0       0       0       0       0       0       0       0       0
 742          KM        Compute runoff from subbasin 520
              *

 743          KK    C520 COMBINE
 744          HC       2   6.956
 745          KM        Combine runoff from S520 with routed flows from Sun Valley Parkway
 746          KM        at Hassayampa River
              *

 747          KK    S530   BASIN
 748          BA   2.226
 749          LG    0.20    0.35    4.30    0.41       0
 750          UI     176     194     574     895    1189    1473    1624    1704    1622    1456
 751          UI    1198     964     787     657     513     417     348     283     227     189
 752          UI     141     120     122      56      43      43      43      43      43      43
 753          UI      43       0       0       0       0       0       0       0       0       0
 754          UI       0       0       0       0       0       0       0       0       0       0
 755          KM        Compute runoff from subbasin 530
              *
1                                          HEC-1 INPUT                                          PAGE 20

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


 756          KK    CF10RETRIEVE
 757          DR    CF10
 758          KM        Retrieve diverted flows from C510
              *

 759          KK  510530   ROUTE
 760          RS       9    FLOW      -1
 761          RC   0.045   0.040   0.045   18095  0.0126  106.00
 762          RX    0.00   20.00   80.00   86.00  121.00  127.00  187.00  207.00
 763          RY  106.00  102.00  102.00  100.00  100.00  102.00  102.00  106.00
 764          KM        Route diverted flows through S530 to Hassayampa River.
 765          KM        Slope = (1420-1192) / 18095
              *

 766          KK    C530 COMBINE
 767          HC       2   7.704

 768          KM        Combine runoff from S530 with routed flows at the Hassayampa River
              *

 769          KK  ALL500 COMBINE
 770          HC       2   9.185
 771          KM        Dummy combine of all 500 series hydrographs at Hassayampa
              *
```

```
 772          KK    S700   BASIN
 773          BA   5.240
 774          LG    0.34    0.36    5.00    0.28       0
 775          UI     302     306     485     986    1424    1796    2125    2542    2707    2882
 776          UI    2934    2807    2645    2359    2015    1713    1505    1280    1105     968
 777          UI     823     674     598     529     462     377     320     308     210     206
 778          UI     207     182      73      74      74      74      73      74      74      73
 779          UI      74      74       0       0       0       0       0       0       0       0
 780          KM        Compute runoff from subbasin 700
              *

 781          KK    S720   BASIN
 782          BA   4.626
 783          LG    0.33    0.36    5.00    0.28       0
 784          UI     260     262     382     820    1159    1518    1787    2118    2322    2417
 785          UI    2508    2445    2355    2135    1829    1563    1390    1173    1020     890
 786          UI     762     653     568     492     421     401     283     275     245     177
 787          UI     178     179     141      63      64      63      63      64      63      63
 788          UI      64      63      64       0       0       0       0       0       0       0
 789          KM        Compute runoff from subbasin 720
              *

 790          KK    S740   BASIN
 791          BA   1.132
 792          LG    0.15    0.37    5.30    0.24       0
 793          UI     150     472     931    1305    1445    1280     941     670     467     327
 794          UI     246     163     109      92      36      37      37      36       0       0
 795          UI       0       0       0       0       0       0       0       0       0       0
 796          UI       0       0       0       0       0       0       0       0       0       0
 797          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 21

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

 798          KM        Compute runoff from subbasin 740
              *

 799          KK  ALL700 COMBINE
 800          HC       3
 801          KM        Dummy combination of all 700 series subbasins.
              *

 802          KK    S900   BASIN
 803          BA   1.035
 804          LG    0.25    0.37    5.30    0.24       6
 805          UI      75      77     215     338     472     551     650     871     671     496
 806          UI     448     394     356     320     277     233     197     180     165     140
 807          UI     116      97      89      83      65      59      58      37      38      37
 808          UI      37      23      14      15      14      15      14      15      15      14
 809          UI      15      14       0       0       0       0       0       0       0       0
 810          KM        Compute runoff from subbasin 900
              *

 811          KK  900910   ROUTE
 812          RS       7    FLOW      -1
 813          RC   0.045   0.035   0.045   10207  0.0192  103.00
 814          RX    0.00   80.00  160.00  163.00  178.00  181.00  261.00  341.00
 815          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
 816          KM        Route runoff from subbasin 900 through subbasin 910.
 817          KM        Slope = (1856-1660) / 10207
              *

 818          KK    S910   BASIN
 819          BA   0.983
 820          LG    0.35    0.35    4.70    0.31       0
 821          UI     234     923    1540    1684    1252     768     471     298     172     120
 822          UI      45      44      44       0       0       0       0       0       0       0
 823          UI       0       0       0       0       0       0       0       0       0       0
 824          UI       0       0       0       0       0       0       0       0       0       0
 825          UI       0       0       0       0       0       0       0       0       0       0
 826          KM        Compute runoff from subbasin 910
              *

 827          KK    C910 COMBINE
 828          HC       2
 829          KM        Combino runoff from S910 with routed flow at Sun Valley Parkway
              *

 830          KK  910915   ROUTE
 831          RS       2    FLOW      -1
 832          RC   0.045   0.035   0.045    2998  0.0110  103.00
 833          RX    0.00  100.00  200.00  203.00  223.00  226.00  326.00  426.00
 834          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
 835          KM        Route combined flow to C915.
 836          KM        Slope = (1660-1627) / 2998
              *
1                                          HEC-1 INPUT                                          PAGE 22

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

 837          KK    S915   BASIN
 838          BA   1.126
 839          LG    0.25    0.37    6.60    0.14       1
 840          UI     102     163     397     611     809     929     977     949     801     634
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841          UI     506     395     311     248     194     158     113      96      70      71
842          UI      32      25      25      25      25      26      25       0       0       0
843          UI       0       0       0       0       0       0       0       0       0       0
844          UI       0       0       0       0       0       0       0       0       0       0
845          KM        Compute runoff from subbasin 915
             *

846          KK    C915 COMBINE
847          HC       2
848          KM        Combine flows at C915
             *

849          KK  915920   ROUTE
850          RS       5    FLOW      -1
851          RC   0.045   0.035   0.045    9456  0.0103  104.00
852          RX    0.00  100.00  200.00  203.00  223.00  226.00  326.00  426.00
853          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
854          KM        Route combined flow to C920, at tributary to Trilby Wash parallel to CAP
855          KM        Slope = (1627-1530) / 9456
             *

856          KK    S920   BASIN
857          BA   3.291
858          LG    0.35    0.38    5.60    0.22       0
859          UI     261     294     853    1330    1783    2190    2432    2520    2411    2144
860          UI    1767    1414    1151     954     759     617     508     410     326     282
861          UI     200     178     181      71      63      65      63      64      64      64
862          UI      64       0       0       0       0       0       0       0       0       0
863          UI       0       0       0       0       0       0       0       0       0       0
864          KM        Compute runoff from subbasin 920
             *

865          KK    C920 COMBINE
866          HC       2
867          KM        Combine flows in Trilby Wash tributary
868          ZZ
```

1

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          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   40       S100
            .
            .
   49       .        S102
            .           .
            .           .
   58     C102............
            V
            V
   61     RR102
            .
            .
   71       .-------->    CF02
   70     D102
            V
            V
   76    100105
            .
            .
   83       .        S105
            .           .
            .           .
   93       .           .          .<-------    CF02
   92       .           .       CF02
            .           .          V
            .           .          V
   95       .           .     102105
            .           .           .
            .           .           .
  102    C105U........................
            .
            .
  107       .        S110
            .           V
            .           V
  116       .      11015I
            .           .
            .           .
  124       .           .-------->    CF5I
  123       .        D15I
            .           V
            .           V
  128       .      15I15R
            .           .
            .           .
  135       .           .       S115
            .           .          .
            .           .          .
  144       .      C115U............
            .           .
            .           .
  148       .           .          .<-------    CF5I
```

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147          .           .        CF51
             .           .           V
             .           .           V
150          .           .      15I15L
             .           .           .
             .           .           .
157          .       C115D............
             .           V
             .           V
161          .      115120
             .           .
             .           .
167          .           .        S120
             .           .           .
             .           .           .
176          .        C120............
             .           .
             .           .
179      C105D............
             V
             V
182     120135
             .
             .
189          .        S125
             .           V
             .           V
198          .      12535I
             .           .
             .           .
205          .           .        S150
             .           .           .
             .           .           .
215          .           .           .-------->    CF50
214          .           .        D150
             .           .           V
             .           .           V
220          .           .      150130
             .           .           .
             .           .           .
226          .           .           .        S130
             .           .           .           .
             .           .           .           .
235          .           .        C130............
             .           .           .
             .           .           .
240          .           .           .-------->    CF30
239          .           .        D130
             .           .           V
             .           .           V
244          .           .      13035I
             .           .           .
             .           .           .
251          .       C135I............
             .           V
             .           V
254          .      35I135
             .           .
             .           .
261          .           .        S135
             .           .           .
             .           .           .
270          .       C135L............
             .           .
             .           .
273      C135............
             V
             V
276     135145
             .
             .
282          .        S140
             .           V
             .           V
291          .      140145
             .           .
             .           .
299          .           .           .<--------    CF30
298          .           .        CF30
             .           .           .
             .           .           .
302          .           .           .-------->   CF302
301          .           .       D1302
             .           .           V
             .           .           V
306          .           .      130145
             .           .           .
             .           .           .
313          .           .           .        S145
             .           .           .           .
             .           .           .           .
322          .           .       C145L............
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326      C145........................
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                V
                V
329        145155
                .
                .
336             .           .<-------    CF50
335             .        CF50
                .           V
                .           V
338             .      150155
                .           .
                .           .
345             .           .           .<-------   CF302
344             .           .       CF302
                .           .           V
                .           .           V
347             .           .      130155
                .           .           .
                .           .           .
353             .           .           .        S155
                .           .           .           .
                .           .           .           .
362             .       C155L.......................
                .           .
                .           .
366          C155............
                V
                V
369        155160
                .
                .
376             .        S160
                .           .
                .           .
385          C160............
                V
                V
388        160170
                .
                .
394             .        S165
                .           V
                .           V
403             .      165170
                .           .
                .           .
410             .           .        S170
                .           .           .
                .           .           .
419             .        C170............
                .           V
                .           V
422             .        170R
                .           .
                .           .
428         C170R............
                V
                V
431        170180
                .
                .
437             .        S175
                .           V
                .           V
446             .        175R
                .           .
                .           .
453             .           .        S180
                .           .           V
                .           .           V
462             .           .        180R
                .           .           .
                .           .           .
469             .      C180RI............
                .           V
                .           V
472             .      RI180R
                .           .
                .           .
478         C180R............
                V
                V
481        180185
                .
                .
488             .        S185
                .           V
                .           V
497             .        185R
                .           .
                .           .
503         C185R............
                V
                V
506        185190
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                .
                .
512             .        S190
                .          .
                .          .
521         C190............
                V
                V
524       190195
                .
                .
530             .        S195
                .          .
                .          .
539         C195............
                .
                .
542             .        S400
                .          .
                .          .
552             .          .-------->    CF00
551             .        D400
                .          .
                .          .
556             .          .        S410
                .          .          .
                .          .          .
565             .        C410............
                .          .
                .          .
569             .          .-------->    CF10
568             .        D410
                .          V
                .          V
573             .      410415
                .          .
                .          .
579             .          .        S415
                .          .          .
                .          .          .
588             .        C415............
                .          V
                .          V
591             .      415420
                .          .
                .          .
598             .          .        S420
                .          .          .
                .          .          .
607             .        C420............
                .          .
                .          .
611             .          .          .<--------    CF00
610             .          .        CF00
                .          .          .
                .          .          .
614             .          .          .          .<--------    CF10
613             .          .          .        CF10
                .          .          .          .
                .          .          .          .
616             .          .      C40010............
                .          .          V
                .          .          V
619             .          .      400430
                .          .          .
                .          .          .
625             .          .          .        S430
                .          .          .          .
                .          .          .          .
634             .          .        C430............
                .          .          V
                .          .          V
637             .          .      430440
                .          .          .
                .          .          .
644             .          .          .        S440
                .          .          .          .
                .          .          .          .
653             .          .        C440............
                .          .          V
                .          .          V
656             .          .      440450
                .          .          .
                .          .          .
663             .          .          .        S450
                .          .          .          .
                .          .          .          .
672             .          .          .          .        S435
                .          .          .          .          V
                .          .          .          .          V
681             .          .          .          .      435450
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                .          .          .          .          .
688             .          .        C450........................
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691          .      ALL400............
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694          .          S500
             .            V
             .            V
703          .       500510
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             .
710          .            .        S510
             .            .          .
             .            .          .
719          .          C510............
             .
             .
723          .            .-------->    CF10
722          .          D510
             .            V
             .            V
727          .       510520
             .
             .
734          .            .        S520
             .            .          .
             .            .          .
743          .          C520............
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             .
747          .            .        S530
             .            .          .
             .            .          .
757          .            .          .          .<-------    CF10
756          .            .          .       CF10
             .            .          .         V
             .            .          .         V
759          .            .          .     510530
             .            .          .          .
             .            .          .          .
766          .            .        C530............
             .            .          .
             .            .          .
769          .       ALL500............
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             .
772          .            .        S700
             .            .          .
             .            .          .
781          .            .          .       S720
             .            .          .          .
             .            .          .          .
790          .            .          .          .        S740
             .            .          .          .          .
             .            .          .          .          .
799          .            .     ALL700........................
             .            .          .
             .            .          .
802          .            .          .       S900
             .            .          .         V
             .            .          .         V
811          .            .          .     900910
             .            .          .          .
             .            .          .          .
818          .            .          .          .        S910
             .            .          .          .          .
             .            .          .          .          .
827          .            .          .       C910............
             .            .          .         V
             .            .          .         V
830          .            .          .     910915
             .            .          .          .
             .            .          .          .
837          .            .          .          .        S915
             .            .          .          .          .
             .            .          .          .          .
846          .            .          .       C915............
             .            .          .         V
             .            .          .         V
849          .            .          .     915920
             .            .          .          .
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856          .            .          .          .        S920
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             .            .          .          .          .
865          .            .          .       C920............
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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1*****************************************                    *****************************************
 *                                       *                    *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                    *    U.S. ARMY CORPS OF ENGINEERS       *
 *              JUN   1998               *                    *    HYDROLOGIC ENGINEERING CENTER      *
 *            VERSION 4.1                *                    *          609 SECOND STREET            *
 *                                       *                    *       DAVIS, CALIFORNIA 95616         *
 *  RUN DATE   16JUN06  TIME  07:56:19   *                    *           (916) 756-1104              *
 *                                       *                    *                                       *
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                    SUN VALLEY AREA DRAINAGE MASTER PLAN (SVADMP) - FCD 2004C049
                     JE FULLER / HYDROLOGY & GEOMORPHOLOGY, INC.
                     FILENAME: A4_EX24.DAT
                     DATE: JUNE 16, 2006

                     100-YEAR 24-HOUR MODEL
                     EXISTING CONDITIONS
                     AREA 4 WATERSHED AREA = 90.5 SQ. MILES
                            MODELED AREA = 76.8 SQ. MILES

                     GREEN-AMPT LOSS METHOD
                     S-GRAPH UNIT HYDROGRAPHS
                      - MOUNTAIN
                      - DESERT/RANGELAND
                     NORMAL-DEPTH CHANNEL ROUTING
                     LAND USE DATA FROM EXAMINATION OF SLOPE FROM 10-FT DTM TO DISTINGUISH
                      - UNDEVELOPED DESERT RANGELAND (NDR) - SLOPES < 5 %
                      - HILLSLOPES, SONORAN DESERT (NHS) - SLOPES 5 - 10 %
                      - MOUNTAIN TERRAIN (NMT) - SLOPES > 10 %
                    SOILS DATA FROM FCDMC GIS DATABASE (RECEIVED FROM FCDMC JULY 2005)


 24 IO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN          5  MINUTES IN COMPUTATION INTERVAL
                      IDATE     1JAN99  STARTING DATE
                      ITIME       1200  STARTING TIME
                         NQ       2000  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE     8JAN99  ENDING DATE
                     NDTIME       1035  ENDING TIME
                      ICENT         19  CENTURY MARK

                 COMPUTATION INTERVAL     .08 HOURS
                      TOTAL TIME BASE  166.58 HOURS

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

 25 JD          INDEX STORM NO. 1
                       STRM       4.20  PRECIPITATION DEPTH
                       TRDA        .10  TRANSPOSITION DRAINAGE AREA

 26 PI            PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .01       .00       .01
                    .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                    .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00

 36 JD          INDEX STORM NO. 2
                       STRM       3.99  PRECIPITATION DEPTH
                       TRDA      10.00  TRANSPOSITION DRAINAGE AREA

  0 PI            PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .01       .00       .01
          .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
          .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
          .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00
37 JD     INDEX STORM NO. 3
               STRM        3.78  PRECIPITATION DEPTH
               TRDA       30.00  TRANSPOSITION DRAINAGE AREA

 0 PI      PRECIPITATION PATTERN
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .01       .00       .01
          .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
          .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
          .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00
38 JD     INDEX STORM NO. 4
               STRM        3.65  PRECIPITATION DEPTH
               TRDA       60.00  TRANSPOSITION DRAINAGE AREA

 0 PI      PRECIPITATION PATTERN
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .01       .00       .01
          .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
          .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
          .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00

 39 JD          INDEX STORM NO. 5
                      STRM        3.58  PRECIPITATION DEPTH
                      TRDA       90.00  TRANSPOSITION DRAINAGE AREA

  0 PI            PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .01       .00       .01
                    .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                    .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
 61 KK      *     RR102  *      STORAGE
            *            *
            **************

 62 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
1
                                                RUNOFF SUMMARY
                                          FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES

                                        PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
        OPERATION        STATION        FLOW    PEAK                                           AREA      STAGE     MAX STAGE
+                                                                 6-HOUR      24-HOUR      72-HOUR

        HYDROGRAPH AT
+                          S100        5214.   12.58          965.         241.          80.       6.99

        HYDROGRAPH AT
+                          S102        3434.   12.33          420.         105.          35.       3.23

        2 COMBINED AT
+                          C102        7803.   12.42         1367.         342.         114.      10.23

        ROUTED TO
+                         RR102         149.   14.42          141.         119.          82.      10.23

        DIVERSION TO
+                          CF02          75.   14.42           71.          59.          41.      10.23

        HYDROGRAPH AT
+                          D102          75.   14.42           71.          59.          41.      10.23

        ROUTED TO
+                        100105          70.   20.33           67.          58.          41.      10.23

        HYDROGRAPH AT
+                          S105        3466.   12.50          531.         133.          44.       4.37

        HYDROGRAPH AT
+                          CF02          75.   14.42           71.          59.          41.      10.23

        ROUTED TO
+                        102105          74.   15.67           70.          59.          41.      10.23

        3 COMBINED AT
+                         C105U        3466.   12.50          587.         238.         125.      14.60
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+	HYDROGRAPH AT	S110	532.	12.17	62.	16.	5.	.43
+	ROUTED TO	11015I	456.	12.42	62.	16.	5.	.43
+	DIVERSION TO	CF5I	91.	12.42	12.	3.	1.	.43
+	HYDROGRAPH AT	D15I	365.	12.42	50.	13.	4.	.43
+	ROUTED TO	15I15R	323.	12.83	50.	13.	4.	.43
+	HYDROGRAPH AT	S115	1693.	12.50	287.	73.	24.	2.25
+	2 COMBINED AT	C115U	1839.	12.58	334.	86.	29.	2.68
+	HYDROGRAPH AT	CF5I	91.	12.42	12.	3.	1.	.43
+	ROUTED TO	15I15L	45.	13.58	12.	3.	1.	.43
+	2 COMBINED AT	C115D	1840.	12.58	346.	89.	30.	2.68
+	ROUTED TO	115120	1807.	12.75	345.	89.	30.	2.68
+	HYDROGRAPH AT	S120	2032.	12.33	247.	62.	21.	2.00
+	2 COMBINED AT	C120	3197.	12.42	585.	149.	50.	4.68
+	2 COMBINED AT	C105D	6214.	12.42	1091.	359.	163.	19.28
+	ROUTED TO	120135	6209.	12.50	1091.	359.	163.	19.28
+	HYDROGRAPH AT	S125	161.	12.08	12.	3.	1.	.09
+	ROUTED TO	12535I	136.	12.17	12.	3.	1.	.09
+	HYDROGRAPH AT	S150	729.	12.33	107.	29.	10.	.77
+	DIVERSION TO	CF50	656.	12.33	97.	26.	9.	.77
+	HYDROGRAPH AT	D150	73.	12.33	11.	3.	1.	.77
+	ROUTED TO	150130	67.	12.50	11.	3.	1.	.77
+	HYDROGRAPH AT	S130	415.	12.17	39.	10.	3.	.31
+	2 COMBINED AT	C130	438.	12.17	50.	13.	4.	.31
+	DIVERSION TO	CF30	131.	12.17	15.	4.	1.	.31
+	HYDROGRAPH AT	D130	307.	12.17	35.	9.	3.	.31
+	ROUTED TO	13035I	302.	12.17	35.	9.	3.	.31
+	2 COMBINED AT	C135I	434.	12.17	46.	12.	4.	.40
+	ROUTED TO	35I135	310.	12.75	46.	12.	4.	.40
+	HYDROGRAPH AT	S135	1015.	12.25	99.	25.	8.	.88
+	2 COMBINED AT	C135L	1010.	12.25	143.	37.	12.	1.28
+	2 COMBINED AT	C135	6729.	12.50	1214.	389.	173.	20.56
	ROUTED TO							

+		135145	5991.	12.83	1201.	386.	173.	20.56
+	HYDROGRAPH AT	S140	2029.	12.17	172.	43.	14.	1.37
+	ROUTED TO	140145	1632.	12.42	172.	43.	14.	1.37
+	HYDROGRAPH AT	CF30	131.	12.17	15.	4.	1.	.31
+	DIVERSION TO	CF302	13.	12.17	1.	0.	0.	.31
+	HYDROGRAPH AT	D1302	118.	12.17	13.	4.	1.	.31
+	ROUTED TO	130145	62.	13.67	13.	4.	1.	.31
+	HYDROGRAPH AT	S145	1945.	12.25	193.	48.	16.	1.76
+	2 COMBINED AT	C145L	1940.	12.25	205.	51.	17.	2.07
+	3 COMBINED AT	C145	6627.	12.83	1517.	465.	198.	23.69
+	ROUTED TO	145155	6629.	12.83	1516.	465.	198.	23.69
+	HYDROGRAPH AT	CF50	656.	12.33	97.	26.	9.	.77
+	ROUTED TO	150155	438.	13.50	96.	26.	9.	.77
+	HYDROGRAPH AT	CF302	13.	12.17	1.	0.	0.	.31
+	ROUTED TO	130155	3.	15.92	1.	0.	0.	.31
+	HYDROGRAPH AT	S155	1781.	12.33	218.	55.	18.	1.83
+	3 COMBINED AT	C155L	1773.	12.33	310.	80.	27.	2.61
+	2 COMBINED AT	C155	7183.	12.83	1781.	532.	220.	26.30
+	ROUTED TO	155160	7159.	12.92	1779.	531.	220.	26.30
+	HYDROGRAPH AT	S160	1342.	12.17	124.	31.	10.	1.14
+	2 COMBINED AT	C160	7201.	12.92	1877.	556.	229.	27.44
+	ROUTED TO	160170	7078.	13.08	1869.	554.	228.	27.44
+	HYDROGRAPH AT	S165	842.	12.17	78.	20.	7.	.62
+	ROUTED TO	165170	658.	12.58	78.	20.	7.	.62
+	HYDROGRAPH AT	S170	1802.	12.17	169.	42.	14.	1.46
+	2 COMBINED AT	C170	1900.	12.25	245.	62.	21.	2.08
+	ROUTED TO	170R	1825.	12.42	245.	62.	21.	2.08
+	2 COMBINED AT	C170R	7607.	13.00	2071.	605.	245.	29.52
+	ROUTED TO	170180	7502.	13.25	2061.	603.	245.	29.52
+	HYDROGRAPH AT	S175	1278.	12.50	217.	55.	18.	1.80
+	ROUTED TO	175R	1185.	12.67	217.	55.	18.	1.80
+	HYDROGRAPH AT	S180	1039.	12.50	171.	44.	15.	1.44

+	ROUTED TO	180R	962.	12.58	171.	44.	15.	1.44
+	2 COMBINED AT	C180RI	2109.	12.67	383.	97.	32.	3.24
+	ROUTED TO	RI180R	2021.	12.75	382.	97.	32.	3.24
+	2 COMBINED AT	C180R	8650.	13.08	2378.	683.	271.	32.76
+	ROUTED TO	180185	8637.	13.17	2372.	681.	271.	32.76
+	HYDROGRAPH AT	S185	1655.	12.50	288.	73.	24.	2.42
+	ROUTED TO	185R	1411.	12.92	287.	73.	24.	2.42
+	2 COMBINED AT	C185R	9648.	13.08	2607.	740.	290.	35.19
+	ROUTED TO	185190	9631.	13.17	2602.	739.	290.	35.19
+	HYDROGRAPH AT	S190	2590.	12.58	448.	112.	37.	4.05
+	2 COMBINED AT	C190	10473.	13.08	2951.	828.	320.	39.24
+	ROUTED TO	190195	10353.	13.25	2943.	827.	320.	39.24
+	HYDROGRAPH AT	S195	1039.	12.67	202.	51.	17.	1.81
+	2 COMBINED AT	C195	10728.	13.25	3099.	866.	333.	41.05
+	HYDROGRAPH AT	S400	1047.	12.50	184.	48.	16.	1.54
+	DIVERSION TO	CF00	524.	12.50	92.	24.	8.	1.54
+	HYDROGRAPH AT	D400	524.	12.50	92.	24.	8.	1.54
+	HYDROGRAPH AT	S410	526.	12.42	80.	21.	7.	.64
+	2 COMBINED AT	C410	1003.	12.50	170.	44.	15.	2.18
+	DIVERSION TO	CF10	100.	12.50	17.	4.	1.	2.18
+	HYDROGRAPH AT	D410	903.	12.50	153.	39.	13.	2.18
+	ROUTED TO	410415	681.	12.92	153.	39.	13.	2.18
+	HYDROGRAPH AT	S415	624.	12.17	50.	13.	4.	.45
+	2 COMBINED AT	C415	695.	12.92	201.	51.	17.	2.63
+	ROUTED TO	415420	613.	13.75	198.	51.	17.	2.63
+	HYDROGRAPH AT	S420	1740.	12.33	198.	50.	17.	1.77
+	2 COMBINED AT	C420	1714.	12.33	390.	100.	33.	4.40
+	HYDROGRAPH AT	CF00	524.	12.50	92.	24.	8.	1.54
+	HYDROGRAPH AT	CF10	100.	12.50	17.	4.	1.	2.18
+	2 COMBINED AT	C40010	624.	12.50	109.	28.	9.	1.54
+	ROUTED TO	400430	581.	12.75	109.	28.	9.	1.54
+	HYDROGRAPH AT	S430	1090.	12.17	95.	24.	8.	.80

+	2 COMBINED AT	C430	1080.	12.17	201.	51.	17.	2.34
+	ROUTED TO	430440	966.	12.50	200.	51.	17.	2.34
+	HYDROGRAPH AT	S440	1205.	12.25	119.	30.	10.	1.07
+	2 COMBINED AT	C440	1702.	12.42	314.	80.	27.	3.41
+	ROUTED TO	440450	1460.	12.67	313.	80.	27.	3.41
+	HYDROGRAPH AT	S450	1624.	12.58	287.	72.	24.	2.52
+	HYDROGRAPH AT	S435	656.	12.08	47.	12.	4.	.39
+	ROUTED TO	435450	378.	12.83	47.	12.	4.	.39
+	3 COMBINED AT	C450	3321.	12.67	635.	161.	54.	6.32
+	2 COMBINED AT	ALL400	4390.	12.67	1015.	258.	86.	9.18
+	HYDROGRAPH AT	S500	2063.	12.75	476.	129.	43.	3.64
+	ROUTED TO	500510	1911.	13.08	475.	129.	43.	3.64
+	HYDROGRAPH AT	S510	2099.	12.25	213.	53.	18.	1.84
+	2 COMBINED AT	C510	2092.	12.25	679.	180.	60.	5.48
+	DIVERSION TO	CF10	1360.	12.25	441.	117.	39.	5.48
+	HYDROGRAPH AT	D510	732.	12.25	238.	63.	21.	5.48
+	ROUTED TO	510520	631.	13.75	234.	63.	21.	5.48
+	HYDROGRAPH AT	S520	1288.	12.42	174.	43.	14.	1.48
+	2 COMBINED AT	C520	1260.	12.42	398.	105.	35.	6.96
+	HYDROGRAPH AT	S530	1697.	12.50	257.	64.	21.	2.23
+	HYDROGRAPH AT	CF10	100.	12.50	17.	4.	1.	2.18
+	ROUTED TO	510530	52.	13.92	17.	4.	1.	2.18
+	2 COMBINED AT	C530	1697.	12.50	274.	69.	23.	7.70
+	2 COMBINED AT	ALL500	2900.	12.42	662.	171.	57.	9.19
+	HYDROGRAPH AT	S700	3186.	12.67	642.	160.	53.	5.24
+	HYDROGRAPH AT	S720	2742.	12.67	569.	142.	47.	4.63
+	HYDROGRAPH AT	S740	1506.	12.25	154.	38.	13.	1.13
+	3 COMBINED AT	ALL700	6188.	12.67	1332.	333.	111.	11.00
+	HYDROGRAPH AT	S900	853.	12.50	150.	39.	13.	1.03
+	ROUTED TO	900910	696.	13.00	150.	39.	13.	1.03
+	HYDROGRAPH AT	S910	1512.	12.17	122.	30.	10.	.98
	2 COMBINED AT							

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+                    C910      1550.   12.17        268.        69.        23.      2.02

     ROUTED TO
+                  910915      1277.   12.33        268.        69.        23.      2.02

     HYDROGRAPH AT
+                    S915      1210.   12.42        172.        43.        14.      1.13

     2 COMBINED AT
+                    C915      2439.   12.33        435.       111.        37.      3.14

     ROUTED TO
+                  915920      1786.   12.92        434.       111.        37.      3.14

     HYDROGRAPH AT
+                    S920      2794.   12.50        428.       107.        36.      3.29

     2 COMBINED AT
+                    C920      3574.   12.67        851.       215.        72.      6.43
1                 SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION    RR102
                (PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED  DURING BREACH FORMATION)

PLAN  1 ..............                  INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION        1550.00           1556.00          1556.00
                          STORAGE              553.             2705.            2705.
                          OUTFLOW                0.              600.             600.

              RATIO     MAXIMUM      MAXIMUM     MAXIMUM     MAXIMUM     DURATION     TIME OF     TIME OF
               OF      RESERVOIR     DEPTH      STORAGE     OUTFLOW     OVER TOP    MAX OUTFLOW  FAILURE
              PMF      W.S.ELEV    OVER DAM      AC-FT        CFS        HOURS        HOURS       HOURS

              1.00     1552.28        .00        1258.       171.        .00         14.42        .00

PLAN  2 ..............                  INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION        1550.00           1556.00          1556.00
                          STORAGE              553.             2705.            2705.
                          OUTFLOW                0.              600.             600.

              RATIO     MAXIMUM      MAXIMUM     MAXIMUM     MAXIMUM     DURATION     TIME OF     TIME OF
               OF      RESERVOIR     DEPTH      STORAGE     OUTFLOW     OVER TOP    MAX OUTFLOW  FAILURE
              PMF      W.S.ELEV    OVER DAM      AC-FT        CFS        HOURS        HOURS       HOURS

              1.00     1552.14        .00        1204.       150.        .00         14.42        .00

PLAN  3 ..............                  INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION        1550.00           1556.00          1556.00
                          STORAGE              553.             2705.            2705.
                          OUTFLOW                0.              600.             600.

              RATIO     MAXIMUM      MAXIMUM     MAXIMUM     MAXIMUM     DURATION     TIME OF     TIME OF
               OF      RESERVOIR     DEPTH      STORAGE     OUTFLOW     OVER TOP    MAX OUTFLOW  FAILURE
              PMF      W.S.ELEV    OVER DAM      AC-FT        CFS        HOURS        HOURS       HOURS

              1.00     1552.00        .00        1149.       128.        .00         14.50        .00

PLAN  4 ..............                  INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION        1550.00           1556.00          1556.00
                          STORAGE              553.             2705.            2705.
                          OUTFLOW                0.              600.             600.

              RATIO     MAXIMUM      MAXIMUM     MAXIMUM     MAXIMUM     DURATION     TIME OF     TIME OF
               OF      RESERVOIR     DEPTH      STORAGE     OUTFLOW     OVER TOP    MAX OUTFLOW  FAILURE
              PMF      W.S.ELEV    OVER DAM      AC-FT        CFS        HOURS        HOURS       HOURS

              1.00     1551.89        .00        1115.       121.        .00         14.50        .00

PLAN  5 ..............                  INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION        1550.00           1556.00          1556.00
                          STORAGE              553.             2705.            2705.
                          OUTFLOW                0.              600.             600.

              RATIO     MAXIMUM      MAXIMUM     MAXIMUM     MAXIMUM     DURATION     TIME OF     TIME OF
               OF      RESERVOIR     DEPTH      STORAGE     OUTFLOW     OVER TOP    MAX OUTFLOW  FAILURE
              PMF      W.S.ELEV    OVER DAM      AC-FT        CFS        HOURS        HOURS       HOURS

              1.00     1551.82        .00        1095.       117.        .00         14.50        .00

*** NORMAL END OF HEC-1 ***
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1****************************************                                    ************************************
 *                                      *                                    *                                  *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *   U.S. ARMY CORPS OF ENGINEERS   *
 *              JUN   1998              *                                    *   HYDROLOGIC ENGINEERING CENTER  *
 *            VERSION 4.1               *                                    *         609 SECOND STREET        *
 *                                      *                                    *      DAVIS, CALIFORNIA 95616     *
 *  RUN DATE   16JUN06  TIME  08:46:55  *                                    *          (916) 756-1104          *
 *                                      *                                    *                                  *
 ****************************************                                    ************************************

                                                X     X  XXXXXXX   XXXXX          X
                                                X     X  X        X     X        XX
                                                X     X  X        X               X
                                                XXXXXXX  XXXX     X        XXXXX  X
                                                X     X  X        X               X
                                                X     X  X        X     X         X
                                                X     X  XXXXXXX   XXXXX        XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

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

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1                                                HEC-1 INPUT                                                    PAGE  1

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

        1           ID    SUN VALLEY AREA DRAINAGE MASTER PLAN (SVADMP) - FCD 2004C049
        2           ID    JE FULLER / HYDROLOGY & GEOMORPHOLOGY, INC.
        3           ID    FILENAME: A4_EX6.DAT
        4           ID    DATE:  JUNE 16, 2006
        5           ID
        6           ID    100-YEAR 6-HOUR MODEL
        7           ID    EXISTING CONDITIONS
        8           ID    AREA 4 WATERSHED AREA = 90.5 SQ. MILES
        9           ID             MODELED AREA = 76.8 SQ. MILES
       10           ID
       11           ID    GREEN-AMPT LOSS METHOD
       12           ID    S-GRAPH UNIT HYDROGRAPHS
       13           ID      - MOUNTAIN
       14           ID      - DESERT/RANGELAND
       15           ID    NORMAL-DEPTH CHANNEL ROUTING
       16           ID    LAND USE DATA FROM EXAMINATION OF SLOPE FROM 10-FT DTM TO DISTINGUISH
       17           ID      - UNDEVELOPED DESERT RANGELAND (NDR) - SLOPES < 5 %
       18           ID      - HILLSLOPES, SONORAN DESERT (NHS) - SLOPES 5 - 10 %
       19           ID      - MOUNTAIN TERRAIN (NMT) - SLOPES > 10 %
       20           ID    SOILS DATA FROM FCDMC GIS DATABASE (RECEIVED FROM FCDMC JULY 2005)
       21           ID
       22           IT       5  1JAN99    1200    2000
       23           IN      15
       24           IO       5
                    *DIAGRAM
                    *
       25           JD   3.196  0.1000
       26           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
       27           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
       28           PC   0.962   0.972   0.983   0.991   1.000
       29           JD   3.181  0.5000
       30           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
       31           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
       32           PC   0.962   0.972   0.983   0.991   1.000
       33           JD   3.120     2.8
       34           PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.068   0.077
       35           PC   0.088   0.101   0.121   0.164   0.253   0.451   0.694   0.836   0.900   0.938
       36           PC   0.950   0.963   0.975   0.988   1.000
       37           JD   2.950    16.0
       38           PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
       39           PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
       40           PC   0.946   0.960   0.973   0.987   1.000
       41           JD   2.592    90.0
       42           PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
       43           PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888

       44           PC   0.927   0.945   0.964   0.982   1.000
                    *

       45           KK    S100   BASIN
       46           BA   6.994
       47           LG    0.35    0.38    6.40    0.16       0
       48           UI     449     455     964    1717    2422    3046    3616    4050    4275    4281
       49           UI    4178    3867    3211    2766    2319    1968    1698    1387    1198     990
       50           UI     848     715     635     476     471     313     309     309     204     110
       51           UI     109     111     110     109     111     109     110     111       0       0
1                                                HEC-1 INPUT                                                    PAGE  2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  52          UI       0       0       0       0       0       0       0       0       0       0
  53          KM        Compute runoff from subbasin 100
              *

  54          KK    S102   BASIN
  55          BA   3.234
  56          LG    0.35    0.38    5.60    0.22       0
  57          UI     333     657    1539    2292    2943    3178    3083    2643    1985    1523
  58          UI    1179     890     674     542     377     300     232     193      81      82
  59          UI      81      81      83       0       0       0       0       0       0       0
  60          UI       0       0       0       0       0       0       0       0       0       0
  61          UI       0       0       0       0       0       0       0       0       0       0
  62          KM        Compute runoff from subbasin 102
              *

  63          KK    C102 COMBINE
  64          HC       2
  65          KM        Combine total inflow to detention area behind (north) of CAP Canal
              *

  66          KK   RR102 STORAGE
  67          KO
  68          RS       1    STOR      -1
  69          SV          553.00 1148.00 2316.00 2705.00
  70          SQ                  128.00  587.00  600.00
  71          SE  1543.0 1550.00 1552.00 1555.00 1556.00
  72          ST  1556.0  1320.0     3.2     1.5
  73          KM        Route flows through storage area behind CAP Canal
  74          KM        Stage-storage-discharge data from Wagner Wash FDS Hydrology (1991)
              *

  75          KK    D102  DIVERT
  76          DT    CF02     0.0     0.0
  77          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
  78          DQ     0.0    50.0   500.0  5000.0     0.0     0.0     0.0     0.0     0.0     0.0
  79          KM        Divide flow evenly over the two 18-foot wide CAP overchutes
  80          KM        although the inverts are 0.5 feet different in elevation
              *

  81          KK  100105   ROUTE
  82          RS       9    FLOW      -1
  83          RC   0.035   0.055   0.035   11235  0.0045  105.00
  84          RX    0.00  120.00  240.00  250.00  590.00  600.00  720.00  840.00
  85          RY  105.00  102.50  100.00  100.00  100.00  100.00  102.50  105.00
  86          KM        Route outflows from east CAP overchute to Sun Valley Parkway.
  87          KM        Slope = (1550-1500) / 11235
              *

  88          KK    S105   BASIN
  89          BA   4.370
  90          LG    0.35    0.35    4.80    0.30       0
  91          UI     345     380    1112    1723    2334    2867    3143    3344    3176    2865
  92          UI    2374    1903    1555    1291    1018     832     685     564     458     369
  93          UI     288     235     238     126      83      85      84      84      84      84
  94          UI      84       0       0       0       0       0       0       0       0       0
```



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

  95          UI       0       0       0       0       0       0       0       0       0       0
  96          KM        Compute runoff from subbasin 105
              *

  97          KK    CF02RETRIEVE
  98          DR    CF02
  99          KM        Retrieve flow from west CAP overchute.
              *

 100          KK  102105   ROUTE
 101          RS       6    FLOW      -1
 102          RC   0.045   0.050   0.045    7656  0.0065  104.00
 103          RX    0.00   40.00  120.00  130.00  250.00  260.00  340.00  380.00
 104          RY  104.00  102.00  101.00  100.00  100.00  101.00  102.00  104.00
 105          KM        Route retrieved flow from west overchute to C105.
 106          KM        Slope = (1550 - 1500) / 7656
              *

 107          KK   C105U COMBINE
 108          HC       3  14.598
 109          KM        Combine runoff from S105 with routed flow from 100105 and 102105
 110          KM        (CAP overchute flows). This is the total flow in Wagner Wash upstream
 111          KM        of Sun Valley Parkway.
              *

 112          KK    S110   BASIN
 113          BA   0.430
 114          LG    0.25    0.37    5.20    0.25       6
 115          UI      56     166     335     449     587     358     291     241     188     140
 116          UI     121      86      68      56      43      32      27      22      11      11
 117          UI      10      11      11       0       0       0       0       0       0       0
 118          UI       0       0       0       0       0       0       0       0       0       0
 119          UI       0       0       0       0       0       0       0       0       0       0
```

```
 120          KM        Compute runoff from subbasin 110
              *

 121          KK  11015I   ROUTE
 122          RS       2    FLOW      -1
 123          RC   0.045   0.035   0.045    3783  0.0267  102.00
 124          RX    0.00   50.00  100.00  110.00  120.00  130.00  180.00  230.00
 125          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 126          KM        Route flow from C105 through subbasin 110 to C115.
 127          KM        Slope = (1847-1746) / 3783
              *

 128          KK    D15I  DIVERT
 129          DT    CF5I     0.0     0.0
 130          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 131          DQ     0.0    20.0   200.0  2000.0     0.0     0.0     0.0     0.0     0.0     0.0
 132          KM        Divert flows to the left into S120
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 133          KK  15I15R   ROUTE
 134          RS       8    FLOW      -1
 135          RC   0.035   0.030   0.035   14128  0.0151  105.00
 136          RX    0.00   25.00   58.00   65.00   85.00   92.00  125.00  150.00
 137          RY  105.00  102.50  102.00  100.00  100.00  102.00  102.50  105.00
 138          KM        Route flows from split through S115 to C115.
 139          KM        Slope = (1746-1532) / 14128
              *

 140          KK    S115   BASIN
 141          BA   2.247
 142          LG    0.32    0.35    4.80    0.30       2
 143          UI     160     163     434     709     984    1212    1401    1530    1539    1465
 144          UI    1351    1100     918     773     632     528     444     351     304     252
 145          UI     203     170     140     110     110      85      39      39      40      39
 146          UI      39      39      40      39       0       0       0       0       0       0
 147          UI       0       0       0       0       0       0       0       0       0       0
 148          KM        Compute runoff from subbasin 115
              *

 149          KK   C115U COMBINE
 150          HC       2   2.677
 151          KM        Combine runoff from S115 with routed flow.
              *

 152          KK    CF5IRETRIEVE
 153          DR    CF5I
 154          KM        Retrieve diverted flow from D15I
              *

 155          KK  15I15L   ROUTE
 156          RS       7    FLOW      -1
 157          RC   0.045   0.045   0.045   12775  0.0168  104.00
 158          RX    0.00   50.00  100.00  130.00  170.00  200.00  250.00  300.00
 159          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
 160          KM        Route flows from split through S120 to C115.
 161          KM        Slope =(1746-1532) / 12775
              *

 162          KK   C115D COMBINE
 163          HC       2   2.677
 164          KM        Combine routed flows from split with remainder of flows in SVP channel
 165          KM        just D/S of C115.
              *

 166          KK  115120   ROUTE
 167          RS       2    FLOW      -1
 168          RC   0.030   0.025   0.030    4077  0.0093  105.00
 169          RX    0.00   30.00   75.00   80.00  105.00  110.00  155.00  190.00
 170          RY  105.00  101.50  101.00  100.00  100.00  101.00  101.50  105.00
 171          KM        Route total flows from C115 to C120. Slope =(1532-1494) / 4077
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 172          KK    S120   BASIN
 173          BA   2.004
 174          LG    0.33    0.35    4.65    0.32       1
 175          UI     206     408     954    1419    1824    1969    1911    1637    1230     944
 176          UI     731     551     418     336     234     186     143     120      50      51
 177          UI      50      51      51       0       0       0       0       0       0       0
 178          UI       0       0       0       0       0       0       0       0       0       0
 179          UI       0       0       0       0       0       0       0       0       0       0
 180          KM        Compute runoff from subbasin 120
              *

 181          KK    C120 COMBINE
 182          HC       2   4.681
 183          KM        Combine flows at Wagner Wash at outlet of channel along SVP
              *
```

```
 184          KK   C105D COMBINE
 185          HC       2  19.279
 186          KM        Combine flows from C105 and C120 just D/S of Sun Valley Parkway
              *

 187          KK  120135   ROUTE
 188          RS       1    FLOW      -1
 189          RC   0.045   0.035   0.045     951  0.0074  110.00
 190          RX    0.00  225.00  450.00  455.00  485.00  490.00  615.00  840.00
 191          RY  110.00  105.00  102.00  100.00  100.00  102.00  102.00  110.00
 192          KM        Route flows in Wagner Wash from Sun Valley Parkway to C135.
 193          KM        Slope = (1494-1487) / 951
              *

 194          KK    S125   BASIN
 195          BA   0.093
 196          LG    0.25    0.35    4.15    0.44       5
 197          UI      46     164     204     116      73      46      28      17      12       4
 198          UI       5       4       0       0       0       0       0       0       0       0
 199          UI       0       0       0       0       0       0       0       0       0       0
 200          UI       0       0       0       0       0       0       0       0       0       0
 201          UI       0       0       0       0       0       0       0       0       0       0
 202          KM        Compute runoff from subbasin 125
              *

 203          KK  12535I   ROUTE
 204          RS       1    FLOW      -1
 205          RC   0.055   0.040   0.055    2207  0.0254  103.00
 206          RX    0.00   50.00  100.00  101.00  151.00  152.00  202.00  252.00
 207          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
 208          KM        Route flows from S125 to intermediate combination point in S135.
 209          KM        Slope = (1754-1698) / 2207
              *
1                                          HEC-1 INPUT                                          PAGE  6

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

 210          KK    S150   BASIN
 211          BA   0.774
 212          LG    0.25    0.35    4.65    0.32       7
 213          UI      71     115     270     425     531     672     746     480     406     356
 214          UI     312     262     212     181     159     132     106      89      77      65
 215          UI      54      47      35      35      35      14      14      13      14      14
 216          UI      13      14      14       0       0       0       0       0       0       0
 217          UI       0       0       0       0       0       0       0       0       0       0
 218          KM        Compute runoff from subbasin 150
              *

 219          KK    D150  DIVERT
 220          DT    CF50     0.0     0.0
 221          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 222          DQ     0.0    90.0   900.0  9000.0     0.0     0.0     0.0     0.0     0.0     0.0
 223          KM        Divert flows continuing west to apex of S150.
 224          KM        Continuing flows exit S150 to S130 via small natural channel.
              *

 225          KK  150130   ROUTE
 226          RS       2    FLOW      -1
 227          RC   0.045   0.035   0.045    3758  0.0300  104.00
 228          RX    0.00   10.00   60.00   66.00   86.00   92.00  142.00  152.00
 229          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
 230          KM        Route flow through S130.  Slope = (1840 - 1727) / 3758
              *

 231          KK    S130   BASIN
 232          BA   0.310
 233          LG    0.21    0.35    4.20    0.43       4
 234          UI      61     239     399     514     313     240     176     128      94      64
 235          UI      49      36      26      19      10      10      10      10       0       0
 236          UI       0       0       0       0       0       0       0       0       0       0
 237          UI       0       0       0       0       0       0       0       0       0       0
 238          UI       0       0       0       0       0       0       0       0       0       0
 239          KM        Compute runoff from subbasin 130
              *

 240          KK    C130 COMBINE
 241          HC       2    0.31
 242          KM        Combine runoff from S130 with diverted flow from S150.
 243          KM        Adjust drainage area to just that from S130 for JD.
              *

 244          KK    D130  DIVERT
 245          DT    CF30     0.0     0.0
 246          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 247          DQ     0.0    30.0   300.0  3000.0     0.0     0.0     0.0     0.0     0.0     0.0
 248          KM        Divert flow to the left into S155
              *
1                                          HEC-1 INPUT                                          PAGE  7

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

 249          KK  13035I   ROUTE
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```
250          RS       1    FLOW      -1
251          RC   0.045   0.035   0.045    1202  0.0241  103.00
252          RX    0.00   50.00  100.00  101.00  151.00  152.00  202.00  252.00
253          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
254          KM        Route continuing flow to intermediate point in S135.
255          KM        Slope = (1727-1698) / 1202
             *

256          KK   C135I COMBINE
257          HC       2   0.403
258          KM        Combine routed flow from C130 and S125
             *

259          KK  35I135   ROUTE
260          RS       8    FLOW      -1
261          RC   0.050   0.035   0.050   12580  0.0168  102.00
262          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
263          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
264          KM        Route combined flows to C135 at Wagner Wash.
265          KM        Slope = (1698-1487) / 12580
             *

266          KK    S135   BASIN
267          BA   0.879
268          LG    0.35    0.35    4.25    0.42       0
269          UI     115     362     709     992    1126     989     736     527     370     260
270          UI     194     128      89      76      28      28      29      28       0       0
271          UI       0       0       0       0       0       0       0       0       0       0
272          UI       0       0       0       0       0       0       0       0       0       0
273          UI       0       0       0       0       0       0       0       0       0       0
274          KM        Compute runoff from subbasin 135
             *

275          KK   C135L COMBINE
276          HC       2   1.282
277          KM        Combine all piedmont runoff inflow to Wagner Wash at C135
             *

278          KK    C135 COMBINE
279          HC       2  20.561
280          KM        Combine all flows in Wagner Wash at C135
             *

281          KK  135145   ROUTE
282          RS       4    FLOW      -1
283          RC   0.045   0.035   0.045    7938  0.0042  110.00
284          RX    0.00  300.00  400.00  406.00  506.00  512.00  612.00  912.00
285          RY  110.00  102.50  102.00  100.00  100.00  102.00  102.50  110.00
286          KM        Route flow in Wagner Wash to C145.  Slope = (1487-1454) / 7938
             *
1                                        HEC-1 INPUT                                          PAGE  8

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

287          KK    S140   BASIN
288          BA   1.373
289          LG    0.35    0.36    5.00    0.28       0
290          UI     260    1034    1801    2168    1890    1235     809     517     339     211
291          UI     157      56      55      57       0       0       0       0       0       0
292          UI       0       0       0       0       0       0       0       0       0       0
293          UI       0       0       0       0       0       0       0       0       0       0
294          UI       0       0       0       0       0       0       0       0       0       0
295          KM        Compute runoff from subbasin 140
             *

296          KK  140145   ROUTE
297          RS       3    FLOW      -1
298          RC   0.040   0.050   0.040    3656  0.0074  103.00
299          RX    0.00   70.00  140.00  150.00  250.00  260.00  330.00  400.00
300          RY  102.00  101.00  100.00  100.00  100.00  100.00  101.00  102.00
301          KM        Route runoff from S140 to C145 at Wagner Wash.
302          KM        Slope = (1481-1454) / 3656
             *

303          KK    CF30RETRIEVE
304          DR    CF30
305          KM        Retrieve diverted flow from C130
             *

306          KK   D1302  DIVERT
307          DT   CF302     0.0     0.0
308          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
309          DQ     0.0    10.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0
310          KM        Divert flow continuing through S155 from flow entering S145
             *

311          KK  130145   ROUTE
312          RS      15    FLOW      -1
313          RC   0.045   0.045   0.045   18285  0.0149  102.00
314          RX    0.00   50.00  100.00  103.00  113.00  116.00  166.00  216.00
315          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
316          KM        Route flow to Wagner Wash through S145 to C145.
317          KM        Slope = (1727 - 1454) / 18285
             *
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```
318          KK    S145   BASIN
319          BA   1.756
320          LG    0.35    0.35    4.15    0.44       0
321          UI     226     672    1369    1903    2167    2003    1508    1085     777     544
322          UI     399     279     198     157      80      55      56      54      55       0
323          UI       0       0       0       0       0       0       0       0       0       0
324          UI       0       0       0       0       0       0       0       0       0       0
325          UI       0       0       0       0       0       0       0       0       0       0
326          KM        Compute runoff from subbasin 145
             *
1                                          HEC-1 INPUT                                          PAGE  9

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


327          KK   C145L COMBINE
328          HC       2   2.066
329          KM        Combine runoff from S145 with routed flows C130.
330          KM        Adjust BA for JD (S130 + S145)
             *

331          KK    C145 COMBINE
332          HC       3   23.69
333          KM        Combine all flows in Wagner Wash at C145
             *

334          KK  145155   ROUTE
335          RS       1    FLOW      -1
336          RC   0.045   0.035   0.055     631  0.0032  110.00
337          RX    0.00  150.00  300.00  309.00  379.00  388.00  538.00  838.00
338          RY  110.00  106.50  103.00  100.00  100.00  103.00  106.50  110.00
339          KM        Route flows in Wagner Wash form C145 to C155. Slope = (1454-1452)/631
             *

340          KK    CF50RETRIEVE
341          DR    CF50
342          KM        Retrieve diverted flow from S150
             *

343          KK  150155   ROUTE
344          RS      12    FLOW      -1
345          RC   0.045   0.040   0.045   19261  0.0188  102.00
346          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
347          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
348          KM        Route flow from S150 to Wagner Wash .  Slope = (1814 - 1452) / 19261
             *

349          KK   CF302RETRIEVE
350          DR   CF302
351          KM        Retrieve diverted flow from C130
             *

352          KK  130155   ROUTE
353          RS      12    FLOW      -1
354          RC   0.045   0.040   0.045   14782  0.0156  102.00
355          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
356          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
357          KM        Route retrieved flow to Wagner Wash.  Slope = (1682 - 1452) / 14782
             *

358          KK    S155   BASIN
359          BA   1.832
360          LG    0.35    0.35    4.50    0.36       1
361          UI     187     361     846    1266    1637    1771    1735    1497    1161     879
362          UI     681     519     385     314     228     181     130     126      46      46
363          UI      45      46      46      45       0       0       0       0       0       0
364          UI       0       0       0       0       0       0       0       0       0       0
365          UI       0       0       0       0       0       0       0       0       0       0
366          KM        Compute runoff from subbasin 155
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


367          KK   C155L COMBINE
368          HC       3   2.606
369          KM        Combine runoff from S155 with routed flows at Wagner Wash.
370          KM        Adjust BA for JD (S150 + S155).
             *

371          KK    C155 COMBINE
372          HC       2  26.296
373          KM        Combine all flows at Wagner Wash at C155
             *

374          KK  155160   ROUTE
375          RS       5    FLOW      -1
376          RC   0.035   0.035   0.035    2291  0.0052  110.00
377          RX    0.00  200.00  400.00  406.00  506.00  512.00  712.00  912.00
378          RY  110.00  106.50  103.00  100.00  100.00  103.00  106.50  110.00
379          KM        Route flow in Wagner Wash to C160 (Sun Valley Parkway).
380          KM        Slope = (1452-1440) / 2291
             *
```

```
381          KK    S160   BASIN
382          BA   1.144
383          LG    0.35    0.35    4.00    0.47       0
384          UI     165     599    1121    1501    1557    1233     844     593     394     281
385          UI     190     122      93      40      40      40      41       0       0       0
386          UI       0       0       0       0       0       0       0       0       0       0
387          UI       0       0       0       0       0       0       0       0       0       0
388          UI       0       0       0       0       0       0       0       0       0       0
389          KM        Compute runoff from subbasin 160
             *

390          KK    C160 COMBINE
391          HC       2   27.44
392          KM        Combine flows at Sun Valley Parkway
             *

393          KK  160170   ROUTE
394          RS       3    FLOW      -1
395          RC   0.040   0.030   0.040    5248  0.0057  108.00
396          RX    0.00  200.00  400.00  406.00  606.00  612.00  812.00 1012.00
397          RY  108.00  103.00  102.00  100.00  100.00  102.00  103.00  108.00
398          KM        Route flows from Sun Valley Parkway to C170R. Slope = (1440-1410)/5248
             *

399          KK    S165   BASIN
400          BA   0.616
401          LG    0.30    0.35    4.55    0.35       3
402          UI     121     477     809    1022     617     474     347     254     185     127
403          UI      96      69      52      36      20      20      20      20       0       0
404          UI       0       0       0       0       0       0       0       0       0       0
405          UI       0       0       0       0       0       0       0       0       0       0
406          UI       0       0       0       0       0       0       0       0       0       0
407          KM        Compute runoff from subbasin 165
             *
```



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

408          KK  165170   ROUTE
409          RS       8    FLOW      -1
410          RC   0.050   0.035   0.050   13704  0.0161  104.00
411          RX    0.00   50.00  100.00  106.00  131.00  137.00  187.00  237.00
412          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
413          KM        Route runoff from S165 to Sun Valley Parkway (C170).
414          KM        Slope = (1677-1456) / 13704
             *

415          KK    S170   BASIN
416          BA   1.464
417          LG    0.35    0.35    4.40    0.38       0
418          UI     209     755    1427    1917    1973    1590    1086     762     513     360
419          UI     246     160     123      52      51      51      52       0       0       0
420          UI       0       0       0       0       0       0       0       0       0       0
421          UI       0       0       0       0       0       0       0       0       0       0
422          UI       0       0       0       0       0       0       0       0       0       0
423          KM        Compute runoff from subbasin 170
             *

424          KK    C170 COMBINE
425          HC       2
426          KM        Combine runoff from S170 with routed flow from S165
             *

427          KK    170R   ROUTE
428          RS       3    FLOW      -1
429          RC   0.045   0.045   0.045    3986  0.0115  104.00
430          RX    0.00   50.00  100.00  103.00  113.00  116.00  166.00  216.00
431          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
432          KM        Route flow from C170 to Wagner Wash.  Slope = (1456-1410) / 3986
             *

433          KK   C170R COMBINE
434          HC       2
435          KM        Combine routed flows from C170 and C160 in Wagner Wash
             *

436          KK  170180   ROUTE
437          RS       4    FLOW      -1
438          RC   0.045   0.035   0.045    6770  0.0065  110.00
439          RX    0.00  200.00  400.00  406.00  606.00  612.00  812.00 1012.00
440          RY  110.00  103.00  102.00  100.00  100.00  102.00  103.00  110.00
441          KM        Route flows in Wagner Wash to C180R.  Slope = (1410-1366) / 6770
             *

442          KK    S175   BASIN
443          BA   1.802
444          LG    0.29    0.35    4.50    0.36       1
445          UI     126     127     317     525     763     877    1013    1295    1376     895
446          UI     771     703     622     572     507     439     372     318     296     274
447          UI     227     192     163     148     138     116      96      97      73      62
448          UI      62      63      55      24      25      24      24      24      24      25
449          UI      24      24      24      25       0       0       0       0       0       0
```

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

 450          KM        Compute runoff from subbasin 175
              *

 451          KK    175R   ROUTE
 452          RS       2    FLOW      -1
 453          RC   0.045   0.045   0.045    3217  0.0134  103.00
 454          RX    0.00   50.00  100.00  103.00  153.00  156.00  216.00  266.00
 455          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
 456          KM        Route runoff from S175 to intermediate point in S190 (C180RI).
 457          KM        Slope = (1456 - 1413) / 3217
              *

 458          KK    S180   BASIN
 459          BA   1.443
 460          LG    0.25    0.35    4.25    0.42       2
 461          UI     107     108     311     490     677     785     927    1258     896     684
 462          UI     622     547     497     440     379     315     275     250     228     185
 463          UI     154     138     120     115      82      83      73      52      53      52
 464          UI      50      21      20      21      20      21      21      20      21      21
 465          UI      20       0       0       0       0       0       0       0       0       0
 466          KM        Compute runoff from subbasin 180
              *

 467          KK    180R   ROUTE
 468          RS       2    FLOW      -1
 469          RC   0.045   0.045   0.045    2965  0.0128  103.00
 470          RX    0.00   50.00  100.00  103.00  128.00  131.00  181.00  231.00
 471          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
 472          KM        Route runoff from S180 to intermediate point in S190 (C180RI).
 473          KM        Slope = (1451 - 1413) / 2965
              *

 474          KK  C180RI COMBINE
 475          HC       2
 476          KM        Combine routed flows from S175 and S180
              *

 477          KK  RI180R   ROUTE
 478          RS       3    FLOW      -1
 479          RC   0.045   0.040   0.045    3866  0.0122  104.00
 480          RX    0.00   50.00  100.00  106.00  156.00  166.00  216.00  266.00
 481          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
 482          KM        Route combined flows to Wagner Wash.  Slope = (1413 - 1366) / 3866
              *

 483          KK   C180R COMBINE
 484          HC       2
 485          KM        Combine flows in Wagner Wash
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 486          KK  180185   ROUTE
 487          RS       3    FLOW      -1
 488          RC   0.045   0.035   0.045    3450  0.0075  106.00
 489          RX    0.00  100.00  200.00  206.00  406.00  412.00  512.00  612.00
 490          RY  106.00  104.00  102.00  100.00  100.00  102.00  104.00  106.00
 491          KM        Route flows in Wagner Wash from C180R to C185R.
 492          KM        Slope = (1366 - 1340) / 3450
              *

 493          KK    S185   BASIN
 494          BA   2.421
 495          LG    0.16    0.35    4.35    0.40       1
 496          UI     165     166     391     668     960    1130    1281    1613    1908    1239
 497          UI    1060     936     847     785     677     614     534     438     399     375
 498          UI     338     271     230     210     183     183     133     126     127      85
 499          UI      80      82      81      67      32      31      32      32      31      32
 500          UI      32      31      32      32      32       0       0       0       0       0
 501          KM        Compute runoff from subbasin 185
              *

 502          KK    185R   ROUTE
 503          RS       5    FLOW      -1
 504          RC   0.045   0.035   0.045    8534  0.0120  104.00
 505          RX    0.00   30.00  100.00  106.00  156.00  162.00  232.00  262.00
 506          RY  104.00  102.00  102.00  100.00  100.00  102.00  102.00  104.00
 507          KM        Route runoff from S185 to Wagner Wash.  Slope = (1442-1340) / 8534
              *

 508          KK   C185R COMBINE
 509          HC       2
 510          KM        Combine flows in Wagner Wash
              *

 511          KK  185190   ROUTE
 512          RS       2    FLOW      -1
 513          RC   0.045   0.040   0.045    2700  0.0119  106.00
 514          RX    0.00   80.00  160.00  166.00  416.00  422.00  502.00  582.00
 515          RY  106.00  103.00  102.00  100.00  100.00  102.00  103.00  106.00
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516          KM        Route flow in Wagner Wash to C190.  Slope = (1340-1308) / 2700
             *

517          KK    S190   BASIN
518          BA   4.054
519          LG    0.35    0.35    3.81    0.44       0
520          UI     274     278     647    1125    1573    1918    2319    2540    2637    2574
521          UI    2467    2112    1787    1506    1256    1044     891     745     605     522
522          UI     432     370     293     266     188     191     188      78      68      66
523          UI      67      67      67      67      67      67       0       0       0       0
524          UI       0       0       0       0       0       0       0       0       0       0
525          KM        Compute runoff from subbasin 190
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

526          KK    C190 COMBINE
527          HC       2   39.24
528          KM        Combine all flow in Wagner Wash at C190
             *

529          KK  190195   ROUTE
530          RS       2    FLOW      -1
531          RC   0.045   0.035   0.045    4941  0.0107  110.00
532          RX    0.00   50.00  200.00  206.00  356.00  366.00  516.00  566.00
533          RY  110.00  103.00  102.00  100.00  100.00  102.00  103.00  110.00
534          KM        Route flow from C190 to the Hassayampa River. Slope = (1308-1255)/4941
             *

535          KK    S195   BASIN
536          BA   1.808
537          LG    0.33    0.35    4.25    0.42       0
538          UI     107     108     188     366     523     660     786     925     975    1026
539          UI    1044     975     915     778     674     571     496     419     359     313
540          UI     260     223     202     165     146     115     114      76      74      74
541          UI      67      27      26      26      26      26      26      27      26      26
542          UI      27       0       0       0       0       0       0       0       0       0
543          KM        Compute runoff from subbasin 195
             *

544          KK    C195 COMBINE
545          HC       2   41.05
546          KM        Combine all flows in Wagner Wash at the Hassayampa River
             *

547          KK    S400   BASIN
548          BA   1.544
549          LG    0.25    0.35    4.20    0.43       3
550          UI     106     106     252     429     616     729     819    1050    1206     793
551          UI     665     601     543     493     440     385     339     276     254     239
552          UI     212     174     144     133     116     116      82      81      81      52
553          UI      51      53      51      39      21      20      20      21      20      20
554          UI      20      21      20      20      20       0       0       0       0       0
555          KM        Compute runoff from subbasin 400
             *

556          KK    D400  DIVERT
557          DT    CF00     0.0     0.0
558          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
559          DQ     0.0    50.0   500.0  5000.0     0.0     0.0     0.0     0.0     0.0     0.0
560          KM        Divert flow to the right into S430
             *

561          KK    S410   BASIN
562          BA   0.639
563          LG    0.15    0.35    3.85    0.43       3
564          UI      53      70     177     290     367     429     593     473     342     300
565          UI     268     232     202     173     136     126     115      89      72      65
566          UI      58      47      41      38      26      26      26      19      11      10
567          UI      10      10      11      10      10      10      11       0       0       0
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

568          UI       0       0       0       0       0       0       0       0       0       0
569          KM        Compute runoff from subbasin 410
             *

570          KK    C410 COMBINE
571          HC       2
572          KM        Combine runoff from S400 and S410
             *

573          KK    D410  DIVERT
574          DT    CF10     0.0     0.0
575          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
576          DQ     0.0    10.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0
577          KM        Divert additional flow to the right into S430
             *

578          KK  410415   ROUTE
579          RS       4    FLOW      -1
580          RC   0.045   0.035   0.045    6871  0.0143  103.00
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581          RX    0.00   30.00  200.00  203.00  253.00  256.00  426.00  456.00
582          RY  103.00  101.00  101.00  100.00  100.00  101.00  101.00  103.00
583          KM        Route combined flows to Sun Valley Parkway. Slope = (1528-1430)/6871
             *

584          KK    S415   BASIN
585          BA   0.451
586          LG    0.35    0.35    3.64    0.49       0
587          UI      92     356     623     728     617     389     253     161     101      65
588          UI      44      18      19      19       0       0       0       0       0       0
589          UI       0       0       0       0       0       0       0       0       0       0
590          UI       0       0       0       0       0       0       0       0       0       0
591          UI       0       0       0       0       0       0       0       0       0       0
592          KM        Compute runoff from subbasin 415
             *

593          KK    C415 COMBINE
594          HC       2
595          KM        Combine runoff at Sun Valley Parkway
             *

596          KK  415420   ROUTE
597          RS      10    FLOW      -1
598          RC   0.045   0.035   0.045   18114  0.0130  104.00
599          RX    0.00   30.00   60.00   66.00   96.00  102.00  132.00  162.00
600          RY  104.00  102.00  102.00  100.00  100.00  102.00  102.00  104.00
601          KM        Route flow from Sun Valley Parkway to Hassayampa River.
602          KM        Slope = (1430-1195) / 18114
             *

603          KK    S420   BASIN
604          BA   1.767
605          LG    0.35    0.35    4.30    0.41       0
606          UI     193     427     964    1407    1752    1846    1712    1346    1015     760
607          UI     582     417     328     242     183     132     115      47      47      48
608          UI      47      47       0       0       0       0       0       0       0       0
```

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

609          UI       0       0       0       0       0       0       0       0       0       0
610          UI       0       0       0       0       0       0       0       0       0       0
611          KM        Compute runoff from subbasin 420
             *

612          KK    C420 COMBINE
613          HC       2
614          KM        Combine flows from S400, S410, S415, and S420 at Hassayampa River
             *

615          KK    CF00RETRIEVE
616          DR    CF00
617          KM        Retrieve diverted flows from S400
             *

618          KK    CF10RETRIEVE
619          DR    CF10
620          KM        Retrieve diverted flows from S410
             *

621          KK  C40010 COMBINE
622          HC       2   1.544
623          KM        Combine retrieved diverted flows
             *

624          KK  400430   ROUTE
625          RS       5    FLOW      -1
626          RC   0.045   0.040   0.045    8383  0.0130  105.00
627          RX    0.00   12.00   25.00   31.00   61.00   67.00   80.00   92.00
628          RY  105.00  104.00  103.00  100.00  100.00  103.00  104.00  105.00
629          KM        Route combined flows to Sun Valley Parkway. Slope = (1539-1430)/8383
             *

630          KK    S430   BASIN
631          BA   0.795
632          LG    0.35    0.35    4.55    0.35       0
633          UI     127     515     918    1163    1116     779     521     349     228     153
634          UI     100      72      30      30      30       0       0       0       0       0
635          UI       0       0       0       0       0       0       0       0       0       0
636          UI       0       0       0       0       0       0       0       0       0       0
637          UI       0       0       0       0       0       0       0       0       0       0
638          KM        Compute runoff from subbasin 430
             *

639          KK    C430 COMBINE
640          HC       2
641          KM        Combine runoff from S430 with routed flows at Sun Valley Parkway
             *

642          KK  430440   ROUTE
643          RS       7    FLOW      -1
644          RC   0.035   0.035   0.035   13256  0.0128  106.00
645          RX    0.00   16.00   32.00   38.00   68.00   74.00   90.00  106.00
646          RY  106.00  104.50  103.00  100.00  100.00  103.00  104.50  106.00
647          KM        Route flows from Sun Valley Parkway through S440.
```

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

 648          KM        Slope = (1430-1260) / 13256
              *

 649          KK    S440   BASIN
 650          BA   1.068
 651          LG    0.35    0.35    4.20    0.43       0
 652          UI     137     414     838    1167    1323    1221     910     657     468     330
 653          UI     240     168     118      95      46      33      35      33      34       0
 654          UI       0       0       0       0       0       0       0       0       0       0
 655          UI       0       0       0       0       0       0       0       0       0       0
 656          UI       0       0       0       0       0       0       0       0       0       0
 657          KM        Compute runoff from subbasin 440
              *

 658          KK    C440 COMBINE
 659          HC       2
 660          KM        Combine runoff from S440 with routed flows from Sun Valley Parkway.
              *

 661          KK  440450   ROUTE
 662          RS       3    FLOW      -1
 663          RC   0.035   0.040   0.035    4154  0.0104  103.00
 664          RX    0.00  150.00  300.00  303.00  333.00  336.00  486.00  636.00
 665          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 666          KM        Route combined flows to the Hassayampa River.
 667          KM        Slope = (1260-1217) / 4154
              *

 668          KK    S450   BASIN
 669          BA   2.521
 670          LG    0.23    0.35    4.25    0.42       0
 671          UI     167     169     381     664     938    1152    1392    1514    1599    1599
 672          UI    1528    1333    1142     951     803     683     567     481     395     336
 673          UI     287     255     184     177     130     116     115      88      41      41
 674          UI      41      41      41      41      41      40      41       0       0       0
 675          UI       0       0       0       0       0       0       0       0       0       0
 676          KM        Compute runoff from subbasin 450
              *

 677          KK    S435   BASIN
 678          BA   0.393
 679          LG    0.35    0.35    4.45    0.37       0
 680          UI     130     505     775     686     414     231     134      75      42      20
 681          UI      20       0       0       0       0       0       0       0       0       0
 682          UI       0       0       0       0       0       0       0       0       0       0
 683          UI       0       0       0       0       0       0       0       0       0       0
 684          UI       0       0       0       0       0       0       0       0       0       0
 685          KM        Compute runoff from subbasin 435
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 686          KK  435450   ROUTE
 687          RS      10    FLOW      -1
 688          RC   0.045   0.035   0.045   18781  0.0119  105.00
 689          RX    0.00   40.00  120.00  126.00  146.00  152.00  232.00  272.00
 690          RY  105.00  103.00  102.00  100.00  100.00  102.00  103.00  105.00
 691          KM        Route runoff from S435 at Sun Valley Parkway to Hassayampa River.
 692          KM        Slope = (1440 - 1217) / 18781
              *

 693          KK    C450 COMBINE
 694          HC       3
 695          KM        Combine flows from S430, S435, S440, and S450 at Hassayampa River
              *

 696          KK  ALL400 COMBINE
 697          HC      29.178000
 698          KM        Dummy combine of all 400 series hydrographs at the Hassayampa
              *

 699          KK    S500   BASIN
 700          BA   3.638
 701          LG    0.25    0.35    3.92    0.41       9
 702          UI     184     186     184     515     713     935    1143    1294    1413    1581
 703          UI    1968    2186    1462    1252    1119    1051     979     907     837     769
 704          UI     716     629     568     487     456     435     408     387     311     297
 705          UI     237     239     212     201     204     146     142     143     141      94
 706          UI      91      90      90      92      90      51      35      36      35      36
 707          KM        Compute runoff from subbasin 500
              *

 708          KK  500510   ROUTE
 709          RS       7    FLOW      -1
 710          RC   0.045   0.035   0.045   14544  0.0186  104.00
 711          RX    0.00   20.00  100.00  106.00  206.00  212.00  292.00  312.00
 712          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
 713          KM        Route runoff from S500 to Sun Valley Parkway.
 714          KM        Slope = (1690-1420) / 14544
```

```
                *
 715            KK    S510   BASIN
 716            BA   1.840
 717            LG    0.35    0.35    3.95    0.40       0
 718            UI     232     677    1390    1950    2228    2094    1604    1165     828     599
 719            UI     433     307     220     160     106      57      58      56      57       0
 720            UI       0       0       0       0       0       0       0       0       0       0
 721            UI       0       0       0       0       0       0       0       0       0       0
 722            UI       0       0       0       0       0       0       0       0       0       0
 723            KM        Compute runoff from subbasin 510
                *
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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 724            KK    C510 COMBINE
 725            HC       2
 726            KM        Combine flows at Sun Valley Parkway
                *

 727            KK    D510  DIVERT
 728            DT    CF10     0.0     0.0
 729            DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 730            DQ     0.0    65.0   650.0  6500.0     0.0     0.0     0.0     0.0     0.0     0.0
 731            KM        Divert flow to the right into S530
                *


 732            KK  510520   ROUTE
 733            RS      10    FLOW      -1
 734            RC   0.045   0.035   0.045   20653  0.0117  105.00
 735            RX    0.00   20.00  120.00  126.00  156.00  166.00  266.00  286.00
 736            RY  105.00  103.00  102.00  100.00  100.00  102.00  103.00  105.00
 737            KM        Route continuing flows from Sun Valley Parkway to Hassayampa River.
 738            KM        Slope = (1420-1178) / 20653
                *

 739            KK    S520   BASIN
 740            BA   1.481
 741            LG    0.35    0.35    4.50    0.36       0
 742            UI     133     206     510     780    1043    1196    1285    1241    1061     847
 743            UI     672     531     420     330     262     210     159     135      91      93
 744            UI      54      33      33      32      33      32      33       0       0       0
 745            UI       0       0       0       0       0       0       0       0       0       0
 746            UI       0       0       0       0       0       0       0       0       0       0
 747            KM        Compute runoff from subbasin 520
                *

 748            KK    C520 COMBINE
 749            HC       2   6.956
 750            KM        Combine runoff from S520 with routed flows from Sun Valley Parkway
 751            KM        at Hassayampa River
                *

 752            KK    S530   BASIN
 753            BA   2.226
 754            LG    0.20    0.35    4.30    0.41       0
 755            UI     176     194     574     895    1189    1473    1624    1704    1622    1456
 756            UI    1198     964     787     657     513     417     348     283     227     189
 757            UI     141     120     122      56      43      43      43      43      43      43
 758            UI      43       0       0       0       0       0       0       0       0       0
 759            UI       0       0       0       0       0       0       0       0       0       0
 760            KM        Compute runoff from subbasin 530
                *
1                                          HEC-1 INPUT                                          PAGE 20

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

 761            KK    CF10RETRIEVE
 762            DR    CF10
 763            KM        Retrieve diverted flows from C510
                *

 764            KK  510530   ROUTE
 765            RS       9    FLOW      -1
 766            RC   0.045   0.040   0.045   18095  0.0126  106.00
 767            RX    0.00   20.00   80.00   86.00  121.00  127.00  187.00  207.00
 768            RY  106.00  102.00  102.00  100.00  100.00  102.00  102.00  106.00
 769            KM        Route diverted flows through S530 to Hassayampa River.
 770            KM        Slope = (1420-1192) / 18095
                *

 771            KK    C530 COMBINE
 772            HC       2   7.704
 773            KM        Combine runoff from S530 with routed flows at the Hassayampa River
                *


 774            KK  ALL500 COMBINE
 775            HC       2   9.185
 776            KM        Dummy combine of all 500 series hydrographs at Hassayampa
                *
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 777          KK    S700   BASIN
 778          BA   5.240
 779          LG    0.34    0.36    5.00    0.28       0
 780          UI     302     306     485     986    1424    1796    2125    2542    2707    2882
 781          UI    2934    2807    2645    2359    2015    1713    1505    1280    1105     968
 782          UI     823     674     598     529     462     377     320     308     210     206
 783          UI     207     182      73      74      74      74      73      74      74      73
 784          UI      74      74       0       0       0       0       0       0       0       0
 785          KM        Compute runoff from subbasin 700
              *

 786          KK    S720   BASIN
 787          BA   4.626
 788          LG    0.33    0.36    5.00    0.28       0
 789          UI     260     262     382     820    1159    1518    1787    2118    2322    2417
 790          UI    2508    2445    2355    2135    1829    1563    1390    1173    1020     890
 791          UI     762     653     568     492     421     401     283     275     245     177
 792          UI     178     179     141      63      64      63      63      64      63      63
 793          UI      64      63      64       0       0       0       0       0       0       0
 794          KM        Compute runoff from subbasin 720
              *

 795          KK    S740   BASIN
 796          BA   1.132
 797          LG    0.15    0.37    5.30    0.24       0
 798          UI     150     472     931    1305    1445    1280     941     670     467     327
 799          UI     246     163     109      92      36      37      37      36       0       0
 800          UI       0       0       0       0       0       0       0       0       0       0
 801          UI       0       0       0       0       0       0       0       0       0       0
 802          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 21

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

 803          KM        Compute runoff from subbasin 740
              *

 804          KK  ALL700 COMBINE
 805          HC       3
 806          KM        Dummy combination of all 700 series subbasins.
              *

 807          KK    S900   BASIN
 808          BA   1.035
 809          LG    0.25    0.37    5.30    0.24       6
 810          UI      75      77     215     338     472     551     650     871     671     496
 811          UI     448     394     356     320     277     233     197     180     165     140
 812          UI     116      97      89      83      65      59      58      37      38      37
 813          UI      37      23      14      15      14      15      14      15      15      14
 814          UI      15      14       0       0       0       0       0       0       0       0
 815          KM        Compute runoff from subbasin 900
              *

 816          KK  900910   ROUTE
 817          RS       7    FLOW      -1
 818          RC   0.045   0.035   0.045   10207  0.0192  103.00
 819          RX    0.00   80.00  160.00  163.00  178.00  181.00  261.00  341.00
 820          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
 821          KM        Route runoff from subbasin 900 through subbasin 910.
 822          KM        Slope = (1856-1660) / 10207
              *

 823          KK    S910   BASIN
 824          BA   0.983
 825          LG    0.35    0.35    4.70    0.31       0
 826          UI     234     923    1540    1684    1252     768     471     298     172     120
 827          UI      45      44      44       0       0       0       0       0       0       0
 828          UI       0       0       0       0       0       0       0       0       0       0
 829          UI       0       0       0       0       0       0       0       0       0       0
 830          UI       0       0       0       0       0       0       0       0       0       0
 831          KM        Compute runoff from subbasin 910
              *

 832          KK    C910 COMBINE
 833          HC       2
 834          KM        Combine runoff from S910 with routed flow at Sun Valley Parkway
              *

 835          KK  910915   ROUTE
 836          RS       2    FLOW      -1
 837          RC   0.045   0.035   0.045    2998  0.0110  103.00
 838          RX    0.00  100.00  200.00  203.00  223.00  226.00  326.00  426.00
 839          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
 840          KM        Route combined flow to C915.
 841          KM        Slope = (1660-1627) / 2998
              *
1                                          HEC-1 INPUT                                          PAGE 22

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

 842          KK    S915   BASIN
 843          BA   1.126
 844          LG    0.25    0.37    6.60    0.14       1
```

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845          UI     102     163     397     611     809     929     977     949     801     634
846          UI     506     395     311     248     194     158     113      96      70      71
847          UI      32      25      25      25      25      26      25       0       0       0
848          UI       0       0       0       0       0       0       0       0       0       0
849          UI       0       0       0       0       0       0       0       0       0       0
850          KM        Compute runoff from subbasin 915
             *

851          KK    C915 COMBINE
852          HC       2
853          KM        Combine flows at C915
             *

854          KK  915920   ROUTE
855          RS       5    FLOW      -1
856          RC   0.045   0.035   0.045    9456  0.0103  104.00
857          RX    0.00  100.00  200.00  203.00  223.00  226.00  326.00  426.00
858          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
859          KM        Route combined flow to C920, at tributary to Trilby Wash parallel to CAP
860          KM        Slope = (1627-1530) / 9456
             *

861          KK    S920   BASIN
862          BA   3.291
863          LG    0.35    0.38    5.60    0.22       0
864          UI     261     294     853    1330    1783    2190    2432    2520    2411    2144
865          UI    1767    1414    1151     954     759     617     508     410     326     282
866          UI     200     178     181      71      63      65      63      64      64      64
867          UI      64       0       0       0       0       0       0       0       0       0
868          UI       0       0       0       0       0       0       0       0       0       0
869          KM        Compute runoff from subbasin 920
             *

870          KK    C920 COMBINE
871          HC       2
872          KM        Combine flows in Trilby Wash tributary
873          ZZ
```

1

```
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    45        S100
                 .
                 .
    54           .        S102
                 .           .
                 .           .
    63        C102............
                 V
                 V
    66       RR102
                 .
                 .
    76           .------->    CF02
    75        D102
                 V
                 V
    81      100105
                 .
                 .
    88           .        S105
                 .           .
                 .           .
    98           .           .           .<-------    CF02
    97           .           .        CF02
                 .           .           V
                 .           .           V
   100           .           .      102105
                 .           .           .
                 .           .           .
   107       C105U........................
                 .
                 .
   112           .        S110
                 .           V
                 .           V
   121           .      11015I
                 .           .
                 .           .
   129           .           .------->    CF5I
   128           .        D15I
                 .           V
                 .           V
   133           .      15I15R
                 .           .
                 .           .
   140           .           .        S115
                 .           .           .
                 .           .           .
   149           .       C115U............
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153          .           .           .<-------    CF5I
152          .           .       CF5I
             .           .          V
             .           .          V
155          .           .     15I15L
             .           .          .
             .           .          .
162          .      C115D............
             .           V
             .           V
166          .     115120
             .           .
             .           .
172          .           .       S120
             .           .          .
             .           .          .
181          .       C120............
             .           .
             .           .
184      C105D............
             V
             V
187     120135
             .
             .
194          .       S125
             .           V
             .           V
203          .     12535I
             .           .
             .           .
210          .           .       S150
             .           .          .
             .           .          .
220          .           .          .------->    CF50
219          .           .       D150
             .           .          V
             .           .          V
225          .           .     150130
             .           .          .
             .           .          .
231          .           .          .        S130
             .           .          .           .
             .           .          .           .
240          .           .       C130............
             .           .          .
             .           .          .
245          .           .          .------->    CF30
244          .           .       D130
             .           .          V
             .           .          V
249          .           .     13035I
             .           .          .
             .           .          .
256          .      C135I............
             .           V
             .           V
259          .     35I135
             .           .
             .           .
266          .           .       S135
             .           .          .
             .           .          .
275          .      C135L............
             .           .
             .           .
278      C135............
             V
             V
281     135145
             .
             .
287          .       S140
             .           V
             .           V
296          .     140145
             .           .
             .           .
304          .           .          .<-------    CF30
303          .           .       CF30
             .           .          .
             .           .          .
307          .           .          .------->   CF302
306          .           .      D1302
             .           .          V
             .           .          V
311          .           .     130145
             .           .          .
             .           .          .
318          .           .          .        S145
             .           .          .           .
             .           .          .           .
327          .           .      C145L............
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             .           .          .
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331        C145.......................
               V
               V
334      145155
               .
               .
341            .           .<-------    CF50
340            .        CF50
               .           V
               .           V
343            .      150155
               .           .
               .           .
350            .           .           .<-------   CF302
349            .           .       CF302
               .           .           V
               .           .           V
352            .           .      130155
               .           .           .
               .           .           .
358            .           .           .        S155
               .           .           .           .
               .           .           .           .
367            .       C155L........................
               .           .
               .           .
371        C155............
               V
               V
374      155160
               .
               .
381            .        S160
               .           .
               .           .
390        C160............
               V
               V
393      160170
               .
               .
399            .        S165
               .           V
               .           V
408            .      165170
               .           .
               .           .
415            .           .        S170
               .           .           .
               .           .           .
424            .        C170............
               .           V
               .           V
427            .        170R
               .           .
               .           .
433       C170R............
               V
               V
436      170180
               .
               .
442            .        S175
               .           V
               .           V
451            .        175R
               .           .
               .           .
458            .           .        S180
               .           .           V
               .           .           V
467            .           .        180R
               .           .           .
               .           .           .
474            .      C180RI............
               .           V
               .           V
477            .      RI180R
               .           .
               .           .
483       C180R............
               V
               V
486      180185
               .
               .
493            .        S185
               .           V
               .           V
502            .        185R
               .           .
               .           .
508       C185R............
               V
               V
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511     185190
            .
            .
517         .        S190
            .           .
            .           .
526       C190...........
            V
            V
529     190195
            .
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535         .        S195
            .           .
            .           .
544       C195...........
            .
            .
547         .        S400
            .           .
            .           .
557         .           .-------->    CF00
556         .        D400
            .           .
            .           .
561         .           .        S410
            .           .           .
            .           .           .
570         .        C410...........
            .           .
            .           .
574         .           .-------->    CF10
573         .        D410
            .           V
            .           V
578         .      410415
            .           .
            .           .
584         .           .        S415
            .           .           .
            .           .           .
593         .        C415...........
            .           V
            .           V
596         .      415420
            .           .
            .           .
603         .           .        S420
            .           .           .
            .           .           .
612         .        C420...........
            .           .
            .           .
616         .           .           .<--------    CF00
615         .           .        CF00
            .           .           .
            .           .           .
619         .           .           .           .<--------    CF10
618         .           .           .        CF10
            .           .           .           .
            .           .           .           .
621         .           .      C40010...........
            .           .           V
            .           .           V
624         .           .      400430
            .           .           .
            .           .           .
630         .           .           .        S430
            .           .           .           .
            .           .           .           .
639         .           .        C430...........
            .           .           V
            .           .           V
642         .           .      430440
            .           .           .
            .           .           .
649         .           .           .        S440
            .           .           .           .
            .           .           .           .
658         .           .        C440...........
            .           .           V
            .           .           V
661         .           .      440450
            .           .           .
            .           .           .
668         .           .           .        S450
            .           .           .           .
            .           .           .           .
677         .           .           .           .        S435
            .           .           .           .           V
            .           .           .           .           V
686         .           .           .           .      435450
            .           .           .           .           .
            .           .           .           .           .
693         .           .        C450........................
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                 .          .          .
                 .          .          .
696              .      ALL400.........
                 .          .
                 .          .
699              .          .       S500
                 .          .          V
                 .          .          V
708              .          .     500510
                 .          .          .
                 .          .          .
715              .          .          .       S510
                 .          .          .          .
                 .          .          .          .
724              .          .       C510...........
                 .          .          .
                 .          .          .
728              .          .          .-------->    CF10
727              .          .       D510
                 .          .          V
                 .          .          V
732              .          .     510520
                 .          .          .
                 .          .          .
739              .          .          .       S520
                 .          .          .          .
                 .          .          .          .
748              .          .       C520...........
                 .          .          .
                 .          .          .
752              .          .          .       S530
                 .          .          .          .
                 .          .          .          .
762              .          .          .          .          .<-------    CF10
761              .          .          .          .       CF10
                 .          .          .          .          V
                 .          .          .          .          V
764              .          .          .          .     510530
                 .          .          .          .          .
                 .          .          .          .          .
771              .          .          .       C530...........
                 .          .          .          .
                 .          .          .          .
774              .          .     ALL500...........
                 .          .          .
                 .          .          .
777              .          .          .       S700
                 .          .          .          .
                 .          .          .          .
786              .          .          .          .       S720
                 .          .          .          .          .
                 .          .          .          .          .
795              .          .          .          .          .       S740
                 .          .          .          .          .          .
                 .          .          .          .          .          .
804              .          .          .     ALL700........................
                 .          .          .          .
                 .          .          .          .
807              .          .          .          .       S900
                 .          .          .          .          V
                 .          .          .          .          V
816              .          .          .          .     900910
                 .          .          .          .          .
                 .          .          .          .          .
823              .          .          .          .          .       S910
                 .          .          .          .          .          .
                 .          .          .          .          .          .
832              .          .          .          .       C910...........
                 .          .          .          .          V
                 .          .          .          .          V
835              .          .          .          .     910915
                 .          .          .          .          .
                 .          .          .          .          .
842              .          .          .          .          .       S915
                 .          .          .          .          .          .
                 .          .          .          .          .          .
851              .          .          .          .       C915...........
                 .          .          .          .          V
                 .          .          .          .          V
854              .          .          .          .     915920
                 .          .          .          .          .
                 .          .          .          .          .
861              .          .          .          .          .       S920
                 .          .          .          .          .          .
                 .          .          .          .          .          .
870              .          .          .          .       C920...........
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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1*************************************                    *************************************
 *                                   *                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                    *    U.S. ARMY CORPS OF ENGINEERS     *
 *              JUN   1998           *                    *    HYDROLOGIC ENGINEERING CENTER    *
 *           VERSION 4.1             *                    *          609 SECOND STREET          *
 *                                   *                    *       DAVIS, CALIFORNIA 95616       *
 *  RUN DATE   16JUN06  TIME  08:46:55   *                    *          (916) 756-1104           *
```

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

                    SUN VALLEY AREA DRAINAGE MASTER PLAN (SVADMP) - FCD 2004C049
                    JE FULLER / HYDROLOGY & GEOMORPHOLOGY, INC.
                    FILENAME: A4_EX6.DAT
                    DATE:  JUNE 16, 2006

                    100-YEAR 6-HOUR MODEL
                    EXISTING CONDITIONS
                    AREA 4 WATERSHED AREA = 90.5 SQ. MILES
                             MODELED AREA = 76.8 SQ. MILES

                    GREEN-AMPT LOSS METHOD
                    S-GRAPH UNIT HYDROGRAPHS
                      - MOUNTAIN
                      - DESERT/RANGELAND
                    NORMAL-DEPTH CHANNEL ROUTING
                    LAND USE DATA FROM EXAMINATION OF SLOPE FROM 10-FT DTM TO DISTINGUISH
                      - UNDEVELOPED DESERT RANGELAND (NDR) - SLOPES < 5 %
                      - HILLSLOPES, SONORAN DESERT (NHS) - SLOPES 5 - 10 %
                      - MOUNTAIN TERRAIN (NMT) - SLOPES > 10 %
                    SOILS DATA FROM FCDMC GIS DATABASE (RECEIVED FROM FCDMC JULY 2005)

 24 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN           5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1JAN99  STARTING DATE
                      ITIME        1200  STARTING TIME
                         NQ        2000  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      8JAN99  ENDING DATE
                     NDTIME        1035  ENDING TIME
                      ICENT          19  CENTURY MARK

                 COMPUTATION INTERVAL     .08 HOURS
                      TOTAL TIME BASE  166.58 HOURS

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

 25 JD          INDEX STORM NO. 1
                       STRM        3.20  PRECIPITATION DEPTH
                       TRDA         .10  TRANSPOSITION DRAINAGE AREA

 26 PI            PRECIPITATION PATTERN
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .01       .01       .01       .01       .01       .01       .03

                     .03       .03       .05       .05       .05       .15       .15       .15       .03       .03
                     .03       .01       .01       .01       .01       .01       .01       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00

 29 JD          INDEX STORM NO. 2
                       STRM        3.18  PRECIPITATION DEPTH
                       TRDA         .50  TRANSPOSITION DRAINAGE AREA

 30 PI            PRECIPITATION PATTERN
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .01       .01       .01       .01       .01       .01       .03
                     .03       .03       .05       .05       .05       .15       .15       .15       .03       .03
                     .03       .01       .01       .01       .01       .01       .01       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00

 33 JD          INDEX STORM NO. 3
                       STRM        3.12  PRECIPITATION DEPTH
                       TRDA        2.80  TRANSPOSITION DRAINAGE AREA

 34 PI            PRECIPITATION PATTERN
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .01       .01       .01       .01       .01       .01       .03
                     .03       .03       .07       .07       .07       .08       .08       .08       .05       .05
                     .05       .02       .02       .02       .01       .01       .01       .00       .00       .00
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                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00

 37 JD          INDEX STORM NO. 4
                     STRM        2.95  PRECIPITATION DEPTH
                     TRDA       16.00  TRANSPOSITION DRAINAGE AREA

 38 PI            PRECIPITATION PATTERN
                    .01       .01       .00       .00       .00       .00       .00       .00       .00       .01
                    .01       .01       .00       .01       .00       .00       .00       .00       .00       .00
                    .00       .00       .01       .00       .00       .00       .00       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .02       .02       .02       .03
                    .03       .03       .06       .06       .06       .07       .07       .07       .04       .04
                    .04       .02       .02       .02       .01       .01       .01       .01       .01       .01
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00

 41 JD          INDEX STORM NO. 5
                     STRM        2.59  PRECIPITATION DEPTH
                     TRDA       90.00  TRANSPOSITION DRAINAGE AREA

 42 PI            PRECIPITATION PATTERN
                    .01       .01       .01       .00       .00       .00       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .02       .02       .02       .03
                    .03       .03       .05       .05       .05       .05       .05       .05       .04       .04
                    .04       .02       .02       .02       .02       .02       .02       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                    .01       .01

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

            **************
            *            *
 66 KK      *     RR102  *      STORAGE
            *            *
            **************

 67 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
1
                                                RUNOFF SUMMARY
                                          FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES

                                  PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
        OPERATION       STATION   FLOW    PEAK                                            AREA      STAGE     MAX STAGE
+                                                     6-HOUR     24-HOUR     72-HOUR

        HYDROGRAPH AT
+                          S100   4347.   4.67         899.        225.         75.      6.99

        HYDROGRAPH AT
+                          S102   2790.   4.33         417.        104.         35.      3.23

        2 COMBINED AT
+                          C102   5993.   4.50        1198.        300.        100.     10.23

        ROUTED TO
+                         RR102    127.   6.75         122.        104.         72.     10.23

        DIVERSION TO
+                          CF02     63.   6.75          61.         52.         36.     10.23

        HYDROGRAPH AT
+                          D102     63.   6.75          61.         52.         36.     10.23

        ROUTED TO
+                        100105     59.  12.58          58.         51.         36.     10.23

        HYDROGRAPH AT
+                          S105   2863.   4.50         495.        124.         41.      4.37

        HYDROGRAPH AT
+                          CF02     63.   6.75          61.         52.         36.     10.23

        ROUTED TO
+                        102105     63.   8.00          60.         51.         36.     10.23

        3 COMBINED AT
+                         C105U   2863.   4.50         549.        226.        120.     14.60

        HYDROGRAPH AT
+                          S110    662.   4.25          76.         19.          6.       .43

        ROUTED TO
+                        11015I    570.   4.42          76.         19.          6.       .43

        DIVERSION TO
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+		CF5I	114.	4.42	15.	4.	1.	.43
+	HYDROGRAPH AT	D15I	456.	4.42	61.	15.	5.	.43
+	ROUTED TO	15I15R	408.	4.75	61.	15.	5.	.43
+	HYDROGRAPH AT	S115	1605.	4.58	296.	74.	25.	2.25
+	2 COMBINED AT	C115U	1730.	4.67	337.	85.	28.	2.68
+	HYDROGRAPH AT	CF5I	114.	4.42	15.	4.	1.	.43
+	ROUTED TO	15I15L	61.	5.50	15.	4.	1.	.43
+	2 COMBINED AT	C115D	1731.	4.67	349.	88.	29.	2.68
+	ROUTED TO	115120	1699.	4.75	349.	88.	29.	2.68
+	HYDROGRAPH AT	S120	1838.	4.33	256.	64.	21.	2.00
+	2 COMBINED AT	C120	2645.	4.50	544.	137.	46.	4.68
+	2 COMBINED AT	C105D	4019.	4.50	821.	275.	127.	19.28
+	ROUTED TO	120135	4008.	4.58	821.	275.	127.	19.28
+	HYDROGRAPH AT	S125	202.	4.08	14.	4.	1.	.09
+	ROUTED TO	12535I	174.	4.17	14.	4.	1.	.09
+	HYDROGRAPH AT	S150	836.	4.33	126.	31.	10.	.77
+	DIVERSION TO	CF50	753.	4.33	113.	28.	9.	.77
+	HYDROGRAPH AT	D150	84.	4.33	13.	3.	1.	.77
+	ROUTED TO	150130	79.	4.50	13.	3.	1.	.77
+	HYDROGRAPH AT	S130	524.	4.17	48.	12.	4.	.31
+	2 COMBINED AT	C130	553.	4.17	61.	15.	5.	.31
+	DIVERSION TO	CF30	166.	4.17	18.	5.	2.	.31
+	HYDROGRAPH AT	D130	387.	4.17	42.	11.	4.	.31
+	ROUTED TO	13035I	381.	4.17	42.	11.	4.	.31
+	2 COMBINED AT	C135I	553.	4.17	57.	14.	5.	.40
+	ROUTED TO	35I135	375.	4.83	56.	14.	5.	.40
+	HYDROGRAPH AT	S135	1102.	4.25	111.	28.	9.	.88
+	2 COMBINED AT	C135L	982.	4.25	153.	38.	13.	1.28
+	2 COMBINED AT	C135	4247.	4.58	889.	291.	132.	20.56
+	ROUTED TO	135145	3838.	5.00	877.	288.	132.	20.56
+	HYDROGRAPH AT	S140	1913.	4.17	188.	47.	16.	1.37
+	ROUTED TO	140145	1623.	4.42	188.	47.	16.	1.37

+	HYDROGRAPH AT	CF30	166.	4.17	18.	5.	2.	.31
+	DIVERSION TO	CF302	17.	4.17	2.	0.	0.	.31
+	HYDROGRAPH AT	D1302	149.	4.17	16.	4.	1.	.31
+	ROUTED TO	130145	73.	5.83	16.	4.	1.	.31
+	HYDROGRAPH AT	S145	1702.	4.25	193.	48.	16.	1.76
+	2 COMBINED AT	C145L	1600.	4.25	199.	50.	17.	2.07
+	3 COMBINED AT	C145	4146.	4.92	1053.	330.	145.	23.69
+	ROUTED TO	145155	4141.	4.92	1052.	330.	145.	23.69
+	HYDROGRAPH AT	CF50	753.	4.33	113.	28.	9.	.77
+	ROUTED TO	150155	504.	5.58	112.	28.	9.	.77
+	HYDROGRAPH AT	CF302	17.	4.17	2.	0.	0.	.31
+	ROUTED TO	130155	4.	7.83	2.	0.	0.	.31
+	HYDROGRAPH AT	S155	1626.	4.33	223.	56.	19.	1.83
+	3 COMBINED AT	C155L	1455.	4.33	305.	77.	26.	2.61
+	2 COMBINED AT	C155	4449.	4.92	1203.	367.	156.	26.30
+	ROUTED TO	155160	4437.	5.00	1202.	366.	156.	26.30
+	HYDROGRAPH AT	S160	1347.	4.25	133.	33.	11.	1.14
+	2 COMBINED AT	C160	4432.	5.00	1246.	377.	159.	27.44
+	ROUTED TO	160170	4323.	5.17	1234.	374.	159.	27.44
+	HYDROGRAPH AT	S165	1008.	4.17	94.	23.	8.	.62
+	ROUTED TO	165170	757.	4.58	94.	23.	8.	.62
+	HYDROGRAPH AT	S170	1686.	4.25	178.	44.	15.	1.46
+	2 COMBINED AT	C170	1721.	4.33	245.	61.	20.	2.08
+	ROUTED TO	170R	1637.	4.50	245.	61.	20.	2.08
+	2 COMBINED AT	C170R	4553.	5.08	1334.	398.	166.	29.52
+	ROUTED TO	170180	4483.	5.42	1326.	397.	166.	29.52
+	HYDROGRAPH AT	S175	1203.	4.50	226.	56.	19.	1.80
+	ROUTED TO	175R	1140.	4.67	226.	56.	19.	1.80
+	HYDROGRAPH AT	S180	1032.	4.50	181.	45.	15.	1.44
+	ROUTED TO	180R	962.	4.67	181.	45.	15.	1.44
+	2 COMBINED AT	C180RI	1764.	4.67	361.	90.	30.	3.24
+	ROUTED TO	RI180R	1717.	4.83	361.	90.	30.	3.24

+	2 COMBINED AT	C180R	4924.	5.25	1479.	434.	177.	32.76
+	ROUTED TO	180185	4911.	5.33	1474.	433.	177.	32.76
+	HYDROGRAPH AT	S185	1450.	4.50	288.	72.	24.	2.42
+	ROUTED TO	185R	1302.	4.92	288.	72.	24.	2.42
+	2 COMBINED AT	C185R	5280.	5.25	1583.	459.	185.	35.19
+	ROUTED TO	185190	5261.	5.33	1578.	459.	185.	35.19
+	HYDROGRAPH AT	S190	2084.	4.58	391.	98.	33.	4.05
+	2 COMBINED AT	C190	5467.	5.25	1695.	488.	194.	39.24
+	ROUTED TO	190195	5351.	5.42	1689.	487.	194.	39.24
+	HYDROGRAPH AT	S195	1001.	4.67	203.	51.	17.	1.81
+	2 COMBINED AT	C195	5422.	5.42	1739.	500.	198.	41.05
+	HYDROGRAPH AT	S400	1019.	4.50	193.	48.	16.	1.54
+	DIVERSION TO	CF00	510.	4.50	97.	24.	8.	1.54
+	HYDROGRAPH AT	D400	510.	4.50	97.	24.	8.	1.54
+	HYDROGRAPH AT	S410	638.	4.42	97.	24.	8.	.64
+	2 COMBINED AT	C410	912.	4.50	171.	43.	14.	2.18
+	DIVERSION TO	CF10	91.	4.50	17.	4.	1.	2.18
+	HYDROGRAPH AT	D410	820.	4.50	154.	39.	13.	2.18
+	ROUTED TO	410415	654.	5.00	154.	39.	13.	2.18
+	HYDROGRAPH AT	S415	791.	4.17	61.	15.	5.	.45
+	2 COMBINED AT	C415	651.	5.00	196.	49.	16.	2.63
+	ROUTED TO	415420	582.	5.75	191.	49.	16.	2.63
+	HYDROGRAPH AT	S420	1576.	4.33	200.	50.	17.	1.77
+	2 COMBINED AT	C420	1228.	4.33	339.	86.	29.	4.40
+	HYDROGRAPH AT	CF00	510.	4.50	97.	24.	8.	1.54
+	HYDROGRAPH AT	CF10	91.	4.50	17.	4.	1.	2.18
+	2 COMBINED AT	C40010	610.	4.50	115.	29.	10.	1.54
+	ROUTED TO	400430	579.	4.75	114.	29.	10.	1.54
+	HYDROGRAPH AT	S430	1207.	4.17	110.	27.	9.	.80
+	2 COMBINED AT	C430	856.	4.25	198.	50.	17.	2.34
+	ROUTED TO	430440	834.	4.58	197.	50.	17.	2.34
	HYDROGRAPH AT							

+		S440	1237.	4.25	130.	32.	11.	1.07
+	2 COMBINED AT	C440	1335.	4.42	287.	73.	24.	3.41
+	ROUTED TO	440450	1190.	4.75	286.	73.	24.	3.41
+	HYDROGRAPH AT	S450	1467.	4.58	279.	70.	23.	2.52
+	HYDROGRAPH AT	S435	822.	4.08	57.	14.	5.	.39
+	ROUTED TO	435450	443.	4.92	57.	14.	5.	.39
+	3 COMBINED AT	C450	2406.	4.75	522.	132.	44.	6.32
+	2 COMBINED AT	ALL400	2967.	4.75	771.	195.	65.	9.18
+	HYDROGRAPH AT	S500	1743.	4.75	454.	115.	38.	3.64
+	ROUTED TO	500510	1680.	5.08	452.	115.	38.	3.64
+	HYDROGRAPH AT	S510	1844.	4.25	216.	54.	18.	1.84
+	2 COMBINED AT	C510	1724.	5.00	600.	152.	51.	5.48
+	DIVERSION TO	CF10	1121.	5.00	390.	99.	33.	5.48
+	HYDROGRAPH AT	D510	603.	5.00	210.	53.	18.	5.48
+	ROUTED TO	510520	557.	5.75	205.	53.	18.	5.48
+	HYDROGRAPH AT	S520	1272.	4.42	183.	46.	15.	1.48
+	2 COMBINED AT	C520	891.	4.42	332.	86.	29.	6.96
+	HYDROGRAPH AT	S530	1563.	4.50	258.	64.	21.	2.23
+	HYDROGRAPH AT	CF10	91.	4.50	17.	4.	1.	2.18
+	ROUTED TO	510530	52.	5.92	17.	4.	1.	2.18
+	2 COMBINED AT	C530	1563.	4.50	279.	70.	23.	7.70
+	2 COMBINED AT	ALL500	1976.	4.50	522.	133.	44.	9.19
+	HYDROGRAPH AT	S700	2698.	4.75	587.	147.	49.	5.24
+	HYDROGRAPH AT	S720	2391.	4.75	531.	133.	44.	4.63
+	HYDROGRAPH AT	S740	1576.	4.25	178.	44.	15.	1.13
+	3 COMBINED AT	ALL700	4813.	4.67	1100.	275.	92.	11.00
+	HYDROGRAPH AT	S900	936.	4.50	170.	43.	14.	1.03
+	ROUTED TO	900910	782.	5.00	170.	43.	14.	1.03
+	HYDROGRAPH AT	S910	1585.	4.17	138.	35.	12.	.98
+	2 COMBINED AT	C910	1293.	4.17	282.	71.	24.	2.02
+	ROUTED TO	910915	1129.	4.33	282.	71.	24.	2.02
+	HYDROGRAPH AT	S915	1308.	4.42	197.	49.	16.	1.13

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        2 COMBINED AT
+                       C915      2053.    4.42         444.        111.         37.       3.14

        ROUTED TO
+                      915920     1677.    5.00         443.        111.         37.       3.14

        HYDROGRAPH AT
+                       S920      2439.    4.50         424.        106.         35.       3.29

        2 COMBINED AT
+                       C920      3015.    4.75         784.        197.         66.       6.43
1                          SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION    RR102
                     (PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED  DURING BREACH FORMATION)


PLAN  1 ..............                    INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION          1550.00            1556.00          1556.00
                          STORAGE              553.              2705.            2705.
                          OUTFLOW                0.               600.             600.

                 RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
                   OF     RESERVOIR      DEPTH     STORAGE    OUTFLOW    OVER TOP   MAX OUTFLOW   FAILURE
                  PMF      W.S.ELEV    OVER DAM     AC-FT       CFS       HOURS        HOURS       HOURS

                 1.00      1552.61         .00       1386.       222.       .00         6.33         .00

PLAN  2 ..............                    INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION          1550.00            1556.00          1556.00
                          STORAGE              553.              2705.            2705.
                          OUTFLOW                0.               600.             600.

                 RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
                   OF     RESERVOIR      DEPTH     STORAGE    OUTFLOW    OVER TOP   MAX OUTFLOW   FAILURE
                  PMF      W.S.ELEV    OVER DAM     AC-FT       CFS       HOURS        HOURS       HOURS

                 1.00      1552.59         .00       1380.       219.       .00         6.33         .00

PLAN  3 ..............                    INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION          1550.00            1556.00          1556.00
                          STORAGE              553.              2705.            2705.
                          OUTFLOW                0.               600.             600.

                 RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
                   OF     RESERVOIR      DEPTH     STORAGE    OUTFLOW    OVER TOP   MAX OUTFLOW   FAILURE
                  PMF      W.S.ELEV    OVER DAM     AC-FT       CFS       HOURS        HOURS       HOURS

                 1.00      1552.23         .00       1236.       163.       .00         6.58         .00

PLAN  4 ..............                    INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION          1550.00            1556.00          1556.00
                          STORAGE              553.              2705.            2705.
                          OUTFLOW                0.               600.             600.

                 RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
                   OF     RESERVOIR      DEPTH     STORAGE    OUTFLOW    OVER TOP   MAX OUTFLOW   FAILURE
                  PMF      W.S.ELEV    OVER DAM     AC-FT       CFS       HOURS        HOURS       HOURS

                 1.00      1551.78         .00       1083.       114.       .00         6.75         .00

PLAN  5 ..............                    INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION          1550.00            1556.00          1556.00
                          STORAGE              553.              2705.            2705.
                          OUTFLOW                0.               600.             600.

                 RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
                   OF     RESERVOIR      DEPTH     STORAGE    OUTFLOW    OVER TOP   MAX OUTFLOW   FAILURE
                  PMF      W.S.ELEV    OVER DAM     AC-FT       CFS       HOURS        HOURS       HOURS

                 1.00      1551.06         .00        868.        68.       .00         6.75         .00


*** NORMAL END OF HEC-1 ***
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D.2. Future Conditions

- **Summary of Results**
- **Unit Discharges**
- **PREFRE Results**
- **Subbasin Data**
- **Subbasin Soil Data**
- **Subbasin Land Use Data**
- **Routing Data**
  - **Channel Routings**
  - **Storage Routing**
- **Diversion Data**
- **Retention Calculations**

D.2.1. 100-Year 24-Hour Future Conditions HEC-1 Model Output

D.2.2. 100-Year 6-Hour Future Conditions HEC-1 Model Output

Future Condition Summary of Results

			24-hour				6-hour			
TYPE	MODELID	AREA	Q100	TIMEPK100	VOL100	VOL100AF	Q100	TIMEPK100	VOL100	VOL100AF
		(sq.mi.)	(cfs)	(hrs)	(in)	(ac-ft)	(cfs)	(hrs)	(in)	(ac-ft)
Hydrograph	S100	6.99	7294	12.42	2.184	815	6425	4.50	1.907	711
Hydrograph	D100V	6.99	1024	13.58	0.357	133	833	5.42	0.102	38
Hydrograph	S102	3.23	4529	12.25	1.944	335	3748	4.25	1.756	303
Hydrograph	D102V	3.23	172	12.92	0.249	43	313	5.25	0.076	13
Combined	C102	10.23	1125	13.58	0.303	165	833	5.42	0.074	40
Routed	RR102	10.23	31	24.67	0.284	155	5	7.33	0.044	24
Hydrograph	D102	10.23	15	24.67	0.142	77	3	7.33	0.022	12
Routed	100105	10.23	15	29.17	0.141	77	2	13.67	0.022	12
Hydrograph	S105	4.37	4639	12.33	1.996	465	4048	4.42	1.691	394
Hydrograph	D105V	4.37	144	14.42	0.242	56	31	6.75	0.005	1
Routed	102105	10.23	15	27.42	0.141	77	2	11.25	0.022	12
Combined	C105U	14.60	145	14.42	0.267	208	31	6.75	0.089	69
Hydrograph	S110	0.43	554	12.17	1.462	34	688	4.17	1.671	38
Hydrograph	D110V	0.43	554	12.17	1.358	31	688	4.17	1.566	36
Routed	11015I	0.43	466	12.42	1.358	31	583	4.42	1.566	36
Hydrograph	D15I	0.43	373	12.42	1.086	25	466	4.42	1.253	29
Routed	15I15R	0.43	329	12.83	1.086	25	414	4.75	1.253	29
Hydrograph	S115	2.25	2274	12.42	1.886	226	2199	4.42	1.696	203
Hydrograph	D115V	2.25	742	13.00	0.496	59	767	5.08	0.306	37
Combined	C115U	2.68	1005	13.00	0.581	83	1015	5.08	0.400	57
Routed	15I15L	0.43	44	13.58	0.272	6	58	5.50	0.313	7
Combined	C115D	2.68	1010	13.00	0.623	89	1022	5.08	0.441	63
Routed	115120	2.68	802	13.17	0.623	89	765	5.25	0.441	63
Hydrograph	S120	2.00	2732	12.25	1.927	206	2504	4.25	1.724	184
Hydrograph	D120V	2.00	476	12.83	0.418	45	445	4.92	0.216	23
Combined	C120	4.68	963	13.17	0.517	129	764	5.25	0.265	66
Combined	C105D	19.28	631	13.33	0.247	254	584	5.00	0.049	51
Routed	120135	19.28	610	13.42	0.247	254	182	5.25	0.021	21
Hydrograph	S125	0.09	184	12.00	1.654	8	231	4.00	1.662	8
Hydrograph	D125V	0.09	179	12.08	0.847	4	227	4.08	0.856	4
Routed	12535I	0.09	91	12.17	0.847	4	126	4.17	0.856	4
Hydrograph	S150	0.77	737	12.33	1.393	58	847	4.33	1.516	63
Hydrograph	D150V	0.77	737	12.33	1.313	54	847	4.33	1.436	59
Hydrograph	D150	0.77	74	12.33	0.131	5	85	4.33	0.144	6
Routed	150130	0.77	68	12.50	0.131	5	79	4.50	0.144	6
Hydrograph	S130	0.31	526	12.08	1.662	27	667	4.08	1.684	28
Hydrograph	D130V	0.31	304	12.25	0.688	11	415	4.17	0.710	12
Combined	C130	0.31	344	12.25	1.021	17	437	4.17	1.089	18
Hydrograph	D130	0.31	241	12.25	0.715	12	306	4.17	0.762	13
Routed	13035I	0.31	214	12.33	0.715	12	312	4.25	0.762	13
Combined	C135I	0.40	277	12.33	0.733	16	423	4.25	0.780	17
Routed	35I135	0.40	146	13.00	0.733	16	218	4.83	0.780	17
Hydrograph	S135	0.88	1348	12.17	2.207	103	1508	4.17	1.954	92
Hydrograph	D135V	0.88	36	13.25	0.317	15	116	4.83	0.096	5
Combined	C135L	1.28	137	13.25	0.432	30	183	4.83	0.245	17
Combined	C135	20.56	671	13.42	0.243	266	181	5.25	0.024	26
Routed	135145	20.56	565	13.83	0.242	266	128	6.25	0.024	26
Hydrograph	S140	1.37	2602	12.08	2.343	172	2523	4.08	2.063	151
Hydrograph	D140V	1.37	76	12.83	0.373	27	182	4.50	0.093	7
Routed	140145	1.37	47	14.92	0.373	27	72	5.00	0.093	7
Hydrograph	D1302	0.31	93	12.25	0.276	5	118	4.17	0.294	5
Routed	130145	0.31	34	13.67	0.276	5	49	5.67	0.294	5
Hydrograph	S145	1.76	2527	12.25	2.526	237	2426	4.25	2.072	194
Hydrograph	D145V	1.76	253	13.17	0.569	53	185	4.75	0.115	11
Combined	C145L	2.07	252	13.17	0.518	57	121	4.75	0.112	12
Combined	C145	23.69	626	14.08	0.240	303	127	6.33	0.021	27
Routed	145155	23.69	610	14.17	0.240	303	122	6.42	0.021	26
Routed	150155	0.77	438	13.50	1.182	49	501	5.58	1.293	53
Routed	130155	0.31	2	16.25	0.031	1	2	8.17	0.033	1
Hydrograph	S155	1.83	1995	12.33	1.809	177	1933	4.33	1.622	159
Hydrograph	D155V	1.83	448	13.00	0.413	40	349	5.17	0.226	22
Combined	C155L	2.61	749	13.00	0.631	88	703	5.17	0.448	62
Combined	C155	26.30	823	13.75	0.255	357	275	5.42	0.039	55
Routed	155160	26.30	822	13.83	0.255	357	268	5.58	0.039	55
Hydrograph	S160	1.14	1790	12.17	2.030	124	1848	4.17	1.791	109
Hydrograph	D160V	1.14	31	13.42	0.245	15	116	4.75	0.069	4
Combined	C160	27.44	817	13.83	0.246	360	268	5.58	0.037	55

Future Condition Summary of Results

			24-hour				6-hour			
TYPE	MODELID	AREA	Q100	TIMEPK100	VOL100	VOL100AF	Q100	TIMEPK100	VOL100	VOL100AF
		(sq.mi.)	(cfs)	(hrs)	(in)	(ac-ft)	(cfs)	(hrs)	(in)	(ac-ft)
Routed	160170	27.44	761	14.17	0.242	354	205	6.50	0.037	54
Hydrograph	S165	0.62	1121	12.08	1.886	62	1353	4.08	1.849	61
Hydrograph	D165V	0.62	222	12.42	0.470	15	503	4.33	0.434	14
Routed	165170	0.62	94	13.17	0.470	15	241	4.83	0.434	14
Hydrograph	S170	1.46	2362	12.17	1.919	150	2252	4.17	1.720	134
Hydrograph	D170V	1.46	17	19.83	0.113	9	48	4.83	0.030	2
Combined	C170	2.08	81	13.25	0.205	23	206	4.83	0.129	14
Routed	170R	2.08	69	13.58	0.203	22	68	5.67	0.083	9
Combined	C170R	29.52	765	14.33	0.224	353	205	6.50	0.034	54
Routed	170180	29.52	728	14.75	0.223	351	182	7.42	0.034	53
Hydrograph	S175	1.80	2223	12.25	1.974	190	2112	4.25	1.756	169
Hydrograph	D175V	1.80	58	13.50	0.228	22	116	5.00	0.052	5
Routed	175R	1.80	44	13.83	0.228	22	78	5.25	0.052	5
Hydrograph	S180	1.44	1666	12.25	2.031	156	1672	4.25	1.786	137
Hydrograph	D180V	1.44	113	13.75	0.353	27	169	5.00	0.108	8
Routed	180R	1.44	96	14.00	0.353	27	115	5.25	0.108	8
Combined	C180RI	3.24	117	14.00	0.265	46	78	7.08	0.040	7
Routed	RI180R	3.24	94	14.42	0.265	46	5	7.83	0.004	1
Combined	C180R	32.76	728	14.75	0.210	367	182	7.42	0.030	53
Routed	180185	32.76	674	14.92	0.201	351	166	7.75	0.029	51
Hydrograph	S185	2.42	2847	12.25	1.908	246	2460	4.25	1.643	212
Hydrograph	D185V	2.42	96	13.33	0.256	33	55	5.00	0.020	3
Routed	185R	2.42	60	15.25	0.256	33	37	5.42	0.020	3
Combined	C185R	35.19	669	14.92	0.192	360	166	7.75	0.027	51
Routed	185190	35.19	625	15.17	0.186	348	153	8.08	0.027	50
Hydrograph	S190	4.05	3381	12.50	1.963	424	3133	4.58	1.651	357
Hydrograph	D190V	4.05	518	13.75	0.362	78	329	5.92	0.085	18
Combined	C190	39.24	634	15.17	0.176	368	153	8.08	0.024	50
Routed	190195	39.24	593	15.50	0.176	368	140	8.75	0.023	48
Hydrograph	S195	1.81	1524	12.50	1.738	168	1535	4.50	1.543	149
Hydrograph	D195V	1.81	96	13.50	0.234	23	124	5.25	0.063	6
Combined	C195	41.05	581	15.50	0.168	367	140	8.75	0.022	48
Hydrograph	S400	1.54	2031	12.17	1.964	162	1946	4.17	1.731	143
Hydrograph	D400V	1.54	122	13.50	0.339	28	213	4.75	0.106	9
Hydrograph	D400	1.54	61	13.50	0.170	14	107	4.75	0.053	4
Hydrograph	S410	0.64	945	12.17	2.103	72	1142	4.17	1.989	68
Hydrograph	D410V	0.64	44	13.17	0.302	10	154	4.75	0.191	7
Combined	C410	2.18	77	13.42	0.195	23	99	4.75	0.037	4
Hydrograph	D410	2.18	69	13.42	0.175	20	64	4.75	0.025	3
Routed	410415	2.18	38	13.58	0.175	20	35	5.25	0.025	3
Hydrograph	S415	0.45	811	12.08	2.113	51	1033	4.08	1.996	48
Hydrograph	D415V	0.45	11	14.17	0.213	5	47	4.83	0.096	2
Combined	C415	2.63	39	14.25	0.171	24	32	5.25	0.021	3
Routed	415420	2.63	33	16.67	0.171	24	6	6.08	0.009	1
Hydrograph	S420	1.77	2134	12.25	1.871	176	2035	4.25	1.650	156
Hydrograph	D420V	1.77	84	13.17	0.252	24	165	4.83	0.061	6
Combined	C420	4.40	61	16.67	0.188	44	6	10.42	0.006	1
Combined	C40010	1.54	69	13.50	0.198	16	124	4.75	0.061	5
Routed	400430	1.54	38	13.58	0.198	16	64	5.25	0.061	5
Hydrograph	S430	0.80	1286	12.17	1.783	76	1462	4.17	1.744	74
Hydrograph	D430V	0.80	54	12.75	0.227	10	340	4.50	0.191	8
Combined	C430	2.34	53	14.33	0.194	24	85	4.50	0.041	5
Routed	430440	2.34	43	15.58	0.194	24	17	5.75	0.026	3
Hydrograph	S440	1.07	1483	12.17	1.867	106	1571	4.17	1.705	97
Hydrograph	D440V	1.07	61	13.00	0.252	14	222	4.67	0.117	7
Combined	C440	3.41	62	15.50	0.198	36	17	9.25	0.018	3
Routed	440450	3.41	61	15.92	0.198	36	3	10.25	0.003	1
Hydrograph	S450	2.52	2664	12.33	1.676	225	2335	4.33	1.457	196
Hydrograph	D450V	2.52	113	13.17	0.202	27	52	4.92	0.015	2
Hydrograph	S435	0.39	796	12.08	1.878	39	1017	4.08	1.854	39
Hydrograph	D435V	0.39	6	14.58	0.137	3	82	4.50	0.112	2
Routed	435450	0.39	4	18.75	0.137	3	10	6.92	0.112	2
Combined	C450	6.32	94	15.83	0.175	59	52	10.25	0.034	12
Combined	ALL400	9.18	144	16.50	0.197	97	7	10.33	0.003	1
Hydrograph	S500	3.64	2341	12.67	1.520	295	2018	4.67	1.324	257
Hydrograph	D500V	3.64	2341	12.67	1.181	229	2018	4.67	0.984	191
Routed	500510	3.64	2140	13.00	1.181	229	1803	5.08	0.984	191

Future Condition Summary of Results

			24-hour				6-hour			
TYPE	MODELID	AREA	Q100	TIMEPK100	VOL100	VOL100AF	Q100	TIMEPK100	VOL100	VOL100AF
		(sq.mi.)	(cfs)	(hrs)	(in)	(ac-ft)	(cfs)	(hrs)	(in)	(ac-ft)
Hydrograph	S510	1.84	2828	12.17	2.153	211	2613	4.17	1.905	187
Hydrograph	D510V	1.84	112	12.92	0.335	33	192	4.67	0.087	9
Combined	C510	5.48	2157	13.00	0.879	257	1762	5.08	0.654	191
Hydrograph	D510	5.48	755	13.00	0.308	90	573	5.17	0.215	63
Routed	510520	5.48	549	13.92	0.308	90	431	6.08	0.215	63
Hydrograph	S520	1.48	1707	12.33	2.172	172	1767	4.33	1.895	150
Hydrograph	D520V	1.48	176	13.42	0.439	35	223	4.92	0.162	13
Combined	C520	6.96	640	13.83	0.325	120	438	6.08	0.169	63
Hydrograph	S530	2.23	2949	12.25	2.077	247	2622	4.25	1.760	209
Hydrograph	D530V	2.23	107	13.08	0.316	38	91	4.83	0.029	3
Routed	510530	2.18	4	16.67	0.019	2	1	7.58	0.003	0
Combined	C530	7.70	95	14.00	0.091	38	91	8.83	0.040	17
Combined	ALL500	9.19	711	13.92	0.314	154	438	6.08	0.128	63
Hydrograph	S700	5.24	4793	12.50	2.040	570	4285	4.50	1.713	479
Hydrograph	D700V	5.24	101	16.50	0.173	48	0	0.00	0.000	0
Hydrograph	S720	4.63	4514	12.42	2.047	505	4043	4.50	1.735	428
Hydrograph	D720V	4.63	90	16.33	0.180	44	0	0.00	0.000	0
Hydrograph	S740	1.13	2393	12.08	2.030	123	2402	4.08	1.919	116
Hydrograph	D740V	1.13	78	12.58	0.276	17	404	4.33	0.165	10
Combined	ALL700	11.00	189	16.50	0.150	88	7	5.33	0.001	1
Hydrograph	S900	1.03	853	12.50	1.417	78	936	4.50	1.535	85
Hydrograph	D900V	1.03	0	0.00	0.000	0	0	0.00	0.000	0
Routed	900910	1.03	0	0.00	0.000	0	0	0.00	0.000	0
Hydrograph	S910	0.98	1913	12.08	1.959	103	2017	4.08	1.850	97
Hydrograph	D910V	0.98	62	12.67	0.275	14	349	4.42	0.165	9
Combined	C910	2.02	43	12.67	0.124	13	109	4.42	0.029	3
Routed	910915	2.02	30	12.83	0.124	13	53	4.58	0.029	3
Hydrograph	S915	1.13	1322	12.33	1.754	105	1434	4.33	1.842	111
Hydrograph	D915V	1.13	1306	12.42	1.043	63	1433	4.42	1.131	68
Combined	C915	3.14	1287	12.42	0.439	74	1124	4.50	0.363	61
Routed	915920	3.14	623	13.25	0.439	74	646	5.25	0.363	61
Hydrograph	S920	3.29	3888	12.33	2.107	370	3466	4.33	1.862	327
Hydrograph	D920V	3.29	110	14.42	0.254	45	116	6.08	0.031	6
Combined	C920	6.43	631	13.33	0.329	113	644	5.25	0.193	66

Future Condition Unit Discharges

		24-hour		6-hour	
MODELID	AREA	Q100	Unit Q	Q100	Unit Q
	(sq.mi.)	(cfs)	(cfs/sq.mi.)	(cfs)	(cfs/sq.mi.)
S100	6.99	7294	1043	6425	102
D100V	6.99	1024	146	833	5
S102	3.23	4529	1402	3748	94
D102V	3.23	172	53	313	4
C102	10.23	1125	110	833	4
RR102	10.23	31	3	5	2
D102	10.23	15	1	3	1
100105	10.23	15	1	2	1
S105	4.37	4639	1062	4048	90
D105V	4.37	144	33	31	0
102105	10.23	15	1	2	1
C105U	14.60	145	10	31	5
S110	0.43	554	1288	688	89
D110V	0.43	554	1288	688	84
11015I	0.43	466	1084	583	84
D15I	0.43	373	867	466	67
15I15R	0.43	329	765	414	67
S115	2.25	2274	1011	2199	90
D115V	2.25	742	330	767	16
C115U	2.68	1005	375	1015	21
15I15L	0.43	44	102	58	17
C115D	2.68	1010	377	1022	24
115120	2.68	802	299	765	24
S120	2.00	2732	1366	2504	92
D120V	2.00	476	238	445	12
C120	4.68	963	206	764	14
C105D	19.28	631	33	584	3
120135	19.28	610	32	182	1
S125	0.09	184	2044	231	92
D125V	0.09	179	1989	227	47
12535I	0.09	91	1011	126	47
S150	0.77	737	957	847	81
D150V	0.77	737	957	847	77
D150	0.77	74	96	85	8
150130	0.77	68	88	79	8
S130	0.31	526	1697	667	90
D130V	0.31	304	981	415	38
C130	0.31	344	1110	437	58
D130	0.31	241	777	306	41
13035I	0.31	214	690	312	41
C135I	0.40	277	693	423	42
35I135	0.40	146	365	218	42
S135	0.88	1348	1532	1508	104
D135V	0.88	36	41	116	5
C135L	1.28	137	107	183	13
C135	20.56	671	33	181	1
135145	20.56	565	27	128	1
S140	1.37	2602	1899	2523	110
D140V	1.37	76	55	182	5

Future Condition Unit Discharges

		24-hour		6-hour	
MODELID	AREA	Q100	Unit Q	Q100	Unit Q
	(sq.mi.)	(cfs)	(cfs/sq.mi.)	(cfs)	(cfs/sq.mi.)
140145	1.37	47	34	72	5
D1302	0.31	93	300	118	16
130145	0.31	34	110	49	16
S145	1.76	2527	1436	2426	110
D145V	1.76	253	144	185	6
C145L	2.07	252	122	121	6
C145	23.69	626	26	127	1
145155	23.69	610	26	122	1
150155	0.77	438	569	501	69
130155	0.31	2	6	2	2
S155	1.83	1995	1090	1933	87
D155V	1.83	448	245	349	12
C155L	2.61	749	287	703	24
C155	26.30	823	31	275	2
155160	26.30	822	31	268	2
S160	1.14	1790	1570	1848	96
D160V	1.14	31	27	116	4
C160	27.44	817	30	268	2
160170	27.44	761	28	205	2
S165	0.62	1121	1808	1353	98
D165V	0.62	222	358	503	23
165170	0.62	94	152	241	23
S170	1.46	2362	1618	2252	92
D170V	1.46	17	12	48	2
C170	2.08	81	39	206	7
170R	2.08	69	33	68	4
C170R	29.52	765	26	205	2
170180	29.52	728	25	182	2
S175	1.80	2223	1235	2112	94
D175V	1.80	58	32	116	3
175R	1.80	44	24	78	3
S180	1.44	1666	1157	1672	95
D180V	1.44	113	78	169	6
180R	1.44	96	67	115	6
C180RI	3.24	117	36	78	2
RI180R	3.24	94	29	5	0
C180R	32.76	728	22	182	2
180185	32.76	674	21	166	2
S185	2.42	2847	1176	2460	88
D185V	2.42	96	40	55	1
185R	2.42	60	25	37	1
C185R	35.19	669	19	166	1
185190	35.19	625	18	153	1
S190	4.05	3381	835	3133	88
D190V	4.05	518	128	329	5
C190	39.24	634	16	153	1
190195	39.24	593	15	140	1
S195	1.81	1524	842	1535	82
D195V	1.81	96	53	124	3

Future Condition Unit Discharges

		24-hour		6-hour	
MODELID	AREA	Q100	Unit Q	Q100	Unit Q
	(sq.mi.)	(cfs)	(cfs/sq.mi.)	(cfs)	(cfs/sq.mi.)
C195	41.05	581	14	140	1
S400	1.54	2031	1319	1946	93
D400V	1.54	122	79	213	6
D400	1.54	61	40	107	3
S410	0.64	945	1477	1142	106
D410V	0.64	44	69	154	10
C410	2.18	77	35	99	2
D410	2.18	69	32	64	1
410415	2.18	38	17	35	1
S415	0.45	811	1802	1033	107
D415V	0.45	11	24	47	5
C415	2.63	39	15	32	1
415420	2.63	33	13	6	0
S420	1.77	2134	1206	2035	88
D420V	1.77	84	47	165	3
C420	4.40	61	14	6	0
C40010	1.54	69	45	124	3
400430	1.54	38	25	64	3
S430	0.80	1286	1608	1462	92
D430V	0.80	54	68	340	10
C430	2.34	53	23	85	2
430440	2.34	43	18	17	1
S440	1.07	1483	1386	1571	91
D440V	1.07	61	57	222	6
C440	3.41	62	18	17	1
440450	3.41	61	18	3	0
S450	2.52	2664	1057	2335	78
D450V	2.52	113	45	52	1
S435	0.39	796	2041	1017	100
D435V	0.39	6	15	82	6
435450	0.39	4	10	10	6
C450	6.32	94	15	52	2
ALL400	9.18	144	16	7	0
S500	3.64	2341	643	2018	71
D500V	3.64	2341	643	2018	52
500510	3.64	2140	588	1803	52
S510	1.84	2828	1537	2613	102
D510V	1.84	112	61	192	5
C510	5.48	2157	394	1762	35
D510	5.48	755	138	573	11
510520	5.48	549	100	431	11
S520	1.48	1707	1153	1767	101
D520V	1.48	176	119	223	9
C520	6.96	640	92	438	9
S530	2.23	2949	1322	2622	94
D530V	2.23	107	48	91	2
510530	2.18	4	2	1	0
C530	7.70	95	12	91	2
ALL500	9.19	711	77	438	7

Future Condition Unit Discharges

		24-hour		6-hour	
MODELID	AREA	Q100	Unit Q	Q100	Unit Q
	(sq.mi.)	(cfs)	(cfs/sq.mi.)	(cfs)	(cfs/sq.mi.)
S700	5.24	4793	915	4285	91
D700V	5.24	101	19	0	0
S720	4.63	4514	975	4043	92
D720V	4.63	90	19	0	0
S740	1.13	2393	2118	2402	103
D740V	1.13	78	69	404	9
ALL700	11.00	189	17	7	0
S900	1.03	853	828	936	82
D900V	1.03	0	0	0	0
900910	1.03	0	0	0	0
S910	0.98	1913	1952	2017	99
D910V	0.98	62	63	349	9
C910	2.02	43	21	109	2
910915	2.02	30	15	53	2
S915	1.13	1322	1170	1434	98
D915V	1.13	1306	1156	1433	60
C915	3.14	1287	410	1124	19
915920	3.14	623	198	646	19
S920	3.29	3888	1182	3466	99
D920V	3.29	110	33	116	2
C920	6.43	631	98	644	10

FCDMC
Drainage Design Management System
RAINFALL DATA
Project Reference: A4_FU24

8/16/2006

Duration	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Rainfall Method: NOAA						
5 MIN	0.39	0.46	0.51	0.58	0.64	0.70
10 MIN	0.58	0.69	0.77	0.89	0.98	1.07
15 MIN	0.71	0.86	0.97	1.13	1.25	1.38
30 MIN	0.94	1.15	1.30	1.52	1.70	1.87
1 HOUR	1.14	1.42	1.62	1.90	2.12	2.33
2 HOUR	1.23	1.56	1.79	2.12	2.38	2.63
3 HOUR	1.29	1.66	1.91	2.27	2.55	2.83
6 HOUR	1.40	1.83	2.13	2.55	2.88	3.20
12 HOUR	1.50	2.04	2.41	2.91	3.31	3.70
24 HOUR	1.60	2.25	2.68	3.28	3.74	4.20

Future Condition Sub-basin Data

	Sub Basin Parameters								Rainfall Losses				
Area ID	Area	Length	Slope	S-Graph	Lca	Lag	Velocity	Kn	IA	DTHETA	PSIF	XKSAT	RTIMP
	(sq mi)	(mi)	(ft/mi)		(mi)	(min)	(ft/s)		(in)		(in)	(in/hr)	(%)
S100	6.994	6.15	33.2	DESERT/RANGELAND	2.48	42	8.1	0.020	0.25	0.21	6.40	0.18	30
S102	3.234	3.46	32.4	DESERT/RANGELAND	1.26	26	7.3	0.020	0.27	0.25	5.60	0.25	24
S105	4.370	5.07	34.5	DESERT/RANGELAND	1.81	36	7.8	0.021	0.26	0.25	4.80	0.35	29
S110	0.430	1.72	430.3	MOUNTAIN	0.82	25	3.8	0.048	0.25	0.36	5.20	0.25	7
S115	2.247	5.42	188.2	DESERT/RANGELAND	2.88	38	7.9	0.025	0.26	0.28	4.80	0.34	25
S120	2.004	3.47	265.5	DESERT/RANGELAND	2.04	25	7.6	0.024	0.26	0.25	4.65	0.39	27
S125	0.093	0.75	783.4	MOUNTAIN	0.43	10	4.2	0.037	0.25	0.31	4.15	0.48	18
S135	0.879	2.87	92.9	DESERT/RANGELAND	1.36	22	7.3	0.021	0.23	0.25	4.25	0.52	38
S130	0.310	1.26	360.3	MOUNTAIN	0.63	15	4.7	0.034	0.25	0.30	4.20	0.47	19
S140	1.373	1.47	40.3	DESERT/RANGELAND	0.94	16	5.0	0.020	0.22	0.25	5.00	0.34	40
S145	1.756	3.24	75.4	DESERT/RANGELAND	1.15	24	7.4	0.023	0.20	0.25	4.15	0.59	50
S150	0.774	2.44	404.4	MOUNTAIN	1.39	36	3.7	0.049	0.25	0.35	4.65	0.33	8
S155	1.832	3.65	99.2	DESERT/RANGELAND	2.16	33	6.1	0.025	0.28	0.25	4.50	0.44	24
S160	1.144	2.85	73.9	DESERT/RANGELAND	0.96	20	8.0	0.021	0.25	0.25	4.00	0.57	33
S165	0.616	1.59	371.6	MOUNTAIN	0.83	14	6.2	0.027	0.25	0.27	4.55	0.39	25
S170	1.464	2.60	85.2	DESERT/RANGELAND	1.15	19	7.6	0.020	0.26	0.25	4.40	0.46	28
S175	1.802	4.35	173.6	MOUNTAIN	1.87	26	9.1	0.022	0.25	0.25	4.50	0.42	29
S180	1.443	4.66	215.0	MOUNTAIN	2.04	29	8.7	0.024	0.24	0.26	4.25	0.49	32
S185	2.421	4.99	254.4	MOUNTAIN	1.99	28	9.9	0.023	0.25	0.26	4.35	0.46	28
S190	4.054	5.88	39.1	DESERT/RANGELAND	2.47	48	6.8	0.024	0.26	0.25	3.81	0.44	29
S195	1.808	5.15	45.2	DESERT/RANGELAND	2.64	43	6.5	0.023	0.28	0.25	4.25	0.51	23
S400	1.544	3.30	249.2	MOUNTAIN	1.75	24	7.7	0.024	0.25	0.26	4.20	0.49	30
S410	0.639	3.28	204.6	MOUNTAIN	1.70	21	8.5	0.021	0.25	0.25	3.85	0.43	32
S415	0.451	2.20	84.2	DESERT/RANGELAND	0.84	16	7.4	0.021	0.25	0.26	3.64	0.49	33
S420	1.767	3.43	68.5	DESERT/RANGELAND	1.59	28	6.7	0.023	0.26	0.25	4.30	0.49	27
S430	0.795	2.16	74.5	DESERT/RANGELAND	1.03	19	6.3	0.022	0.28	0.25	4.55	0.41	22
S435	0.393	1.57	72.1	DESERT/RANGELAND	0.61	13	6.8	0.020	0.27	0.25	4.45	0.44	25
S440	1.068	2.51	67.7	DESERT/RANGELAND	1.39	23	6.0	0.022	0.26	0.25	4.20	0.52	27
S450	2.521	3.80	59.2	DESERT/RANGELAND	1.90	32	6.5	0.023	0.28	0.25	4.25	0.50	21
S500	3.638	4.48	359.1	MOUNTAIN	3.39	60	4.1	0.045	0.25	0.33	3.92	0.41	15
S510	1.840	3.49	107.1	DESERT/RANGELAND	1.32	22	8.7	0.021	0.24	0.25	3.95	0.40	34
S520	1.481	3.91	61.9	DESERT/RANGELAND	2.21	33	6.6	0.022	0.23	0.25	4.50	0.45	36
S530	2.226	3.43	66.5	DESERT/RANGELAND	1.40	26	7.3	0.022	0.24	0.25	4.30	0.50	34
S700	5.240	6.91	47.9	DESERT/RANGELAND	3.20	45	8.5	0.020	0.25	0.25	5.00	0.32	30
S720	4.626	6.41	48.1	DESERT/RANGELAND	2.78	41	8.6	0.020	0.25	0.25	5.00	0.32	30
S740	1.132	1.48	73.5	DESERT/RANGELAND	0.66	13	6.5	0.020	0.26	0.25	5.30	0.28	27
S900	1.035	3.21	420.5	MOUNTAIN	1.94	46	3.9	0.050	0.25	0.37	5.30	0.24	6

Future Condition Sub-basin Data

	Sub Basin Parameters								Rainfall Losses				
Area ID	Area	Length	Slope	S-Graph	Lca	Lag	Velocity	Kn	IA	DTHETA	PSIF	XKSAT	RTIMP
	(sq mi)	(mi)	(ft/mi)		(mi)	(min)	(ft/s)		(in)		(in)	(in/hr)	(%)
S910	0.983	2.07	105.2	DESERT/RANGELAND	0.82	15	7.9	0.020	0.26	0.26	4.70	0.36	27
S915	1.126	4.08	127.5	DESERT/RANGELAND	1.54	35	6.5	0.030	0.23	0.30	6.60	0.15	12
S920	3.291	3.63	40.2	DESERT/RANGELAND	2.65	34	5.9	0.020	0.25	0.25	5.60	0.25	30

FCDMC
Drainage Design Management System
SOILS
Project Reference: A4_FU24

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S100	64522	0.015	0.20	0.04	-	50
	64522	0.020	0.30	0.04	-	50
	64522	0.036	0.50	0.04	-	50
	64522	0.043	0.60	0.04	-	50
	64522	0.263	3.80	0.04	-	50
	64553	0.001	0.00	0.02	-	50
	64553	2.237	32.00	0.02	-	50
	64553	0.003	0.00	0.02	-	50
	64553	0.004	0.10	0.02	-	50
	64553	0.005	0.10	0.02	-	50
	64575	0.024	0.30	0.23	-	50
	64576	0.005	0.10	0.23	-	50
	64576	0.007	0.10	0.23	-	50
	64576	0.012	0.20	0.23	-	50
	64576	0.018	0.30	0.23	-	50
	64576	0.023	0.30	0.23	-	50
	64576	0.045	0.60	0.23	-	50
	64576	0.206	2.90	0.23	-	50
	64577	0.001	0.00	0.05	-	50
	64577	0.002	0.00	0.05	-	50
	64577	0.057	0.80	0.05	-	50
	64580	0.079	1.10	0.08	-	50
	645112	0.033	0.50	0.39	-	50
	645112	0.056	0.80	0.39	-	50
	645112	0.428	6.10	0.39	-	50
	645112	1.226	17.50	0.39	-	50
	645112	1.838	26.30	0.39	-	50
	645113	0.074	1.10	0.39	-	50
	645113	0.075	1.10	0.39	-	50
	645113	0.151	2.20	0.39	-	50
	645119	0.006	0.10	0.14	-	50

* Non default value

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S102	64553	0.032	1.00	0.02	-	50
	64553	0.124	3.80	0.02	-	50
	64553	0.721	22.30	0.02	-	50
	645112	0.934	28.90	0.39	-	50
	645113	0.041	1.30	0.39	-	50
	645113	0.075	2.30	0.39	-	50
	645113	0.192	5.90	0.39	-	50
	645113	0.309	9.60	0.39	-	50
	645113	0.807	25.00	0.39	-	50
	645119	0.001	0.00	0.14	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S105	6453	0.070	1.60	0.58	-	50
	64522	0.006	0.10	0.04	-	50
	64529	0.040	0.90	0.34	-	50
	64552	0.024	0.50	0.16	20.00	50
	64553	0.056	1.30	0.02	-	50
	64553	0.242	5.50	0.02	-	50
	64555	0.120	2.70	0.27	-	50
	64575	0.097	2.20	0.23	-	50
	64575	0.852	19.50	0.23	-	50
	64576	0.030	0.70	0.23	-	50
	64576	0.030	0.70	0.23	-	50
	64576	0.044	1.00	0.23	-	50
	64576	0.063	1.40	0.23	-	50
	64576	0.075	1.70	0.23	-	50
	64577	0.011	0.20	0.05	-	50
	64577	0.036	0.80	0.05	-	50
	64577	0.084	1.90	0.05	-	50
	64577	0.099	2.30	0.05	-	50
	64598	0.086	2.00	0.37	-	50
	645113	0.029	0.70	0.39	-	50
	645113	0.053	1.20	0.39	-	50
	645113	0.061	1.40	0.39	-	50
	645113	0.069	1.60	0.39	-	50
	645113	0.090	2.10	0.39	-	50
	645113	0.145	3.30	0.39	-	50
	645113	0.200	4.60	0.39	-	50
	645113	0.425	9.70	0.39	-	50
	645124	1.233	28.20	0.39	-	50
S110	64548	0.036	8.30	0.06	-	50
	64549	0.041	9.60	0.06	-	50
	645100	0.242	56.30	0.40	20.00	50
	645110	0.111	25.90	0.13	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S115	6453	0.499	22.20	0.58	-	50
	64545	0.001	0.00	0.03	-	50
	64548	0.476	21.20	0.06	-	50
	64549	0.001	0.00	0.06	-	50
	64549	0.060	2.60	0.06	-	50
	64549	0.084	3.70	0.06	-	50
	64598	0.269	12.00	0.37	-	50
	645100	0.010	0.40	0.40	20.00	50
	645100	0.031	1.40	0.40	20.00	50
	645100	0.425	18.90	0.40	20.00	50
	645110	0.046	2.00	0.13	-	50
	645113	0.025	1.10	0.39	-	50
	645113	0.088	3.90	0.39	-	50
	645115	0.039	1.70	0.39	-	50
	645124	0.195	8.70	0.39	-	50
S120	6453	0.001	0.10	0.58	-	50
	6453	0.010	0.50	0.58	-	50
	64529	0.109	5.40	0.34	-	50
	64545	0.203	10.10	0.03	-	50
	64552	0.018	0.90	0.16	20.00	50
	64598	0.458	22.90	0.37	-	50
	645100	0.003	0.20	0.40	20.00	50
	645100	0.006	0.30	0.40	20.00	50
	645100	0.014	0.70	0.40	20.00	50
	645100	0.224	11.20	0.40	20.00	50
	645110	0.183	9.10	0.13	-	50
	645113	0.235	11.70	0.39	-	50
	645115	0.001	0.10	0.39	-	50
	645115	0.453	22.60	0.39	-	50
	645123	0.013	0.60	0.37	-	50
	645123	0.016	0.80	0.37	-	50
	645123	0.055	2.70	0.37	-	50
	645124	0.001	0.10	0.39	-	50
S125	64529	0.039	41.70	0.34	-	50
	645100	0.045	48.80	0.40	20.00	50
	645115	0.009	9.60	0.39	-	50

* Non default value

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S130	64529	0.197	63.30	0.34	-	50
	645100	0.111	35.70	0.40	20.00	50
	645115	0.003	1.00	0.39	-	50
S135	6453	0.015	1.70	0.58	-	50
	64529	0.004	0.50	0.34	-	50
	64529	0.008	0.90	0.34	-	50
	64552	0.006	0.70	0.16	20.00	50
	64598	0.184	20.90	0.37	-	50
	645100	0.004	0.50	0.40	20.00	50
	645110	0.006	0.70	0.13	-	50
	645110	0.077	8.70	0.13	-	50
	645113	0.007	0.80	0.39	-	50
	645113	0.376	42.80	0.39	-	50
	645115	0.182	20.70	0.39	-	50
	645124	0.010	1.10	0.39	-	50
S140	64552	0.004	0.30	0.16	20.00	50
	64552	0.016	1.20	0.16	20.00	50
	64553	0.050	3.60	0.02	-	50
	64553	0.083	6.10	0.02	-	50
	64553	0.093	6.80	0.02	-	50
	64571	0.007	0.50	0.36	-	50
	64577	0.014	1.00	0.05	-	50
	64577	0.015	1.10	0.05	-	50
	645113	1.091	79.50	0.39	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S145	6453	0.149	8.50	0.58	-	50
	64529	0.024	1.40	0.34	-	50
	64552	0.011	0.60	0.16	20.00	50
	64553	0.002	0.10	0.02	-	50
	64553	0.006	0.40	0.02	-	50
	64553	0.010	0.60	0.02	-	50
	64555	0.012	0.70	0.27	-	50
	64555	0.030	1.70	0.27	-	50
	64577	0.012	0.70	0.05	-	50
	64577	0.022	1.30	0.05	-	50
	645100	0.013	0.80	0.40	20.00	50
	645110	0.011	0.60	0.13	-	50
	645112	0.076	4.30	0.39	-	50
	645112	0.320	18.20	0.39	-	50
	645113	0.003	0.20	0.39	-	50
	645113	0.090	5.10	0.39	-	50
	645113	0.180	10.30	0.39	-	50
	645115	0.409	23.30	0.39	-	50
	645124	0.376	21.40	0.39	-	50
S150	64514	0.029	3.80	1.04	-	50
	64529	0.066	8.50	0.34	-	50
	64547	0.002	0.30	0.11	-	50
	64549	0.161	20.80	0.06	-	50
	645100	0.513	66.20	0.40	20.00	50
	645110	0.003	0.40	0.13	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S155	6453	0.014	0.80	0.58	-	50
	64514	0.004	0.20	1.04	-	50
	64529	0.053	2.90	0.34	-	50
	64547	0.026	1.40	0.11	-	50
	64552	0.024	1.30	0.16	20.00	50
	64552	0.034	1.90	0.16	20.00	50
	64552	0.049	2.60	0.16	20.00	50
	64555	0.010	0.60	0.27	-	50
	64598	0.005	0.30	0.37	-	50
	64598	0.252	13.70	0.37	-	50
	645100	0.019	1.00	0.40	20.00	50
	645100	0.033	1.80	0.40	20.00	50
	645100	0.051	2.80	0.40	20.00	50
	645110	0.316	17.20	0.13	-	50
	645112	0.022	1.20	0.39	-	50
	645112	0.218	11.90	0.39	-	50
	645113	0.022	1.20	0.39	-	50
	645115	0.557	30.40	0.39	-	50
	645123	0.122	6.70	0.37	-	50
S160	6453	0.037	3.20	0.58	-	50
	64555	0.065	5.70	0.27	-	50
	64598	0.175	15.30	0.37	-	50
	645112	0.730	63.80	0.39	-	50
	645113	0.123	10.70	0.39	-	50
	645115	0.014	1.20	0.39	-	50
S165	64514	0.012	1.90	1.04	-	50
	64529	0.002	0.40	0.34	-	50
	64547	0.140	22.70	0.11	-	50
	64598	0.002	0.30	0.37	-	50
	645100	0.160	25.90	0.40	20.00	50
	645115	0.001	0.10	0.39	-	50
	645123	0.300	48.70	0.37	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S170	64515	0.453	30.90	0.54	-	50
	64598	0.344	23.50	0.37	-	50
	645106	0.506	34.60	0.18	-	50
	645110	0.048	3.30	0.13	-	50
	645112	0.089	6.10	0.39	-	50
	645123	0.023	1.60	0.37	-	50
S175	64515	0.167	9.30	0.54	-	50
	645100	0.102	5.60	0.40	20.00	50
	645106	0.102	5.70	0.18	-	50
	645107	0.525	29.10	0.18	-	50
	645123	0.906	50.30	0.37	-	50
S180	64515	0.347	24.00	0.54	-	50
	645100	0.221	15.30	0.40	20.00	50
	645107	0.346	24.00	0.18	-	50
	645123	0.530	36.70	0.37	-	50
S185	64515	0.025	1.00	0.54	-	50
	64571	0.768	31.70	0.36	-	50
	645100	0.204	8.40	0.40	20.00	50
	645107	0.167	6.90	0.18	-	50
	645107	0.280	11.60	0.18	-	50
	645123	0.977	40.40	0.37	-	50
S190	6452	0.007	0.20	0.41	-	50
	6453	0.142	3.50	0.58	-	50
	64510	0.228	5.60	0.94	-	50
	64515	1.971	48.60	0.54	-	50
	64553	0.089	2.20	0.02	-	50
	64555	0.071	1.70	0.27	-	50
	64571	0.004	0.10	0.36	-	50
	64571	0.025	0.60	0.36	-	50
	64598	0.014	0.30	0.37	-	50
	64598	0.931	23.00	0.37	-	50
	645107	0.066	1.60	0.18	-	50
	645112	0.174	4.30	0.39	-	50
	645113	0.332	8.20	0.39	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S195	64510	0.110	6.10	0.94	-	50
	64571	0.091	5.10	0.36	-	50
	64571	0.197	10.90	0.36	-	50
	64577	0.092	5.10	0.05	-	50
	64598	0.001	0.00	0.37	-	50
	64598	1.317	72.80	0.37	-	50
S400	64515	0.001	0.00	0.54	-	50
	64571	0.003	0.20	0.36	-	50
	645100	0.527	34.10	0.40	20.00	50
	645107	0.148	9.60	0.18	-	50
	645123	0.866	56.10	0.37	-	50
S410	64515	0.342	53.50	0.54	-	50
	645100	0.184	28.70	0.40	20.00	50
	645107	0.075	11.70	0.18	-	50
	645123	0.039	6.10	0.37	-	50
S415	64515	0.338	75.00	0.54	-	50
	64571	0.112	25.00	0.36	-	50
S420	6452	0.038	2.10	0.41	-	50
	64515	0.263	14.90	0.54	-	50
	64520	0.012	0.70	0.19	-	50
	64520	0.050	2.80	0.19	-	50
	64520	0.204	11.50	0.19	-	50
	64555	0.185	10.50	0.27	-	50
	64571	1.016	57.50	0.36	-	50
S430	64571	0.554	69.70	0.36	-	50
	645107	0.241	30.30	0.18	-	50
S435	64571	0.313	79.70	0.36	-	50
	645107	0.080	20.30	0.18	-	50
S440	64520	0.015	1.40	0.19	-	50
	64555	0.007	0.60	0.27	-	50
	64571	1.047	98.00	0.36	-	50

* Non default value

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S450	6452	0.012	0.50	0.41	-	50
	6452	0.239	9.50	0.41	-	50
	64515	0.133	5.30	0.54	-	50
	64520	0.012	0.50	0.19	-	50
	64520	0.052	2.00	0.19	-	50
	64555	0.339	13.40	0.27	-	50
	64571	0.206	8.20	0.36	-	50
	64571	1.321	52.40	0.36	-	50
	64598	0.210	8.30	0.37	-	50
S500	64515	0.082	2.20	0.54	-	50
	64569	0.001	0.00	0.63	-	50
	64592	0.070	1.90	0.93	-	50
	64598	0.142	3.90	0.37	-	50
	645100	0.002	0.10	0.40	20.00	50
	645100	3.341	91.80	0.40	20.00	50
S510	64515	0.503	27.40	0.54	-	50
	64569	0.277	15.00	0.63	-	50
	64592	0.281	15.30	0.93	-	50
	645107	0.658	35.70	0.18	-	50
	645123	0.122	6.60	0.37	-	50
S520	6452	0.151	10.20	0.41	-	50
	64515	0.105	7.10	0.54	-	50
	64520	0.076	5.10	0.19	-	50
	64520	0.147	9.90	0.19	-	50
	64555	0.010	0.70	0.27	-	50
	64571	0.613	41.40	0.36	-	50
	645102	0.121	8.20	0.40	-	50
	645107	0.259	17.50	0.18	-	50
S530	6452	0.178	8.00	0.41	-	50
	64515	0.232	10.40	0.54	-	50
	64520	0.087	3.90	0.19	-	50
	64520	0.242	10.90	0.19	-	50
	64555	0.061	2.70	0.27	-	50
	64571	1.425	64.00	0.36	-	50

* Non default value

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S700	64522	0.003	0.10	0.04	-	50
	64522	0.360	6.90	0.04	-	50
	64529	0.541	10.30	0.34	-	50
	64544	0.001	0.00	0.03	-	50
	64545	0.011	0.20	0.03	-	50
	64546	0.007	0.10	0.03	-	50
	64546	0.097	1.80	0.03	-	50
	64553	0.001	0.00	0.02	-	50
	64553	0.013	0.20	0.02	-	50
	64560	0.015	0.30	0.26	-	50
	64570	0.003	0.10	0.36	-	50
	64570	1.585	30.30	0.36	-	50
	64574	0.350	6.70	0.08	-	50
	64575	0.006	0.10	0.23	-	50
	64575	0.692	13.20	0.23	-	50
	64576	0.009	0.20	0.23	-	50
	64576	0.028	0.50	0.23	-	50
	64580	0.205	3.90	0.08	-	50
	64598	0.035	0.70	0.37	-	50
	64598	0.298	5.70	0.37	-	50
	64598	0.338	6.40	0.37	-	50
	645110	0.005	0.10	0.13	-	50
	645110	0.016	0.30	0.13	-	50
	645110	0.026	0.50	0.13	-	50
	645110	0.031	0.60	0.13	-	50
	645115	0.206	3.90	0.39	-	50
	645116	0.176	3.40	0.23	-	50
	645119	0.075	1.40	0.14	-	50
	645125	0.108	2.10	0.43	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S720	6451	0.070	1.50	0.41	-	50
	6451	0.085	1.80	0.41	-	50
	6454	0.133	2.90	0.58	-	50
	64553	0.013	0.30	0.02	-	50
	64553	0.202	4.40	0.02	-	50
	64570	0.030	0.60	0.36	-	50
	64571	0.883	19.10	0.36	-	50
	64574	0.035	0.80	0.08	-	50
	64575	0.039	0.80	0.23	-	50
	64575	0.149	3.20	0.23	-	50
	64575	0.163	3.50	0.23	-	50
	64576	0.004	0.10	0.23	-	50
	64576	0.038	0.80	0.23	-	50
	64576	0.084	1.80	0.23	-	50
	645112	0.327	7.10	0.39	-	50
	645113	0.926	20.00	0.39	-	50
	645119	0.001	0.00	0.14	-	50
	645119	0.162	3.50	0.14	-	50
	645119	1.282	27.70	0.14	-	50
S740	6452	0.012	1.10	0.41	-	50
	64511	0.023	2.00	0.94	-	50
	64520	1.091	96.40	0.19	-	50
	645102	0.006	0.50	0.40	-	50
S900	64548	0.140	13.50	0.06	-	50
	64549	0.238	23.00	0.06	-	50
	645100	0.002	0.20	0.40	20.00	50
	645100	0.632	61.10	0.40	20.00	50
	645115	0.002	0.20	0.39	-	50
	645115	0.021	2.10	0.39	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S910	6453	0.008	0.80	0.58	-	50
	6453	0.014	1.50	0.58	-	50
	6453	0.134	13.70	0.58	-	50
	64548	0.033	3.30	0.06	-	50
	64548	0.198	20.10	0.06	-	50
	64549	0.013	1.30	0.06	-	50
	645113	0.511	52.00	0.39	-	50
	645115	0.006	0.60	0.39	-	50
	645115	0.013	1.30	0.39	-	50
	645124	0.053	5.40	0.39	-	50
S915	6453	0.000	0.00	0.58	-	50
	64529	0.000	0.00	0.34	-	50
	64529	0.000	0.00	0.34	-	50
	64529	0.142	12.60	0.34	-	50
	64529	0.155	13.70	0.34	-	50
	64548	0.000	0.00	0.06	-	50
	64548	0.002	0.20	0.06	-	50
	64548	0.023	2.00	0.06	-	50
	64548	0.268	23.80	0.06	-	50
	64548	0.333	29.60	0.06	-	50
	64549	0.004	0.40	0.06	-	50
	64549	0.042	3.70	0.06	-	50
	64550	0.001	0.10	0.26	-	50
	645100	0.021	1.80	0.40	20.00	50
	645100	0.068	6.00	0.40	20.00	50
	645113	0.010	0.90	0.39	-	50
	645115	0.001	0.10	0.39	-	50
	645115	0.022	2.00	0.39	-	50
	645115	0.034	3.00	0.39	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S920	6452	0.008	0.20	0.41	-	50
	6452	0.013	0.40	0.41	-	50
	6453	0.019	0.60	0.58	-	50
	6453	0.027	0.80	0.58	-	50
	6453	0.036	1.10	0.58	-	50
	64522	0.274	8.30	0.04	-	50
	64529	0.004	0.10	0.34	-	50
	64548	0.002	0.10	0.06	-	50
	64548	0.019	0.60	0.06	-	50
	64550	0.002	0.10	0.26	-	50
	64550	0.030	0.90	0.26	-	50
	64550	0.033	1.00	0.26	-	50
	64550	0.036	1.10	0.26	-	50
	64550	0.059	1.80	0.26	-	50
	64550	0.091	2.80	0.26	-	50
	64550	0.365	11.10	0.26	-	50
	64553	0.030	0.90	0.02	-	50
	64553	0.050	1.50	0.02	-	50
	64575	0.030	0.90	0.23	-	50
	64575	0.048	1.50	0.23	-	50
	64575	0.050	1.50	0.23	-	50
	64575	0.053	1.60	0.23	-	50
	64575	0.053	1.60	0.23	-	50
	64575	0.065	2.00	0.23	-	50
	64575	0.412	12.50	0.23	-	50
	64576	0.014	0.40	0.23	-	50
	64576	0.018	0.50	0.23	-	50
	64576	0.025	0.80	0.23	-	50
	64576	0.108	3.30	0.23	-	50
	64576	0.134	4.10	0.23	-	50
	64577	0.008	0.30	0.05	-	50
	64577	0.042	1.30	0.05	-	50
	64577	0.044	1.30	0.05	-	50
	64577	0.051	1.50	0.05	-	50
	64577	0.068	2.10	0.05	-	50
	64577	0.185	5.60	0.05	-	50
	645113	0.022	0.70	0.39	-	50
	645113	0.047	1.40	0.39	-	50
	645113	0.065	2.00	0.39	-	50

* Non default value

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S920	645113	0.324	9.90	0.39	-	50
	645124	0.329	10.00	0.39	-	50

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
S100	130	0.576	8.2	0.30	15	50.0	NORMAL	0.02
	130	0.449	6.4	0.30	15	50.0	NORMAL	0.02
	130	0.001		0.30	15	50.0	NORMAL	0.02
	150	3.027	43.3	0.25	30	50.0	NORMAL	0.02
	150	0.691	9.9	0.25	30	50.0	NORMAL	0.02
	150	0.615	8.8	0.25	30	50.0	NORMAL	0.02
	150	0.582	8.3	0.25	30	50.0	NORMAL	0.02
	150	0.457	6.5	0.25	30	50.0	NORMAL	0.02
	150	0.120	1.7	0.25	30	50.0	NORMAL	0.02
	150	0.027	0.4	0.25	30	50.0	NORMAL	0.02
	150	0.008	0.1	0.25	30	50.0	NORMAL	0.02
	150	0.003		0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	230	0.162	2.3	0.10	80	75.0	NORMAL	0.02
	230	0.051	0.7	0.10	80	75.0	NORMAL	0.02
	230	0.024	0.3	0.10	80	75.0	NORMAL	0.02
	230	0.023	0.3	0.10	80	75.0	NORMAL	0.02
	230	0.001		0.10	80	75.0	NORMAL	0.02
	520	0.093	1.3	0.25	45	80.0	NORMAL	0.02
	520	0.025	0.4	0.25	45	80.0	NORMAL	0.02
	730	0.041	0.6	0.35	0	60.0	NORMAL	0.04
	730	0.014	0.2	0.35	0	60.0	NORMAL	0.04
		6.997	**99.7**					
S102	130	0.932	28.8	0.30	15	50.0	NORMAL	0.02
	130	0.566	17.5	0.30	15	50.0	NORMAL	0.02
	130	0.004	0.1	0.30	15	50.0	NORMAL	0.02
	150	0.719	22.2	0.25	30	50.0	NORMAL	0.02
	150	0.546	16.9	0.25	30	50.0	NORMAL	0.02
	150	0.348	10.8	0.25	30	50.0	NORMAL	0.02
	150	0.044	1.4	0.25	30	50.0	NORMAL	0.02
	150	0.011	0.3	0.25	30	50.0	NORMAL	0.02
	150	0.004	0.1	0.25	30	50.0	NORMAL	0.02
	150	0.002	0.1	0.25	30	50.0	NORMAL	0.02

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
S102	230	0.021	0.6	0.10	80	75.0	NORMAL	0.02
	520	0.040	1.2	0.25	45	80.0	NORMAL	0.02
		3.237	**100.0**					
S105	150	1.079	24.7	0.25	30	50.0	NORMAL	0.02
	150	0.724	16.6	0.25	30	50.0	NORMAL	0.02
	150	0.640	14.6	0.25	30	50.0	NORMAL	0.02
	150	0.479	11.0	0.25	30	50.0	NORMAL	0.02
	150	0.435	10.0	0.25	30	50.0	NORMAL	0.02
	150	0.357	8.2	0.25	30	50.0	NORMAL	0.02
	150	0.262	6.0	0.25	30	50.0	NORMAL	0.02
	150	0.034	0.8	0.25	30	50.0	NORMAL	0.02
	150	0.013	0.3	0.25	30	50.0	NORMAL	0.02
	150	0.004	0.1	0.25	30	50.0	NORMAL	0.02
	180	0.023	0.5	0.25	45	50.0	NORMAL	0.02
	230	0.018	0.4	0.10	80	75.0	NORMAL	0.02
	230	0.006	0.1	0.10	80	75.0	NORMAL	0.02
	520	0.012	0.3	0.25	45	80.0	NORMAL	0.02
	720	0.003	0.1	0.20	5	80.0	NORMAL	0.03
	730	0.125	2.9	0.35	0	60.0	NORMAL	0.04
	730	0.093	2.1	0.35	0	60.0	NORMAL	0.04
	730	0.061	1.4	0.35	0	60.0	NORMAL	0.04
	730	0.003	0.1	0.35	0	60.0	NORMAL	0.04
		4.371	**100.2**					
S110	150	0.024	5.6	0.25	30	50.0	NORMAL	0.02
	710	0.406	94.4	0.25	0	30.0	DRY	0.05
		0.430	**100.0**					
S115	130	0.004	0.2	0.30	15	50.0	NORMAL	0.02
	150	0.899	40.0	0.25	30	50.0	NORMAL	0.02
	150	0.598	26.6	0.25	30	50.0	NORMAL	0.02
	150	0.103	4.6	0.25	30	50.0	NORMAL	0.02
	150	0.006	0.3	0.25	30	50.0	NORMAL	0.02
	150	0.005	0.2	0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	230	0.030	1.3	0.10	80	75.0	NORMAL	0.02
	230	0.012	0.5	0.10	80	75.0	NORMAL	0.02
	230	0.001		0.10	80	75.0	NORMAL	0.02

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
S115	710	0.271	12.1	0.25	0	30.0	DRY	0.05
	710	0.047	2.1	0.25	0	30.0	DRY	0.05
	712	0.144	6.4	0.35	0	30.0	DRY	0.03
	712	0.127	5.6	0.35	0	30.0	DRY	0.03
		2.248	**99.9**					
S120	130	0.082	4.1	0.30	15	50.0	NORMAL	0.02
	130	0.072	3.6	0.30	15	50.0	NORMAL	0.02
	130	0.003	0.1	0.30	15	50.0	NORMAL	0.02
	130	0.001	0.1	0.30	15	50.0	NORMAL	0.02
	150	0.543	27.1	0.25	30	50.0	NORMAL	0.02
	150	0.475	23.7	0.25	30	50.0	NORMAL	0.02
	150	0.245	12.2	0.25	30	50.0	NORMAL	0.02
	150	0.034	1.7	0.25	30	50.0	NORMAL	0.02
	150	0.003	0.1	0.25	30	50.0	NORMAL	0.02
	230	0.040	2.0	0.10	80	75.0	NORMAL	0.02
	230	0.027	1.3	0.10	80	75.0	NORMAL	0.02
	230	0.021	1.0	0.10	80	75.0	NORMAL	0.02
	520	0.024	1.2	0.25	45	80.0	NORMAL	0.02
	520	0.019	0.9	0.25	45	80.0	NORMAL	0.02
	710	0.015	0.7	0.25	0	30.0	DRY	0.05
	720	0.065	3.2	0.20	5	80.0	NORMAL	0.03
	730	0.326	16.3	0.35	0	60.0	NORMAL	0.04
	730	0.004	0.2	0.35	0	60.0	NORMAL	0.04
	730	0.002	0.1	0.35	0	60.0	NORMAL	0.04
		2.001	**99.6**					
S125	150	0.040	43.0	0.25	30	50.0	NORMAL	0.02
	710	0.053	57.0	0.25	0	30.0	DRY	0.05
		0.093	**100.0**					
S130	150	0.162	52.1	0.25	30	50.0	NORMAL	0.02
	710	0.149	47.9	0.25	0	30.0	DRY	0.05
		0.311	**100.0**					
S135	130	0.157	17.9	0.30	15	50.0	NORMAL	0.02
	130	0.003	0.3	0.30	15	50.0	NORMAL	0.02
	150	0.181	20.6	0.25	30	50.0	NORMAL	0.02
	150	0.141	16.1	0.25	30	50.0	NORMAL	0.02

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
S135	150	0.127	14.5	0.25	30	50.0	NORMAL	0.02
	150	0.010	1.1	0.25	30	50.0	NORMAL	0.02
	180	0.013	1.5	0.25	45	50.0	NORMAL	0.02
	230	0.114	13.0	0.10	80	75.0	NORMAL	0.02
	230	0.072	8.2	0.10	80	75.0	NORMAL	0.02
	230	0.011	1.3	0.10	80	75.0	NORMAL	0.02
	230	0.001	0.1	0.10	80	75.0	NORMAL	0.02
	520	0.019	2.2	0.25	45	80.0	NORMAL	0.02
	730	0.029	3.3	0.35	0	60.0	NORMAL	0.04
		0.878	**100.1**					
S140	150	0.599	43.6	0.25	30	50.0	NORMAL	0.02
	150	0.473	34.5	0.25	30	50.0	NORMAL	0.02
	150	0.001	0.1	0.25	30	50.0	NORMAL	0.02
	180	0.002	0.1	0.25	45	50.0	NORMAL	0.02
	230	0.278	20.2	0.10	80	75.0	NORMAL	0.02
	730	0.020	1.5	0.35	0	60.0	NORMAL	0.04
		1.373	**100.0**					
S145	130	0.082	4.7	0.30	15	50.0	NORMAL	0.02
	150	0.182	10.4	0.25	30	50.0	NORMAL	0.02
	150	0.051	2.9	0.25	30	50.0	NORMAL	0.02
	150	0.030	1.7	0.25	30	50.0	NORMAL	0.02
	150	0.017	1.0	0.25	30	50.0	NORMAL	0.02
	180	0.133	7.6	0.25	45	50.0	NORMAL	0.02
	180	0.106	6.0	0.25	45	50.0	NORMAL	0.02
	180	0.049	2.8	0.25	45	50.0	NORMAL	0.02
	180	0.017	1.0	0.25	45	50.0	NORMAL	0.02
	230	0.277	15.8	0.10	80	75.0	NORMAL	0.02
	230	0.093	5.3	0.10	80	75.0	NORMAL	0.02
	230	0.091	5.2	0.10	80	75.0	NORMAL	0.02
	230	0.078	4.4	0.10	80	75.0	NORMAL	0.02
	230	0.070	4.0	0.10	80	75.0	NORMAL	0.02
	230	0.062	3.5	0.10	80	75.0	NORMAL	0.02
	230	0.038	2.2	0.10	80	75.0	NORMAL	0.02
	230	0.034	1.9	0.10	80	75.0	NORMAL	0.02
	520	0.059	3.4	0.25	45	80.0	NORMAL	0.02
	520	0.021	1.2	0.25	45	80.0	NORMAL	0.02
	520	0.020	1.1	0.25	45	80.0	NORMAL	0.02

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
S145	730	0.247	14.1	0.35	0	60.0	NORMAL	0.04
	730	0.001	0.1	0.35	0	60.0	NORMAL	0.04
		1.758	**100.3**					
S150	150	0.033	4.3	0.25	30	50.0	NORMAL	0.02
	710	0.740	95.7	0.25	0	30.0	DRY	0.05
		0.773	**100.0**					
S155	130	0.261	14.3	0.30	15	50.0	NORMAL	0.02
	130	0.027	1.5	0.30	15	50.0	NORMAL	0.02
	130	0.001	0.1	0.30	15	50.0	NORMAL	0.02
	150	0.469	25.6	0.25	30	50.0	NORMAL	0.02
	150	0.359	19.6	0.25	30	50.0	NORMAL	0.02
	150	0.057	3.1	0.25	30	50.0	NORMAL	0.02
	150	0.004	0.2	0.25	30	50.0	NORMAL	0.02
	150	0.001	0.1	0.25	30	50.0	NORMAL	0.02
	180	0.092	5.0	0.25	45	50.0	NORMAL	0.02
	180	0.009	0.5	0.25	45	50.0	NORMAL	0.02
	230	0.031	1.7	0.10	80	75.0	NORMAL	0.02
	230	0.017	0.9	0.10	80	75.0	NORMAL	0.02
	230	0.002	0.1	0.10	80	75.0	NORMAL	0.02
	520	0.022	1.2	0.25	45	80.0	NORMAL	0.02
	520	0.018	1.0	0.25	45	80.0	NORMAL	0.02
	520	0.006	0.3	0.25	45	80.0	NORMAL	0.02
	520	0.002	0.1	0.25	45	80.0	NORMAL	0.02
	730	0.453	24.7	0.35	0	60.0	NORMAL	0.04
		1.831	**100.0**					
S160	130	0.179	15.7	0.30	15	50.0	NORMAL	0.02
	150	0.386	33.8	0.25	30	50.0	NORMAL	0.02
	150	0.303	26.5	0.25	30	50.0	NORMAL	0.02
	180	0.030	2.6	0.25	45	50.0	NORMAL	0.02
	180	0.003	0.3	0.25	45	50.0	NORMAL	0.02
	180	0.003	0.3	0.25	45	50.0	NORMAL	0.02
	230	0.110	9.6	0.10	80	75.0	NORMAL	0.02
	230	0.033	2.9	0.10	80	75.0	NORMAL	0.02
	520	0.020	1.7	0.25	45	80.0	NORMAL	0.02
	520	0.002	0.2	0.25	45	80.0	NORMAL	0.02
	730	0.074	6.5	0.35	0	60.0	NORMAL	0.04

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
		1.143	**100.1**					
S165	150	0.467	75.8	0.25	30	50.0	NORMAL	0.02
	710	0.149	24.2	0.25	0	30.0	DRY	0.05
		0.616	**100.0**					
S170	130	0.164	11.2	0.30	15	50.0	NORMAL	0.02
	130	0.101	6.9	0.30	15	50.0	NORMAL	0.02
	150	0.590	40.3	0.25	30	50.0	NORMAL	0.02
	150	0.331	22.6	0.25	30	50.0	NORMAL	0.02
	150	0.075	5.1	0.25	30	50.0	NORMAL	0.02
	150	0.069	4.7	0.25	30	50.0	NORMAL	0.02
	150	0.010	0.7	0.25	30	50.0	NORMAL	0.02
	150	0.003	0.2	0.25	30	50.0	NORMAL	0.02
	520	0.104	7.1	0.25	45	80.0	NORMAL	0.02
	730	0.011	0.8	0.35	0	60.0	NORMAL	0.04
	730	0.004	0.3	0.35	0	60.0	NORMAL	0.04
	730	0.001	0.1	0.35	0	60.0	NORMAL	0.04
		1.463	**100.0**					
S175	150	1.237	68.6	0.25	30	50.0	NORMAL	0.02
	150	0.226	12.5	0.25	30	50.0	NORMAL	0.02
	150	0.118	6.5	0.25	30	50.0	NORMAL	0.02
	150	0.010	0.6	0.25	30	50.0	NORMAL	0.02
	230	0.030	1.7	0.10	80	75.0	NORMAL	0.02
	520	0.023	1.3	0.25	45	80.0	NORMAL	0.02
	520	0.020	1.1	0.25	45	80.0	NORMAL	0.02
	710	0.083	4.6	0.25	0	30.0	DRY	0.05
	730	0.054	3.0	0.35	0	60.0	NORMAL	0.04
	730	0.001	0.1	0.35	0	60.0	NORMAL	0.04
		1.802	**100.0**					
S180	150	0.773	53.6	0.25	30	50.0	NORMAL	0.02
	150	0.298	20.7	0.25	30	50.0	NORMAL	0.02
	150	0.003	0.2	0.25	30	50.0	NORMAL	0.02
	180	0.064	4.4	0.25	45	50.0	NORMAL	0.02
	180	0.012	0.8	0.25	45	50.0	NORMAL	0.02
	230	0.055	3.8	0.10	80	75.0	NORMAL	0.02
	230	0.041	2.8	0.10	80	75.0	NORMAL	0.02

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
S180	710	0.190	13.2	0.25	0	30.0	DRY	0.05
	730	0.006	0.4	0.35	0	60.0	NORMAL	0.04
		1.442	**99.9**					
S185	150	1.634	67.5	0.25	30	50.0	NORMAL	0.02
	150	0.370	15.3	0.25	30	50.0	NORMAL	0.02
	150	0.011	0.5	0.25	30	50.0	NORMAL	0.02
	150	0.009	0.4	0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	180	0.050	2.1	0.25	45	50.0	NORMAL	0.02
	180	0.003	0.1	0.25	45	50.0	NORMAL	0.02
	230	0.015	0.6	0.10	80	75.0	NORMAL	0.02
	520	0.025	1.0	0.25	45	80.0	NORMAL	0.02
	710	0.204	8.4	0.25	0	30.0	DRY	0.05
	714	0.006	0.2	0.15	0	30.0	DRY	0.04
	730	0.091	3.8	0.35	0	60.0	NORMAL	0.04
	730	0.003	0.1	0.35	0	60.0	NORMAL	0.04
		2.422	**100.0**					
S190	130	0.179	4.4	0.30	15	50.0	NORMAL	0.02
	130	0.099	2.4	0.30	15	50.0	NORMAL	0.02
	130	0.085	2.1	0.30	15	50.0	NORMAL	0.02
	130	0.042	1.0	0.30	15	50.0	NORMAL	0.02
	130	0.040	1.0	0.30	15	50.0	NORMAL	0.02
	150	0.384	9.5	0.25	30	50.0	NORMAL	0.02
	150	0.295	7.3	0.25	30	50.0	NORMAL	0.02
	150	0.274	6.8	0.25	30	50.0	NORMAL	0.02
	150	0.196	4.8	0.25	30	50.0	NORMAL	0.02
	150	0.086	2.1	0.25	30	50.0	NORMAL	0.02
	150	0.071	1.8	0.25	30	50.0	NORMAL	0.02
	150	0.066	1.6	0.25	30	50.0	NORMAL	0.02
	150	0.059	1.5	0.25	30	50.0	NORMAL	0.02
	150	0.052	1.3	0.25	30	50.0	NORMAL	0.02
	150	0.052	1.3	0.25	30	50.0	NORMAL	0.02
	150	0.051	1.3	0.25	30	50.0	NORMAL	0.02
	150	0.049	1.2	0.25	30	50.0	NORMAL	0.02
	150	0.047	1.2	0.25	30	50.0	NORMAL	0.02
	150	0.046	1.1	0.25	30	50.0	NORMAL	0.02
	150	0.045	1.1	0.25	30	50.0	NORMAL	0.02

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
S190	150	0.041	1.0	0.25	30	50.0	NORMAL	0.02
	150	0.037	0.9	0.25	30	50.0	NORMAL	0.02
	150	0.036	0.9	0.25	30	50.0	NORMAL	0.02
	150	0.035	0.9	0.25	30	50.0	NORMAL	0.02
	150	0.024	0.6	0.25	30	50.0	NORMAL	0.02
	150	0.020	0.5	0.25	30	50.0	NORMAL	0.02
	150	0.016	0.4	0.25	30	50.0	NORMAL	0.02
	150	0.009	0.2	0.25	30	50.0	NORMAL	0.02
	150	0.005	0.1	0.25	30	50.0	NORMAL	0.02
	150	0.004	0.1	0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	180	0.159	3.9	0.25	45	50.0	NORMAL	0.02
	180	0.055	1.4	0.25	45	50.0	NORMAL	0.02
	180	0.027	0.7	0.25	45	50.0	NORMAL	0.02
	180	0.026	0.6	0.25	45	50.0	NORMAL	0.02
	180	0.026	0.6	0.25	45	50.0	NORMAL	0.02
	180	0.018	0.4	0.25	45	50.0	NORMAL	0.02
	180	0.018	0.4	0.25	45	50.0	NORMAL	0.02
	180	0.008	0.2	0.25	45	50.0	NORMAL	0.02
	180	0.003	0.1	0.25	45	50.0	NORMAL	0.02
	230	0.095	2.3	0.10	80	75.0	NORMAL	0.02
	230	0.086	2.1	0.10	80	75.0	NORMAL	0.02
	230	0.071	1.8	0.10	80	75.0	NORMAL	0.02
	230	0.025	0.6	0.10	80	75.0	NORMAL	0.02
	230	0.015	0.4	0.10	80	75.0	NORMAL	0.02
	230	0.008	0.2	0.10	80	75.0	NORMAL	0.02
	230	0.003	0.1	0.10	80	75.0	NORMAL	0.02
	230	0.003	0.1	0.10	80	75.0	NORMAL	0.02
	230	0.002		0.10	80	75.0	NORMAL	0.02
	520	0.068	1.7	0.25	45	80.0	NORMAL	0.02
	520	0.047	1.2	0.25	45	80.0	NORMAL	0.02
	520	0.038	0.9	0.25	45	80.0	NORMAL	0.02
	520	0.027	0.7	0.25	45	80.0	NORMAL	0.02
	520	0.026	0.6	0.25	45	80.0	NORMAL	0.02
	520	0.023	0.6	0.25	45	80.0	NORMAL	0.02
	520	0.003	0.1	0.25	45	80.0	NORMAL	0.02
	730	0.400	9.9	0.35	0	60.0	NORMAL	0.04
	730	0.327	8.1	0.35	0	60.0	NORMAL	0.04

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
S190	730	0.001		0.35	0	60.0	NORMAL	0.04
		4.056	**100.1**					
S195	130	0.127	7.0	0.30	15	50.0	NORMAL	0.02
	130	0.052	2.9	0.30	15	50.0	NORMAL	0.02
	130	0.044	2.4	0.30	15	50.0	NORMAL	0.02
	130	0.043	2.4	0.30	15	50.0	NORMAL	0.02
	130	0.043	2.4	0.30	15	50.0	NORMAL	0.02
	130	0.031	1.7	0.30	15	50.0	NORMAL	0.02
	130	0.027	1.5	0.30	15	50.0	NORMAL	0.02
	130	0.024	1.3	0.30	15	50.0	NORMAL	0.02
	130	0.008	0.4	0.30	15	50.0	NORMAL	0.02
	150	0.542	30.0	0.25	30	50.0	NORMAL	0.02
	150	0.102	5.6	0.25	30	50.0	NORMAL	0.02
	150	0.098	5.4	0.25	30	50.0	NORMAL	0.02
	150	0.089	4.9	0.25	30	50.0	NORMAL	0.02
	150	0.077	4.3	0.25	30	50.0	NORMAL	0.02
	150	0.052	2.9	0.25	30	50.0	NORMAL	0.02
	150	0.048	2.7	0.25	30	50.0	NORMAL	0.02
	150	0.045	2.5	0.25	30	50.0	NORMAL	0.02
	150	0.022	1.2	0.25	30	50.0	NORMAL	0.02
	150	0.009	0.5	0.25	30	50.0	NORMAL	0.02
	150	0.001	0.1	0.25	30	50.0	NORMAL	0.02
	520	0.025	1.4	0.25	45	80.0	NORMAL	0.02
	520	0.019	1.1	0.25	45	80.0	NORMAL	0.02
	520	0.001	0.1	0.25	45	80.0	NORMAL	0.02
	730	0.280	15.5	0.35	0	60.0	NORMAL	0.04
		1.809	**100.2**					
S400	150	1.344	87.1	0.25	30	50.0	NORMAL	0.02
	710	0.199	12.9	0.25	0	30.0	DRY	0.05
		1.543	**100.0**					
S410	150	0.617	96.4	0.25	30	50.0	NORMAL	0.02
	714	0.023	3.6	0.15	0	30.0	DRY	0.04
		0.640	**100.0**					
S415	150	0.179	39.7	0.25	30	50.0	NORMAL	0.02
	150	0.097	21.5	0.25	30	50.0	NORMAL	0.02

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
S415	150	0.036	8.0	0.25	30	50.0	NORMAL	0.02
	150	0.002	0.4	0.25	30	50.0	NORMAL	0.02
	180	0.083	18.4	0.25	45	50.0	NORMAL	0.02
	520	0.022	4.9	0.25	45	80.0	NORMAL	0.02
	520	0.012	2.7	0.25	45	80.0	NORMAL	0.02
	730	0.017	3.8	0.35	0	60.0	NORMAL	0.04
	730	0.002	0.4	0.35	0	60.0	NORMAL	0.04
	730	0.001	0.2	0.35	0	60.0	NORMAL	0.04
		0.451	**100.0**					
S420	130	0.082	4.6	0.30	15	50.0	NORMAL	0.02
	130	0.002	0.1	0.30	15	50.0	NORMAL	0.02
	150	0.552	31.2	0.25	30	50.0	NORMAL	0.02
	150	0.273	15.4	0.25	30	50.0	NORMAL	0.02
	150	0.169	9.6	0.25	30	50.0	NORMAL	0.02
	150	0.169	9.6	0.25	30	50.0	NORMAL	0.02
	150	0.115	6.5	0.25	30	50.0	NORMAL	0.02
	180	0.072	4.1	0.25	45	50.0	NORMAL	0.02
	180	0.004	0.2	0.25	45	50.0	NORMAL	0.02
	230	0.031	1.8	0.10	80	75.0	NORMAL	0.02
	520	0.023	1.3	0.25	45	80.0	NORMAL	0.02
	520	0.019	1.1	0.25	45	80.0	NORMAL	0.02
	730	0.174	9.8	0.35	0	60.0	NORMAL	0.04
	730	0.081	4.6	0.35	0	60.0	NORMAL	0.04
	730	0.001	0.1	0.35	0	60.0	NORMAL	0.04
		1.767	**100.0**					
S430	130	0.300	37.7	0.30	15	50.0	NORMAL	0.02
	130	0.005	0.6	0.30	15	50.0	NORMAL	0.02
	150	0.284	35.7	0.25	30	50.0	NORMAL	0.02
	150	0.072	9.0	0.25	30	50.0	NORMAL	0.02
	150	0.031	3.9	0.25	30	50.0	NORMAL	0.02
	150	0.008	1.0	0.25	30	50.0	NORMAL	0.02
	150	0.001	0.1	0.25	30	50.0	NORMAL	0.02
	180	0.008	1.0	0.25	45	50.0	NORMAL	0.02
	520	0.013	1.6	0.25	45	80.0	NORMAL	0.02
	730	0.037	4.6	0.35	0	60.0	NORMAL	0.04
	730	0.036	4.5	0.35	0	60.0	NORMAL	0.04
	730	0.001	0.1	0.35	0	60.0	NORMAL	0.04

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
		0.796	**99.8**					
S435	130	0.150	38.3	0.30	15	50.0	NORMAL	0.02
	130	0.002	0.5	0.30	15	50.0	NORMAL	0.02
	150	0.179	45.7	0.25	30	50.0	NORMAL	0.02
	150	0.033	8.4	0.25	30	50.0	NORMAL	0.02
	180	0.004	1.0	0.25	45	50.0	NORMAL	0.02
	520	0.024	6.1	0.25	45	80.0	NORMAL	0.02
		0.392	**100.0**					
S440	130	0.308	28.8	0.30	15	50.0	NORMAL	0.02
	130	0.033	3.1	0.30	15	50.0	NORMAL	0.02
	150	0.269	25.2	0.25	30	50.0	NORMAL	0.02
	150	0.229	21.4	0.25	30	50.0	NORMAL	0.02
	150	0.002	0.2	0.25	30	50.0	NORMAL	0.02
	180	0.003	0.3	0.25	45	50.0	NORMAL	0.02
	230	0.112	10.5	0.10	80	75.0	NORMAL	0.02
	520	0.001	0.1	0.25	45	80.0	NORMAL	0.02
	730	0.054	5.1	0.35	0	60.0	NORMAL	0.04
	730	0.037	3.5	0.35	0	60.0	NORMAL	0.04
	730	0.020	1.9	0.35	0	60.0	NORMAL	0.04
		1.068	**100.1**					
S450	130	0.304	12.1	0.30	15	50.0	NORMAL	0.02
	130	0.158	6.3	0.30	15	50.0	NORMAL	0.02
	130	0.138	5.5	0.30	15	50.0	NORMAL	0.02
	130	0.073	2.9	0.30	15	50.0	NORMAL	0.02
	130	0.062	2.5	0.30	15	50.0	NORMAL	0.02
	130	0.054	2.1	0.30	15	50.0	NORMAL	0.02
	130	0.044	1.7	0.30	15	50.0	NORMAL	0.02
	150	0.319	12.6	0.25	30	50.0	NORMAL	0.02
	150	0.223	8.8	0.25	30	50.0	NORMAL	0.02
	150	0.162	6.4	0.25	30	50.0	NORMAL	0.02
	150	0.162	6.4	0.25	30	50.0	NORMAL	0.02
	150	0.078	3.1	0.25	30	50.0	NORMAL	0.02
	150	0.054	2.1	0.25	30	50.0	NORMAL	0.02
	150	0.044	1.7	0.25	30	50.0	NORMAL	0.02
	150	0.042	1.7	0.25	30	50.0	NORMAL	0.02
	150	0.029	1.1	0.25	30	50.0	NORMAL	0.02

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
S450	150	0.024	1.0	0.25	30	50.0	NORMAL	0.02
	150	0.023	0.9	0.25	30	50.0	NORMAL	0.02
	150	0.022	0.9	0.25	30	50.0	NORMAL	0.02
	150	0.004	0.2	0.25	30	50.0	NORMAL	0.02
	150	0.003	0.1	0.25	30	50.0	NORMAL	0.02
	150	0.002	0.1	0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	180	0.066	2.6	0.25	45	50.0	NORMAL	0.02
	230	0.001		0.10	80	75.0	NORMAL	0.02
	520	0.019	0.8	0.25	45	80.0	NORMAL	0.02
	520	0.018	0.7	0.25	45	80.0	NORMAL	0.02
	520	0.009	0.4	0.25	45	80.0	NORMAL	0.02
	730	0.213	8.4	0.35	0	60.0	NORMAL	0.04
	730	0.157	6.2	0.35	0	60.0	NORMAL	0.04
	730	0.014	0.6	0.35	0	60.0	NORMAL	0.04
		2.522	**99.9**					
S500	150	0.662	18.2	0.25	30	50.0	NORMAL	0.02
	710	1.937	53.3	0.25	0	30.0	DRY	0.05
	710	1.038	28.5	0.25	0	30.0	DRY	0.05
		3.637	**100.0**					
S510	150	1.115	60.6	0.25	30	50.0	NORMAL	0.02
	150	0.248	13.5	0.25	30	50.0	NORMAL	0.02
	150	0.040	2.2	0.25	30	50.0	NORMAL	0.02
	150	0.025	1.4	0.25	30	50.0	NORMAL	0.02
	150	0.007	0.4	0.25	30	50.0	NORMAL	0.02
	180	0.044	2.4	0.25	45	50.0	NORMAL	0.02
	180	0.021	1.1	0.25	45	50.0	NORMAL	0.02
	230	0.092	5.0	0.10	80	75.0	NORMAL	0.02
	230	0.073	4.0	0.10	80	75.0	NORMAL	0.02
	230	0.041	2.2	0.10	80	75.0	NORMAL	0.02
	730	0.119	6.5	0.35	0	60.0	NORMAL	0.04
	730	0.014	0.8	0.35	0	60.0	NORMAL	0.04
		1.839	**100.1**					
S520	130	0.070	4.7	0.30	15	50.0	NORMAL	0.02
	150	0.184	12.4	0.25	30	50.0	NORMAL	0.02
	150	0.124	8.4	0.25	30	50.0	NORMAL	0.02

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
S520	150	0.105	7.1	0.25	30	50.0	NORMAL	0.02
	150	0.093	6.3	0.25	30	50.0	NORMAL	0.02
	150	0.044	3.0	0.25	30	50.0	NORMAL	0.02
	150	0.039	2.6	0.25	30	50.0	NORMAL	0.02
	150	0.035	2.4	0.25	30	50.0	NORMAL	0.02
	150	0.020	1.3	0.25	30	50.0	NORMAL	0.02
	150	0.011	0.7	0.25	30	50.0	NORMAL	0.02
	150	0.011	0.7	0.25	30	50.0	NORMAL	0.02
	150	0.009	0.6	0.25	30	50.0	NORMAL	0.02
	150	0.008	0.5	0.25	30	50.0	NORMAL	0.02
	150	0.005	0.3	0.25	30	50.0	NORMAL	0.02
	150	0.005	0.3	0.25	30	50.0	NORMAL	0.02
	150	0.004	0.3	0.25	30	50.0	NORMAL	0.02
	150	0.003	0.2	0.25	30	50.0	NORMAL	0.02
	150	0.002	0.1	0.25	30	50.0	NORMAL	0.02
	150	0.002	0.1	0.25	30	50.0	NORMAL	0.02
	230	0.056	3.8	0.10	80	75.0	NORMAL	0.02
	230	0.044	3.0	0.10	80	75.0	NORMAL	0.02
	230	0.013	0.9	0.10	80	75.0	NORMAL	0.02
	230	0.013	0.9	0.10	80	75.0	NORMAL	0.02
	300	0.207	14.0	0.15	55	60.0	NORMAL	0.02
	300	0.132	8.9	0.15	55	60.0	NORMAL	0.02
	300	0.006	0.4	0.15	55	60.0	NORMAL	0.02
	520	0.027	1.8	0.25	45	80.0	NORMAL	0.02
	520	0.017	1.1	0.25	45	80.0	NORMAL	0.02
	720	0.016	1.1	0.20	5	80.0	NORMAL	0.03
	720	0.009	0.6	0.20	5	80.0	NORMAL	0.03
	730	0.067	4.5	0.35	0	60.0	NORMAL	0.04
	730	0.056	3.8	0.35	0	60.0	NORMAL	0.04
	730	0.041	2.8	0.35	0	60.0	NORMAL	0.04
	730	0.003	0.2	0.35	0	60.0	NORMAL	0.04
	730	0.001	0.1	0.35	0	60.0	NORMAL	0.04
		1.482	**99.9**					
S530	130	0.064	2.9	0.30	15	50.0	NORMAL	0.02
	150	0.736	33.1	0.25	30	50.0	NORMAL	0.02
	150	0.243	10.9	0.25	30	50.0	NORMAL	0.02
	150	0.096	4.3	0.25	30	50.0	NORMAL	0.02
	150	0.091	4.1	0.25	30	50.0	NORMAL	0.02
	150	0.091	4.1	0.25	30	50.0	NORMAL	0.02

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
S530	150	0.072	3.2	0.25	30	50.0	NORMAL	0.02
	150	0.053	2.4	0.25	30	50.0	NORMAL	0.02
	150	0.030	1.3	0.25	30	50.0	NORMAL	0.02
	150	0.029	1.3	0.25	30	50.0	NORMAL	0.02
	150	0.026	1.2	0.25	30	50.0	NORMAL	0.02
	150	0.008	0.4	0.25	30	50.0	NORMAL	0.02
	150	0.007	0.3	0.25	30	50.0	NORMAL	0.02
	150	0.003	0.1	0.25	30	50.0	NORMAL	0.02
	150	0.002	0.1	0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
	180	0.027	1.2	0.25	45	50.0	NORMAL	0.02
	180	0.002	0.1	0.25	45	50.0	NORMAL	0.02
	230	0.096	4.3	0.10	80	75.0	NORMAL	0.02
	230	0.076	3.4	0.10	80	75.0	NORMAL	0.02
	230	0.063	2.8	0.10	80	75.0	NORMAL	0.02
	230	0.045	2.0	0.10	80	75.0	NORMAL	0.02
	230	0.020	0.9	0.10	80	75.0	NORMAL	0.02
	520	0.093	4.2	0.25	45	80.0	NORMAL	0.02
	520	0.002	0.1	0.25	45	80.0	NORMAL	0.02
	720	0.005	0.2	0.20	5	80.0	NORMAL	0.03
	730	0.177	8.0	0.35	0	60.0	NORMAL	0.04
	730	0.026	1.2	0.35	0	60.0	NORMAL	0.04
	730	0.024	1.1	0.35	0	60.0	NORMAL	0.04
	730	0.014	0.6	0.35	0	60.0	NORMAL	0.04
		2.225	**99.8**					
S700	150	4.554	86.9	0.25	30	50.0	NORMAL	0.02
	150	0.248	4.7	0.25	30	50.0	NORMAL	0.02
	150	0.243	4.6	0.25	30	50.0	NORMAL	0.02
	150	0.128	2.4	0.25	30	50.0	NORMAL	0.02
	150	0.039	0.7	0.25	30	50.0	NORMAL	0.02
	150	0.026	0.5	0.25	30	50.0	NORMAL	0.02
	150	0.002		0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
		5.241	**99.8**					

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
S720	150	2.343	50.7	0.25	30	50.0	NORMAL	0.02
	150	2.159	46.7	0.25	30	50.0	NORMAL	0.02
	150	0.086	1.9	0.25	30	50.0	NORMAL	0.02
	150	0.027	0.6	0.25	30	50.0	NORMAL	0.02
	150	0.009	0.2	0.25	30	50.0	NORMAL	0.02
	150	0.001		0.25	30	50.0	NORMAL	0.02
		4.625	**100.1**					
S740	130	0.340	30.1	0.30	15	50.0	NORMAL	0.02
	130	0.021	1.9	0.30	15	50.0	NORMAL	0.02
	150	0.338	29.9	0.25	30	50.0	NORMAL	0.02
	150	0.207	18.3	0.25	30	50.0	NORMAL	0.02
	150	0.114	10.1	0.25	30	50.0	NORMAL	0.02
	150	0.014	1.2	0.25	30	50.0	NORMAL	0.02
	150	0.010	0.9	0.25	30	50.0	NORMAL	0.02
	150	0.009	0.8	0.25	30	50.0	NORMAL	0.02
	150	0.008	0.7	0.25	30	50.0	NORMAL	0.02
	150	0.002	0.2	0.25	30	50.0	NORMAL	0.02
	150	0.001	0.1	0.25	30	50.0	NORMAL	0.02
	230	0.028	2.5	0.10	80	75.0	NORMAL	0.02
	520	0.028	2.5	0.25	45	80.0	NORMAL	0.02
	720	0.009	0.8	0.20	5	80.0	NORMAL	0.03
	730	0.001	0.1	0.35	0	60.0	NORMAL	0.04
		1.130	**100.1**					
S900	710	0.860	83.1	0.25	0	30.0	DRY	0.05
	710	0.175	16.9	0.25	0	30.0	DRY	0.05
		1.035	**100.0**					
S910	150	0.794	80.7	0.25	30	50.0	NORMAL	0.02
	150	0.091	9.2	0.25	30	50.0	NORMAL	0.02
	150	0.002	0.2	0.25	30	50.0	NORMAL	0.02
	712	0.081	8.2	0.35	0	30.0	DRY	0.03
	712	0.016	1.6	0.35	0	30.0	DRY	0.03
		0.984	**99.9**					
S915	150	0.429	38.1	0.25	30	50.0	NORMAL	0.02
	712	0.208	18.5	0.35	0	30.0	DRY	0.03
	714	0.489	43.4	0.15	0	30.0	DRY	0.04

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin 01								
		1.126	**100.0**					
S920	150	1.959	59.5	0.25	30	50.0	NORMAL	0.02
	150	0.703	21.4	0.25	30	50.0	NORMAL	0.02
	150	0.232	7.0	0.25	30	50.0	NORMAL	0.02
	150	0.195	5.9	0.25	30	50.0	NORMAL	0.02
	150	0.142	4.3	0.25	30	50.0	NORMAL	0.02
	150	0.006	0.2	0.25	30	50.0	NORMAL	0.02
	150	0.003	0.1	0.25	30	50.0	NORMAL	0.02
	520	0.018	0.5	0.25	45	80.0	NORMAL	0.02
	720	0.009	0.3	0.20	5	80.0	NORMAL	0.03
	730	0.024	0.7	0.35	0	60.0	NORMAL	0.04
		3.291	**99.9**					

Route ID	LOB N	Chan N	ROB N	Length (ft)	Slope (ft/ft)	Max Elev (ft)		1.	2.	3.	4.	5.	6.	7.	8.
NORMAL DEPTH															
Major Basin 01															
100105	0.035	0.055	0.035	11,235.00	0.0045	105.00	X:	-	120.00	240.00	250.00	590.00	600.00	720.00	840.00
							Y:	105.00	102.50	100.00	100.00	100.00	100.00	102.50	105.00
102105	0.045	0.050	0.045	7,656.00	0.0065	104.00	X:	-	40.00	120.00	130.00	250.00	260.00	340.00	380.00
							Y:	104.00	102.00	101.00	100.00	100.00	101.00	102.00	104.00
11015I	0.045	0.035	0.045	3,783.00	0.0267	102.00	X:	-	50.00	100.00	110.00	120.00	130.00	180.00	230.00
							Y:	102.00	101.50	101.00	100.00	100.00	101.00	101.50	102.00
115120	0.030	0.025	0.030	4,077.00	0.0093	105.00	X:	-	30.00	75.00	80.00	105.00	110.00	155.00	190.00
							Y:	105.00	101.50	101.00	100.00	100.00	101.00	101.50	105.00
120135	0.045	0.035	0.045	951.00	0.0074	110.00	X:	-	225.00	450.00	455.00	485.00	490.00	615.00	840.00
							Y:	110.00	105.00	102.00	100.00	100.00	102.00	102.00	110.00
12535I	0.055	0.040	0.055	2,207.00	0.0254	103.00	X:	-	50.00	100.00	101.00	151.00	152.00	202.00	252.00
							Y:	103.00	102.00	101.00	100.00	100.00	101.00	102.00	103.00
130145	0.045	0.045	0.045	18,285.00	0.0149	102.00	X:	-	50.00	100.00	103.00	113.00	116.00	166.00	216.00
							Y:	102.00	101.50	101.00	100.00	100.00	101.00	101.50	102.00
130155	0.045	0.040	0.045	14,782.00	0.0156	102.00	X:	-	100.00	200.00	203.00	253.00	256.00	356.00	456.00
							Y:	102.00	101.50	101.00	100.00	100.00	101.00	101.50	102.00
13035I	0.045	0.035	0.045	1,202.00	0.0241	103.00	X:	-	50.00	100.00	101.00	151.00	152.00	202.00	252.00
							Y:	103.00	102.00	101.00	100.00	100.00	101.00	102.00	103.00
135145	0.045	0.035	0.045	7,938.00	0.0042	110.00	X:	-	300.00	400.00	406.00	506.00	512.00	612.00	912.00
							Y:	110.00	102.50	102.00	100.00	100.00	102.00	102.50	110.00
140145	0.040	0.050	0.040	3,656.00	0.0074	103.00	X:	-	70.00	140.00	150.00	250.00	260.00	330.00	400.00
							Y:	102.00	101.00	100.00	100.00	100.00	100.00	101.00	102.00
145155	0.045	0.035	0.055	631.00	0.0032	110.00	X:	-	150.00	300.00	309.00	379.00	388.00	538.00	838.00
							Y:	110.00	106.50	103.00	100.00	100.00	103.00	106.50	110.00
150130	0.045	0.035	0.045	3,758.00	0.0300	104.00	X:	-	10.00	60.00	66.00	86.00	92.00	142.00	152.00
							Y:	104.00	103.00	102.00	100.00	100.00	102.00	103.00	104.00
150155	0.045	0.040	0.045	19,261.00	0.0188	102.00	X:	-	100.00	200.00	203.00	253.00	256.00	356.00	456.00
							Y:	102.00	101.50	101.00	100.00	100.00	101.00	101.50	102.00
155160	0.035	0.035	0.035	2,291.00	0.0052	110.00	X:	-	200.00	400.00	406.00	506.00	512.00	712.00	912.00
							Y:	110.00	106.50	103.00	100.00	100.00	103.00	106.50	110.00
15I15L	0.045	0.045	0.045	12,775.00	0.0168	104.00	X:	-	50.00	100.00	130.00	170.00	200.00	250.00	300.00
							Y:	104.00	103.00	102.00	100.00	100.00	102.00	103.00	104.00

Route ID	LOB N	Chan N	ROB N	Length (ft)	Slope (ft/ft)	Max Elev (ft)		1.	2.	3.	4.	5.	6.	7.	8.
15I15R	0.035	0.030	0.035	14,128.00	0.0151	105.00	X:	-	25.00	58.00	65.00	85.00	92.00	125.00	150.00
							Y:	105.00	102.50	102.00	100.00	100.00	102.00	102.50	105.00
160170	0.040	0.030	0.040	5,248.00	0.0057	108.00	X:	-	200.00	400.00	406.00	606.00	612.00	812.00	1,012.00
							Y:	108.00	103.00	102.00	100.00	100.00	102.00	103.00	108.00
165170	0.050	0.035	0.050	13,704.00	0.0161	104.00	X:	-	50.00	100.00	106.00	131.00	137.00	187.00	237.00
							Y:	104.00	103.00	102.00	100.00	100.00	102.00	103.00	104.00
170180	0.045	0.035	0.045	6,770.00	0.0065	110.00	X:	-	200.00	400.00	406.00	606.00	612.00	812.00	1,012.00
							Y:	110.00	103.00	102.00	100.00	100.00	102.00	103.00	110.00
170R	0.045	0.045	0.045	3,986.00	0.0115	104.00	X:	-	50.00	100.00	103.00	113.00	116.00	166.00	216.00
							Y:	103.00	102.00	101.00	100.00	100.00	101.00	102.00	103.00
175R	0.045	0.045	0.045	3,217.00	0.0134	103.00	X:	-	50.00	100.00	103.00	153.00	156.00	216.00	266.00
							Y:	103.00	102.00	101.00	100.00	100.00	101.00	102.00	103.00
180185	0.045	0.035	0.045	3,450.00	0.0075	106.00	X:	-	100.00	200.00	206.00	406.00	412.00	512.00	612.00
							Y:	106.00	104.00	102.00	100.00	100.00	102.00	104.00	106.00
180R	0.045	0.045	0.045	2,965.00	0.0128	103.00	X:	-	50.00	100.00	103.00	128.00	131.00	181.00	231.00
							Y:	103.00	102.00	101.00	100.00	100.00	101.00	102.00	103.00
185190	0.045	0.040	0.045	2,700.00	0.0119	106.00	X:	-	80.00	160.00	166.00	416.00	422.00	502.00	582.00
							Y:	106.00	103.00	102.00	100.00	100.00	102.00	103.00	106.00
185R	0.045	0.035	0.045	8,534.00	0.0120	104.00	X:	-	30.00	100.00	106.00	156.00	162.00	232.00	262.00
							Y:	104.00	102.00	102.00	100.00	100.00	102.00	102.00	104.00
190195	0.045	0.035	0.045	4,941.00	0.0107	110.00	X:	-	50.00	200.00	206.00	356.00	366.00	516.00	566.00
							Y:	110.00	103.00	102.00	100.00	100.00	102.00	103.00	110.00
35I135	0.050	0.035	0.050	12,580.00	0.0168	102.00	X:	-	100.00	200.00	203.00	253.00	256.00	356.00	456.00
							Y:	102.00	101.50	101.00	100.00	100.00	101.00	101.50	102.00
400430	0.045	0.040	0.045	8,383.00	0.0130	105.00	X:	-	12.00	25.00	31.00	61.00	67.00	80.00	92.00
							Y:	105.00	104.00	103.00	100.00	100.00	103.00	104.00	105.00
410415	0.045	0.035	0.045	6,871.00	0.0143	103.00	X:	-	30.00	200.00	203.00	253.00	256.00	426.00	456.00
							Y:	103.00	101.00	101.00	100.00	100.00	101.00	101.00	103.00
415420	0.045	0.035	0.045	18,114.00	0.0130	104.00	X:	-	30.00	60.00	66.00	96.00	102.00	132.00	162.00
							Y:	104.00	102.00	102.00	100.00	100.00	102.00	102.00	104.00
430440	0.035	0.035	0.035	13,256.00	0.0128	106.00	X:	-	16.00	32.00	38.00	68.00	74.00	90.00	106.00
							Y:	106.00	104.50	103.00	100.00	100.00	103.00	104.50	106.00
435450	0.045	0.035	0.045	18,781.00	0.0119	105.00	X:	-	40.00	120.00	126.00	146.00	152.00	232.00	272.00
							Y:	105.00	103.00	102.00	100.00	100.00	102.00	103.00	105.00

Route ID	LOB N	Chan N	ROB N	Length (ft)	Slope (ft/ft)	Max Elev (ft)		1.	2.	3.	4.	5.	6.	7.	8.
440450	0.035	0.040	0.035	4,154.00	0.0104	103.00	X:	-	150.00	300.00	303.00	333.00	336.00	486.00	636.00
							Y:	102.00	101.50	101.00	100.00	100.00	101.00	101.50	102.00
500510	0.045	0.035	0.045	14,544.00	0.0186	104.00	X:	-	20.00	100.00	106.00	206.00	212.00	292.00	312.00
							Y:	104.00	103.00	102.00	100.00	100.00	102.00	103.00	104.00
510520	0.045	0.035	0.045	20,653.00	0.0117	105.00	X:	-	20.00	120.00	126.00	156.00	166.00	266.00	286.00
							Y:	105.00	103.00	102.00	100.00	100.00	102.00	103.00	105.00
510530	0.045	0.040	0.045	18,095.00	0.0126	106.00	X:	-	20.00	80.00	86.00	121.00	127.00	187.00	207.00
							Y:	106.00	102.00	102.00	100.00	100.00	102.00	102.00	106.00
900910	0.045	0.035	0.045	10,207.00	0.0192	103.00	X:	-	80.00	160.00	163.00	178.00	181.00	261.00	341.00
							Y:	103.00	102.00	101.00	100.00	100.00	101.00	102.00	103.00
910915	0.045	0.035	0.045	2,998.00	0.0110	103.00	X:	-	100.00	200.00	203.00	223.00	226.00	326.00	426.00
							Y:	103.00	102.00	101.00	100.00	100.00	101.00	102.00	103.00
915920	0.045	0.035	0.045	9,456.00	0.0103	104.00	X:	-	100.00	200.00	203.00	223.00	226.00	326.00	426.00
							Y:	103.00	102.00	101.00	100.00	100.00	101.00	102.00	103.00
RI180R	0.045	0.040	0.045	3,866.00	0.0122	104.00	X:	-	50.00	100.00	106.00	156.00	166.00	216.00	266.00
							Y:	104.00	103.00	102.00	100.00	100.00	102.00	103.00	104.00

FCDMC
Drainage Design Management System
HEC-1 STORAGE FACILITIES
Project Reference: A4_FU24

8/16/2006

Basin ID	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
RR102	Elevation Top of Dam: 1,556.00		Length of Dam: 1,320.00		Discharge Coefficient: 3.20			Weir Coefficient:1.50		
Volume (ac-ft)		553.00	1,148.00	2,316.00	2,705.00					
Discharge (cfs)			128	587	600					
Elevation (ft)	1,543.0	1,550.0	1,552.0	1,555.0	1,556.0	-	-	-	-	-

	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Peak Volume (ac-ft)						759.00
Peak Stage (ft)						1,550.69

Diversion ID/ DT Card ID	Maximum Volume (ac-ft)	Maximum Diversion (cfs)		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
D15I			**Inflow (cfs)**		100	1,000	10,000						
			Diversion (cfs)		20	200	2,000						
D400			**Inflow (cfs)**		100	1,000	10,000						
			Diversion (cfs)		50	500	5,000						
D150			**Inflow (cfs)**		100	1,000	10,000						
			Diversion (cfs)		90	900	9,000						
D410			**Inflow (cfs)**		100	1,000	10,000						
			Diversion (cfs)		10	100	1,000						
D130			**Inflow (cfs)**		100	1,000	10,000						
			Diversion (cfs)		30	300	3,000						
D510			**Inflow (cfs)**		100	1,000	10,000						
			Diversion (cfs)		65	650	6,500						
D1302			**Inflow (cfs)**		100	1,000	10,000						
			Diversion (cfs)		10	100	1,000						
D102			**Inflow (cfs)**		100	1,000	10,000						
			Diversion (cfs)		50	500	5,000						
D100V	681		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D105V	409		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D102V	292		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D110V	2		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								

Diversion ID/ DT Card ID	Maximum Volume (ac-ft)	Maximum Diversion (cfs)		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
D115V	167		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D120V	161		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D125V	4		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D130V	16		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D135V	89		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D140V	144		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D145V	183		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D150V	3		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D155V	136		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D160V	109		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D165V	47		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D170V	141		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								

Diversion ID/ DT Card ID	Maximum Volume (ac-ft)	Maximum Diversion (cfs)		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
D175V	168		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D180V	129		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D185V	213		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D190V	346		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D195V	145		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D400V	134		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D410V	61		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D415V	46		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D420V	153		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D435V	37		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D440V	92		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D450V	198		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								

Diversion ID/ DT Card ID	Maximum Volume (ac-ft)	Maximum Diversion (cfs)		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
D500V	66		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D510V	178		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D520V	137		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D530V	209		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D700V	522		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D720V	461		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D740V	106		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D900V			**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D910V	88		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D915V	43		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D920V	325		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								
D430V	66		**Inflow (cfs)**		10,000								
			Diversion (cfs)		10,000								

Future Condtion Retention Volume Calculations

Sub Basin	Land Use Code	Area (sq.mi.)	Area (%)	IA (inches)	RTIMP (%)	Veg. Cover (%)	DTHETA	Kn	Equiv. C	Retention (Ac-ft)
S100	130	0.576	8.2	0.30	15	50.0	NORMAL	0.02	0.56	45.2
	130	0.449	6.4	0.30	15	50.0	NORMAL	0.02	0.56	35.3
	130	0.001		0.30	15	50.0	NORMAL	0.02	0.56	0.1
	150	3.027	43.3	0.25	30	50.0	NORMAL	0.02	0.71	301.5
	150	0.691	9.9	0.25	30	50.0	NORMAL	0.02	0.71	68.8
	150	0.615	8.8	0.25	30	50.0	NORMAL	0.02	0.71	61.2
	150	0.582	8.3	0.25	30	50.0	NORMAL	0.02	0.71	58.0
	150	0.457	6.5	0.25	30	50.0	NORMAL	0.02	0.71	45.5
	150	0.120	1.7	0.25	30	50.0	NORMAL	0.02	0.71	12.0
	150	0.027	0.4	0.25	30	50.0	NORMAL	0.02	0.71	2.7
	150	0.008	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.8
	150	0.003		0.25	30	50.0	NORMAL	0.02	0.71	0.3
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
	230	0.162	2.3	0.10	80	75.0	NORMAL	0.02	0.95	21.6
	230	0.051	0.7	0.10	80	75.0	NORMAL	0.02	0.95	6.8
	230	0.024	0.3	0.10	80	75.0	NORMAL	0.02	0.95	3.2
	230	0.023	0.3	0.10	80	75.0	NORMAL	0.02	0.95	3.1
	230	0.001		0.10	80	75.0	NORMAL	0.02	0.95	0.1
	520	0.093	1.3	0.25	45	80.0	NORMAL	0.02	0.88	11.5
	520	0.025	0.4	0.25	45	80.0	NORMAL	0.02	0.88	3.1
	730	0.041	0.6	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.014	0.2	0.35	0	60.0	NORMAL	0.04	0	0.0
		6.997	**99.7**							**681.4**
S102	130	0.932	28.8	0.30	15	50.0	NORMAL	0.02	0.56	73.2
	130	0.566	17.5	0.30	15	50.0	NORMAL	0.02	0.56	44.5
	130	0.004	0.1	0.30	15	50.0	NORMAL	0.02	0.56	0.3
	150	0.719	22.2	0.25	30	50.0	NORMAL	0.02	0.71	71.6
	150	0.546	16.9	0.25	30	50.0	NORMAL	0.02	0.71	54.4
	150	0.348	10.8	0.25	30	50.0	NORMAL	0.02	0.71	34.7
	150	0.044	1.4	0.25	30	50.0	NORMAL	0.02	0.71	4.4
	150	0.011	0.3	0.25	30	50.0	NORMAL	0.02	0.71	1.1
	150	0.004	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.4
	150	0.002	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.2
	230	0.021	0.6	0.10	80	75.0	NORMAL	0.02	0.95	2.8
	520	0.040	1.2	0.25	45	80.0	NORMAL	0.02	0.88	4.9
		3.237	**100.0**							**292.4**

Future Condtion Retention Volume Calculations

Sub Basin	Land Use Code	Area (sq.mi.)	Area (%)	IA (inches)	RTIMP (%)	Veg. Cover (%)	DTHETA	Kn	Equiv. C	Retention (Ac-ft)
S105	150	1.079	24.7	0.25	30	50.0	NORMAL	0.02	0.71	107.5
	150	0.724	16.6	0.25	30	50.0	NORMAL	0.02	0.71	72.1
	150	0.640	14.6	0.25	30	50.0	NORMAL	0.02	0.71	63.7
	150	0.479	11.0	0.25	30	50.0	NORMAL	0.02	0.71	47.7
	150	0.435	10.0	0.25	30	50.0	NORMAL	0.02	0.71	43.3
	150	0.357	8.2	0.25	30	50.0	NORMAL	0.02	0.71	35.6
	150	0.262	6.0	0.25	30	50.0	NORMAL	0.02	0.71	26.1
	150	0.034	0.8	0.25	30	50.0	NORMAL	0.02	0.71	3.4
	150	0.013	0.3	0.25	30	50.0	NORMAL	0.02	0.71	1.3
	150	0.004	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.4
	180	0.023	0.5	0.25	45	50.0	NORMAL	0.02	0.88	2.8
	230	0.018	0.4	0.10	80	75.0	NORMAL	0.02	0.95	2.4
	230	0.006	0.1	0.10	80	75.0	NORMAL	0.02	0.95	0.8
	520	0.012	0.3	0.25	45	80.0	NORMAL	0.02	0.88	1.5
	720	0.003	0.1	0.20	5	80.0	NORMAL	0.03	0.25	0.1
	730	0.125	2.9	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.093	2.1	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.061	1.4	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.003	0.1	0.35	0	60.0	NORMAL	0.04	0	0.0
		4.371	**100.2**							**408.7**
S110	150	0.024	5.6	0.25	30	50.0	NORMAL	0.02	0.71	2.4
	710	0.406	94.4	0.25	0	30.0	DRY	0.05	0	0.0
		0.430	**100.0**							**2.4**
S115	130	0.004	0.2	0.30	15	50.0	NORMAL	0.02	0.56	0.3
	150	0.899	40.0	0.25	30	50.0	NORMAL	0.02	0.71	89.5
	150	0.598	26.6	0.25	30	50.0	NORMAL	0.02	0.71	59.6
	150	0.103	4.6	0.25	30	50.0	NORMAL	0.02	0.71	10.3
	150	0.006	0.3	0.25	30	50.0	NORMAL	0.02	0.71	0.6
	150	0.005	0.2	0.25	30	50.0	NORMAL	0.02	0.71	0.5
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
	230	0.030	1.3	0.10	80	75.0	NORMAL	0.02	0.95	4.0
	230	0.012	0.5	0.10	80	75.0	NORMAL	0.02	0.95	1.6
	230	0.001		0.10	80	75.0	NORMAL	0.02	0.95	0.1
	710	0.271	12.1	0.25	0	30.0	DRY	0.05	0	0.0
	710	0.047	2.1	0.25	0	30.0	DRY	0.05	0	0.0
	712	0.144	6.4	0.35	0	30.0	DRY	0.03	0	0.0
	712	0.127	5.6	0.35	0	30.0	DRY	0.03	0	0.0
		2.248	**99.9**							**166.6**

Future Condtion Retention Volume Calculations

Sub Basin	Land Use Code	Area (sq.mi.)	Area (%)	IA (inches)	RTIMP (%)	Veg. Cover (%)	DTHETA	Kn	Equiv. C	Retention (Ac-ft)
S120	130	0.082	4.1	0.30	15	50.0	NORMAL	0.02	0.56	6.4
	130	0.072	3.6	0.30	15	50.0	NORMAL	0.02	0.56	5.7
	130	0.003	0.1	0.30	15	50.0	NORMAL	0.02	0.56	0.2
	130	0.001	0.1	0.30	15	50.0	NORMAL	0.02	0.56	0.1
	150	0.543	27.1	0.25	30	50.0	NORMAL	0.02	0.71	54.1
	150	0.475	23.7	0.25	30	50.0	NORMAL	0.02	0.71	47.3
	150	0.245	12.2	0.25	30	50.0	NORMAL	0.02	0.71	24.4
	150	0.034	1.7	0.25	30	50.0	NORMAL	0.02	0.71	3.4
	150	0.003	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.3
	230	0.040	2.0	0.10	80	75.0	NORMAL	0.02	0.95	5.3
	230	0.027	1.3	0.10	80	75.0	NORMAL	0.02	0.95	3.6
	230	0.021	1.0	0.10	80	75.0	NORMAL	0.02	0.95	2.8
	520	0.024	1.2	0.25	45	80.0	NORMAL	0.02	0.88	3.0
	520	0.019	0.9	0.25	45	80.0	NORMAL	0.02	0.88	2.3
	710	0.015	0.7	0.25	0	30.0	DRY	0.05	0	0.0
	720	0.065	3.2	0.20	5	80.0	NORMAL	0.03	0.25	2.3
	730	0.326	16.3	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.004	0.2	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.002	0.1	0.35	0	60.0	NORMAL	0.04	0	0.0
		2.001	**99.6**							**161.2**
S125	150	0.040	43.0	0.25	30	50.0	NORMAL	0.02	0.71	4.0
	710	0.053	57.0	0.25	0	30.0	DRY	0.05	0	0.0
		0.093	**100.0**							**4.0**
S130	150	0.162	52.1	0.25	30	50.0	NORMAL	0.02	0.71	16.1
	710	0.149	47.9	0.25	0	30.0	DRY	0.05	0	0.0
		0.311	**100.0**							**16.1**
S135	130	0.157	17.9	0.30	15	50.0	NORMAL	0.02	0.56	12.3
	130	0.003	0.3	0.30	15	50.0	NORMAL	0.02	0.56	0.2
	150	0.181	20.6	0.25	30	50.0	NORMAL	0.02	0.71	18.0
	150	0.141	16.1	0.25	30	50.0	NORMAL	0.02	0.71	14.0
	150	0.127	14.5	0.25	30	50.0	NORMAL	0.02	0.71	12.6
	150	0.010	1.1	0.25	30	50.0	NORMAL	0.02	0.71	1.0
	180	0.013	1.5	0.25	45	50.0	NORMAL	0.02	0.88	1.6
	230	0.114	13.0	0.10	80	75.0	NORMAL	0.02	0.95	15.2
	230	0.072	8.2	0.10	80	75.0	NORMAL	0.02	0.95	9.6
	230	0.011	1.3	0.10	80	75.0	NORMAL	0.02	0.95	1.5
	230	0.001	0.1	0.10	80	75.0	NORMAL	0.02	0.95	0.1
	520	0.019	2.2	0.25	45	80.0	NORMAL	0.02	0.88	2.3
	730	0.029	3.3	0.35	0	60.0	NORMAL	0.04	0	0.0
		0.878	**100.1**							**88.6**

Future Condtion Retention Volume Calculations

Sub Basin	Land Use Code	Area (sq.mi.)	Area (%)	IA (inches)	RTIMP (%)	Veg. Cover (%)	DTHETA	Kn	Equiv. C	Retention (Ac-ft)
S140	150	0.599	43.6	0.25	30	50.0	NORMAL	0.02	0.71	59.7
	150	0.473	34.5	0.25	30	50.0	NORMAL	0.02	0.71	47.1
	150	0.001	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.1
	180	0.002	0.1	0.25	45	50.0	NORMAL	0.02	0.88	0.2
	230	0.278	20.2	0.10	80	75.0	NORMAL	0.02	0.95	37.0
	730	0.020	1.5	0.35	0	60.0	NORMAL	0.04	0	0.0
		1.373	**100.0**							**144.2**
S145	130	0.082	4.7	0.30	15	50.0	NORMAL	0.02	0.56	6.4
	150	0.182	10.4	0.25	30	50.0	NORMAL	0.02	0.71	18.1
	150	0.051	2.9	0.25	30	50.0	NORMAL	0.02	0.71	5.1
	150	0.030	1.7	0.25	30	50.0	NORMAL	0.02	0.71	3.0
	150	0.017	1.0	0.25	30	50.0	NORMAL	0.02	0.71	1.7
	180	0.133	7.6	0.25	45	50.0	NORMAL	0.02	0.88	16.4
	180	0.106	6.0	0.25	45	50.0	NORMAL	0.02	0.88	13.1
	180	0.049	2.8	0.25	45	50.0	NORMAL	0.02	0.88	6.0
	180	0.017	1.0	0.25	45	50.0	NORMAL	0.02	0.88	2.1
	230	0.277	15.8	0.10	80	75.0	NORMAL	0.02	0.95	36.9
	230	0.093	5.3	0.10	80	75.0	NORMAL	0.02	0.95	12.4
	230	0.091	5.2	0.10	80	75.0	NORMAL	0.02	0.95	12.1
	230	0.078	4.4	0.10	80	75.0	NORMAL	0.02	0.95	10.4
	230	0.070	4.0	0.10	80	75.0	NORMAL	0.02	0.95	9.3
	230	0.062	3.5	0.10	80	75.0	NORMAL	0.02	0.95	8.3
	230	0.038	2.2	0.10	80	75.0	NORMAL	0.02	0.95	5.1
	230	0.034	1.9	0.10	80	75.0	NORMAL	0.02	0.95	4.5
	520	0.059	3.4	0.25	45	80.0	NORMAL	0.02	0.88	7.3
	520	0.021	1.2	0.25	45	80.0	NORMAL	0.02	0.88	2.6
	520	0.020	1.1	0.25	45	80.0	NORMAL	0.02	0.88	2.5
	730	0.247	14.1	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.001	0.1	0.35	0	60.0	NORMAL	0.04	0	0.0
		1.758	**100.3**							**183.3**
S150	150	0.033	4.3	0.25	30	50.0	NORMAL	0.02	0.71	3.3
	710	0.740	95.7	0.25	0	30.0	DRY	0.05	0	0.0
		0.773	**100.0**							**3.3**

Future Condtion Retention Volume Calculations

Sub Basin	Land Use Code	Area (sq.mi.)	Area (%)	IA (inches)	RTIMP (%)	Veg. Cover (%)	DTHETA	Kn	Equiv. C	Retention (Ac-ft)
S155	130	0.261	14.3	0.30	15	50.0	NORMAL	0.02	0.56	20.5
	130	0.027	1.5	0.30	15	50.0	NORMAL	0.02	0.56	2.1
	130	0.001	0.1	0.30	15	50.0	NORMAL	0.02	0.56	0.1
	150	0.469	25.6	0.25	30	50.0	NORMAL	0.02	0.71	46.7
	150	0.359	19.6	0.25	30	50.0	NORMAL	0.02	0.71	35.8
	150	0.057	3.1	0.25	30	50.0	NORMAL	0.02	0.71	5.7
	150	0.004	0.2	0.25	30	50.0	NORMAL	0.02	0.71	0.4
	150	0.001	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.1
	180	0.092	5.0	0.25	45	50.0	NORMAL	0.02	0.88	11.4
	180	0.009	0.5	0.25	45	50.0	NORMAL	0.02	0.88	1.1
	230	0.031	1.7	0.10	80	75.0	NORMAL	0.02	0.95	4.1
	230	0.017	0.9	0.10	80	75.0	NORMAL	0.02	0.95	2.3
	230	0.002	0.1	0.10	80	75.0	NORMAL	0.02	0.95	0.3
	520	0.022	1.2	0.25	45	80.0	NORMAL	0.02	0.88	2.7
	520	0.018	1.0	0.25	45	80.0	NORMAL	0.02	0.88	2.2
	520	0.006	0.3	0.25	45	80.0	NORMAL	0.02	0.88	0.7
	520	0.002	0.1	0.25	45	80.0	NORMAL	0.02	0.88	0.2
	730	0.453	24.7	0.35	0	60.0	NORMAL	0.04	0	0.0
		1.831	**100.0**							**136.4**
S160	130	0.179	15.7	0.30	15	50.0	NORMAL	0.02	0.56	14.1
	150	0.386	33.8	0.25	30	50.0	NORMAL	0.02	0.71	38.4
	150	0.303	26.5	0.25	30	50.0	NORMAL	0.02	0.71	30.2
	180	0.030	2.6	0.25	45	50.0	NORMAL	0.02	0.88	3.7
	180	0.003	0.3	0.25	45	50.0	NORMAL	0.02	0.88	0.4
	180	0.003	0.3	0.25	45	50.0	NORMAL	0.02	0.88	0.4
	230	0.110	9.6	0.10	80	75.0	NORMAL	0.02	0.95	14.7
	230	0.033	2.9	0.10	80	75.0	NORMAL	0.02	0.95	4.4
	520	0.020	1.7	0.25	45	80.0	NORMAL	0.02	0.88	2.5
	520	0.002	0.2	0.25	45	80.0	NORMAL	0.02	0.88	0.2
	730	0.074	6.5	0.35	0	60.0	NORMAL	0.04	0	0.0
		1.143	**100.1**							**108.9**
S165	150	0.467	75.8	0.25	30	50.0	NORMAL	0.02	0.71	46.5
	710	0.149	24.2	0.25	0	30.0	DRY	0.05	0	0.0
		0.616	**100.0**							**46.5**
S170	130	0.164	11.2	0.30	15	50.0	NORMAL	0.02	0.56	12.9
	130	0.101	6.9	0.30	15	50.0	NORMAL	0.02	0.56	7.9
	150	0.590	40.3	0.25	30	50.0	NORMAL	0.02	0.71	58.8
	150	0.331	22.6	0.25	30	50.0	NORMAL	0.02	0.71	33.0
	150	0.075	5.1	0.25	30	50.0	NORMAL	0.02	0.71	7.5
	150	0.069	4.7	0.25	30	50.0	NORMAL	0.02	0.71	6.9
	150	0.010	0.7	0.25	30	50.0	NORMAL	0.02	0.71	1.0
	150	0.003	0.2	0.25	30	50.0	NORMAL	0.02	0.71	0.3
	520	0.104	7.1	0.25	45	80.0	NORMAL	0.02	0.88	12.8
	730	0.011	0.8	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.004	0.3	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.001	0.1	0.35	0	60.0	NORMAL	0.04	0	0.0
		1.463	**100.0**							**141.0**

Future Condtion Retention Volume Calculations

Sub Basin	Land Use Code	Area (sq.mi.)	Area (%)	IA (inches)	RTIMP (%)	Veg. Cover (%)	DTHETA	Kn	Equiv. C	Retention (Ac-ft)
S175	150	1.237	68.6	0.25	30	50.0	NORMAL	0.02	0.71	123.2
	150	0.226	12.5	0.25	30	50.0	NORMAL	0.02	0.71	22.5
	150	0.118	6.5	0.25	30	50.0	NORMAL	0.02	0.71	11.8
	150	0.010	0.6	0.25	30	50.0	NORMAL	0.02	0.71	1.0
	230	0.030	1.7	0.10	80	75.0	NORMAL	0.02	0.95	4.0
	520	0.023	1.3	0.25	45	80.0	NORMAL	0.02	0.88	2.8
	520	0.020	1.1	0.25	45	80.0	NORMAL	0.02	0.88	2.5
	710	0.083	4.6	0.25	0	30.0	DRY	0.05	0	0.0
	730	0.054	3.0	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.001	0.1	0.35	0	60.0	NORMAL	0.04	0	0.0
		1.802	**100.0**							**167.8**
S180	150	0.773	53.6	0.25	30	50.0	NORMAL	0.02	0.71	77.0
	150	0.298	20.7	0.25	30	50.0	NORMAL	0.02	0.71	29.7
	150	0.003	0.2	0.25	30	50.0	NORMAL	0.02	0.71	0.3
	180	0.064	4.4	0.25	45	50.0	NORMAL	0.02	0.88	7.9
	180	0.012	0.8	0.25	45	50.0	NORMAL	0.02	0.88	1.5
	230	0.055	3.8	0.10	80	75.0	NORMAL	0.02	0.95	7.3
	230	0.041	2.8	0.10	80	75.0	NORMAL	0.02	0.95	5.5
	710	0.190	13.2	0.25	0	30.0	DRY	0.05	0	0.0
	730	0.006	0.4	0.35	0	60.0	NORMAL	0.04	0	0.0
		1.442	**99.9**							**129.1**
S185	150	1.634	67.5	0.25	30	50.0	NORMAL	0.02	0.71	162.7
	150	0.370	15.3	0.25	30	50.0	NORMAL	0.02	0.71	36.8
	150	0.011	0.5	0.25	30	50.0	NORMAL	0.02	0.71	1.1
	150	0.009	0.4	0.25	30	50.0	NORMAL	0.02	0.71	0.9
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
	180	0.050	2.1	0.25	45	50.0	NORMAL	0.02	0.88	6.2
	180	0.003	0.1	0.25	45	50.0	NORMAL	0.02	0.88	0.4
	230	0.015	0.6	0.10	80	75.0	NORMAL	0.02	0.95	2.0
	520	0.025	1.0	0.25	45	80.0	NORMAL	0.02	0.88	3.1
	710	0.204	8.4	0.25	0	30.0	DRY	0.05	0	0.0
	714	0.006	0.2	0.15	0	30.0	DRY	0.04	0	0.0
	730	0.091	3.8	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.003	0.1	0.35	0	60.0	NORMAL	0.04	0	0.0
		2.422	**100.0**							**213.3**

Future Condtion Retention Volume Calculations

Sub Basin	Land Use Code	Area (sq.mi.)	Area (%)	IA (inches)	RTIMP (%)	Veg. Cover (%)	DTHETA	Kn	Equiv. C	Retention (Ac-ft)
S190	130	0.179	4.4	0.30	15	50.0	NORMAL	0.02	0.56	14.1
	130	0.099	2.4	0.30	15	50.0	NORMAL	0.02	0.56	7.8
	130	0.085	2.1	0.30	15	50.0	NORMAL	0.02	0.56	6.7
	130	0.042	1.0	0.30	15	50.0	NORMAL	0.02	0.56	3.3
	130	0.040	1.0	0.30	15	50.0	NORMAL	0.02	0.56	3.1
	150	0.384	9.5	0.25	30	50.0	NORMAL	0.02	0.71	38.2
	150	0.295	7.3	0.25	30	50.0	NORMAL	0.02	0.71	29.4
	150	0.274	6.8	0.25	30	50.0	NORMAL	0.02	0.71	27.3
	150	0.196	4.8	0.25	30	50.0	NORMAL	0.02	0.71	19.5
	150	0.086	2.1	0.25	30	50.0	NORMAL	0.02	0.71	8.6
	150	0.071	1.8	0.25	30	50.0	NORMAL	0.02	0.71	7.1
	150	0.066	1.6	0.25	30	50.0	NORMAL	0.02	0.71	6.6
	150	0.059	1.5	0.25	30	50.0	NORMAL	0.02	0.71	5.9
	150	0.052	1.3	0.25	30	50.0	NORMAL	0.02	0.71	5.2
	150	0.052	1.3	0.25	30	50.0	NORMAL	0.02	0.71	5.2
	150	0.051	1.3	0.25	30	50.0	NORMAL	0.02	0.71	5.1
	150	0.049	1.2	0.25	30	50.0	NORMAL	0.02	0.71	4.9
	150	0.047	1.2	0.25	30	50.0	NORMAL	0.02	0.71	4.7
	150	0.046	1.1	0.25	30	50.0	NORMAL	0.02	0.71	4.6
	150	0.045	1.1	0.25	30	50.0	NORMAL	0.02	0.71	4.5
	150	0.041	1.0	0.25	30	50.0	NORMAL	0.02	0.71	4.1
	150	0.037	0.9	0.25	30	50.0	NORMAL	0.02	0.71	3.7
	150	0.036	0.9	0.25	30	50.0	NORMAL	0.02	0.71	3.6
	150	0.035	0.9	0.25	30	50.0	NORMAL	0.02	0.71	3.5
	150	0.024	0.6	0.25	30	50.0	NORMAL	0.02	0.71	2.4
	150	0.020	0.5	0.25	30	50.0	NORMAL	0.02	0.71	2.0
	150	0.016	0.4	0.25	30	50.0	NORMAL	0.02	0.71	1.6
	150	0.009	0.2	0.25	30	50.0	NORMAL	0.02	0.71	0.9
	150	0.005	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.5
	150	0.004	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.4
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
	180	0.159	3.9	0.25	45	50.0	NORMAL	0.02	0.88	19.6
	180	0.055	1.4	0.25	45	50.0	NORMAL	0.02	0.88	6.8
	180	0.027	0.7	0.25	45	50.0	NORMAL	0.02	0.88	3.3
	180	0.026	0.6	0.25	45	50.0	NORMAL	0.02	0.88	3.2
	180	0.026	0.6	0.25	45	50.0	NORMAL	0.02	0.88	3.2
	180	0.018	0.4	0.25	45	50.0	NORMAL	0.02	0.88	2.2
	180	0.018	0.4	0.25	45	50.0	NORMAL	0.02	0.88	2.2
	180	0.008	0.2	0.25	45	50.0	NORMAL	0.02	0.88	1.0
	180	0.003	0.1	0.25	45	50.0	NORMAL	0.02	0.88	0.4
	230	0.095	2.3	0.10	80	75.0	NORMAL	0.02	0.95	12.7
	230	0.086	2.1	0.10	80	75.0	NORMAL	0.02	0.95	11.5
	230	0.071	1.8	0.10	80	75.0	NORMAL	0.02	0.95	9.5
	230	0.025	0.6	0.10	80	75.0	NORMAL	0.02	0.95	3.3
	230	0.015	0.4	0.10	80	75.0	NORMAL	0.02	0.95	2.0
	230	0.008	0.2	0.10	80	75.0	NORMAL	0.02	0.95	1.1
	230	0.003	0.1	0.10	80	75.0	NORMAL	0.02	0.95	0.4
	230	0.003	0.1	0.10	80	75.0	NORMAL	0.02	0.95	0.4
	230	0.002		0.10	80	75.0	NORMAL	0.02	0.95	0.3
	520	0.068	1.7	0.25	45	80.0	NORMAL	0.02	0.88	8.4
	520	0.047	1.2	0.25	45	80.0	NORMAL	0.02	0.88	5.8
	520	0.038	0.9	0.25	45	80.0	NORMAL	0.02	0.88	4.7

Future Condtion Retention Volume Calculations

Sub Basin	Land Use Code	Area (sq.mi.)	Area (%)	IA (inches)	RTIMP (%)	Veg. Cover (%)	DTHETA	Kn	Equiv. C	Retention (Ac-ft)
	520	0.027	0.7	0.25	45	80.0	NORMAL	0.02	0.88	3.3
	520	0.026	0.6	0.25	45	80.0	NORMAL	0.02	0.88	3.2
	520	0.023	0.6	0.25	45	80.0	NORMAL	0.02	0.88	2.8
	520	0.003	0.1	0.25	45	80.0	NORMAL	0.02	0.88	0.4
	730	0.400	9.9	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.327	8.1	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.001		0.35	0	60.0	NORMAL	0.04	0	0.0
		4.056	**100.1**							**346.1**
S195	130	0.127	7.0	0.30	15	50.0	NORMAL	0.02	0.56	10.0
	130	0.052	2.9	0.30	15	50.0	NORMAL	0.02	0.56	4.1
	130	0.044	2.4	0.30	15	50.0	NORMAL	0.02	0.56	3.5
	130	0.043	2.4	0.30	15	50.0	NORMAL	0.02	0.56	3.4
	130	0.043	2.4	0.30	15	50.0	NORMAL	0.02	0.56	3.4
	130	0.031	1.7	0.30	15	50.0	NORMAL	0.02	0.56	2.4
	130	0.027	1.5	0.30	15	50.0	NORMAL	0.02	0.56	2.1
	130	0.024	1.3	0.30	15	50.0	NORMAL	0.02	0.56	1.9
	130	0.008	0.4	0.30	15	50.0	NORMAL	0.02	0.56	0.6
	150	0.542	30.0	0.25	30	50.0	NORMAL	0.02	0.71	54.0
	150	0.102	5.6	0.25	30	50.0	NORMAL	0.02	0.71	10.2
	150	0.098	5.4	0.25	30	50.0	NORMAL	0.02	0.71	9.8
	150	0.089	4.9	0.25	30	50.0	NORMAL	0.02	0.71	8.9
	150	0.077	4.3	0.25	30	50.0	NORMAL	0.02	0.71	7.7
	150	0.052	2.9	0.25	30	50.0	NORMAL	0.02	0.71	5.2
	150	0.048	2.7	0.25	30	50.0	NORMAL	0.02	0.71	4.8
	150	0.045	2.5	0.25	30	50.0	NORMAL	0.02	0.71	4.5
	150	0.022	1.2	0.25	30	50.0	NORMAL	0.02	0.71	2.2
	150	0.009	0.5	0.25	30	50.0	NORMAL	0.02	0.71	0.9
	150	0.001	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.1
	520	0.025	1.4	0.25	45	80.0	NORMAL	0.02	0.88	3.1
	520	0.019	1.1	0.25	45	80.0	NORMAL	0.02	0.88	2.3
	520	0.001	0.1	0.25	45	80.0	NORMAL	0.02	0.88	0.1
	730	0.280	15.5	0.35	0	60.0	NORMAL	0.04	0	0.0
		1.809	**100.2**							**145.0**
S400	150	1.344	87.1	0.25	30	50.0	NORMAL	0.02	0.71	133.8
	710	0.199	12.9	0.25	0	30.0	DRY	0.05	0	0.0
		1.543	**100.0**							**133.8**
S410	150	0.617	96.4	0.25	30	50.0	NORMAL	0.02	0.71	61.4
	714	0.023	3.6	0.15	0	30.0	DRY	0.04	0	0.0
		0.640	**100.0**							**61.4**

Future Condtion Retention Volume Calculations

Sub Basin	Land Use Code	Area (sq.mi.)	Area (%)	IA (inches)	RTIMP (%)	Veg. Cover (%)	DTHETA	Kn	Equiv. C	Retention (Ac-ft)
S415	150	0.179	39.7	0.25	30	50.0	NORMAL	0.02	0.71	17.8
	150	0.097	21.5	0.25	30	50.0	NORMAL	0.02	0.71	9.7
	150	0.036	8.0	0.25	30	50.0	NORMAL	0.02	0.71	3.6
	150	0.002	0.4	0.25	30	50.0	NORMAL	0.02	0.71	0.2
	180	0.083	18.4	0.25	45	50.0	NORMAL	0.02	0.88	10.2
	520	0.022	4.9	0.25	45	80.0	NORMAL	0.02	0.88	2.7
	520	0.012	2.7	0.25	45	80.0	NORMAL	0.02	0.88	1.5
	730	0.017	3.8	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.002	0.4	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.001	0.2	0.35	0	60.0	NORMAL	0.04	0	0.0
		0.451	**100.0**							**45.7**
S420	130	0.082	4.6	0.30	15	50.0	NORMAL	0.02	0.56	6.4
	130	0.002	0.1	0.30	15	50.0	NORMAL	0.02	0.56	0.2
	150	0.552	31.2	0.25	30	50.0	NORMAL	0.02	0.71	55.0
	150	0.273	15.4	0.25	30	50.0	NORMAL	0.02	0.71	27.2
	150	0.169	9.6	0.25	30	50.0	NORMAL	0.02	0.71	16.8
	150	0.169	9.6	0.25	30	50.0	NORMAL	0.02	0.71	16.8
	150	0.115	6.5	0.25	30	50.0	NORMAL	0.02	0.71	11.5
	180	0.072	4.1	0.25	45	50.0	NORMAL	0.02	0.88	8.9
	180	0.004	0.2	0.25	45	50.0	NORMAL	0.02	0.88	0.5
	230	0.031	1.8	0.10	80	75.0	NORMAL	0.02	0.95	4.1
	520	0.023	1.3	0.25	45	80.0	NORMAL	0.02	0.88	2.8
	520	0.019	1.1	0.25	45	80.0	NORMAL	0.02	0.88	2.3
	730	0.174	9.8	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.081	4.6	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.001	0.1	0.35	0	60.0	NORMAL	0.04	0	0.0
		1.767	**100.0**							**152.6**
S430	130	0.300	37.7	0.30	15	50.0	NORMAL	0.02	0.56	23.6
	130	0.005	0.6	0.30	15	50.0	NORMAL	0.02	0.56	0.4
	150	0.284	35.7	0.25	30	50.0	NORMAL	0.02	0.71	28.3
	150	0.072	9.0	0.25	30	50.0	NORMAL	0.02	0.71	7.2
	150	0.031	3.9	0.25	30	50.0	NORMAL	0.02	0.71	3.1
	150	0.008	1.0	0.25	30	50.0	NORMAL	0.02	0.71	0.8
	150	0.001	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.1
	180	0.008	1.0	0.25	45	50.0	NORMAL	0.02	0.88	1.0
	520	0.013	1.6	0.25	45	80.0	NORMAL	0.02	0.88	1.6
	730	0.037	4.6	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.036	4.5	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.001	0.1	0.35	0	60.0	NORMAL	0.04	0	0.0
		0.796	**99.8**							**66.0**
S435	130	0.150	38.3	0.30	15	50.0	NORMAL	0.02	0.56	11.8
	130	0.002	0.5	0.30	15	50.0	NORMAL	0.02	0.56	0.2
	150	0.179	45.7	0.25	30	50.0	NORMAL	0.02	0.71	17.8
	150	0.033	8.4	0.25	30	50.0	NORMAL	0.02	0.71	3.3
	180	0.004	1.0	0.25	45	50.0	NORMAL	0.02	0.88	0.5
	520	0.024	6.1	0.25	45	80.0	NORMAL	0.02	0.88	3.0
		0.392	**100.0**							**36.5**

Future Condtion Retention Volume Calculations

Sub Basin	Land Use Code	Area (sq.mi.)	Area (%)	IA (inches)	RTIMP (%)	Veg. Cover (%)	DTHETA	Kn	Equiv. C	Retention (Ac-ft)
S440	130	0.308	28.8	0.30	15	50.0	NORMAL	0.02	0.56	24.2
	130	0.033	3.1	0.30	15	50.0	NORMAL	0.02	0.56	2.6
	150	0.269	25.2	0.25	30	50.0	NORMAL	0.02	0.71	26.8
	150	0.229	21.4	0.25	30	50.0	NORMAL	0.02	0.71	22.8
	150	0.002	0.2	0.25	30	50.0	NORMAL	0.02	0.71	0.2
	180	0.003	0.3	0.25	45	50.0	NORMAL	0.02	0.88	0.4
	230	0.112	10.5	0.10	80	75.0	NORMAL	0.02	0.95	14.9
	520	0.001	0.1	0.25	45	80.0	NORMAL	0.02	0.88	0.1
	730	0.054	5.1	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.037	3.5	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.020	1.9	0.35	0	60.0	NORMAL	0.04	0	0.0
		1.068	**100.1**							**92.0**
S450	130	0.304	12.1	0.30	15	50.0	NORMAL	0.02	0.56	23.9
	130	0.158	6.3	0.30	15	50.0	NORMAL	0.02	0.56	12.4
	130	0.138	5.5	0.30	15	50.0	NORMAL	0.02	0.56	10.8
	130	0.073	2.9	0.30	15	50.0	NORMAL	0.02	0.56	5.7
	130	0.062	2.5	0.30	15	50.0	NORMAL	0.02	0.56	4.9
	130	0.054	2.1	0.30	15	50.0	NORMAL	0.02	0.56	4.2
	130	0.044	1.7	0.30	15	50.0	NORMAL	0.02	0.56	3.5
	150	0.319	12.6	0.25	30	50.0	NORMAL	0.02	0.71	31.8
	150	0.223	8.8	0.25	30	50.0	NORMAL	0.02	0.71	22.2
	150	0.162	6.4	0.25	30	50.0	NORMAL	0.02	0.71	16.1
	150	0.162	6.4	0.25	30	50.0	NORMAL	0.02	0.71	16.1
	150	0.078	3.1	0.25	30	50.0	NORMAL	0.02	0.71	7.8
	150	0.054	2.1	0.25	30	50.0	NORMAL	0.02	0.71	5.4
	150	0.044	1.7	0.25	30	50.0	NORMAL	0.02	0.71	4.4
	150	0.042	1.7	0.25	30	50.0	NORMAL	0.02	0.71	4.2
	150	0.029	1.1	0.25	30	50.0	NORMAL	0.02	0.71	2.9
	150	0.024	1.0	0.25	30	50.0	NORMAL	0.02	0.71	2.4
	150	0.023	0.9	0.25	30	50.0	NORMAL	0.02	0.71	2.3
	150	0.022	0.9	0.25	30	50.0	NORMAL	0.02	0.71	2.2
	150	0.004	0.2	0.25	30	50.0	NORMAL	0.02	0.71	0.4
	150	0.003	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.3
	150	0.002	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.2
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
	180	0.066	2.6	0.25	45	50.0	NORMAL	0.02	0.88	8.1
	230	0.001		0.10	80	75.0	NORMAL	0.02	0.95	0.1
	520	0.019	0.8	0.25	45	80.0	NORMAL	0.02	0.88	2.3
	520	0.018	0.7	0.25	45	80.0	NORMAL	0.02	0.88	2.2
	520	0.009	0.4	0.25	45	80.0	NORMAL	0.02	0.88	1.1
	730	0.213	8.4	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.157	6.2	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.014	0.6	0.35	0	60.0	NORMAL	0.04	0	0.0
		2.522	**99.9**							**198.1**
S500	150	0.662	18.2	0.25	30	50.0	NORMAL	0.02	0.71	65.9
	710	1.937	53.3	0.25	0	30.0	DRY	0.05	0	0.0
	710	1.038	28.5	0.25	0	30.0	DRY	0.05	0	0.0
		3.637	**100.0**							**65.9**

Future Condtion Retention Volume Calculations

Sub Basin	Land Use Code	Area (sq.mi.)	Area (%)	IA (inches)	RTIMP (%)	Veg. Cover (%)	DTHETA	Kn	Equiv. C	Retention (Ac-ft)
S510	150	1.115	60.6	0.25	30	50.0	NORMAL	0.02	0.71	111.0
	150	0.248	13.5	0.25	30	50.0	NORMAL	0.02	0.71	24.7
	150	0.040	2.2	0.25	30	50.0	NORMAL	0.02	0.71	4.0
	150	0.025	1.4	0.25	30	50.0	NORMAL	0.02	0.71	2.5
	150	0.007	0.4	0.25	30	50.0	NORMAL	0.02	0.71	0.7
	180	0.044	2.4	0.25	45	50.0	NORMAL	0.02	0.88	5.4
	180	0.021	1.1	0.25	45	50.0	NORMAL	0.02	0.88	2.6
	230	0.092	5.0	0.10	80	75.0	NORMAL	0.02	0.95	12.3
	230	0.073	4.0	0.10	80	75.0	NORMAL	0.02	0.95	9.7
	230	0.041	2.2	0.10	80	75.0	NORMAL	0.02	0.95	5.5
	730	0.119	6.5	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.014	0.8	0.35	0	60.0	NORMAL	0.04	0	0.0
		1.839	**100.1**							**178.4**
S520	130	0.070	4.7	0.30	15	50.0	NORMAL	0.02	0.56	5.5
	150	0.184	12.4	0.25	30	50.0	NORMAL	0.02	0.71	18.3
	150	0.124	8.4	0.25	30	50.0	NORMAL	0.02	0.71	12.3
	150	0.105	7.1	0.25	30	50.0	NORMAL	0.02	0.71	10.5
	150	0.093	6.3	0.25	30	50.0	NORMAL	0.02	0.71	9.3
	150	0.044	3.0	0.25	30	50.0	NORMAL	0.02	0.71	4.4
	150	0.039	2.6	0.25	30	50.0	NORMAL	0.02	0.71	3.9
	150	0.035	2.4	0.25	30	50.0	NORMAL	0.02	0.71	3.5
	150	0.020	1.3	0.25	30	50.0	NORMAL	0.02	0.71	2.0
	150	0.011	0.7	0.25	30	50.0	NORMAL	0.02	0.71	1.1
	150	0.011	0.7	0.25	30	50.0	NORMAL	0.02	0.71	1.1
	150	0.009	0.6	0.25	30	50.0	NORMAL	0.02	0.71	0.9
	150	0.008	0.5	0.25	30	50.0	NORMAL	0.02	0.71	0.8
	150	0.005	0.3	0.25	30	50.0	NORMAL	0.02	0.71	0.5
	150	0.005	0.3	0.25	30	50.0	NORMAL	0.02	0.71	0.5
	150	0.004	0.3	0.25	30	50.0	NORMAL	0.02	0.71	0.4
	150	0.003	0.2	0.25	30	50.0	NORMAL	0.02	0.71	0.3
	150	0.002	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.2
	150	0.002	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.2
	230	0.056	3.8	0.10	80	75.0	NORMAL	0.02	0.95	7.5
	230	0.044	3.0	0.10	80	75.0	NORMAL	0.02	0.95	5.9
	230	0.013	0.9	0.10	80	75.0	NORMAL	0.02	0.95	1.7
	230	0.013	0.9	0.10	80	75.0	NORMAL	0.02	0.95	1.7
	300	0.207	14.0	0.15	55	60.0	NORMAL	0.02	0.79	22.9
	300	0.132	8.9	0.15	55	60.0	NORMAL	0.02	0.79	14.6
	300	0.006	0.4	0.15	55	60.0	NORMAL	0.02	0.79	0.7
	520	0.027	1.8	0.25	45	80.0	NORMAL	0.02	0.88	3.3
	520	0.017	1.1	0.25	45	80.0	NORMAL	0.02	0.88	2.1
	720	0.016	1.1	0.20	5	80.0	NORMAL	0.03	0.25	0.6
	720	0.009	0.6	0.20	5	80.0	NORMAL	0.03	0.25	0.3
	730	0.067	4.5	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.056	3.8	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.041	2.8	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.003	0.2	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.001	0.1	0.35	0	60.0	NORMAL	0.04	0	0.0
		1.482	**99.9**							**136.9**

Future Condtion Retention Volume Calculations

Sub Basin	Land Use Code	Area (sq.mi.)	Area (%)	IA (inches)	RTIMP (%)	Veg. Cover (%)	DTHETA	Kn	Equiv. C	Retention (Ac-ft)
S530	130	0.064	2.9	0.30	15	50.0	NORMAL	0.02	0.56	5.0
	150	0.736	33.1	0.25	30	50.0	NORMAL	0.02	0.71	73.3
	150	0.243	10.9	0.25	30	50.0	NORMAL	0.02	0.71	24.2
	150	0.096	4.3	0.25	30	50.0	NORMAL	0.02	0.71	9.6
	150	0.091	4.1	0.25	30	50.0	NORMAL	0.02	0.71	9.1
	150	0.091	4.1	0.25	30	50.0	NORMAL	0.02	0.71	9.1
	150	0.072	3.2	0.25	30	50.0	NORMAL	0.02	0.71	7.2
	150	0.053	2.4	0.25	30	50.0	NORMAL	0.02	0.71	5.3
	150	0.030	1.3	0.25	30	50.0	NORMAL	0.02	0.71	3.0
	150	0.029	1.3	0.25	30	50.0	NORMAL	0.02	0.71	2.9
	150	0.026	1.2	0.25	30	50.0	NORMAL	0.02	0.71	2.6
	150	0.008	0.4	0.25	30	50.0	NORMAL	0.02	0.71	0.8
	150	0.007	0.3	0.25	30	50.0	NORMAL	0.02	0.71	0.7
	150	0.003	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.3
	150	0.002	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.2
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
	180	0.027	1.2	0.25	45	50.0	NORMAL	0.02	0.88	3.3
	180	0.002	0.1	0.25	45	50.0	NORMAL	0.02	0.88	0.2
	230	0.096	4.3	0.10	80	75.0	NORMAL	0.02	0.95	12.8
	230	0.076	3.4	0.10	80	75.0	NORMAL	0.02	0.95	10.1
	230	0.063	2.8	0.10	80	75.0	NORMAL	0.02	0.95	8.4
	230	0.045	2.0	0.10	80	75.0	NORMAL	0.02	0.95	6.0
	230	0.020	0.9	0.10	80	75.0	NORMAL	0.02	0.95	2.7
	520	0.093	4.2	0.25	45	80.0	NORMAL	0.02	0.88	11.5
	520	0.002	0.1	0.25	45	80.0	NORMAL	0.02	0.88	0.2
	720	0.005	0.2	0.20	5	80.0	NORMAL	0.03	0.25	0.2
	730	0.177	8.0	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.026	1.2	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.024	1.1	0.35	0	60.0	NORMAL	0.04	0	0.0
	730	0.014	0.6	0.35	0	60.0	NORMAL	0.04	0	0.0
		2.225	**99.8**							**209.0**

Future Condtion Retention Volume Calculations

Sub Basin	Land Use Code	Area (sq.mi.)	Area (%)	IA (inches)	RTIMP (%)	Veg. Cover (%)	DTHETA	Kn	Equiv. C	Retention (Ac-ft)
S700	150	4.554	86.9	0.25	30	50.0	NORMAL	0.02	0.71	453.5
	150	0.248	4.7	0.25	30	50.0	NORMAL	0.02	0.71	24.7
	150	0.243	4.6	0.25	30	50.0	NORMAL	0.02	0.71	24.2
	150	0.128	2.4	0.25	30	50.0	NORMAL	0.02	0.71	12.7
	150	0.039	0.7	0.25	30	50.0	NORMAL	0.02	0.71	3.9
	150	0.026	0.5	0.25	30	50.0	NORMAL	0.02	0.71	2.6
	150	0.002		0.25	30	50.0	NORMAL	0.02	0.71	0.2
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
		5.241	**99.8**							**521.9**
S720	150	2.343	50.7	0.25	30	50.0	NORMAL	0.02	0.71	233.3
	150	2.159	46.7	0.25	30	50.0	NORMAL	0.02	0.71	215.0
	150	0.086	1.9	0.25	30	50.0	NORMAL	0.02	0.71	8.6
	150	0.027	0.6	0.25	30	50.0	NORMAL	0.02	0.71	2.7
	150	0.009	0.2	0.25	30	50.0	NORMAL	0.02	0.71	0.9
	150	0.001		0.25	30	50.0	NORMAL	0.02	0.71	0.1
		4.625	**100.1**							**460.6**
S740	130	0.340	30.1	0.30	15	50.0	NORMAL	0.02	0.56	26.7
	130	0.021	1.9	0.30	15	50.0	NORMAL	0.02	0.56	1.6
	150	0.338	29.9	0.25	30	50.0	NORMAL	0.02	0.71	33.7
	150	0.207	18.3	0.25	30	50.0	NORMAL	0.02	0.71	20.6
	150	0.114	10.1	0.25	30	50.0	NORMAL	0.02	0.71	11.4
	150	0.014	1.2	0.25	30	50.0	NORMAL	0.02	0.71	1.4
	150	0.010	0.9	0.25	30	50.0	NORMAL	0.02	0.71	1.0
	150	0.009	0.8	0.25	30	50.0	NORMAL	0.02	0.71	0.9
	150	0.008	0.7	0.25	30	50.0	NORMAL	0.02	0.71	0.8
	150	0.002	0.2	0.25	30	50.0	NORMAL	0.02	0.71	0.2
	150	0.001	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.1
	230	0.028	2.5	0.10	80	75.0	NORMAL	0.02	0.95	3.7
	520	0.028	2.5	0.25	45	80.0	NORMAL	0.02	0.88	3.5
	720	0.009	0.8	0.20	5	80.0	NORMAL	0.03	0.25	0.3
	730	0.001	0.1	0.35	0	60.0	NORMAL	0.04	0	0.0
		1.130	**100.1**							**105.9**

Future Condtion Retention Volume Calculations

Sub Basin	Land Use Code	Area (sq.mi.)	Area (%)	IA (inches)	RTIMP (%)	Veg. Cover (%)	DTHETA	Kn	Equiv. C	Retention (Ac-ft)
S900	710	0.860	83.1	0.25	0	30.0	DRY	0.05	0	0.0
	710	0.175	16.9	0.25	0	30.0	DRY	0.05	0	0.0
		1.035	**100.0**							**0.0**
S910	150	0.794	80.7	0.25	30	50.0	NORMAL	0.02	0.71	79.1
	150	0.091	9.2	0.25	30	50.0	NORMAL	0.02	0.71	9.1
	150	0.002	0.2	0.25	30	50.0	NORMAL	0.02	0.71	0.2
	712	0.081	8.2	0.35	0	30.0	DRY	0.03	0	0.0
	712	0.016	1.6	0.35	0	30.0	DRY	0.03	0	0.0
		0.984	**99.9**							**88.3**
S915	150	0.429	38.1	0.25	30	50.0	NORMAL	0.02	0.71	42.7
	712	0.208	18.5	0.35	0	30.0	DRY	0.03	0	0.0
	714	0.489	43.4	0.15	0	30.0	DRY	0.04	0	0.0
		1.126	**100.0**							**42.7**
S920	150	1.959	59.5	0.25	30	50.0	NORMAL	0.02	0.71	195.1
	150	0.703	21.4	0.25	30	50.0	NORMAL	0.02	0.71	70.0
	150	0.232	7.0	0.25	30	50.0	NORMAL	0.02	0.71	23.1
	150	0.195	5.9	0.25	30	50.0	NORMAL	0.02	0.71	19.4
	150	0.142	4.3	0.25	30	50.0	NORMAL	0.02	0.71	14.1
	150	0.006	0.2	0.25	30	50.0	NORMAL	0.02	0.71	0.6
	150	0.003	0.1	0.25	30	50.0	NORMAL	0.02	0.71	0.3
	520	0.018	0.5	0.25	45	80.0	NORMAL	0.02	0.88	2.2
	720	0.009	0.3	0.20	5	80.0	NORMAL	0.03	0.25	0.3
	730	0.024	0.7	0.35	0	60.0	NORMAL	0.04	0	0.0
		3.291	**99.9**							**325.2**

```
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUN   1998              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1               *                                    *          609 SECOND STREET           *
 *                                      *                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   16AUG06  TIME  10:01:13  *                                    *          (916) 756-1104              *
 *                                      *                                    *                                      *
 ****************************************                                    ****************************************

                                        X     X  XXXXXXX   XXXXX           X
                                        X     X  X        X     X         XX
                                        X     X  X        X                X
                                        XXXXXXX  XXXX     X        XXXXX   X
                                        X     X  X        X                X
                                        X     X  X        X     X          X
                                        X     X  XXXXXXX   XXXXX         XXX


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

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

1                                                HEC-1 INPUT                                                    PAGE  1

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

        1           ID   SUN VALLEY AREA DRAINAGE MASTER PLAN (SVADMP) - FCD 2004C049
        2           ID    JE FULLER / HYDROLOGY & GEOMORPHOLOGY, INC.
        3           ID    FILENAME: A4_FU24.DAT
        4           ID
        5           ID    100-YEAR 24-HOUR MODEL
        6           ID    FUTURE CONDITIONS
        7           ID    AREA 4 WATERSHED AREA = 90.5 SQ. MILES
        8           ID           MODELED AREA = 76.8 SQ. MILES
        9           ID
       10           ID    GREEN-AMPT LOSS METHOD
       11           ID    S-GRAPH UNIT HYDROGRAPHS
       12           ID     - MOUNTAIN
       13           ID     - DESERT/RANGELAND
       14           ID    NORMAL-DEPTH CHANNEL ROUTING
       15           ID    LAND USE DATA FROM MASTER PLANNED COMMUNITY PLANS WHERE AVAILABLE.
       16           ID    STATE LAND AND OTHER NON-MASTER PLANNED AREAS ASSUMED AS SMALL LOT
       17           ID    RESIDENTIAL.  NATURAL AREAS IN WHITE TANK REGIONAL PARK ASSIGNED
       18           ID    BASED ON EXAMINATION OF SLOPE FROM 10-FT DTM TO DISTINGUISH
       19           ID     - UNDEVELOPED DESERT RANGELAND (NDR) - SLOPES < 5 %
       20           ID     - HILLSLOPES, SONORAN DESERT (NHS) - SLOPES 5 - 10 %
       21           ID     - MOUNTAIN TERRAIN (NMT) - SLOPES > 10 %
       22           ID   SOILS DATA FROM FCDMC GIS DATABASE (RECEIVED FROM FCDMC JULY 2005)
       23           ID
       24           ID        08/15/2006
       25           IT       5  1JAN99    1200    2000
       26           IN      15
       27           IO       5
                    *DIAGRAM
                    *
       28           JD   4.198  0.1000
       29           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
       30           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
       31           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
       32           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
       33           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
       34           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
       35           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
       36           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
       37           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
       38           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
       39           JD   3.990    10.0
       40           JD   3.780    30.0
       41           JD   3.654    60.0
       42           JD   3.578    90.0
                    *

       43           KK    S100   BASIN
       44           BA   6.994
       45           LG    0.25    0.21    6.40    0.18      30
       46           UI     562     659    1870    2908    3864    4761    5212    5460    5148    4502
       47           UI    3689    2974    2407    1979    1594    1258    1054     865     641     597
       48           UI     384     385     335     136     137     139     137     136     139     137
       49           UI       0       0       0       0       0       0       0       0       0       0
       50           UI       0       0       0       0       0       0       0       0       0       0
       51           KM        Compute runoff from subbasin 100
                    *
1                                                HEC-1 INPUT                                                    PAGE  2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  52          KK   D100V  DIVERT
  53          DT   CF00V   681.4     0.0
  54          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
  55          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
  56          KM        Divert 100-yr 2-hr retention volume.
              *

  57          KK    S102   BASIN
  58          BA   3.234
  59          LG    0.27    0.25    5.60    0.25      24
  60          UI     416    1254    2537    3534    4007    3696    2755    1990    1417    1000
  61          UI     727     506     357     289     139     102     102     102     102       0
  62          UI       0       0       0       0       0       0       0       0       0       0
  63          UI       0       0       0       0       0       0       0       0       0       0
  64          UI       0       0       0       0       0       0       0       0       0       0
  65          KM        Compute runoff from subbasin 102
              *

  66          KK   D102V  DIVERT
  67          DT   CF02V   292.4     0.0
  68          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
  69          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
  70          KM        Divert 100-yr 2-hr retention volume.
              *

  71          KK    C102 COMBINE
  72          HC       2
  73          KM        Combine total inflow to detention area behind (north) of CAP Canal
              *

  74          KK   RR102 STORAGE
  75          KO
  76          RS       1    STOR      -1
  77          SV          553.00 1148.00 2316.00 2705.00
  78          SQ                  128.00  587.00  600.00
  79          SE  1543.0 1550.00 1552.00 1555.00 1556.00
  80          ST  1556.0  1320.0     3.2     1.5
  81          KM        Route flows through storage area behind CAP Canal
  82          KM        Stage-storage-discharge data from Wagner Wash FDS Hydrology (1991)
              *

  83          KK    D102  DIVERT
  84          DT    CF02     0.0     0.0
  85          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0

  86          DQ     0.0    50.0   500.0  5000.0     0.0     0.0     0.0     0.0     0.0     0.0
  87          KM        Divide flow evenly over the two 18-foot wide CAP overchutes
  88          KM        although the inverts are 0.5 feet different in elevation
              *
```



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

  89          KK  100105   ROUTE
  90          RS       9    FLOW      -1
  91          RC   0.035   0.055   0.035   11235  0.0045  105.00
  92          RX    0.00  120.00  240.00  250.00  590.00  600.00  720.00  840.00
  93          RY  105.00  102.50  100.00  100.00  100.00  100.00  102.50  105.00
  94          KM        Route outflows from east CAP overchute to Sun Valley Parkway.
  95          KM        Slope = (1550-1500) / 11235
              *

  96          KK    S105   BASIN
  97          BA   4.370
  98          LG    0.26    0.25    4.80    0.35      29
  99          UI     410     690    1634    2546    3338    3758    3913    3720    3034    2325
 100          UI    1879    1457    1152     870     705     552     436     305     281     203
 101          UI     100     100     101      99     100     101       0       0       0       0
 102          UI       0       0       0       0       0       0       0       0       0       0
 103          UI       0       0       0       0       0       0       0       0       0       0
 104          KM        Compute runoff from subbasin 105
              *

 105          KK   D105V  DIVERT
 106          DT   CF05V   408.7     0.0
 107          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 108          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 109          KM        Divert 100-yr 2-hr retention volume.
              *

 110          KK    CF02RETRIEVE
 111          DR    CF02
 112          KM        Retrieve flow from west CAP overchute.
              *

 113          KK  102105   ROUTE
 114          RS       6    FLOW      -1
 115          RC   0.045   0.050   0.045    7656  0.0065  104.00
 116          RX    0.00   40.00  120.00  130.00  250.00  260.00  340.00  380.00
 117          RY  104.00  102.00  101.00  100.00  100.00  101.00  102.00  104.00
```

```
118          KM        Route retrieved flow from west overchute to C105.
119          KM        Slope = (1550 - 1500) / 7656
             *

120          KK   C105U COMBINE
121          HC       3  14.598
122          KM        Combine runoff from S105 with routed flow from 100105 and 102105
123          KM        (CAP overchute flows). This is the total flow in Wagner Wash upstream
124          KM        of Sun Valley Parkway.
             *

125          KK    S110   BASIN
126          BA   0.430
127          LG    0.25    0.36    5.20    0.25       7

128          UI      59     184     361     499     572     351     289     235     174     138
129          UI     111      79      65      49      40      28      28      12      11      11
130          UI      12      11      11       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE  4

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

131          UI       0       0       0       0       0       0       0       0       0       0
132          UI       0       0       0       0       0       0       0       0       0       0
133          KM        Compute runoff from subbasin 110
             *

134          KK   D110V  DIVERT
135          DT   CF10V     2.4     0.0
136          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
137          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
138          KM        Divert 100-yr 2-hr retention volume.
             *

139          KK  11015I   ROUTE
140          RS       2    FLOW      -1
141          RC   0.045   0.035   0.045    3783  0.0267  102.00
142          RX    0.00   50.00  100.00  110.00  120.00  130.00  180.00  230.00
143          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
144          KM        Route flow from C105 through subbasin 110 to C115.
145          KM        Slope = (1847-1746) / 3783
             *

146          KK    D15I  DIVERT
147          DT    CF5I     0.0     0.0
148          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
149          DQ     0.0    20.0   200.0  2000.0     0.0     0.0     0.0     0.0     0.0     0.0
150          KM        Divert flows to the left into S120
             *

151          KK  15I15R   ROUTE
152          RS       8    FLOW      -1
153          RC   0.035   0.030   0.035   14128  0.0151  105.00
154          RX    0.00   25.00   58.00   65.00   85.00   92.00  125.00  150.00
155          RY  105.00  102.50  102.00  100.00  100.00  102.00  102.50  105.00
156          KM        Route flows from split through S115 to C115.
157          KM        Slope = (1746-1532) / 14128
             *

158          KK    S115   BASIN
159          BA   2.247
160          LG    0.26    0.28    4.80    0.34      25
161          UI     199     302     745    1158    1547    1779    1903    1872    1631    1305
162          UI    1042     828     647     518     406     328     260     212     144     138
163          UI     106      48      49      49      48      49      49       0       0       0
164          UI       0       0       0       0       0       0       0       0       0       0
165          UI       0       0       0       0       0       0       0       0       0       0
166          KM        Compute runoff from subbasin 115
             *

167          KK   D115V  DIVERT
168          DT   CF15V   166.6     0.0
169          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
170          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
171          KM        Divert 100-yr 2-hr retention volume.
             *
1                                          HEC-1 INPUT                                          PAGE  5

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

172          KK   C115U COMBINE
173          HC       2   2.677
174          KM        Combine runoff from S115 with routed flow.
             *

175          KK    CF5IRETRIEVE
176          DR    CF5I
177          KM        Retrieve diverted flow from D15I
             *

178          KK  15I15L   ROUTE
179          RS       7    FLOW      -1
180          RC   0.045   0.045   0.045   12775  0.0168  104.00
181          RX    0.00   50.00  100.00  130.00  170.00  200.00  250.00  300.00
```

```
182          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
183          KM        Route flows from split through S120 to C115.
184          KM        Slope =(1746-1532) / 12775
             *

185          KK   C115D COMBINE
186          HC       2   2.677
187          KM        Combine routed flows from split with remainder of flows in SVP channel
188          KM        just D/S of C115.
             *

189          KK  115120   ROUTE
190          RS       2    FLOW      -1
191          RC   0.030   0.025   0.030    4077  0.0093  105.00
192          RX    0.00   30.00   75.00   80.00  105.00  110.00  155.00  190.00
193          RY  105.00  101.50  101.00  100.00  100.00  101.00  101.50  105.00
194          KM        Route total flows from C115 to C120. Slope =(1532-1494) / 4077
             *

195          KK    S120   BASIN
196          BA   2.004
197          LG    0.26    0.25    4.65    0.39      27
198          UI     265     853    1653    2319    2576    2266    1650    1178     828     574
199          UI     433     283     190     157      64      65      66      65       0       0
200          UI       0       0       0       0       0       0       0       0       0       0
201          UI       0       0       0       0       0       0       0       0       0       0
202          UI       0       0       0       0       0       0       0       0       0       0
203          KM        Compute runoff from subbasin 120
             *

204          KK   D120V  DIVERT
205          DT   CF20V   161.2     0.0
206          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
207          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
208          KM        Divert 100-yr 2-hr retention volume.
             *
```



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

209          KK    C120 COMBINE
210          HC       2   4.681
211          KM        Combine flows at Wagner Wash at outlet of channel along SVP
             *

212          KK   C105D COMBINE
213          HC       2  19.279
214          KM        Combine flows from C105 and C120 just D/S of Sun Valley Parkway
             *

215          KK  120135   ROUTE
216          RS       1    FLOW      -1
217          RC   0.045   0.035   0.045     951  0.0074  110.00
218          RX    0.00  225.00  450.00  455.00  485.00  490.00  615.00  840.00
219          RY  110.00  105.00  102.00  100.00  100.00  102.00  102.00  110.00
220          KM        Route flows in Wagner Wash from Sun Valley Parkway to C135.
221          KM        Slope = (1494-1487) / 951
             *

222          KK    S125   BASIN
223          BA   0.093
224          LG    0.25    0.31    4.15    0.48      18
225          UI      91     278     164      90      47      25      13       6       6       0
226          UI       0       0       0       0       0       0       0       0       0       0
227          UI       0       0       0       0       0       0       0       0       0       0
228          UI       0       0       0       0       0       0       0       0       0       0
229          UI       0       0       0       0       0       0       0       0       0       0
230          KM        Compute runoff from subbasin 125
             *

231          KK   D125V  DIVERT
232          DT   CF25V     4.0     0.0
233          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
234          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
235          KM        Divert 100-yr 2-hr retention volume.
             *

236          KK  12535I   ROUTE
237          RS       1    FLOW      -1
238          RC   0.055   0.040   0.055    2207  0.0254  103.00
239          RX    0.00   50.00  100.00  101.00  151.00  152.00  202.00  252.00
240          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
241          KM        Route flows from S125 to intermediate combination point in S135.
242          KM        Slope = (1754-1698) / 2207
             *

243          KK    S150   BASIN
244          BA   0.774
245          LG    0.25    0.35    4.65    0.33       8
246          UI      72     122     282     441     550     713     722     476     405     353
247          UI     309     257     204     177     159     125      99      86      79      57
248          UI      56      39      36      35      26      14      14      14      14      14
249          UI      14      14      14       0       0       0       0       0       0       0
250          UI       0       0       0       0       0       0       0       0       0       0
```

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

 251          KM        Compute runoff from subbasin 150
              *

 252          KK   D150V  DIVERT
 253          DT   CF50V     3.3     0.0
 254          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 255          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 256          KM        Divert 100-yr 2-hr retention volume.
              *

 257          KK    D150  DIVERT
 258          DT    CF50     0.0     0.0
 259          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 260          DQ     0.0    90.0   900.0  9000.0     0.0     0.0     0.0     0.0     0.0     0.0
 261          KM        Divert flows continuing west to apex of S150.
 262          KM        Continuing flows exit S150 to S130 via small natural channel.
              *

 263          KK  150130   ROUTE
 264          RS       2    FLOW      -1
 265          RC   0.045   0.035   0.045    3758  0.0300  104.00
 266          RX    0.00   10.00   60.00   66.00   86.00   92.00  142.00  152.00
 267          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
 268          KM        Route flow through S130.  Slope = (1840 - 1727) / 3758
              *

 269          KK    S130   BASIN
 270          BA   0.310
 271          LG    0.25    0.30    4.20    0.47      19
 272          UI     118     444     668     394     279     176     114      76      47      35
 273          UI      15      13      14       0       0       0       0       0       0       0
 274          UI       0       0       0       0       0       0       0       0       0       0
 275          UI       0       0       0       0       0       0       0       0       0       0
 276          UI       0       0       0       0       0       0       0       0       0       0
 277          KM        Compute runoff from subbasin 130
              *

 278          KK   D130V  DIVERT
 279          DT   CF30V    16.1     0.0
 280          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 281          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 282          KM        Divert 100-yr 2-hr retention volume.
              *

 283          KK    C130 COMBINE
 284          HC       2    0.31
 285          KM        Combine runoff from S130 with diverted flow from S150
 286          KM        Adjust drainage area to just that from S130 for JD.
              *
```



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

 287          KK    D130  DIVERT
 288          DT    CF30     0.0     0.0
 289          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 290          DQ     0.0    30.0   300.0  3000.0     0.0     0.0     0.0     0.0     0.0     0.0
 291          KM        Divert flow to the left into S155
              *

 292          KK  13035I   ROUTE
 293          RS       1    FLOW      -1
 294          RC   0.045   0.035   0.045    1202  0.0241  103.00
 295          RX    0.00   50.00  100.00  101.00  151.00  152.00  202.00  252.00
 296          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
 297          KM        Route continuing flow to intermediate point in S135.
 298          KM        Slope = (1727-1698) / 1202
              *

 299          KK   C135I COMBINE
 300          HC       2   0.403
 301          KM        Combine routed flow from C130 and S125
              *

 302          KK  35I135   ROUTE
 303          RS       8    FLOW      -1
 304          RC   0.050   0.035   0.050   12580  0.0168  102.00
 305          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
 306          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 307          KM        Route combined flows to C135 at Wagner Wash.
 308          KM        Slope = (1698-1487) / 12580
              *

 309          KK    S135   BASIN
 310          BA   0.879
 311          LG    0.23    0.25    4.25    0.52      38
 312          UI     141     569    1015    1285    1235     860     578     384     253     170
 313          UI     111      78      34      33      34       0       0       0       0       0
 314          UI       0       0       0       0       0       0       0       0       0       0
 315          UI       0       0       0       0       0       0       0       0       0       0
```

```
 316          UI       0       0       0       0       0       0       0       0       0       0
 317          KM        Compute runoff from subbasin 135
              *

 318          KK   D135V  DIVERT
 319          DT   CF35V    88.6     0.0
 320          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 321          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 322          KM        Divert 100-yr 2-hr retention volume.
              *

 323          KK   C135L COMBINE
 324          HC       2   1.282
 325          KM        Combine all piedmont runoff inflow to Wagner Wash at C135
              *
1                                          HEC-1 INPUT                                          PAGE  9

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


 326          KK    C135 COMBINE
 327          HC       2  20.561
 328          KM        Combine all flows in Wagner Wash at C135
              *

 329          KK  135145   ROUTE
 330          RS       4    FLOW      -1
 331          RC   0.045   0.035   0.045    7938  0.0042  110.00
 332          RX    0.00  300.00  400.00  406.00  506.00  512.00  612.00  912.00
 333          RY  110.00  102.50  102.00  100.00  100.00  102.00  102.50  110.00
 334          KM        Route flow in Wagner Wash to C145.  Slope = (1487-1454) / 7938
              *

 335          KK    S140   BASIN
 336          BA   1.373
 337          LG    0.22    0.25    5.00    0.34      40
 338          UI     425    1675    2614    2421    1491     852     507     279     170      69
 339          UI      71       0       0       0       0       0       0       0       0       0
 340          UI       0       0       0       0       0       0       0       0       0       0
 341          UI       0       0       0       0       0       0       0       0       0       0
 342          UI       0       0       0       0       0       0       0       0       0       0
 343          KM        Compute runoff from subbasin 140
              *

 344          KK   D140V  DIVERT
 345          DT   CF40V   144.2     0.0
 346          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 347          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 348          KM        Divert 100-yr 2-hr retention volume.
              *

 349          KK  140145   ROUTE
 350          RS       3    FLOW      -1
 351          RC   0.040   0.050   0.040    3656  0.0074  103.00
 352          RX    0.00   70.00  140.00  150.00  250.00  260.00  330.00  400.00
 353          RY  102.00  101.00  100.00  100.00  100.00  100.00  101.00  102.00
 354          KM        Route runoff from S140 to C145 at Wagner Wash.
 355          KM        Slope = (1481-1454) / 3656
              *

 356          KK    CF30RETRIEVE
 357          DR    CF30
 358          KM        Retrieve diverted flow from C130
              *

 359          KK   D1302  DIVERT
 360          DT   CF302     0.0     0.0
 361          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 362          DQ     0.0    10.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0
 363          KM        Divert flow continuing through S155 from flow entering S145
              *
1                                          HEC-1 INPUT                                          PAGE 10

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


 364          KK  130145   ROUTE
 365          RS      15    FLOW      -1
 366          RC   0.045   0.045   0.045   18285  0.0149  102.00
 367          RX    0.00   50.00  100.00  103.00  113.00  116.00  166.00  216.00
 368          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 369          KM        Route flow to Wagner Wash through S145 to C145.
 370          KM        Slope = (1727 - 1454) / 18285
              *

 371          KK    S145   BASIN
 372          BA   1.756
 373          LG    0.20    0.25    4.15    0.59      50
 374          UI     245     843    1632    2202    2339    1944    1345     955     648     453
 375          UI     318     215     167      73      60      60      60       0       0       0
 376          UI       0       0       0       0       0       0       0       0       0       0
 377          UI       0       0       0       0       0       0       0       0       0       0
 378          UI       0       0       0       0       0       0       0       0       0       0
 379          KM        Compute runoff from subbasin 145
              *
```

```
 380          KK   D145V  DIVERT
 381          DT   CF45V   183.3     0.0
 382          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 383          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 384          KM        Divert 100-yr 2-hr retention volume.
              *

 385          KK   C145L COMBINE
 386          HC       2   2.066
 387          KM        Combine runoff from S145 with routed flows from S140 and C130
 388          KM        Adjust BA for JD (S130 + S145)
              *

 389          KK    C145 COMBINE
 390          HC       3   23.69
 391          KM        Combine all flows in Wagner Wash at C145
              *

 392          KK  145155   ROUTE
 393          RS       1    FLOW      -1
 394          RC   0.045   0.035   0.055     631  0.0032  110.00
 395          RX    0.00  150.00  300.00  309.00  379.00  388.00  538.00  838.00
 396          RY  110.00  106.50  103.00  100.00  100.00  103.00  106.50  110.00
 397          KM        Route flows in Wagner Wash form C145 to C155. Slope = (1454-1452)/631
              *

 398          KK    CF50RETRIEVE
 399          DR    CF50
 400          KM        Retrieve diverted flow from S150
              *
```



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

 401          KK  150155   ROUTE
 402          RS      12    FLOW      -1
 403          RC   0.045   0.040   0.045   19261  0.0188  102.00
 404          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
 405          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 406          KM        Route flow from S150 to Wagner Wash .  Slope = (1814 - 1452) / 19261
              *

 407          KK   CF302RETRIEVE
 408          DR   CF302
 409          KM        Retrieve diverted flow from C130
              *

 410          KK  130155   ROUTE
 411          RS      12    FLOW      -1
 412          RC   0.045   0.040   0.045   14782  0.0156  102.00
 413          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
 414          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 415          KM        Route retrieved flow to Wagner Wash.  Slope = (1682 - 1452) / 14782
              *

 416          KK    S155   BASIN
 417          BA   1.832
 418          LG    0.28    0.25    4.50    0.44      24
 419          UI     187     361     846    1266    1637    1771    1735    1497    1161     879
 420          UI     681     519     385     314     228     181     130     126      46      46
 421          UI      45      46      46      45       0       0       0       0       0       0
 422          UI       0       0       0       0       0       0       0       0       0       0
 423          UI       0       0       0       0       0       0       0       0       0       0
 424          KM        Compute runoff from subbasin 155
              *

 425          KK   D155V  DIVERT
 426          DT   CF55V   136.4     0.0
 427          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 428          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 429          KM        Divert 100-yr 2-hr retention volume.
              *

 430          KK   C155L COMBINE
 431          HC       3   2.606
 432          KM        Combine runoff from S155 with routed flows at Wagner Wash
 433          KM        Adjust BA for JD (S150 + S155).
              *

 434          KK    C155 COMBINE
 435          HC       2  26.296
 436          KM        Combine all flows at Wagner Wash at C155
              *
```



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

 437          KK  155160   ROUTE
 438          RS       5    FLOW      -1
 439          RC   0.035   0.035   0.035    2291  0.0052  110.00
 440          RX    0.00  200.00  400.00  406.00  506.00  512.00  712.00  912.00
 441          RY  110.00  106.50  103.00  100.00  100.00  103.00  106.50  110.00
```

```
442          KM        Route flow in Wagner Wash to C160 (Sun Valley Parkway).
443          KM        Slope = (1452-1440) / 2291
             *

444          KK    S160   BASIN
445          BA   1.144
446          LG    0.25    0.25    4.00    0.57      33
447          UI     231     906    1580    1846    1564     988     642     408     258     163
448          UI     110      48      47      49       0       0       0       0       0       0
449          UI       0       0       0       0       0       0       0       0       0       0
450          UI       0       0       0       0       0       0       0       0       0       0
451          UI       0       0       0       0       0       0       0       0       0       0
452          KM        Compute runoff from subbasin 160
             *

453          KK   D160V  DIVERT
454          DT   CF60V   108.9     0.0
455          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
456          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
457          KM        Divert 100-yr 2-hr retention volume.
             *

458          KK    C160 COMBINE
459          HC       2   27.44
460          KM        Combine flows at Sun Valley Parkway
             *

461          KK  160170   ROUTE
462          RS       3    FLOW      -1
463          RC   0.040   0.030   0.040    5248  0.0057  108.00
464          RX    0.00  200.00  400.00  406.00  606.00  612.00  812.00 1012.00
465          RY  108.00  103.00  102.00  100.00  100.00  102.00  103.00  108.00
466          KM        Route flows from Sun Valley Parkway to C170R. Slope = (1440-1410)/5248
             *

467          KK    S165   BASIN
468          BA   0.616
469          LG    0.25    0.27    4.55    0.39      25
470          UI     266     960    1350     779     525     333     203     135      82      54
471          UI      28      29       0       0       0       0       0       0       0       0
472          UI       0       0       0       0       0       0       0       0       0       0
473          UI       0       0       0       0       0       0       0       0       0       0
474          UI       0       0       0       0       0       0       0       0       0       0
475          KM        Compute runoff from subbasin 165
             *
```



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

476          KK   D165V  DIVERT
477          DT   CF65V    46.5     0.0
478          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
479          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
480          KM        Divert 100-yr 2-hr retention volume.
             *

481          KK  165170   ROUTE
482          RS       8    FLOW      -1
483          RC   0.050   0.035   0.050   13704  0.0161  104.00
484          RX    0.00   50.00  100.00  106.00  131.00  137.00  187.00  237.00
485          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
486          KM        Route runoff from S165 to Sun Valley Parkway (C170).
487          KM        Slope = (1677-1456) / 13704
             *

488          KK    S170   BASIN
489          BA   1.464
490          LG    0.26    0.25    4.40    0.46      28
491          UI     326    1261    2183    2466    1927    1190     747     480     301     179
492          UI      97      63      64       0       0       0       0       0       0       0
493          UI       0       0       0       0       0       0       0       0       0       0
494          UI       0       0       0       0       0       0       0       0       0       0
495          UI       0       0       0       0       0       0       0       0       0       0
496          KM        Compute runoff from subbasin 170
             *

497          KK   D170V  DIVERT
498          DT   CF70V   141.0     0.0
499          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
500          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
501          KM        Divert 100-yr 2-hr retention volume.
             *

502          KK    C170 COMBINE
503          HC       2
504          KM        Combine runoff from S170 with routed flow from S165
             *

505          KK    170R   ROUTE
506          RS       3    FLOW      -1
507          RC   0.045   0.045   0.045    3986  0.0115  104.00
508          RX    0.00   50.00  100.00  103.00  113.00  116.00  166.00  216.00
509          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
510          KM        Route flow from C170 to Wagner Wash.  Slope = (1456-1410) / 3986
```

```
                *
511             KK   C170R COMBINE
512             HC       2
513             KM        Combine routed flows from C170 and C160 in Wagner Wash
                *
1                                          HEC-1 INPUT                                                    PAGE 14

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


514             KK  170180   ROUTE
515             RS       4    FLOW      -1
516             RC   0.045   0.035   0.045    6770  0.0065  110.00
517             RX    0.00  200.00  400.00  406.00  606.00  612.00  812.00 1012.00
518             RY  110.00  103.00  102.00  100.00  100.00  102.00  103.00  110.00
519             KM        Route flows in Wagner Wash to C180R.  Slope = (1410-1366) / 6770
                *

520             KK    S175   BASIN
521             BA   1.802
522             LG    0.25    0.25    4.50    0.42      29
523             UI     229     659    1345    1826    2446    1507    1238    1020     801     603
524             UI     515     391     285     254     176     148     114     112      48      45
525             UI      43      44      45      44       0       0       0       0       0       0
526             UI       0       0       0       0       0       0       0       0       0       0
527             UI       0       0       0       0       0       0       0       0       0       0
528             KM        Compute runoff from subbasin 175
                *

529             KK   D175V  DIVERT
530             DT   CF75V   167.8     0.0
531             DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
532             DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
533             KM        Divert 100-yr 2-hr retention volume.
                *

534             KK    175R   ROUTE
535             RS       2    FLOW      -1
536             RC   0.045   0.045   0.045    3217  0.0134  103.00
537             RX    0.00   50.00  100.00  103.00  153.00  156.00  216.00  266.00
538             RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
539             KM        Route runoff from S175 to intermediate point in S190 (C180RI).
540             KM        Slope = (1456 - 1413) / 3217
                *

541             KK    S180   BASIN
542             BA   1.443
543             LG    0.24    0.26    4.25    0.49      32
544             UI     165     401     862    1190    1656    1471     993     852     710     572
545             UI     437     377     303     228     191     155     128      94      81      82
546             UI      34      31      32      32      32      32      32       0       0       0
547             UI       0       0       0       0       0       0       0       0       0       0
548             UI       0       0       0       0       0       0       0       0       0       0
549             KM        Compute runoff from subbasin 180
                *

550             KK   D180V  DIVERT
551             DT   CF80V   129.1     0.0
552             DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
553             DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
554             KM        Divert 100-yr 2-hr retention volume.
                *
1                                          HEC-1 INPUT                                                    PAGE 15

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


555             KK    180R   ROUTR
556             RS       2    FLOW      -1
557             RC   0.045   0.045   0.045    2965  0.0128  103.00
558             RX    0.00   50.00  100.00  103.00  128.00  131.00  181.00  231.00
559             RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
560             KM        Route runoff from S180 to intermediate point in S190 (C180RI).
561             KM        Slope = (1451 - 1413) / 2965
                *

562             KK  C180RI COMBINE
563             HC       2
564             KM        Combine routed flows from S175 and S180
                *

565             KK  RI180R   ROUTE
566             RS       3    FLOW      -1
567             RC   0.045   0.040   0.045    3866  0.0122  104.00
568             RX    0.00   50.00  100.00  106.00  156.00  166.00  216.00  266.00
569             RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
570             KM        Route combined flows to Wagner Wash.  Slope = (1413 - 1366) / 3866
                *

571             KK   C180R COMBINE
572             HC       2
573             KM        Combine flows in Wagner Wash
                *
```

```
KK  180185   ROUTE
RS       3    FLOW      -1
RC   0.045   0.035   0.045    3450  0.0075  106.00
RX    0.00  100.00  200.00  206.00  406.00  412.00  512.00  612.00
RY  106.00  104.00  102.00  100.00  100.00  102.00  104.00  106.00
KM        Route flows in Wagner Wash from C180R to C185R.
KM        Slope = (1366 - 1340) / 3450
*

KK    S185   BASIN
BA   2.421
LG    0.25    0.26    4.35    0.46      28
UI     294     777    1629    2237    3200    2112    1661    1409    1136     871
UI     707     588     433     353     289     224     173     143     140      57
UI      56      56      57      56      56       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
KM        Compute runoff from subbasin 185
*

KK   D185V  DIVERT
DT   CF85V   213.3     0.0
DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
KM        Divert 100-yr 2-hr retention volume.
*
```

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

KK    185R   ROUTE
RS       5    FLOW      -1
RC   0.045   0.035   0.045    8534  0.0120  104.00
RX    0.00   30.00  100.00  106.00  156.00  162.00  232.00  262.00
RY  104.00  102.00  102.00  100.00  100.00  102.00  102.00  104.00
KM        Route runoff from S185 to Wagner Wash.  Slope = (1442-1340) / 8534
*

KK   C185R COMBINE
HC       2
KM        Combine flows in Wagner Wash
*

KK  185190   ROUTE
RS       2    FLOW      -1
RC   0.045   0.040   0.045    2700  0.0119  106.00
RX    0.00   80.00  160.00  166.00  416.00  422.00  502.00  582.00
RY  106.00  103.00  102.00  100.00  100.00  102.00  103.00  106.00
KM        Route flow in Wagner Wash to C190.  Slope = (1340-1308) / 2700
*

KK    S190   BASIN
BA   4.054
LG    0.26    0.25    3.81    0.44      29
UI     286     290     733    1241    1733    2110    2460    2713    2743    2614
UI    2486    2023    1667    1418    1185     962     830     661     552     476
UI     404     303     286     196     196     198      69      70      70      70
UI      69      71      69      70      70       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
KM        Compute runoff from subbasin 190
*

KK   D190V  DIVERT
DT   CF90V   346.1     0.0
DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
KM        Divert 100-yr 2-hr retention volume.
*

KK    C190 COMBINE
HC       2   39.24
KM        Combine all flow in Wagner Wash at C190
*

KK  190195   ROUTE
RS       2    FLOW      -1
RC   0.045   0.035   0.045    4941  0.0107  110.00
RX    0.00   50.00  200.00  206.00  356.00  366.00  516.00  566.00
RY  110.00  103.00  102.00  100.00  100.00  102.00  103.00  110.00
KM        Route flow from C190 to the Hassayampa River. Slope = (1308-1255)/4941
*
```

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

KK    S195   BASIN
BA   1.808
LG    0.28    0.25    4.25    0.51      23
UI     140     145     448     687     937    1143    1276    1351    1310    1204
UI     994     796     662     549     440     356     293     242     206     151
UI     135      96      97      74      35      34      34      34      35      34
UI      34       0       0       0       0       0       0       0       0       0
```

```
640          UI       0       0       0       0       0       0       0       0       0       0
641          KM        Compute runoff from subbasin 195
             *

642          KK   D195V  DIVERT
643          DT   CF95V   145.0     0.0
644          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
645          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
646          KM        Divert 100-yr 2-hr retention volume.
             *

647          KK    C195 COMBINE
648          HC       2   41.05
649          KM        Combine all flows in Wagner Wash at the Hassayampa River
             *

650          KK    S400   BASIN
651          BA   1.544
652          LG    0.25    0.26    4.20    0.49      30
653          UI     220     767    1444    2053    1904    1251    1013     806     580     478
654          UI     339     262     205     165     108     107      52      42      43      42
655          UI      42       0       0       0       0       0       0       0       0       0
656          UI       0       0       0       0       0       0       0       0       0       0
657          UI       0       0       0       0       0       0       0       0       0       0
658          KM        Compute runoff from subbasin 400
             *

659          KK   D400V  DIVERT
660          DT   CF00V   133.8     0.0
661          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
662          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
663          KM        Divert 100-yr 2-hr retention volume.
             *

664          KK    D400  DIVERT
665          DT    CF00     0.0     0.0
666          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
667          DQ     0.0    50.0   500.0  5000.0     0.0     0.0     0.0     0.0     0.0     0.0
668          KM        Divert flow to the right into S430
             *

669          KK    S410   BASIN
670          BA   0.639
671          LG    0.25    0.25    3.85    0.43      32
672          UI     106     419     722    1047     661     504     393     281     224     150
673          UI     119      85      63      51      34      19      20      19      20       0
674          UI       0       0       0       0       0       0       0       0       0       0
```



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

675          UI       0       0       0       0       0       0       0       0       0       0
676          UI       0       0       0       0       0       0       0       0       0       0
677          KM        Compute runoff from subbasin 410
             *

678          KK   D410V  DIVERT
679          DT   CF10V    61.4     0.0
680          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
681          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
682          KM        Divert 100-yr 2-hr retention volume.
             *

683          KK    C410 COMBINE
684          HC       2
685          KM        Combine runoff from S400 and S410
             *

686          KK    D410  DIVERT
687          DT    CF10     0.0     0.0
688          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
689          DQ     0.0    10.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0
690          KM        Divert additional flow to the right into S430
             *

691          KK  410415   ROUTE
692          RS       4    FLOW      -1
693          RC   0.045   0.035   0.045    6871  0.0143  103.00
694          RX    0.00   30.00  200.00  203.00  253.00  256.00  426.00  456.00
695          RY  103.00  101.00  101.00  100.00  100.00  101.00  101.00  103.00
696          KM        Route combined flows to Sun Valley Parkway. Slope = (1528-1430)/6871
             *

697          KK    S415   BASIN
698          BA   0.451
699          LG    0.25    0.26    3.64    0.49      33
700          UI     134     530     838     795     501     293     170     101      62      22
701          UI      23      23       0       0       0       0       0       0       0       0
702          UI       0       0       0       0       0       0       0       0       0       0
703          UI       0       0       0       0       0       0       0       0       0       0
704          UI       0       0       0       0       0       0       0       0       0       0
705          KM        Compute runoff from subbasin 415
             *

706          KK   D415V  DIVERT
```

```
 707          DT   CF15V    45.7     0.0
 708          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 709          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 710          KM        Divert 100-yr 2-hr retention volume.
              *
1                                          HEC-1 INPUT                                          PAGE 19

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


 711          KK    C415 COMBINE
 712          HC       2
 713          KM        Combine runoff at Sun Valley Parkway
              *

 714          KK  415420   ROUTE
 715          RS      10    FLOW      -1
 716          RC   0.045   0.035   0.045   18114  0.0130  104.00

 717          RX    0.00   30.00   60.00   66.00   96.00  102.00  132.00  162.00
 718          RY  104.00  102.00  102.00  100.00  100.00  102.00  102.00  104.00
 719          KM        Route flow from Sun Valley Parkway to Hassayampa River.
 720          KM        Slope = (1430-1195) / 18114
              *

 721          KK    S420   BASIN
 722          BA   1.767
 723          LG    0.26    0.25    4.30    0.49      27
 724          UI     211     542    1147    1658    1965    1957    1661    1233     891     654
 725          UI     481     355     255     190     143      94      52      51      51      52
 726          UI       0       0       0       0       0       0       0       0       0       0
 727          UI       0       0       0       0       0       0       0       0       0       0
 728          UI       0       0       0       0       0       0       0       0       0       0
 729          KM        Compute runoff from subbasin 420
              *

 730          KK   D420V  DIVERT
 731          DT   CF20V   152.6     0.0
 732          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 733          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 734          KM        Divert 100-yr 2-hr retention volume.
              *

 735          KK    C420 COMBINE
 736          HC       2
 737          KM        Combine flows from S400, S410, S415, and S420 at Hassayampa River
              *

 738          KK    CF00RETRIEVE
 739          DR    CF00
 740          KM        Retrieve diverted flows from S400
              *

 741          KK    CF10RETRIEVE
 742          DR    CF10
 743          KM        Retrieve diverted flows from S410
              *

 744          KK  C40010 COMBINE
 745          HC       2   1.544
 746          KM        Combine retrieved diverted flows
              *
1                                          HEC-1 INPUT                                          PAGE 20

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


 747          KK  400430   ROUTE
 748          RS       5    FLOW      -1
 749          RC   0.045   0.040   0.045    8383  0.0130  105.00
 750          RX    0.00   12.00   25.00   31.00   61.00   67.00   80.00   92.00
 751          RY  105.00  104.00  103.00  100.00  100.00  103.00  104.00  105.00
 752          KM        Route combined flows to Sun Valley Parkway. Slope = (1539-1430)/8383
              *

 753          KK    S430   BASIN
 754          BA   0.795
 755          LG    0.28    0.25    4.55    0.41      22
 756          UI     175     676    1172    1332    1050     655     414     263     164     100
 757          UI      55      35      34       0       0       0       0       0       0       0
 758          UI       0       0       0       0       0       0       0       0       0       0
 759          UI       0       0       0       0       0       0       0       0       0       0
 760          UI       0       0       0       0       0       0       0       0       0       0
 761          KM        Compute runoff from subbasin 430
              *

 762          KK   D430V  DIVERT
 763          DT   CF30V    66.0     0.0
 764          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 765          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 766          KM        Divert 100-yr 2-hr retention volume.
              *

 767          KK    C430 COMBINE
 768          HC       2
```

```
 769          KM        Combine runoff from S430 with routed flows at Sun Valley Parkway
              *

 770          KK  430440   ROUTE
 771          RS       7    FLOW      -1
 772          RC   0.035   0.035   0.035   13256  0.0128  106.00
 773          RX    0.00   16.00   32.00   38.00   68.00   74.00   90.00  106.00
 774          RY  106.00  104.50  103.00  100.00  100.00  103.00  104.50  106.00
 775          KM        Route flows from Sun Valley Parkway through S440.
 776          KM        Slope = (1430-1260) / 13256
              *

 777          KK    S440   BASIN
 778          BA   1.068
 779          LG    0.26    0.25    4.20    0.52      27
 780          UI     156     589    1090    1436    1460    1135     765     537     354     254
 781          UI     168     106      73      39      38      39       0       0       0       0
 782          UI       0       0       0       0       0       0       0       0       0       0
 783          UI       0       0       0       0       0       0       0       0       0       0
 784          UI       0       0       0       0       0       0       0       0       0       0
 785          KM        Compute runoff from subbasin 440
              *
1                                          HEC-1 INPUT                                          PAGE 21

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

 786          KK   D440V  DIVERT
 787          DT   CF40V    92.0     0.0
 788          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 789          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 790          KM        Divert 100-yr 2-hr retention volume.
              *

 791          KK    C440 COMBINE
 792          HC       2
 793          KM        Combine runoff from S440 with routed flows from Sun Valley Parkway.
              *

 794          KK  440450   ROUTE
 795          RS       3    FLOW      -1
 796          RC   0.035   0.040   0.035    4154  0.0104  103.00
 797          RX    0.00  150.00  300.00  303.00  333.00  336.00  486.00  636.00
 798          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 799          KM        Route combined flows to the Hassayampa River.
 800          KM        Slope = (1260-1217) / 4154
              *

 801          KK    S450   BASIN
 802          BA   2.521
 803          LG    0.28    0.25    4.25    0.50      21
 804          UI     261     520    1227    1819    2281    2512    2417    2043    1530    1179
 805          UI     912     681     525     415     286     227     181     138      64      65
 806          UI      64      64      64       0       0       0       0       0       0       0
 807          UI       0       0       0       0       0       0       0       0       0       0
 808          UI       0       0       0       0       0       0       0       0       0       0
 809          KM        Compute runoff from subbasin 450
              *

 810          KK   D450V  DIVERT
 811          DT   CF50V   198.1     0.0
 812          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 813          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 814          KM        Divert 100-yr 2-hr retention volume.
              *

 815          KK    S435   BASIN
 816          BA   0.393
 817          LG    0.27    0.25    4.45    0.44      25
 818          UI     216     795     937     553     278     139      68      25      25       0
 819          UI       0       0       0       0       0       0       0       0       0       0
 820          UI       0       0       0       0       0       0       0       0       0       0
 821          UI       0       0       0       0       0       0       0       0       0       0
 822          UI       0       0       0       0       0       0       0       0       0       0
 823          KM        Compute runoff from subbasin 435
              *
1                                          HEC-1 INPUT                                          PAGE 22

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

 824          KK   D435V  DIVERT
 825          DT   CF35V    36.5     0.0
 826          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 827          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 828          KM        Divert 100-yr 2-hr retention volume.
              *

 829          KK  435450   ROUTE
 830          RS      10    FLOW      -1
 831          RC   0.045   0.035   0.045   18781  0.0119  105.00
 832          RX    0.00   40.00  120.00  126.00  146.00  152.00  232.00  272.00
 833          RY  105.00  103.00  102.00  100.00  100.00  102.00  103.00  105.00
 834          KM        Route runoff from S435 at Sun Valley Parkway to Hassayampa River.
 835          KM        Slope = (1440 - 1217) / 18781
```

```
                *

 836            KK    C450 COMBINE
 837            HC       3
 838            KM        Combine flows from S430, S435, S440, and S450 at Hassayampa River
                *

 839            KK  ALL400 COMBINE
 840            HC       29.178000
 841            KM        Dummy combine of all 400 series hydrographs at the Hassayampa
                *

 842            KK    S500   BASIN
 843            BA   3.638
 844            LG    0.25    0.33    3.92    0.41      15
 845            UI     205     207     306     644     892    1207    1381    1557    1748    2203
 846            UI    2307    1545    1308    1225    1103    1026     953     853     792     690
 847            UI     600     525     501     466     429     366     332     261     265     228
 848            UI     224     199     157     157     159     109     100     102     100     100
 849            UI      86      40      39      40      39      39      40      39      40      39
 850            KM        Compute runoff from subbasin 500
                *

 851            KK   D500V  DIVERT
 852            DT   CF00V    65.9     0.0
 853            DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 854            DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 855            KM        Divert 100-yr 2-hr retention volume.
                *

 856            KK  500510   ROUTE
 857            RS       7    FLOW      -1
 858            RC   0.045   0.035   0.045   14544  0.0186  104.00
 859            RX    0.00   20.00  100.00  106.00  206.00  212.00  292.00  312.00
 860            RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
 861            KM        Route runoff from S500 to Sun Valley Parkway.
 862            KM        Slope = (1690-1420) / 14544
                *
1                                          HEC-1 INPUT                                          PAGE 23

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

 863            KK    S510   BASIN
 864            BA   1.840
 865            LG    0.24    0.25    3.95    0.40      34
 866            UI     278    1094    1991    2590    2568    1871    1266     881     564     386
 867            UI     259     191      84      68      68      68       0       0       0       0
 868            UI       0       0       0       0       0       0       0       0       0       0
 869            UI       0       0       0       0       0       0       0       0       0       0
 870            UI       0       0       0       0       0       0       0       0       0       0
 871            KM        Compute runoff from subbasin 510
                *

 872            KK   D510V  DIVERT
 873            DT   CF10V   178.4     0.0
 874            DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 875            DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 876            KM        Divert 100-yr 2-hr retention volume.
                *

 877            KK    C510 COMBINE
 878            HC       2
 879            KM        Combine flows at Sun Valley Parkway
                *

 880            KK    D510  DIVERT
 881            DT    CF10     0.0     0.0
 882            DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 883            DQ     0.0    65.0   650.0  6500.0     0.0     0.0     0.0     0.0     0.0     0.0
 884            KM        Divert flow to the right into S530
                *

 885            KK  510520   ROUTE
 886            RS      10    FLOW      -1
 887            RC   0.045   0.035   0.045   20653  0.0117  105.00
 888            RX    0.00   20.00  120.00  126.00  156.00  166.00  266.00  286.00
 889            RY  105.00  103.00  102.00  100.00  100.00  102.00  103.00  105.00
 890            KM        Route continuing flows from Sun Valley Parkway to Hassayampa River.
 891            KM        Slope = (1420-1178) / 20653
                *

 892            KK    S520   BASIN
 893            BA   1.481
 894            LG    0.23    0.25    4.50    0.45      36
 895            UI     151     297     689    1028    1325    1433    1412    1209     933     712
 896            UI     546     415     312     252     181     144     105      98      37      37
 897            UI      37      37      38      37       0       0       0       0       0       0
 898            UI       0       0       0       0       0       0       0       0       0       0
 899            UI       0       0       0       0       0       0       0       0       0       0
 900            KM        Compute runoff from subbasin 520
                *
1                                          HEC-1 INPUT                                          PAGE 24

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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901          KK   D520V  DIVERT
902          DT   CF20V   136.9     0.0
903          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
904          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
905          KM        Divert 100-yr 2-hr retention volume.
             *

906          KK    C520 COMBINE
907          HC       2   6.956
908          KM        Combine runoff from S520 with routed flows from Sun Valley Parkway
909          KM        at Hassayampa River
             *

910          KK    S530   BASIN
911          BA   2.226
912          LG    0.24    0.25    4.30    0.50      34
913          UI     289     876    1754    2440    2777    2552    1876    1364     971     680
914          UI     498     346     242     200      88      70      71      70      71       0
915          UI       0       0       0       0       0       0       0       0       0       0
916          UI       0       0       0       0       0       0       0       0       0       0
917          UI       0       0       0       0       0       0       0       0       0       0
918          KM        Compute runoff from subbasin 530
             *

919          KK   D530V  DIVERT
920          DT   CF30V   209.0     0.0
921          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
922          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
923          KM        Divert 100-yr 2-hr retention volume.
             *

924          KK    CF10RETRIEVE
925          DR    CF10
926          KM        Retrieve diverted flows from C510
             *

927          KK  510530   ROUTE
928          RS       9    FLOW      -1
929          RC   0.045   0.040   0.045   18095  0.0126  106.00
930          RX    0.00   20.00   80.00   86.00  121.00  127.00  187.00  207.00
931          RY  106.00  102.00  102.00  100.00  100.00  102.00  102.00  106.00
932          KM        Route diverted flows through S530 to Hassayampa River.
933          KM        Slope = (1420-1192) / 18095
             *

934          KK    C530 COMBINE
935          HC       2   7.704
936          KM        Combine runoff from S530 with routed flows at the Hassayampa River
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

937          KK  ALL500 COMBINE
938          HC       2   9.185
939          KM        Dummy combine of all 500 series hydrographs at Hassayampa
             *

940          KK    S700   BASIN
941          BA   5.240
942          LG    0.25    0.25    5.00    0.32      30
943          UI     392     396    1178    1838    2554    3056    3490    3823    3697    3476
944          UI    3012    2435    2011    1676    1371    1124     918     751     627     519
945          UI     416     337     272     269     178      97      96      95      97      95
946          UI      96      96       0       0       0       0       0       0       0       0
947          UI       0       0       0       0       0       0       0       0       0       0
948          KM        Compute runoff from subbasin 700
             *

949          KK   D700V  DIVERT
950          DT   CF00V   521.9     0.0
951          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
952          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
953          KM        Divert 100-yr 2-hr retention volume.
             *

954          KK    S720   BASIN
955          BA   4.626
956          LG    0.25    0.25    5.00    0.32      30
957          UI     376     457    1262    1983    2634    3200    3522    3635    3430    2927
958          UI    2418    1930    1566    1271    1027     808     679     568     400     366
959          UI     257     258     178      92      92      92      92      92      93      91
960          UI       0       0       0       0       0       0       0       0       0       0
961          UI       0       0       0       0       0       0       0       0       0       0
962          KM        Compute runoff from subbasin 720
             *

963          KK   D720V  DIVERT
964          DT   CF20V   460.6     0.0
965          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
966          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
967          KM        Divert 100-yr 2-hr retention volume.
```

```
                 *
 968             KK    S740   BASIN
 969             BA   1.132
 970             LG    0.26    0.25    5.30    0.28      27
 971             UI     621    2289    2700    1592     802     400     195      74      74       0
 972             UI       0       0       0       0       0       0       0       0       0       0
 973             UI       0       0       0       0       0       0       0       0       0       0
 974             UI       0       0       0       0       0       0       0       0       0       0
 975             UI       0       0       0       0       0       0       0       0       0       0
 976             KM        Compute runoff from subbasin 740
                 *
1                                          HEC-1 INPUT                                          PAGE 26

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

 977             KK   D740V  DIVERT
 978             DT   CF40V   105.9     0.0
 979             DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 980             DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 981             KM        Divert 100-yr 2-hr retention volume.
                 *

 982             KK  ALL700 COMBINE
 983             HC       3
 984             KM        Dummy combination of all 700 series subbasins.
                 *

 985             KK    S900   BASIN
 986             BA   1.035
 987             LG    0.25    0.37    5.30    0.24       6
 988             UI      75      77     215     338     472     551     650     871     671     496
 989             UI     448     394     356     320     277     233     197     180     165     140
 990             UI     116      97      89      83      65      59      58      37      38      37
 991             UI      37      23      14      15      14      15      14      15      15      14
 992             UI      15      14       0       0       0       0       0       0       0       0
 993             KM        Compute runoff from subbasin 900
                 *

 994             KK   D900V  DIVERT
 995             DT   CF00V     0.0     0.0
 996             DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 997             DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 998             KM        Divert 100-yr 2-hr retention volume.
                 *

 999             KK  900910   ROUTE
1000             RS       7    FLOW      -1
1001             RC   0.045   0.035   0.045   10207  0.0192  103.00
1002             RX    0.00   80.00  160.00  163.00  178.00  181.00  261.00  341.00
1003             RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
1004             KM        Route runoff from subbasin 900 through subbasin 910.
1005             KM        Slope = (1856-1660) / 10207
                 *

1006             KK    S910   BASIN
1007             BA   0.983
1008             LG    0.26    0.26    4.70    0.36      27
1009             UI     391    1501    2117    1638     908     489     272     149      55      55
1010             UI       0       0       0       0       0       0       0       0       0       0
1011             UI       0       0       0       0       0       0       0       0       0       0
1012             UI       0       0       0       0       0       0       0       0       0       0
1013             UI       0       0       0       0       0       0       0       0       0       0
1014             KM        Compute runoff from subbasin 910
                 *
1                                          HEC-1 INPUT                                          PAGE 27

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

1015             KK   D910V  DIVERT
1016             DT   CF10V    88.3     0.0
1017             DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1018             DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1019             KM        Divert 100-yr 2-hr retention volume.
                 *

1020             KK    C910 COMBINE
1021             HC       2
1022             KM        Combine runoff from S910 with routed flow at Sun Valley Parkway
                 *

1023             KK  910915   ROUTE
1024             RS       2    FLOW      -1
1025             RC   0.045   0.035   0.045    2998  0.0110  103.00
1026             RX    0.00  100.00  200.00  203.00  223.00  226.00  326.00  426.00
1027             RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
1028             KM        Route combined flow to C915.
1029             KM        Slope = (1660-1627) / 2998
                 *

1030             KK    S915   BASIN
1031             BA   1.126
1032             LG    0.23    0.30    6.60    0.15      12
```

```
1033          UI     109     194     465     701     915    1017    1034     960     741     581
1034          UI     461     350     270     217     168     120     100      74      71      27
1035          UI      26      27      27      26      27       0       0       0       0       0
1036          UI       0       0       0       0       0       0       0       0       0       0
1037          UI       0       0       0       0       0       0       0       0       0       0
1038          KM        Compute runoff from subbasin 915
              *

1039          KK   D915V  DIVERT
1040          DT   CF15V    42.7     0.0
1041          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1042          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1043          KM        Divert 100-yr 2-hr retention volume.
              *

1044          KK    C915 COMBINE
1045          HC       2
1046          KM        Combine flows at C915
              *

1047          KK  915920   ROUTE
1048          RS       5    FLOW      -1
1049          RC   0.045   0.035   0.045    9456  0.0103  104.00
1050          RX    0.00  100.00  200.00  203.00  223.00  226.00  326.00  426.00
1051          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
1052          KM        Route combined flow to C920, at tributary to Trilby Wash parallel to CAP
1053          KM        Slope = (1627-1530) / 9456
              *
1                                                HEC-1 INPUT                                          PAGE 28

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


1054          KK    S920   BASIN
1055          BA   3.291
1056          LG    0.25    0.25    5.60    0.25      30
1057          UI     326     603    1429    2144    2816    3058    3080    2765    2128    1632
1058          UI    1289     983     751     587     457     347     252     224     147      80
1059          UI      80      79      81      79       0       0       0       0       0       0
1060          UI       0       0       0       0       0       0       0       0       0       0
1061          UI       0       0       0       0       0       0       0       0       0       0
1062          KM        Compute runoff from subbasin 920
              *

1063          KK   D920V  DIVERT
1064          DT   CF20V   325.2     0.0
1065          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1066          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1067          KM        Divert 100-yr 2-hr retention volume.
              *

1068          KK    C920 COMBINE
1069          HC       2
1070          KM        Combine flows in Trilby Wash tributary
1071          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    43        S100
                .
                .
    53          .-------->   CF00V
    52      D100V
                .
                .
    57          .        S102
                .           .
                .           .
    67          .           .-------->   CF02V
    66          .       D102V
                .           .
                .           .
    71      C102............
                V
                V
    74      RR102
                .
                .
    84          .-------->    CF02
    83       D102
                V
                V
    89     100105
                .
                .
    96          .        S105
                .           .
                .           .
   106          .           .-------->   CF05V
   105          .       D105V
                .           .
```

```
                .           .
111             .           .           .<-------    CF02
110             .           .        CF02
                .           .           V
                .           .           V
113             .           .      102105
                .           .           .
                .           .           .
120         C105U.......................
                .
                .
125             .        S110
                .           .
                .           .
135             .           .------->   CF10V
134             .       D110V
                .           V
                .           V
139             .      11015I
                .           .
                .           .
147             .           .------->    CF5I
146             .        D15I
                .           V
                .           V
151             .      15I15R
                .           .
                .           .
158             .           .        S115
                .           .           .
                .           .           .
168             .           .           .------->   CF15V
167             .           .       D115V
                .           .           .
                .           .           .
172             .       C115U............
                .           .
                .           .
176             .           .           .<-------    CF5I
175             .           .        CF5I
                .           .           V
                .           .           V
178             .           .      15I15L
                .           .           .
                .           .           .
185             .       C115D............
                .           V
                .           V
189             .      115120
                .           .
                .           .
195             .           .        S120
                .           .           .
                .           .           .
205             .           .           .------->   CF20V
204             .           .       D120V
                .           .           .
                .           .           .
209             .        C120............
                .           .
                .           .
212         C105D............
                V
                V
215        120135
                .
                .
222             .        S125
                .           .
                .           .
232             .           .------->   CF25V
231             .       D125V
                .           V
                .           V
236             .      12535I
                .           .
                .           .
243             .           .        S150
                .           .           .
                .           .           .
253             .           .           .------->   CF50V
252             .           .       D150V
                .           .           .
                .           .           .
258             .           .           .------->    CF50
257             .           .        D150
                .           .           V
                .           .           V
263             .           .      150130
                .           .           .
                .           .           .
269             .           .           .        S130
                .           .           .           .
                .           .           .           .
279             .           .           .           .------->   CF30V
```

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278          .           .           .       D130V
             .           .           .           .
             .           .           .           .
283          .           .        C130............
             .           .           .
             .           .           .
288          .           .           .-------->    CF30
287          .           .        D130
             .           .           V
             .           .           V
292          .           .      13035I
             .           .           .
             .           .           .
299          .       C135I............
             .           V
             .           V
302          .      35I135
             .           .
             .           .
309          .           .        S135
             .           .           .
             .           .           .
319          .           .           .-------->   CF35V
318          .           .       D135V
             .           .           .
             .           .           .
323          .       C135L............
             .           .
             .           .
326       C135............
             V
             V
329     135145
             .
             .
335          .        S140
             .           .
             .           .
345          .           .-------->   CF40V
344          .       D140V
             .           V
             .           V
349          .      140145
             .           .
             .           .
357          .           .           .<--------    CF30
356          .           .        CF30
             .           .           .
             .           .           .
360          .           .           .-------->   CF302
359          .           .       D1302
             .           .           V
             .           .           V
364          .           .      130145
             .           .           .
             .           .           .
371          .           .           .        S145
             .           .           .           .
             .           .           .           .
381          .           .           .           .-------->   CF45V
380          .           .           .       D145V
             .           .           .           .
             .           .           .           .
385          .           .       C145L............
             .           .           .
             .           .           .
389       C145........................
             V
             V
392     145155
             .
             .
399          .           .<--------    CF50
398          .        CF50
             .           V
             .           V
401          .      150155
             .           .
             .           .
408          .           .           .<--------   CF302
407          .           .       CF302
             .           .           V
             .           .           V
410          .           .      130155
             .           .           .
             .           .           .
416          .           .           .        S155
             .           .           .           .
             .           .           .           .
426          .           .           .           .-------->   CF55V
425          .           .           .       D155V
             .           .           .           .
             .           .           .           .
430          .       C155L........................
             .           .
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                .           .
434        C155............
              V
              V
437      155160
                .
                .
444             .        S160
                .           .
                .           .
454             .           .-------->   CF60V
453             .       D160V
                .           .
                .           .
458        C160............
              V
              V
461      160170
                .
                .
467             .        S165
                .           .
                .           .
477             .           .-------->   CF65V
476             .       D165V
                .           V
                .           V
481             .      165170
                .           .
                .           .
488             .           .        S170
                .           .           .
                .           .           .
498             .           .           .-------->   CF70V
497             .           .       D170V
                .           .           .
                .           .           .
502             .        C170............
                .           V
                .           V
505             .        170R
                .           .
                .           .
511       C170R............
              V
              V
514      170180
                .
                .
520             .        S175
                .           .
                .           .
530             .           .-------->   CF75V
529             .       D175V
                .           V
                .           V
534             .        175R
                .           .
                .           .
541             .           .        S180
                .           .           .
                .           .           .
551             .           .           .-------->   CF80V
550             .           .       D180V
                .           .           V
                .           .           V
555             .           .        180R
                .           .           .
                .           .           .
562             .      C180RI............
                .           V
                .           V
565             .      RI180R
                .           .
                .           .
571       C180R............
              V
              V
574      180185
                .
                .
581             .        S185
                .           .
                .           .
591             .           .-------->   CF85V
590             .       D185V
                .           V
                .           V
595             .        185R
                .           .
                .           .
601       C185R............
              V
              V
604      185190
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                .
                .
610             .        S190
                .          .
                .          .
620             .          .-------->   CF90V
619             .      D190V
                .          .
                .          .
624         C190............
                V
                V
627       190195
                .
                .
633             .        S195
                .          .
                .          .
643             .          .-------->   CF95V
642             .      D195V
                .          .
                .          .
647         C195............
                .
                .
650             .        S400
                .          .
                .          .
660             .          .-------->   CF00V
659             .      D400V
                .          .
                .          .
665             .          .-------->    CF00
664             .        D400
                .          .
                .          .
669             .          .        S410
                .          .          .
                .          .          .
679             .          .          .-------->   CF10V
678             .          .      D410V
                .          .          .
                .          .          .
683             .        C410............
                .          .
                .          .
687             .          .-------->    CF10
686             .        D410
                .          V
                .          V
691             .      410415
                .          .
                .          .
697             .          .        S415
                .          .          .
                .          .          .
707             .          .          .-------->   CF15V
706             .          .      D415V
                .          .          .
                .          .          .
711             .        C415............
                .          V
                .          V
714             .      415420
                .          .
                .          .
721             .          .        S420
                .          .          .
                .          .          .
731             .          .          .-------->   CF20V
730             .          .      D420V
                .          .          .
                .          .          .
735             .        C420............
                .          .
                .          .
739             .          .          .<--------    CF00
738             .          .        CF00
                .          .          .
                .          .          .
742             .          .          .           .<--------    CF10
741             .          .          .        CF10
                .          .          .           .
                .          .          .           .
744             .          .      C40010............
                .          .          V
                .          .          V
747             .          .      400430
                .          .          .
                .          .          .
753             .          .          .        S430
                .          .          .           .
                .          .          .           .
763             .          .          .           .-------->   CF30V
762             .          .          .       D430V
```

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767          .           .        C430............
             .           .           V
             .           .           V
770          .           .      430440
             .           .
             .           .
777          .           .           .        S440
             .           .           .           .
             .           .           .           .
787          .           .           .           .-------->   CF40V
786          .           .           .       D440V
             .           .           .           .
             .           .           .           .
791          .           .        C440............
             .           .           V
             .           .           V
794          .           .      440450
             .           .
             .           .
801          .           .           .        S450
             .           .           .           .
             .           .           .           .
811          .           .           .           .-------->   CF50V
810          .           .           .       D450V
             .           .           .           .
             .           .           .           .
815          .           .           .           .           .        S435
             .           .           .           .           .           .
             .           .           .           .           .           .
825          .           .           .           .           .           .-------->   CF35V
824          .           .           .           .           .       D435V
             .           .           .           .           .           V
             .           .           .           .           .           V
829          .           .           .           .           .      435450
             .           .           .           .           .           .
             .           .           .           .           .           .
836          .           .        C450........................
             .           .           .
             .           .           .
839          .      ALL400............
             .           .
             .           .
842          .           .        S500
             .           .           .
             .           .           .
852          .           .           .-------->   CF00V
851          .           .       D500V
             .           .           V
             .           .           V
856          .           .      500510
             .           .           .
             .           .           .
863          .           .           .        S510
             .           .           .           .
             .           .           .           .
873          .           .           .           .-------->   CF10V
872          .           .           .       D510V
             .           .           .           .
             .           .           .           .
877          .           .        C510............
             .           .           .
             .           .           .
881          .           .           .-------->    CF10
880          .           .        D510
             .           .           V
             .           .           V
885          .           .      510520
             .           .           .
             .           .           .
892          .           .           .        S520
             .           .           .           .
             .           .           .           .
902          .           .           .           .-------->   CF20V
901          .           .           .       D520V
             .           .           .           .
             .           .           .           .
906          .           .        C520............
             .           .           .
             .           .           .
910          .           .           .        S530
             .           .           .           .
             .           .           .           .
920          .           .           .           .-------->   CF30V
919          .           .           .       D530V
             .           .           .           .
             .           .           .           .
925          .           .           .           .           .<-------    CF10
924          .           .           .           .        CF10
             .           .           .           .           V
             .           .           .           .           V
927          .           .           .           .      510530
             .           .           .           .           .
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 934          .          .          .       C530............
              .          .          .          .
              .          .          .          .
 937          .          .     ALL500...........
              .          .          .
              .          .          .
 940          .          .          .       S700
              .          .          .          .
              .          .          .          .
 950          .          .          .          .-------->   CF00V
 949          .          .          .      D700V
              .          .          .          .
              .          .          .          .
 954          .          .          .          .        S720
              .          .          .          .          .
              .          .          .          .          .
 964          .          .          .          .          .-------->   CF20V
 963          .          .          .          .      D720V
              .          .          .          .          .
              .          .          .          .          .
 968          .          .          .          .          .        S740
              .          .          .          .          .          .
              .          .          .          .          .          .
 978          .          .          .          .          .          .-------->   CF40V
 977          .          .          .          .          .      D740V
              .          .          .          .          .          .
              .          .          .          .          .          .
 982          .          .          .     ALL700......................
              .          .          .          .
              .          .          .          .
 985          .          .          .          .        S900
              .          .          .          .          .
              .          .          .          .          .
 995          .          .          .          .          .-------->   CF00V
 994          .          .          .          .      D900V
              .          .          .          .          V
              .          .          .          .          V
 999          .          .          .          .     900910
              .          .          .          .          .
              .          .          .          .          .
1006          .          .          .          .          .        S910
              .          .          .          .          .          .
              .          .          .          .          .          .
1016          .          .          .          .          .          .-------->   CF10V
1015          .          .          .          .          .      D910V
              .          .          .          .          .          .
              .          .          .          .          .          .
1020          .          .          .          .        C910............
              .          .          .          .          V
              .          .          .          .          V
1023          .          .          .          .     910915
              .          .          .          .          .
              .          .          .          .          .
1030          .          .          .          .          .        S915
              .          .          .          .          .          .
              .          .          .          .          .          .
1040          .          .          .          .          .          .-------->   CF15V
1039          .          .          .          .          .      D915V
              .          .          .          .          .          .
              .          .          .          .          .          .
1044          .          .          .          .        C915............
              .          .          .          .          V
              .          .          .          .          V
1047          .          .          .          .     915920
              .          .          .          .          .
              .          .          .          .          .
1054          .          .          .          .          .        S920
              .          .          .          .          .          .
              .          .          .          .          .          .
1064          .          .          .          .          .          .-------->   CF20V
1063          .          .          .          .          .      D920V
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              .          .          .          .          .          .
1068          .          .          .          .        C920............
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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1*****************************************                                    *****************************************
 *                                       *                                    *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                    *   U.S. ARMY CORPS OF ENGINEERS        *
 *              JUN   1998               *                                    *   HYDROLOGIC ENGINEERING CENTER       *
 *            VERSION 4.1                *                                    *         609 SECOND STREET             *
 *                                       *                                    *      DAVIS, CALIFORNIA 95616          *
 *  RUN DATE   16AUG06  TIME  10:01:13   *                                    *          (916) 756-1104               *
 *                                       *                                    *                                       *
 *****************************************                                    *****************************************
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SUN VALLEY AREA DRAINAGE MASTER PLAN (SVADMP) - FCD 2004C049
JE FULLER / HYDROLOGY & GEOMORPHOLOGY, INC.
FILENAME: A4_FU24.DAT

100-YEAR 24-HOUR MODEL

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                    FUTURE CONDITIONS
                    AREA 4 WATERSHED AREA = 90.5 SQ. MILES
                           MODELED AREA = 76.8 SQ. MILES

                    GREEN-AMPT LOSS METHOD
                    S-GRAPH UNIT HYDROGRAPHS
                     - MOUNTAIN
                     - DESERT/RANGELAND
                    NORMAL-DEPTH CHANNEL ROUTING
                    LAND USE DATA FROM MASTER PLANNED COMMUNITY PLANS WHERE AVAILABLE.
                    STATE LAND AND OTHER NON-MASTER PLANNED AREAS ASSUMED AS SMALL LOT
                    RESIDENTIAL.  NATURAL AREAS IN WHITE TANK REGIONAL PARK ASSIGNED
                    BASED ON EXAMINATION OF SLOPE FROM 10-FT DTM TO DISTINGUISH
                     - UNDEVELOPED DESERT RANGELAND (NDR) - SLOPES < 5 %
                     - HILLSLOPES, SONORAN DESERT (NHS) - SLOPES 5 - 10 %
                     - MOUNTAIN TERRAIN (NMT) - SLOPES > 10 %
                   SOILS DATA FROM FCDMC GIS DATABASE (RECEIVED FROM FCDMC JULY 2005)

                        08/15/2006

27 IO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

   IT          HYDROGRAPH TIME DATA
                      NMIN          5  MINUTES IN COMPUTATION INTERVAL
                     IDATE     1JAN99  STARTING DATE
                     ITIME       1200  STARTING TIME
                        NQ       2000  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE     8JAN99  ENDING DATE
                    NDTIME       1035  ENDING TIME
                     ICENT         19  CENTURY MARK

              COMPUTATION INTERVAL     .08 HOURS
                   TOTAL TIME BASE  166.58 HOURS

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

28 JD          INDEX STORM NO. 1
                     STRM       4.20  PRECIPITATION DEPTH
                     TRDA        .10  TRANSPOSITION DRAINAGE AREA

29 PI            PRECIPITATION PATTERN
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
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                  .01     .01     .01     .01     .01     .01     .01     .01     .03     .03
                  .03     .09     .09     .09     .01     .01     .01     .01     .01     .01
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39 JD          INDEX STORM NO. 2
                     STRM       3.99  PRECIPITATION DEPTH
                     TRDA      10.00  TRANSPOSITION DRAINAGE AREA

 0 PI            PRECIPITATION PATTERN
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
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40 JD INDEX STORM NO. 3
STRM 3.78 PRECIPITATION DEPTH
TRDA 30.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
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41 JD INDEX STORM NO. 4
STRM 3.65 PRECIPITATION DEPTH
TRDA 60.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

42 JD INDEX STORM NO. 5
STRM 3.58 PRECIPITATION DEPTH
TRDA 90.00 TRANSPOSITION DRAINAGE AREA

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  0 PI            PRECIPITATION PATTERN
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                     .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
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            *            *
  74 KK     *     RR102  *      STORAGE
            *            *
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  75 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
1
                                                  RUNOFF SUMMARY
                                          FLOW IN CUBIC FEET PER SECOND
                                        TIME IN HOURS,  AREA IN SQUARE MILES

                                   PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
          OPERATION       STATION  FLOW    PEAK                                           AREA      STAGE     MAX STAGE
+                                                      6-HOUR     24-HOUR     72-HOUR

          HYDROGRAPH AT
+                          S100    7294.   12.42       1379.       410.        137.       6.99

          DIVERSION TO
+                         CF00V    7294.   12.42       1287.       344.        115.       6.99

          HYDROGRAPH AT
+                         D100V    1024.   13.58        204.        67.         22.       6.99

          HYDROGRAPH AT
+                          S102    4529.   12.25        578.       169.         56.       3.23

          DIVERSION TO
+                         CF02V    4529.   12.25        556.       147.         49.       3.23

          HYDROGRAPH AT
+                         D102V     172.   12.92         62.        22.          7.       3.23

          2 COMBINED AT
+                          C102    1125.   13.58        252.        83.         28.      10.23

          ROUTED TO
+                         RR102      31.   24.67         30.        27.         20.      10.23

          DIVERSION TO
+                          CF02      15.   24.67         15.        13.         10.      10.23

          HYDROGRAPH AT
+                          D102      15.   24.67         15.        13.         10.      10.23

          ROUTED TO
+                        100105      15.   29.17         15.        13.         10.      10.23

          HYDROGRAPH AT
+                          S105    4639.   12.33        778.       234.         78.       4.37

          DIVERSION TO
+                         CF05V    4639.   12.33        761.       206.         69.       4.37
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+	HYDROGRAPH AT	D105V	144.	14.42	77.	28.	9.	4.37
+	HYDROGRAPH AT	CF02	15.	24.67	15.	13.	10.	10.23
+	ROUTED TO	102105	15.	27.42	15.	13.	10.	10.23
+	3 COMBINED AT	C105U	145.	14.42	84.	49.	28.	14.60
+	HYDROGRAPH AT	S110	554.	12.17	64.	17.	6.	.43
+	DIVERSION TO	CF10V	58.	11.75	4.	1.	0.	.43
+	HYDROGRAPH AT	D110V	554.	12.17	62.	16.	5.	.43
+	ROUTED TO	11015I	466.	12.42	61.	16.	5.	.43
+	DIVERSION TO	CF5I	93.	12.42	12.	3.	1.	.43
+	HYDROGRAPH AT	D15I	373.	12.42	49.	13.	4.	.43
+	ROUTED TO	15I15R	329.	12.83	49.	13.	4.	.43
+	HYDROGRAPH AT	S115	2274.	12.42	385.	114.	38.	2.25
+	DIVERSION TO	CF15V	2274.	12.42	315.	84.	28.	2.25
+	HYDROGRAPH AT	D115V	742.	13.00	101.	30.	10.	2.25
+	2 COMBINED AT	C115U	1005.	13.00	146.	42.	14.	2.68
+	HYDROGRAPH AT	CF5I	93.	12.42	12.	3.	1.	.43
+	ROUTED TO	15I15L	44.	13.58	12.	3.	1.	.43
+	2 COMBINED AT	C115D	1010.	13.00	157.	45.	15.	2.68
+	ROUTED TO	115120	802.	13.17	156.	45.	15.	2.68
+	HYDROGRAPH AT	S120	2732.	12.25	347.	104.	35.	2.00
+	DIVERSION TO	CF20V	2732.	12.25	304.	81.	27.	2.00
+	HYDROGRAPH AT	D120V	476.	12.83	72.	23.	8.	2.00
+	2 COMBINED AT	C120	963.	13.17	219.	65.	22.	4.68
+	2 COMBINED AT	C105D	631.	13.33	201.	84.	37.	19.28
+	ROUTED TO	120135	610.	13.42	200.	84.	37.	19.28
+	HYDROGRAPH AT	S125	184.	12.00	14.	4.	1.	.09
+	DIVERSION TO	CF25V	146.	12.00	7.	2.	1.	.09
+	HYDROGRAPH AT	D125V	179.	12.08	8.	2.	1.	.09
+	ROUTED TO	12535I	91.	12.17	8.	2.	1.	.09
+	HYDROGRAPH AT	S150	737.	12.33	108.	29.	10.	.77
+	DIVERSION TO	CF50V	17.	11.58	5.	2.	1.	.77
+	HYDROGRAPH AT	D150V	737.	12.33	107.	27.	9.	.77

	DIVERSION TO							
+		CF50	663.	12.33	96.	25.	8.	.77
	HYDROGRAPH AT							
+		D150	74.	12.33	11.	3.	1.	.77
	ROUTED TO							
+		150130	68.	12.50	11.	3.	1.	.77
	HYDROGRAPH AT							
+		S130	526.	12.08	48.	14.	5.	.31
	DIVERSION TO							
+		CF30V	526.	12.08	30.	8.	3.	.31
	HYDROGRAPH AT							
+		D130V	304.	12.25	21.	6.	2.	.31
	2 COMBINED AT							
+		C130	344.	12.25	32.	9.	3.	.31
	DIVERSION TO							
+		CF30	103.	12.25	9.	3.	1.	.31
	HYDROGRAPH AT							
+		D130	241.	12.25	22.	6.	2.	.31
	ROUTED TO							
+		13035I	214.	12.33	22.	6.	2.	.31
	2 COMBINED AT							
+		C135I	277.	12.33	29.	8.	3.	.40
	ROUTED TO							
+		35I135	146.	13.00	28.	8.	3.	.40
	HYDROGRAPH AT							
+		S135	1348.	12.17	166.	52.	17.	.88
	DIVERSION TO							
+		CF35V	1348.	12.17	160.	45.	15.	.88
	HYDROGRAPH AT							
+		D135V	36.	13.25	20.	8.	3.	.88
	2 COMBINED AT							
+		C135L	137.	13.25	45.	15.	5.	1.28
	2 COMBINED AT							
+		C135	671.	13.42	220.	92.	39.	20.56
	ROUTED TO							
+		135145	565.	13.83	210.	91.	39.	20.56
	HYDROGRAPH AT							
+		S140	2602.	12.08	276.	86.	29.	1.37
	DIVERSION TO							
+		CF40V	2602.	12.08	264.	73.	24.	1.37
	HYDROGRAPH AT							
+		D140V	76.	12.83	38.	14.	5.	1.37
	ROUTED TO							
+		140145	47.	14.92	35.	14.	5.	1.37
	HYDROGRAPH AT							
+		CF30	103.	12.25	9.	3.	1.	.31
	DIVERSION TO							
+		CF302	10.	12.25	1.	0.	0.	.31
	HYDROGRAPH AT							
+		D1302	93.	12.25	9.	2.	1.	.31
	ROUTED TO							
+		130145	34.	13.67	8.	2.	1.	.31
	HYDROGRAPH AT							
+		S145	2527.	12.25	366.	119.	40.	1.76
	DIVERSION TO							
+		CF45V	2527.	12.25	333.	92.	31.	1.76
	HYDROGRAPH AT							
+		D145V	253.	13.17	79.	27.	9.	1.76
	2 COMBINED AT							
+		C145L	252.	13.17	85.	29.	10.	2.07
	3 COMBINED AT							
+		C145	626.	14.08	260.	113.	46.	23.69
	ROUTED TO							

+		145155	610.	14.17	259.	113.	46.	23.69
+	HYDROGRAPH AT	CF50	663.	12.33	96.	25.	8.	.77
+	ROUTED TO	150155	438.	13.50	93.	25.	8.	.77
+	HYDROGRAPH AT	CF302	10.	12.25	1.	0.	0.	.31
+	ROUTED TO	130155	2.	16.25	1.	0.	0.	.31
+	HYDROGRAPH AT	S155	1995.	12.33	300.	89.	30.	1.83
+	DIVERSION TO	CF55V	1995.	12.33	258.	69.	23.	1.83
+	HYDROGRAPH AT	D155V	448.	13.00	67.	20.	7.	1.83
+	3 COMBINED AT	C155L	749.	13.00	157.	44.	15.	2.61
+	2 COMBINED AT	C155	823.	13.75	354.	142.	55.	26.30
+	ROUTED TO	155160	822.	13.83	352.	142.	55.	26.30
+	HYDROGRAPH AT	S160	1790.	12.17	202.	62.	21.	1.14
+	DIVERSION TO	CF60V	1790.	12.17	197.	55.	18.	1.14
+	HYDROGRAPH AT	D160V	31.	13.42	20.	8.	3.	1.14
+	2 COMBINED AT	C160	817.	13.83	352.	144.	56.	27.44
+	ROUTED TO	160170	761.	14.17	336.	142.	55.	27.44
+	HYDROGRAPH AT	S165	1121.	12.08	105.	31.	10.	.62
+	DIVERSION TO	CF65V	1121.	12.08	88.	23.	8.	.62
+	HYDROGRAPH AT	D165V	222.	12.42	26.	8.	3.	.62
+	ROUTED TO	165170	94.	13.17	24.	8.	3.	.62
+	HYDROGRAPH AT	S170	2362.	12.17	250.	75.	25.	1.46
+	DIVERSION TO	CF70V	2362.	12.17	250.	71.	24.	1.46
+	HYDROGRAPH AT	D170V	17.	19.83	12.	4.	1.	1.46
+	2 COMBINED AT	C170	81.	13.25	28.	11.	4.	2.08
+	ROUTED TO	170R	69.	13.58	27.	11.	4.	2.08
+	2 COMBINED AT	C170R	765.	14.33	337.	142.	55.	29.52
+	ROUTED TO	170180	728.	14.75	325.	141.	54.	29.52
+	HYDROGRAPH AT	S175	2223.	12.25	316.	96.	32.	1.80
+	DIVERSION TO	CF75V	2223.	12.25	308.	85.	28.	1.80
+	HYDROGRAPH AT	D175V	58.	13.50	29.	11.	4.	1.80
	ROUTED TO							

+		175R	44.	13.83	28.	11.	4.	1.80
+	HYDROGRAPH AT	S180	1666.	12.25	256.	79.	26.	1.44
+	DIVERSION TO	CF80V	1666.	12.25	239.	65.	22.	1.44
+	HYDROGRAPH AT	D180V	113.	13.75	41.	14.	5.	1.44
+	ROUTED TO	180R	96.	14.00	40.	14.	5.	1.44
+	2 COMBINED AT	C180RI	117.	14.00	61.	23.	8.	3.24
+	ROUTED TO	RI180R	94.	14.42	59.	23.	8.	3.24
+	2 COMBINED AT	C180R	728.	14.75	336.	150.	57.	32.76
+	ROUTED TO	180185	674.	14.92	320.	143.	55.	32.76
+	HYDROGRAPH AT	S185	2847.	12.25	411.	124.	41.	2.42
+	DIVERSION TO	CF85V	2847.	12.25	397.	108.	36.	2.42
+	HYDROGRAPH AT	D185V	96.	13.33	47.	17.	6.	2.42
+	ROUTED TO	185R	60.	15.25	43.	17.	6.	2.42
+	2 COMBINED AT	C185R	669.	14.92	324.	148.	56.	35.19
+	ROUTED TO	185190	625.	15.17	311.	144.	54.	35.19
+	HYDROGRAPH AT	S190	3381.	12.50	707.	214.	71.	4.05
+	DIVERSION TO	CF90V	3381.	12.50	648.	174.	58.	4.05
+	HYDROGRAPH AT	D190V	518.	13.75	121.	39.	13.	4.05
+	2 COMBINED AT	C190	634.	15.17	351.	156.	58.	39.24
+	ROUTED TO	190195	593.	15.50	343.	155.	58.	39.24
+	HYDROGRAPH AT	S195	1524.	12.50	285.	84.	28.	1.81
+	DIVERSION TO	CF95V	1524.	12.50	272.	73.	24.	1.81
+	HYDROGRAPH AT	D195V	96.	13.50	33.	11.	4.	1.81
+	2 COMBINED AT	C195	581.	15.50	343.	156.	58.	41.05
+	HYDROGRAPH AT	S400	2031.	12.17	267.	81.	27.	1.54
+	DIVERSION TO	CF00V	2031.	12.17	250.	67.	22.	1.54
+	HYDROGRAPH AT	D400V	122.	13.50	42.	14.	5.	1.54
+	DIVERSION TO	CF00	61.	13.50	21.	7.	2.	1.54
+	HYDROGRAPH AT	D400	61.	13.50	21.	7.	2.	1.54
+	HYDROGRAPH AT	S410	945.	12.17	118.	36.	12.	.64
+	DIVERSION TO	CF10V	945.	12.17	113.	31.	10.	.64
+	HYDROGRAPH AT	D410V	44.	13.17	15.	5.	2.	.64

+	2 COMBINED AT	C410	77.	13.42	32.	11.	4.	2.18
+	DIVERSION TO	CF10	8.	13.42	3.	1.	0.	2.18
+	HYDROGRAPH AT	D410	69.	13.42	29.	10.	3.	2.18
+	ROUTED TO	410415	38.	13.58	27.	10.	3.	2.18
+	HYDROGRAPH AT	S415	811.	12.08	83.	26.	9.	.45
+	DIVERSION TO	CF15V	811.	12.08	83.	23.	8.	.45
+	HYDROGRAPH AT	D415V	11.	14.17	7.	3.	1.	.45
+	2 COMBINED AT	C415	39.	14.25	30.	12.	4.	2.63
+	ROUTED TO	415420	33.	16.67	27.	12.	4.	2.63
+	HYDROGRAPH AT	S420	2134.	12.25	295.	89.	30.	1.77
+	DIVERSION TO	CF20V	2134.	12.25	284.	77.	26.	1.77
+	HYDROGRAPH AT	D420V	84.	13.17	33.	12.	4.	1.77
+	2 COMBINED AT	C420	61.	16.67	51.	22.	7.	4.40
+	HYDROGRAPH AT	CF00	61.	13.50	21.	7.	2.	1.54
+	HYDROGRAPH AT	CF10	8.	13.42	3.	1.	0.	2.18
+	2 COMBINED AT	C40010	69.	13.50	24.	8.	3.	1.54
+	ROUTED TO	400430	38.	13.58	22.	8.	3.	1.54
+	HYDROGRAPH AT	S430	1286.	12.17	130.	38.	13.	.80
+	DIVERSION TO	CF30V	1286.	12.17	124.	33.	11.	.80
+	HYDROGRAPH AT	D430V	54.	12.75	14.	5.	2.	.80
+	2 COMBINED AT	C430	53.	14.33	32.	12.	4.	2.34
+	ROUTED TO	430440	43.	15.58	29.	12.	4.	2.34
+	HYDROGRAPH AT	S440	1483.	12.17	178.	54.	18.	1.07
+	DIVERSION TO	CF40V	1483.	12.17	171.	46.	15.	1.07
+	HYDROGRAPH AT	D440V	61.	13.00	20.	7.	2.	1.07
+	2 COMBINED AT	C440	62.	15.50	44.	18.	6.	3.41
+	ROUTED TO	440450	61.	15.92	43.	18.	6.	3.41
+	HYDROGRAPH AT	S450	2664.	12.33	387.	113.	38.	2.52
+	DIVERSION TO	CF50V	2664.	12.33	374.	100.	33.	2.52
+	HYDROGRAPH AT	D450V	113.	13.17	39.	14.	5.	2.52

+	HYDROGRAPH AT	S435	796.	12.08	67.	20.	7.	.39
+	DIVERSION TO	CF35V	796.	12.08	67.	18.	6.	.39
+	HYDROGRAPH AT	D435V	6.	14.58	4.	1.	0.	.39
+	ROUTED TO	435450	4.	18.75	4.	1.	0.	.39
+	3 COMBINED AT	C450	94.	15.83	72.	30.	10.	6.32
+	2 COMBINED AT	ALL400	144.	16.50	117.	49.	16.	9.18
+	HYDROGRAPH AT	S500	2341.	12.67	525.	148.	50.	3.64
+	DIVERSION TO	CF00V	1492.	12.33	117.	33.	11.	3.64
+	HYDROGRAPH AT	D500V	2341.	12.67	439.	115.	38.	3.64
+	ROUTED TO	500510	2140.	13.00	430.	115.	38.	3.64
+	HYDROGRAPH AT	S510	2828.	12.17	347.	106.	36.	1.84
+	DIVERSION TO	CF10V	2828.	12.17	331.	90.	30.	1.84
+	HYDROGRAPH AT	D510V	112.	12.92	46.	17.	6.	1.84
+	2 COMBINED AT	C510	2157.	13.00	467.	130.	43.	5.48
+	DIVERSION TO	CF10	1402.	13.00	303.	84.	28.	5.48
+	HYDROGRAPH AT	D510	755.	13.00	163.	45.	15.	5.48
+	ROUTED TO	510520	549.	13.92	156.	45.	15.	5.48
+	HYDROGRAPH AT	S520	1707.	12.33	278.	86.	29.	1.48
+	DIVERSION TO	CF20V	1707.	12.33	254.	69.	23.	1.48
+	HYDROGRAPH AT	D520V	176.	13.42	53.	17.	6.	1.48
+	2 COMBINED AT	C520	640.	13.83	200.	61.	20.	6.96
+	HYDROGRAPH AT	S530	2949.	12.25	401.	124.	41.	2.23
+	DIVERSION TO	CF30V	2949.	12.25	385.	105.	35.	2.23
+	HYDROGRAPH AT	D530V	107.	13.08	53.	19.	6.	2.23
+	HYDROGRAPH AT	CF10	8.	13.42	3.	1.	0.	2.18
+	ROUTED TO	510530	4.	16.67	3.	1.	0.	2.18
+	2 COMBINED AT	C530	95.	14.00	50.	19.	6.	7.70
+	2 COMBINED AT	ALL500	711.	13.92	245.	78.	26.	9.19
+	HYDROGRAPH AT	S700	4793.	12.50	952.	287.	96.	5.24
+	DIVERSION TO	CF00V	4793.	12.50	944.	263.	88.	5.24
+	HYDROGRAPH AT	D700V	101.	16.50	68.	24.	8.	5.24
	HYDROGRAPH AT							

+		S720	4514.	12.42	843.	254.	85.	4.63
+	DIVERSION TO	CF20V	4514.	12.42	835.	232.	77.	4.63
+	HYDROGRAPH AT	D720V	90.	16.33	61.	22.	7.	4.63
+	HYDROGRAPH AT	S740	2393.	12.08	208.	62.	21.	1.13
+	DIVERSION TO	CF40V	2393.	12.08	199.	53.	18.	1.13
+	HYDROGRAPH AT	D740V	78.	12.58	24.	8.	3.	1.13
+	3 COMBINED AT	ALL700	189.	16.50	129.	44.	15.	11.00
+	HYDROGRAPH AT	S900	853.	12.50	150.	39.	13.	1.03
+	DIVERSION TO	CF00V	853.	12.50	150.	39.	13.	1.03
+	HYDROGRAPH AT	D900V	0.	.00	0.	0.	0.	1.03
+	ROUTED TO	900910	0.	.00	0.	0.	0.	1.03
+	HYDROGRAPH AT	S910	1913.	12.08	173.	52.	17.	.98
+	DIVERSION TO	CF10V	1913.	12.08	165.	45.	15.	.98
+	HYDROGRAPH AT	D910V	62.	12.67	20.	7.	2.	.98
+	2 COMBINED AT	C910	43.	12.67	18.	7.	2.	2.02
+	ROUTED TO	910915	30.	12.83	18.	7.	2.	2.02
+	HYDROGRAPH AT	S915	1322.	12.33	195.	53.	18.	1.13
+	DIVERSION TO	CF15V	1239.	12.25	82.	22.	7.	1.13
+	HYDROGRAPH AT	D915V	1306.	12.42	121.	32.	11.	1.13
+	2 COMBINED AT	C915	1287.	12.42	134.	37.	12.	3.14
+	ROUTED TO	915920	623.	13.25	131.	37.	12.	3.14
+	HYDROGRAPH AT	S920	3888.	12.33	621.	186.	62.	3.29
+	DIVERSION TO	CF20V	3888.	12.33	606.	164.	55.	3.29
+	HYDROGRAPH AT	D920V	110.	14.42	61.	23.	8.	3.29
+	2 COMBINED AT	C920	631.	13.33	176.	57.	19.	6.43

1 SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RR102
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1550.00	1556.00	1556.00
STORAGE	553.	2705.	2705.
OUTFLOW	0.	600.	600.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1550.69	.00	759.	44.	.00	24.50	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1550.00	1556.00	1556.00
STORAGE	553.	2705.	2705.
OUTFLOW	0.	600.	600.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1550.49	.00	698.	31.	.00	24.67	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1550.00	1556.00	1556.00
STORAGE	553.	2705.	2705.
OUTFLOW	0.	600.	600.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1550.28	.00	636.	18.	.00	24.83	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1550.00	1556.00	1556.00
STORAGE	553.	2705.	2705.
OUTFLOW	0.	600.	600.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1550.15	.00	598.	10.	.00	25.00	.00

PLAN 5 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1550.00	1556.00	1556.00
STORAGE	553.	2705.	2705.
OUTFLOW	0.	600.	600.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1550.09	.00	579.	6.	.00	25.08	.00

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

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1*************************************
 *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *              JUN   1998           *
 *           VERSION 4.1             *
 *                                   *
 *  RUN DATE   16AUG06  TIME  10:01:44   *
 *                                   *
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*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*          (916) 756-1104           *
*                                   *
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX        XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

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

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1                                    HEC-1 INPUT                                    PAGE  1

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

        1           ID   SUN VALLEY AREA DRAINAGE MASTER PLAN (SVADMP) - FCD 2004C049
        2           ID    JE FULLER / HYDROLOGY & GEOMORPHOLOGY, INC.
        3           ID    FILENAME: A4_FU6.DAT
        4           ID
        5           ID    100-YEAR 6-HOUR MODEL
        6           ID    FUTURE CONDITIONS
        7           ID    AREA 4 WATERSHED AREA = 90.5 SQ. MILES
        8           ID           MODELED AREA = 76.8 SQ. MILES
        9           ID
       10           ID    GREEN-AMPT LOSS METHOD
       11           ID    S-GRAPH UNIT HYDROGRAPHS
       12           ID     - MOUNTAIN
       13           ID     - DESERT/RANGELAND
       14           ID    NORMAL-DEPTH CHANNEL ROUTING
       15           ID    LAND USE DATA FROM MASTER PLANNED COMMUNITY PLANS WHERE AVAILABLE.
       16           ID    STATE LAND AND OTHER NON-MASTER PLANNED AREAS ASSUMED AS SMALL LOT
       17           ID    RESIDENTIAL.  NATURAL AREAS IN WHITE TANK REGIONAL PARK ASSIGNED
       18           ID    BASED ON EXAMINATION OF SLOPE FROM 10-FT DTM TO DISTINGUISH
       19           ID     - UNDEVELOPED DESERT RANGELAND (NDR) - SLOPES < 5 %
       20           ID     - HILLSLOPES, SONORAN DESERT (NHS) - SLOPES 5 - 10 %
       21           ID     - MOUNTAIN TERRAIN (NMT) - SLOPES > 10 %
       22           ID   SOILS DATA FROM FCDMC GIS DATABASE (RECEIVED FROM FCDMC JULY 2005)
       23           ID
       24           ID        08/15/2006
       25           IT       5  1JAN99    1200    2000
       26           IN      15
       27           IO       5
                    *DIAGRAM
                    *
       28           JD   3.196  0.1000
       29           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
       30           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
       31           PC   0.962   0.972   0.983   0.991   1.000
       32           JD   3.181  0.5000
       33           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
       34           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
       35           PC   0.962   0.972   0.983   0.991   1.000
       36           JD   3.120     2.8
       37           PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.068   0.077
       38           PC   0.088   0.101   0.121   0.164   0.253   0.451   0.694   0.836   0.900   0.938
       39           PC   0.950   0.963   0.975   0.988   1.000
       40           JD   2.950    16.0
       41           PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
       42           PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
       43           PC   0.946   0.960   0.973   0.987   1.000

       44           JD   2.592    90.0
       45           PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
       46           PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
       47           PC   0.927   0.945   0.964   0.982   1.000
                    *
1                                    HEC-1 INPUT                                    PAGE  2

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

       48           KK    S100   BASIN
```

```
 49          BA   6.994
 50          LG    0.25    0.21    6.40    0.18      30
 51          UI     562     659    1870    2908    3864    4761    5212    5460    5148    4502
 52          UI    3689    2974    2407    1979    1594    1258    1054     865     641     597
 53          UI     384     385     335     136     137     139     137     136     139     137
 54          UI       0       0       0       0       0       0       0       0       0       0
 55          UI       0       0       0       0       0       0       0       0       0       0
 56          KM        Compute runoff from subbasin 100
             *

 57          KK   D100V  DIVERT
 58          DT   CF00V   681.4     0.0
 59          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 60          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 61          KM        Divert 100-yr 2-hr retention volume.
             *

 62          KK    S102   BASIN
 63          BA   3.234
 64          LG    0.27    0.25    5.60    0.25      24
 65          UI     416    1254    2537    3534    4007    3696    2755    1990    1417    1000
 66          UI     727     506     357     289     139     102     102     102     102       0
 67          UI       0       0       0       0       0       0       0       0       0       0
 68          UI       0       0       0       0       0       0       0       0       0       0
 69          UI       0       0       0       0       0       0       0       0       0       0
 70          KM        Compute runoff from subbasin 102
             *

 71          KK   D102V  DIVERT
 72          DT   CF02V   292.4     0.0
 73          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 74          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 75          KM        Divert 100-yr 2-hr retention volume.
             *

 76          KK    C102 COMBINE
 77          HC       2
 78          KM        Combine total inflow to detention area behind (north) of CAP Canal
             *

 79          KK   RR102 STORAGE
 80          KO
 81          RS       1    STOR      -1
 82          SV          553.00 1148.00 2316.00 2705.00
 83          SQ                  128.00  587.00  600.00
 84          SE  1543.0 1550.00 1552.00 1555.00 1556.00
 85          ST  1556.0  1320.0     3.2     1.5
 86          KM        Route flows through storage area behind CAP Canal
 87          KM        Stage-storage-discharge data from Wagner Wash FDS Hydrology (1991)
             *
```



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

 88          KK    D102  DIVERT
 89          DT    CF02     0.0     0.0
 90          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 91          DQ     0.0    50.0   500.0  5000.0     0.0     0.0     0.0     0.0     0.0     0.0
 92          KM        Divide flow evenly over the two 18-foot wide CAP overchutes
 93          KM        although the inverts are 0.5 feet different in elevation
             *

 94          KK  100105   ROUTE
 95          RS       9    FLOW      -1
 96          RC   0.035   0.055   0.035   11235  0.0045  105.00
 97          RX    0.00  120.00  240.00  250.00  590.00  600.00  720.00  840.00
 98          RY  105.00  102.50  100.00  100.00  100.00  100.00  102.50  105.00
 99          KM        Route outflows from east CAP overchute to Sun Valley Parkway.
100          KM        Slope = (1550-1500) / 11235
             *

101          KK    S105   BASIN
102          BA   4.370
103          LG    0.26    0.25    4.80    0.35      29
104          UI     410     690    1634    2546    3338    3758    3913    3720    3034    2325
105          UI    1879    1457    1152     870     705     552     436     305     281     203
106          UI     100     100     101      99     100     101       0       0       0       0
107          UI       0       0       0       0       0       0       0       0       0       0
108          UI       0       0       0       0       0       0       0       0       0       0
109          KM        Compute runoff from subbasin 105
             *

110          KK   D105V  DIVERT
111          DT   CF05V   408.7     0.0
112          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
113          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
114          KM        Divert 100-yr 2-hr retention volume.
             *

115          KK    CF02RETRIEVE
116          DR    CF02
117          KM        Retrieve flow from west CAP overchute.
             *
```

```
 118          KK  102105   ROUTE
 119          RS       6    FLOW      -1
 120          RC   0.045   0.050   0.045    7656  0.0065  104.00
 121          RX    0.00   40.00  120.00  130.00  250.00  260.00  340.00  380.00
 122          RY  104.00  102.00  101.00  100.00  100.00  101.00  102.00  104.00
 123          KM        Route retrieved flow from west overchute to C105.
 124          KM        Slope = (1550 - 1500) / 7656
              *
1                                          HEC-1 INPUT                                                    PAGE  4

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


 125          KK   C105U COMBINE
 126          HC       3  14.598
 127          KM        Combine runoff from S105 with routed flow from 100105 and 102105
 128          KM        (CAP overchute flows). This is the total flow in Wagner Wash upstream
 129          KM        of Sun Valley Parkway.
              *

 130          KK    S110   BASIN
 131          BA   0.430
 132          LG    0.25    0.36    5.20    0.25       7
 133          UI      59     184     361     499     572     351     289     235     174     138
 134          UI     111      79      65      49      40      28      28      12      11      11
 135          UI      12      11      11       0       0       0       0       0       0       0
 136          UI       0       0       0       0       0       0       0       0       0       0
 137          UI       0       0       0       0       0       0       0       0       0       0
 138          KM        Compute runoff from subbasin 110
              *

 139          KK   D110V  DIVERT
 140          DT   CF10V     2.4     0.0
 141          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 142          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 143          KM        Divert 100-yr 2-hr retention volume.
              *

 144          KK  11015I   ROUTE
 145          RS       2    FLOW      -1
 146          RC   0.045   0.035   0.045    3783  0.0267  102.00
 147          RX    0.00   50.00  100.00  110.00  120.00  130.00  180.00  230.00
 148          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 149          KM        Route flow from C105 through subbasin 110 to C115.
 150          KM        Slope = (1847-1746) / 3783
              *

 151          KK    D15I  DIVERT
 152          DT    CF5I     0.0     0.0
 153          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 154          DQ     0.0    20.0   200.0  2000.0     0.0     0.0     0.0     0.0     0.0     0.0
 155          KM        Divert flows to the left into S120
              *

 156          KK  15I15R   ROUTE
 157          RS       8    FLOW      -1
 158          RC   0.035   0.030   0.035   14128  0.0151  105.00
 159          RX    0.00   25.00   58.00   65.00   85.00   92.00  125.00  150.00
 160          RY  105.00  102.50  102.00  100.00  100.00  102.00  102.50  105.00
 161          KM        Route flows from split through S115 to C115.
 162          KM        Slope = (1746-1532) / 14128
              *
1                                          HEC-1 INPUT                                                    PAGE  5

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


 163          KK    S115   BASIN
 164          BA   2.247
 165          LG    0.26    0.28    4.80    0.34      25
 166          UI     199     302     745    1158    1547    1779    1903    1872    1631    1305
 167          UI    1042     828     647     518     406     328     260     212     144     138
 168          UI     106      48      49      49      48      49      49       0       0       0
 169          UI       0       0       0       0       0       0       0       0       0       0
 170          UI       0       0       0       0       0       0       0       0       0       0
 171          KM        Compute runoff from subbasin 115
              *

 172          KK   D115V  DIVERT
 173          DT   CF15V   166.6     0.0
 174          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 175          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 176          KM        Divert 100-yr 2-hr retention volume.
              *

 177          KK   C115U COMBINE
 178          HC       2   2.677
 179          KM        Combine runoff from S115 with routed flow.
              *

 180          KK    CF5IRETRIEVE
 181          DR    CF5I
 182          KM        Retrieve diverted flow from D15I
              *
```

```
183          KK  15I15L   ROUTE
184          RS       7    FLOW      -1
185          RC   0.045   0.045   0.045   12775  0.0168  104.00
186          RX    0.00   50.00  100.00  130.00  170.00  200.00  250.00  300.00
187          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
188          KM        Route flows from split through S120 to C115.
189          KM        Slope =(1746-1532) / 12775
             *

190          KK   C115D COMBINE
191          HC       2   2.677
192          KM        Combine routed flows from split with remainder of flows in SVP channel
193          KM        just D/S of C115.
             *

194          KK  115120   ROUTE
195          RS       2    FLOW      -1
196          RC   0.030   0.025   0.030    4077  0.0093  105.00
197          RX    0.00   30.00   75.00   80.00  105.00  110.00  155.00  190.00
198          RY  105.00  101.50  101.00  100.00  100.00  101.00  101.50  105.00
199          KM        Route total flows from C115 to C120. Slope =(1532-1494) / 4077
             *
```



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

200          KK    S120   BASIN
201          BA   2.004
202          LG    0.26    0.25    4.65    0.39      27
203          UI     265     853    1653    2319    2576    2266    1650    1178     828     574
204          UI     433     283     190     157      64      65      66      65       0       0
205          UI       0       0       0       0       0       0       0       0       0       0
206          UI       0       0       0       0       0       0       0       0       0       0
207          UI       0       0       0       0       0       0       0       0       0       0
208          KM        Compute runoff from subbasin 120
             *

209          KK   D120V  DIVERT
210          DT   CF20V   161.2     0.0
211          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
212          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
213          KM        Divert 100-yr 2-hr retention volume.
             *

214          KK    C120 COMBINE
215          HC       2   4.681
216          KM        Combine flows at Wagner Wash at outlet of channel along SVP
             *

217          KK   C105D COMBINE
218          HC       2  19.279
219          KM        Combine flows from C105 and C120 just D/S of Sun Valley Parkway
             *

220          KK  120135   ROUTE
221          RS       1    FLOW      -1
222          RC   0.045   0.035   0.045     951  0.0074  110.00
223          RX    0.00  225.00  450.00  455.00  485.00  490.00  615.00  840.00
224          RY  110.00  105.00  102.00  100.00  100.00  102.00  102.00  110.00
225          KM        Route flows in Wagner Wash from Sun Valley Parkway to C135.
226          KM        Slope = (1494-1487) / 951
             *

227          KK    S125   BASIN
228          BA   0.093
229          LG    0.25    0.31    4.15    0.48      18
230          UI      91     278     164      90      47      25      13       6       6       0
231          UI       0       0       0       0       0       0       0       0       0       0
232          UI       0       0       0       0       0       0       0       0       0       0
233          UI       0       0       0       0       0       0       0       0       0       0
234          UI       0       0       0       0       0       0       0       0       0       0
235          KM        Compute runoff from subbasin 125
             *

236          KK   D125V  DIVERT
237          DT   CF25V     4.0     0.0
238          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
239          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
240          KM        Divert 100-yr 2-hr retention volume.
             *
```



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

241          KK  12535I   ROUTE
242          RS       1    FLOW      -1
243          RC   0.055   0.040   0.055    2207  0.0254  103.00
244          RX    0.00   50.00  100.00  101.00  151.00  152.00  202.00  252.00
245          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
246          KM        Route flows from S125 to intermediate combination point in S135.
247          KM        Slope = (1754-1698) / 2207
             *
```

```
248          KK    S150   BASIN
249          BA   0.774
250          LG    0.25    0.35    4.65    0.33       8
251          UI      72     122     282     441     550     713     722     476     405     353
252          UI     309     257     204     177     159     125      99      86      79      57
253          UI      56      39      36      35      26      14      14      14      14      14
254          UI      14      14      14       0       0       0       0       0       0       0
255          UI       0       0       0       0       0       0       0       0       0       0
256          KM        Compute runoff from subbasin 150
             *

257          KK   D150V  DIVERT
258          DT   CF50V     3.3     0.0
259          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
260          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
261          KM        Divert 100-yr 2-hr retention volume.
             *

262          KK    D150  DIVERT
263          DT    CF50     0.0     0.0
264          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
265          DQ     0.0    90.0   900.0  9000.0     0.0     0.0     0.0     0.0     0.0     0.0
266          KM        Divert flows continuing west to apex of S150.
267          KM        Continuing flows exit S150 to S130 via small natural channel.
             *

268          KK  150130   ROUTE
269          RS       2    FLOW      -1
270          RC   0.045   0.035   0.045    3758  0.0300  104.00
271          RX    0.00   10.00   60.00   66.00   86.00   92.00  142.00  152.00
272          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
273          KM        Route flow through S130.  Slope = (1840 - 1727) / 3758
             *

274          KK    S130   BASIN
275          BA   0.310
276          LG    0.25    0.30    4.20    0.47      19
277          UI     118     444     668     394     279     176     114      76      47      35
278          UI      15      13      14       0       0       0       0       0       0       0
279          UI       0       0       0       0       0       0       0       0       0       0
280          UI       0       0       0       0       0       0       0       0       0       0
281          UI       0       0       0       0       0       0       0       0       0       0
282          KM        Compute runoff from subbasin 130
             *
```



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

283          KK   D130V  DIVERT
284          DT   CF30V    16.1     0.0
285          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
286          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
287          KM        Divert 100-yr 2-hr retention volume.
             *

288          KK    C130 COMBINE
289          HC       2    0.31
290          KM        Combine runoff from S130 with diverted flow from S150
291          KM        Adjust drainage area to just that from S130 for JD.
             *

292          KK    D130  DIVERT
293          DT    CF30     0.0     0.0
294          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
295          DQ     0.0    30.0   300.0  3000.0     0.0     0.0     0.0     0.0     0.0     0.0
296          KM        Divert flow to the left into S155
             *

297          KK  13035I   ROUTE
298          RS       1    FLOW      -1
299          RC   0.045   0.035   0.045    1202  0.0241  103.00
300          RX    0.00   50.00  100.00  101.00  151.00  152.00  202.00  252.00
301          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
302          KM        Route continuing flow to intermediate point in S135.
303          KM        Slope = (1727-1698) / 1202
             *

304          KK   C135I COMBINE
305          HC       2   0.403
306          KM        Combine routed flow from C130 and S125
             *

307          KK  35I135   ROUTE
308          RS       8    FLOW      -1
309          RC   0.050   0.035   0.050   12580  0.0168  102.00
310          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
311          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
312          KM        Route combined flows to C135 at Wagner Wash.
313          KM        Slope = (1698-1487) / 12580
             *

314          KK    S135   BASIN
315          BA   0.879
316          LG    0.23    0.25    4.25    0.52      38
```

```
 317          UI     141     569    1015    1285    1235     860     578     384     253     170
 318          UI     111      78      34      33      34       0       0       0       0       0
 319          UI       0       0       0       0       0       0       0       0       0       0
 320          UI       0       0       0       0       0       0       0       0       0       0
 321          UI       0       0       0       0       0       0       0       0       0       0
 322          KM        Compute runoff from subbasin 135
              *
1                                        HEC-1 INPUT                                          PAGE  9

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

 323          KK   D135V  DIVERT
 324          DT   CF35V    88.6     0.0
 325          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 326          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 327          KM        Divert 100-yr 2-hr retention volume.
              *

 328          KK   C135L COMBINE
 329          HC       2   1.282
 330          KM        Combine all piedmont runoff inflow to Wagner Wash at C135
              *

 331          KK    C135 COMBINE
 332          HC       2  20.561
 333          KM        Combine all flows in Wagner Wash at C135
              *

 334          KK  135145   ROUTE
 335          RS       4    FLOW      -1
 336          RC   0.045   0.035   0.045    7938  0.0042  110.00
 337          RX    0.00  300.00  400.00  406.00  506.00  512.00  612.00  912.00
 338          RY  110.00  102.50  102.00  100.00  100.00  102.00  102.50  110.00
 339          KM        Route flow in Wagner Wash to C145.  Slope = (1487-1454) / 7938
              *

 340          KK    S140   BASIN
 341          BA   1.373
 342          LG    0.22    0.25    5.00    0.34      40
 343          UI     425    1675    2614    2421    1491     852     507     279     170      69
 344          UI      71       0       0       0       0       0       0       0       0       0
 345          UI       0       0       0       0       0       0       0       0       0       0
 346          UI       0       0       0       0       0       0       0       0       0       0
 347          UI       0       0       0       0       0       0       0       0       0       0
 348          KM        Compute runoff from subbasin 140
              *

 349          KK   D140V  DIVERT
 350          DT   CF40V   144.2     0.0
 351          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 352          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 353          KM        Divert 100-yr 2-hr retention volume.
              *

 354          KK  140145   ROUTE
 355          RS       3    FLOW      -1
 356          RC   0.040   0.050   0.040    3656  0.0074  103.00
 357          RX    0.00   70.00  140.00  150.00  250.00  260.00  330.00  400.00
 358          RY  102.00  101.00  100.00  100.00  100.00  100.00  101.00  102.00
 359          KM        Route runoff from S140 to C145 at Wagner Wash.
 360          KM        Slope = (1481-1454) / 3656
              *
1                                        HEC-1 INPUT                                          PAGE 10

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

 361          KK    CF30RETRIEVE
 362          DR    CF30
 363          KM        Retrieve diverted flow from C130
              *

 364          KK   D1302  DIVERT
 365          DT   CF302     0.0     0.0
 366          DI     0.0    10.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 367          DQ     0.0    10.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0
 368          KM        Divert flow continuing through S155 from flow entering S145
              *

 369          KK  130145   ROUTE
 370          RS      15    FLOW      -1
 371          RC   0.045   0.045   0.045   18285  0.0149  102.00
 372          RX    0.00   50.00  100.00  103.00  113.00  116.00  166.00  216.00
 373          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 374          KM        Route flow to Wagner Wash through S145 to C145.
 375          KM        Slope = (1727 - 1454) / 18285
              *

 376          KK    S145   BASIN
 377          BA   1.756
 378          LG    0.20    0.25    4.15    0.59      50
 379          UI     245     843    1632    2202    2339    1944    1345     955     648     453
 380          UI     318     215     167      73      60      60      60       0       0       0
 381          UI       0       0       0       0       0       0       0       0       0       0
```

```
382          UI       0       0       0       0       0       0       0       0       0       0
383          UI       0       0       0       0       0       0       0       0       0       0
384          KM        Compute runoff from subbasin 145
             *

385          KK   D145V  DIVERT
386          DT   CF45V   183.3     0.0
387          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
388          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
389          KM        Divert 100-yr 2-hr retention volume.
             *

390          KK   C145L COMBINE
391          HC       2   2.066
392          KM        Combine runoff from S145 with routed flows from S140 and C130
393          KM        Adjust BA for JD (S130 + S145)
             *

394          KK    C145 COMBINE
395          HC       3   23.69
396          KM        Combine all flows in Wagner Wash at C145
             *
1                                        HEC-1 INPUT                                          PAGE 11

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


397          KK  145155   ROUTE
398          RS       1    FLOW      -1
399          RC   0.045   0.035   0.055     631  0.0032  110.00
400          RX    0.00  150.00  300.00  309.00  379.00  388.00  538.00  838.00
401          RY  110.00  106.50  103.00  100.00  100.00  103.00  106.50  110.00
402          KM        Route flows in Wagner Wash form C145 to C155. Slope = (1454-1452)/631
             *

403          KK    CF50RETRIEVE
404          DR    CF50
405          KM        Retrieve diverted flow from S150
             *

406          KK  150155   ROUTE
407          RS      12    FLOW      -1
408          RC   0.045   0.040   0.045   19261  0.0188  102.00
409          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
410          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
411          KM        Route flow from S150 to Wagner Wash .  Slope = (1814 - 1452) / 19261
             *

412          KK   CF302RETRIEVE
413          DR   CF302
414          KM        Retrieve diverted flow from C130
             *

415          KK  130155   ROUTE
416          RS      12    FLOW      -1
417          RC   0.045   0.040   0.045   14782  0.0156  102.00
418          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
419          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
420          KM        Route retrieved flow to Wagner Wash.  Slope = (1682 - 1452) / 14782
             *

421          KK    S155   BASIN
422          BA   1.832
423          LG    0.28    0.25    4.50    0.44      24
424          UI     187     361     846    1266    1637    1771    1735    1497    1161     879
425          UI     681     519     385     314     228     181     130     126      46      46
426          UI      45      46      46      45       0       0       0       0       0       0
427          UI       0       0       0       0       0       0       0       0       0       0
428          UI       0       0       0       0       0       0       0       0       0       0
429          KM        Compute runoff from subbasin 155
             *

430          KK   D155V  DIVERT
431          DT   CF55V   136.4     0.0
432          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
433          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
434          KM        Divert 100-yr 2-hr retention volume.
             *
1                                        HEC-1 INPUT                                          PAGE 12

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


435          KK   C155L COMBINE
436          HC       3   2.606
437          KM        Combine runoff from S155 with routed flows at Wagner Wash
438          KM        Adjust BA for JD (S150 + S155).
             *

439          KK    C155 COMBINE
440          HC       2  26.296
441          KM        Combine all flows at Wagner Wash at C155
             *

442          KK  155160   ROUTE
```

```
443          RS       5    FLOW      -1
444          RC   0.035   0.035   0.035    2291  0.0052  110.00
445          RX    0.00  200.00  400.00  406.00  506.00  512.00  712.00  912.00
446          RY  110.00  106.50  103.00  100.00  100.00  103.00  106.50  110.00
447          KM        Route flow in Wagner Wash to C160 (Sun Valley Parkway).
448          KM        Slope = (1452-1440) / 2291
             *

449          KK    S160   BASIN
450          BA   1.144
451          LG    0.25    0.25    4.00    0.57      33
452          UI     231     906    1580    1846    1564     988     642     408     258     163
453          UI     110      48      47      49       0       0       0       0       0       0
454          UI       0       0       0       0       0       0       0       0       0       0
455          UI       0       0       0       0       0       0       0       0       0       0
456          UI       0       0       0       0       0       0       0       0       0       0
457          KM        Compute runoff from subbasin 160
             *

458          KK   D160V  DIVERT
459          DT   CF60V   108.9     0.0
460          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
461          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
462          KM        Divert 100-yr 2-hr retention volume.
             *

463          KK    C160 COMBINE
464          HC       2   27.44
465          KM        Combine flows at Sun Valley Parkway
             *

466          KK  160170   ROUTE
467          RS       3    FLOW      -1
468          RC   0.040   0.030   0.040    5248  0.0057  108.00
469          RX    0.00  200.00  400.00  406.00  606.00  612.00  812.00 1012.00
470          RY  108.00  103.00  102.00  100.00  100.00  102.00  103.00  108.00
471          KM        Route flows from Sun Valley Parkway to C170R. Slope = (1440-1410)/5248
             *
```



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

472          KK    S165   BASIN
473          BA   0.616
474          LG    0.25    0.27    4.55    0.39      25
475          UI     266     960    1350     779     525     333     203     135      82      54
476          UI      28      29       0       0       0       0       0       0       0       0
477          UI       0       0       0       0       0       0       0       0       0       0
478          UI       0       0       0       0       0       0       0       0       0       0
479          UI       0       0       0       0       0       0       0       0       0       0
480          KM        Compute runoff from subbasin 165
             *

481          KK   D165V  DIVERT
482          DT   CF65V    46.5     0.0
483          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
484          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
485          KM        Divert 100-yr 2-hr retention volume.
             *

486          KK  165170   ROUTE
487          RS       8    FLOW      -1
488          RC   0.050   0.035   0.050   13704  0.0161  104.00
489          RX    0.00   50.00  100.00  106.00  131.00  137.00  187.00  237.00
490          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
491          KM        Route runoff from S165 to Sun Valley Parkway (C170).
492          KM        Slope = (1677-1456) / 13704
             *

493          KK    S170   BASIN
494          BA   1.464
495          LG    0.26    0.25    4.40    0.46      28
496          UI     326    1261    2183    2466    1927    1190     747     480     301     179
497          UI      97      63      64       0       0       0       0       0       0       0
498          UI       0       0       0       0       0       0       0       0       0       0
499          UI       0       0       0       0       0       0       0       0       0       0
500          UI       0       0       0       0       0       0       0       0       0       0
501          KM        Compute runoff from subbasin 170
             *

502          KK   D170V  DIVERT
503          DT   CF70V   141.0     0.0
504          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
505          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
506          KM        Divert 100-yr 2-hr retention volume.
             *

507          KK    C170 COMBINE
508          HC       2
509          KM        Combine runoff from S170 with routed flow from S165
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
510          KK    170R   ROUTE
511          RS       3    FLOW      -1
512          RC   0.045   0.045   0.045    3986  0.0115  104.00
513          RX    0.00   50.00  100.00  103.00  113.00  116.00  166.00  216.00
514          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
515          KM        Route flow from C170 to Wagner Wash.  Slope = (1456-1410) / 3986
             *

516          KK   C170R COMBINE
517          HC       2
518          KM        Combine routed flows from C170 and C160 in Wagner Wash
             *

519          KK  170180   ROUTE
520          RS       4    FLOW      -1
521          RC   0.045   0.035   0.045    6770  0.0065  110.00
522          RX    0.00  200.00  400.00  406.00  606.00  612.00  812.00 1012.00
523          RY  110.00  103.00  102.00  100.00  100.00  102.00  103.00  110.00
524          KM        Route flows in Wagner Wash to C180R.  Slope = (1410-1366) / 6770
             *

525          KK    S175   BASIN
526          BA   1.802
527          LG    0.25    0.25    4.50    0.42      29
528          UI     229     659    1345    1826    2446    1507    1238    1020     801     603
529          UI     515     391     285     254     176     148     114     112      48      45
530          UI      43      44      45      44       0       0       0       0       0       0
531          UI       0       0       0       0       0       0       0       0       0       0
532          UI       0       0       0       0       0       0       0       0       0       0
533          KM        Compute runoff from subbasin 175
             *

534          KK   D175V  DIVERT
535          DT   CF75V   167.8     0.0
536          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
537          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
538          KM        Divert 100-yr 2-hr retention volume.
             *

539          KK    175R   ROUTE
540          RS       2    FLOW      -1
541          RC   0.045   0.045   0.045    3217  0.0134  103.00
542          RX    0.00   50.00  100.00  103.00  153.00  156.00  216.00  266.00
543          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
544          KM        Route runoff from S175 to intermediate point in S190 (C180RI).
545          KM        Slope = (1456 - 1413) / 3217
             *

546          KK    S180   BASIN
547          BA   1.443
548          LG    0.24    0.26    4.25    0.49      32
549          UI     165     401     862    1190    1656    1471     993     852     710     572
550          UI     437     377     303     228     191     155     128      94      81      82
551          UI      34      31      32      32      32      32      32       0       0       0
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

552          UI       0       0       0       0       0       0       0       0       0       0
553          UI       0       0       0       0       0       0       0       0       0       0
554          KM        Compute runoff from subbasin 180
             *

555          KK   D180V  DIVERT
556          DT   CF80V   129.1     0.0
557          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
558          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
559          KM        Divert 100-yr 2-hr retention volume.
             *

560          KK    180R   ROUTE
561          RS       2    FLOW      -1
562          RC   0.045   0.045   0.045    2965  0.0128  103.00
563          RX    0.00   50.00  100.00  103.00  128.00  131.00  181.00  231.00
564          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
565          KM        Route runoff from S180 to intermediate point in S190 (C180RI).
566          KM        Slope = (1451 - 1413) / 2965
             *

567          KK  C180RI COMBINE
568          HC       2
569          KM        Combine routed flows from S175 and S180
             *

570          KK  RI180R   ROUTE
571          RS       3    FLOW      -1
572          RC   0.045   0.040   0.045    3866  0.0122  104.00
573          RX    0.00   50.00  100.00  106.00  156.00  166.00  216.00  266.00
574          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
575          KM        Route combined flows to Wagner Wash.  Slope = (1413 - 1366) / 3866
             *

576          KK   C180R COMBINE
```

```
 577          HC       2
 578          KM        Combine flows in Wagner Wash
              *

 579          KK  180185   ROUTE
 580          RS       3    FLOW      -1
 581          RC   0.045   0.035   0.045    3450  0.0075  106.00
 582          RX    0.00  100.00  200.00  206.00  406.00  412.00  512.00  612.00
 583          RY  106.00  104.00  102.00  100.00  100.00  102.00  104.00  106.00
 584          KM        Route flows in Wagner Wash from C180R to C185R.
 585          KM        Slope = (1366 - 1340) / 3450
              *

 586          KK    S185   BASIN
 587          BA   2.421
 588          LG    0.25    0.26    4.35    0.46      28
 589          UI     294     777    1629    2237    3200    2112    1661    1409    1136     871
 590          UI     707     588     433     353     289     224     173     143     140      57
 591          UI      56      56      57      56      56       0       0       0       0       0
 592          UI       0       0       0       0       0       0       0       0       0       0
1                                                HEC-1 INPUT                                          PAGE 16

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

 593          UI       0       0       0       0       0       0       0       0       0       0
 594          KM        Compute runoff from subbasin 185
              *

 595          KK   D185V  DIVERT
 596          DT   CF85V   213.3     0.0
 597          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 598          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 599          KM        Divert 100-yr 2-hr retention volume.
              *

 600          KK    185R   ROUTE
 601          RS       5    FLOW      -1
 602          RC   0.045   0.035   0.045    8534  0.0120  104.00
 603          RX    0.00   30.00  100.00  106.00  156.00  162.00  232.00  262.00
 604          RY  104.00  102.00  102.00  100.00  100.00  102.00  102.00  104.00
 605          KM        Route runoff from S185 to Wagner Wash.  Slope = (1442-1340) / 8534
              *

 606          KK   C185R COMBINE
 607          HC       2
 608          KM        Combine flows in Wagner Wash
              *

 609          KK  185190   ROUTE
 610          RS       2    FLOW      -1
 611          RC   0.045   0.040   0.045    2700  0.0119  106.00
 612          RX    0.00   80.00  160.00  166.00  416.00  422.00  502.00  582.00
 613          RY  106.00  103.00  102.00  100.00  100.00  102.00  103.00  106.00
 614          KM        Route flow in Wagner Wash to C190.  Slope = (1340-1308) / 2700
              *

 615          KK    S190   BASIN
 616          BA   4.054
 617          LG    0.26    0.25    3.81    0.44      29
 618          UI     286     290     733    1241    1733    2110    2460    2713    2743    2614
 619          UI    2486    2023    1667    1418    1185     962     830     661     552     476
 620          UI     404     303     286     196     196     198      69      70      70      70
 621          UI      69      71      69      70      70       0       0       0       0       0
 622          UI       0       0       0       0       0       0       0       0       0       0
 623          KM        Compute runoff from subbasin 190
              *

 624          KK   D190V  DIVERT
 625          DT   CF90V   346.1     0.0
 626          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 627          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 628          KM        Divert 100-yr 2-hr retention volume.
              *
1                                                HEC-1 INPUT                                          PAGE 17

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

 629          KK    C190 COMBINE
 630          HC       2   39.24
 631          KM        Combine all flow in Wagner Wash at C190
              *

 632          KK  190195   ROUTE
 633          RS       2    FLOW      -1
 634          RC   0.045   0.035   0.045    4941  0.0107  110.00
 635          RX    0.00   50.00  200.00  206.00  356.00  366.00  516.00  566.00
 636          RY  110.00  103.00  102.00  100.00  100.00  102.00  103.00  110.00
 637          KM        Route flow from C190 to the Hassayampa River. Slope = (1308-1255)/4941
              *

 638          KK    S195   BASIN
 639          BA   1.808
 640          LG    0.28    0.25    4.25    0.51      23
 641          UI     140     145     448     687     937    1143    1276    1351    1310    1204
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642          UI     994     796     662     549     440     356     293     242     206     151
643          UI     135      96      97      74      35      34      34      34      35      34
644          UI      34       0       0       0       0       0       0       0       0       0
645          UI       0       0       0       0       0       0       0       0       0       0
646          KM        Compute runoff from subbasin 195
             *

647          KK   D195V  DIVERT
648          DT   CF95V   145.0     0.0
649          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
650          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
651          KM        Divert 100-yr 2-hr retention volume.
             *

652          KK    C195 COMBINE
653          HC       2   41.05
654          KM        Combine all flows in Wagner Wash at the Hassayampa River
             *

655          KK    S400   BASIN
656          BA   1.544
657          LG    0.25    0.26    4.20    0.49      30
658          UI     220     767    1444    2053    1904    1251    1013     806     580     478
659          UI     339     262     205     165     108     107      52      42      43      42
660          UI      42       0       0       0       0       0       0       0       0       0
661          UI       0       0       0       0       0       0       0       0       0       0
662          UI       0       0       0       0       0       0       0       0       0       0
663          KM        Compute runoff from subbasin 400
             *

664          KK   D400V  DIVERT
665          DT   CF00V   133.8     0.0
666          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
667          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
668          KM        Divert 100-yr 2-hr retention volume.
             *
```



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

669          KK    D400  DIVERT
670          DT    CF00     0.0     0.0
671          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
672          DQ     0.0    50.0   500.0  5000.0     0.0     0.0     0.0     0.0     0.0     0.0
673          KM        Divert flow to the right into S430
             *

674          KK    S410   BASIN
675          BA   0.639
676          LG    0.25    0.25    3.85    0.43      32
677          UI     106     419     722    1047     661     504     393     281     224     150
678          UI     119      85      63      51      34      19      20      19      20       0
679          UI       0       0       0       0       0       0       0       0       0       0
680          UI       0       0       0       0       0       0       0       0       0       0
681          UI       0       0       0       0       0       0       0       0       0       0
682          KM        Compute runoff from subbasin 410
             *

683          KK   D410V  DIVERT
684          DT   CF10V    61.4     0.0
685          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
686          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
687          KM        Divert 100-yr 2-hr retention volume.
             *

688          KK    C410 COMBINE
689          HC       2
690          KM        Combine runoff from S400 and S410
             *

691          KK    D410  DIVERT
692          DT    CF10     0.0     0.0
693          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
694          DQ     0.0    10.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0
695          KM        Divert additional flow to the right into S430
             *

696          KK  410415   ROUTE
697          RS       4    FLOW      -1
698          RC   0.045   0.035   0.045    6871  0.0143  103.00
699          RX    0.00   30.00  200.00  203.00  253.00  256.00  426.00  456.00
700          RY  103.00  101.00  101.00  100.00  100.00  101.00  101.00  103.00
701          KM        Route combined flows to Sun Valley Parkway. Slope = (1528-1430)/6871
             *

702          KK    S415   BASIN
703          BA   0.451
704          LG    0.25    0.26    3.64    0.49      33
705          UI     134     530     838     795     501     293     170     101      62      22
706          UI      23      23       0       0       0       0       0       0       0       0
707          UI       0       0       0       0       0       0       0       0       0       0
708          UI       0       0       0       0       0       0       0       0       0       0
709          UI       0       0       0       0       0       0       0       0       0       0
710          KM        Compute runoff from subbasin 415
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                *
LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 711            KK   D415V  DIVERT
 712            DT   CF15V    45.7     0.0
 713            DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 714            DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 715            KM        Divert 100-yr 2-hr retention volume.
                *

 716            KK    C415 COMBINE
 717            HC       2
 718            KM        Combine runoff at Sun Valley Parkway
                *

 719            KK  415420   ROUTE
 720            RS      10    FLOW      -1
 721            RC   0.045   0.035   0.045   18114  0.0130  104.00
 722            RX    0.00   30.00   60.00   66.00   96.00  102.00  132.00  162.00
 723            RY  104.00  102.00  102.00  100.00  100.00  102.00  102.00  104.00
 724            KM        Route flow from Sun Valley Parkway to Hassayampa River.
 725            KM        Slope = (1430-1195) / 18114
                *

 726            KK    S420   BASIN
 727            BA   1.767
 728            LG    0.26    0.25    4.30    0.49      27
 729            UI     211     542    1147    1658    1965    1957    1661    1233     891     654
 730            UI     481     355     255     190     143      94      52      51      51      52
 731            UI       0       0       0       0       0       0       0       0       0       0
 732            UI       0       0       0       0       0       0       0       0       0       0
 733            UI       0       0       0       0       0       0       0       0       0       0
 734            KM        Compute runoff from subbasin 420
                *

 735            KK   D420V  DIVERT
 736            DT   CF20V   152.6     0.0
 737            DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 738            DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 739            KM        Divert 100-yr 2-hr retention volume.
                *

 740            KK    C420 COMBINE
 741            HC       2
 742            KM        Combine flows from S400, S410, S415, and S420 at Hassayampa River
                *

 743            KK    CF00RETRIEVE
 744            DR    CF00
 745            KM        Retrieve diverted flows from S400
                *
```



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

 746            KK    CF10RETRIEVE
 747            DR    CF10
 748            KM        Retrieve diverted flows from S410
                *

 749            KK  C40010 COMBINE
 750            HC       2   1.544
 751            KM        Combine retrieved diverted flows
                *

 752            KK  400430   ROUTE
 753            RS       5    FLOW      -1
 754            RC   0.045   0.040   0.045    8383  0.0130  105.00
 755            RX    0.00   12.00   25.00   31.00   61.00   67.00   80.00   92.00
 756            RY  105.00  104.00  103.00  100.00  100.00  103.00  104.00  105.00
 757            KM        Route combined flows to Sun Valley Parkway. Slope = (1539-1430)/8383
                *

 758            KK    S430   BASIN
 759            BA   0.795
 760            LG    0.28    0.25    4.55    0.41      22
 761            UI     175     676    1172    1332    1050     655     414     263     164     100
 762            UI      55      35      34       0       0       0       0       0       0       0
 763            UI       0       0       0       0       0       0       0       0       0       0
 764            UI       0       0       0       0       0       0       0       0       0       0
 765            UI       0       0       0       0       0       0       0       0       0       0
 766            KM        Compute runoff from subbasin 430
                *

 767            KK   D430V  DIVERT
 768            DT   CF30V    66.0     0.0
 769            DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 770            DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 771            KM        Divert 100-yr 2-hr retention volume.
                *
```

```
 772          KK    C430 COMBINE
 773          HC       2
 774          KM        Combine runoff from S430 with routed flows at Sun Valley Parkway
              *

 775          KK  430440   ROUTE
 776          RS       7    FLOW      -1
 777          RC   0.035   0.035   0.035   13256  0.0128  106.00
 778          RX    0.00   16.00   32.00   38.00   68.00   74.00   90.00  106.00
 779          RY  106.00  104.50  103.00  100.00  100.00  103.00  104.50  106.00
 780          KM        Route flows from Sun Valley Parkway through S440.
 781          KM        Slope = (1430-1260) / 13256
              *
1                                          HEC-1 INPUT                                                    PAGE 21

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


 782          KK    S440   BASIN
 783          BA   1.068
 784          LG    0.26    0.25    4.20    0.52      27
 785          UI     156     589    1090    1436    1460    1135     765     537     354     254
 786          UI     168     106      73      39      38      39       0       0       0       0
 787          UI       0       0       0       0       0       0       0       0       0       0
 788          UI       0       0       0       0       0       0       0       0       0       0
 789          UI       0       0       0       0       0       0       0       0       0       0
 790          KM        Compute runoff from subbasin 440
              *

 791          KK   D440V  DIVERT
 792          DT   CF40V    92.0     0.0
 793          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 794          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 795          KM        Divert 100-yr 2-hr retention volume.
              *

 796          KK    C440 COMBINE
 797          HC       2
 798          KM        Combine runoff from S440 with routed flows from Sun Valley Parkway.
              *

 799          KK  440450   ROUTE
 800          RS       3    FLOW      -1
 801          RC   0.035   0.040   0.035    4154  0.0104  103.00
 802          RX    0.00  150.00  300.00  303.00  333.00  336.00  486.00  636.00
 803          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 804          KM        Route combined flows to the Hassayampa River.
 805          KM        Slope = (1260-1217) / 4154
              *

 806          KK    S450   BASIN
 807          BA   2.521
 808          LG    0.28    0.25    4.25    0.50      21
 809          UI     261     520    1227    1819    2281    2512    2417    2043    1530    1179
 810          UI     912     681     525     415     286     227     181     138      64      65
 811          UI      64      64      64       0       0       0       0       0       0       0
 812          UI       0       0       0       0       0       0       0       0       0       0
 813          UI       0       0       0       0       0       0       0       0       0       0
 814          KM        Compute runoff from subbasin 450
              *

 815          KK   D450V  DIVERT
 816          DT   CF50V   198.1     0.0
 817          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 818          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 819          KM        Divert 100-yr 2-hr retention volume.
              *
1                                          HEC-1 INPUT                                                    PAGE 22

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


 820          KK    S435   BASIN
 821          BA   0.393
 822          LG    0.27    0.25    4.45    0.44      25
 823          UI     216     795     937     553     278     139      68      25      25       0
 824          UI       0       0       0       0       0       0       0       0       0       0
 825          UI       0       0       0       0       0       0       0       0       0       0
 826          UI       0       0       0       0       0       0       0       0       0       0
 827          UI       0       0       0       0       0       0       0       0       0       0
 828          KM        Compute runoff from subbasin 435
              *

 829          KK   D435V  DIVERT
 830          DT   CF35V    36.5     0.0
 831          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 832          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 833          KM        Divert 100-yr 2-hr retention volume.
              *

 834          KK  435450   ROUTE
 835          RS      10    FLOW      -1
 836          RC   0.045   0.035   0.045   18781  0.0119  105.00
 837          RX    0.00   40.00  120.00  126.00  146.00  152.00  232.00  272.00
 838          RY  105.00  103.00  102.00  100.00  100.00  102.00  103.00  105.00
```

```
839          KM        Route runoff from S435 at Sun Valley Parkway to Hassayampa River.
840          KM        Slope = (1440 - 1217) / 18781
             *

841          KK    C450 COMBINE
842          HC       3

843          KM        Combine flows from S430, S435, S440, and S450 at Hassayampa River
             *

844          KK  ALL400 COMBINE
845          HC       29.178000
846          KM        Dummy combine of all 400 series hydrographs at the Hassayampa
             *

847          KK    S500   BASIN
848          BA   3.638
849          LG    0.25    0.33    3.92    0.41      15
850          UI     205     207     306     644     892    1207    1381    1557    1748    2203
851          UI    2307    1545    1308    1225    1103    1026     953     853     792     690
852          UI     600     525     501     466     429     366     332     261     265     228
853          UI     224     199     157     157     159     109     100     102     100     100
854          UI      86      40      39      40      39      39      40      39      40      39
855          KM        Compute runoff from subbasin 500
             *

856          KK   D500V  DIVERT
857          DT   CF00V    65.9     0.0
858          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
859          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
860          KM        Divert 100-yr 2-hr retention volume.
             *
1                                          HEC-1 INPUT                                          PAGE 23

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

861          KK  500510   ROUTE
862          RS       7    FLOW      -1
863          RC   0.045   0.035   0.045   14544  0.0186  104.00
864          RX    0.00   20.00  100.00  106.00  206.00  212.00  292.00  312.00
865          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
866          KM        Route runoff from S500 to Sun Valley Parkway.
867          KM        Slope = (1690-1420) / 14544
             *

868          KK    S510   BASIN
869          BA   1.840
870          LG    0.24    0.25    3.95    0.40      34
871          UI     278    1094    1991    2590    2568    1871    1266     881     564     386
872          UI     259     191      84      68      68      68       0       0       0       0
873          UI       0       0       0       0       0       0       0       0       0       0
874          UI       0       0       0       0       0       0       0       0       0       0
875          UI       0       0       0       0       0       0       0       0       0       0
876          KM        Compute runoff from subbasin 510
             *

877          KK   D510V  DIVERT
878          DT   CF10V   178.4     0.0
879          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
880          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
881          KM        Divert 100-yr 2-hr retention volume.
             *

882          KK    C510 COMBINE
883          HC       2
884          KM        Combine flows at Sun Valley Parkway

             *

885          KK    D510  DIVERT
886          DT    CF10     0.0     0.0
887          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
888          DQ     0.0    65.0   650.0  6500.0     0.0     0.0     0.0     0.0     0.0     0.0
889          KM        Divert flow to the right into S530
             *

890          KK  510520   ROUTE
891          RS      10    FLOW      -1
892          RC   0.045   0.035   0.045   20653  0.0117  105.00
893          RX    0.00   20.00  120.00  126.00  156.00  166.00  266.00  286.00
894          RY  105.00  103.00  102.00  100.00  100.00  102.00  103.00  105.00
895          KM        Route continuing flows from Sun Valley Parkway to Hassayampa River.
896          KM        Slope = (1420-1178) / 20653
             *

897          KK    S520   BASIN
898          BA   1.481
899          LG    0.23    0.25    4.50    0.45      36
900          UI     151     297     689    1028    1325    1433    1412    1209     933     712
901          UI     546     415     312     252     181     144     105      98      37      37
902          UI      37      37      38      37       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 24

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
903          UI       0       0       0       0       0       0       0       0       0       0
904          UI       0       0       0       0       0       0       0       0       0       0
905          KM        Compute runoff from subbasin 520
             *

906          KK   D520V  DIVERT
907          DT   CF20V   136.9     0.0
908          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
909          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
910          KM        Divert 100-yr 2-hr retention volume.
             *

911          KK    C520 COMBINE
912          HC       2   6.956
913          KM        Combine runoff from S520 with routed flows from Sun Valley Parkway
914          KM        at Hassayampa River
             *

915          KK    S530   BASIN
916          BA   2.226
917          LG    0.24    0.25    4.30    0.50      34
918          UI     289     876    1754    2440    2777    2552    1876    1364     971     680
919          UI     498     346     242     200      88      70      71      70      71       0
920          UI       0       0       0       0       0       0       0       0       0       0
921          UI       0       0       0       0       0       0       0       0       0       0
922          UI       0       0       0       0       0       0       0       0       0       0
923          KM        Compute runoff from subbasin 530
             *

924          KK   D530V  DIVERT
925          DT   CF30V   209.0     0.0
926          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0

927          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
928          KM        Divert 100-yr 2-hr retention volume.
             *

929          KK    CF10RETRIEVE
930          DR    CF10
931          KM        Retrieve diverted flows from C510
             *

932          KK  510530   ROUTE
933          RS       9    FLOW      -1
934          RC   0.045   0.040   0.045   18095  0.0126  106.00
935          RX    0.00   20.00   80.00   86.00  121.00  127.00  187.00  207.00
936          RY  106.00  102.00  102.00  100.00  100.00  102.00  102.00  106.00
937          KM        Route diverted flows through S530 to Hassayampa River.
938          KM        Slope = (1420-1192) / 18095
             *
```



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

939          KK    C530 COMBINE
940          HC       2   7.704
941          KM        Combine runoff from S530 with routed flows at the Hassayampa River
             *

942          KK  ALL500 COMBINE
943          HC       2   9.185
944          KM        Dummy combine of all 500 series hydrographs at Hassayampa
             *

945          KK    S700   BASIN
946          BA   5.240
947          LG    0.25    0.25    5.00    0.32      30
948          UI     392     396    1178    1838    2554    3056    3490    3823    3697    3476
949          UI    3012    2435    2011    1676    1371    1124     918     751     627     519
950          UI     416     337     272     269     178      97      96      95      97      95
951          UI      96      96       0       0       0       0       0       0       0       0
952          UI       0       0       0       0       0       0       0       0       0       0
953          KM        Compute runoff from subbasin 700
             *

954          KK   D700V  DIVERT
955          DT   CF00V   521.9     0.0
956          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
957          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
958          KM        Divert 100-yr 2-hr retention volume.
             *

959          KK    S720   BASIN
960          BA   4.626
961          LG    0.25    0.25    5.00    0.32      30
962          UI     376     457    1262    1983    2634    3200    3522    3635    3430    2927
963          UI    2418    1930    1566    1271    1027     808     679     568     400     366
964          UI     257     258     178      92      92      92      92      92      93      91
965          UI       0       0       0       0       0       0       0       0       0       0
966          UI       0       0       0       0       0       0       0       0       0       0
967          KM        Compute runoff from subbasin 720
             *
```

```
 968          KK   D720V  DIVERT
 969          DT   CF20V   460.6     0.0
 970          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 971          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 972          KM        Divert 100-yr 2-hr retention volume.
              *

 973          KK    S740   BASIN
 974          BA   1.132
 975          LG    0.26    0.25    5.30    0.28      27
 976          UI     621    2289    2700    1592     802     400     195      74      74       0
 977          UI       0       0       0       0       0       0       0       0       0       0
 978          UI       0       0       0       0       0       0       0       0       0       0
 979          UI       0       0       0       0       0       0       0       0       0       0
 980          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 26

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

 981          KM        Compute runoff from subbasin 740
              *

 982          KK   D740V  DIVERT
 983          DT   CF40V   105.9     0.0
 984          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 985          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
 986          KM        Divert 100-yr 2-hr retention volume.
              *

 987          KK  ALL700 COMBINE
 988          HC       3
 989          KM        Dummy combination of all 700 series subbasins.
              *

 990          KK    S900   BASIN
 991          BA   1.035
 992          LG    0.25    0.37    5.30    0.24       6
 993          UI      75      77     215     338     472     551     650     871     671     496
 994          UI     448     394     356     320     277     233     197     180     165     140
 995          UI     116      97      89      83      65      59      58      37      38      37
 996          UI      37      23      14      15      14      15      14      15      15      14
 997          UI      15      14       0       0       0       0       0       0       0       0
 998          KM        Compute runoff from subbasin 900
              *

 999          KK   D900V  DIVERT
1000          DT   CF00V     0.0     0.0
1001          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1002          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1003          KM        Divert 100-yr 2-hr retention volume.
              *

1004          KK  900910   ROUTE
1005          RS       7    FLOW      -1
1006          RC   0.045   0.035   0.045   10207  0.0192  103.00
1007          RX    0.00   80.00  160.00  163.00  178.00  181.00  261.00  341.00
1008          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
1009          KM        Route runoff from subbasin 900 through subbasin 910.
1010          KM        Slope = (1856-1660) / 10207

              *

1011          KK    S910   BASIN
1012          BA   0.983
1013          LG    0.26    0.26    4.70    0.36      27
1014          UI     391    1501    2117    1638     908     489     272     149      55      55
1015          UI       0       0       0       0       0       0       0       0       0       0
1016          UI       0       0       0       0       0       0       0       0       0       0
1017          UI       0       0       0       0       0       0       0       0       0       0
1018          UI       0       0       0       0       0       0       0       0       0       0
1019          KM        Compute runoff from subbasin 910
              *
1                                          HEC-1 INPUT                                          PAGE 27

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

1020          KK   D910V  DIVERT
1021          DT   CF10V    88.3     0.0
1022          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1023          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1024          KM        Divert 100-yr 2-hr retention volume.
              *

1025          KK    C910 COMBINE
1026          HC       2
1027          KM        Combine runoff from S910 with routed flow at Sun Valley Parkway
              *

1028          KK  910915   ROUTE
1029          RS       2    FLOW      -1
1030          RC   0.045   0.035   0.045    2998  0.0110  103.00
1031          RX    0.00  100.00  200.00  203.00  223.00  226.00  326.00  426.00
1032          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
1033          KM        Route combined flow to C915.
```

```
1034          KM        Slope = (1660-1627) / 2998
              *

1035          KK    S915   BASIN
1036          BA   1.126
1037          LG    0.23    0.30    6.60    0.15      12
1038          UI     109     194     465     701     915    1017    1034     960     741     581
1039          UI     461     350     270     217     168     120     100      74      71      27
1040          UI      26      27      27      26      27       0       0       0       0       0
1041          UI       0       0       0       0       0       0       0       0       0       0
1042          UI       0       0       0       0       0       0       0       0       0       0
1043          KM        Compute runoff from subbasin 915
              *

1044          KK   D915V  DIVERT
1045          DT   CF15V    42.7     0.0
1046          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1047          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1048          KM        Divert 100-yr 2-hr retention volume.
              *

1049          KK    C915 COMBINE
1050          HC       2
1051          KM        Combine flows at C915
              *

1052          KK  915920   ROUTE
1053          RS       5    FLOW      -1
1054          RC   0.045   0.035   0.045    9456  0.0103  104.00
1055          RX    0.00  100.00  200.00  203.00  223.00  226.00  326.00  426.00
1056          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
1057          KM        Route combined flow to C920, at tributary to Trilby Wash parallel to CAP
1058          KM        Slope = (1627-1530) / 9456
              *
1                                          HEC-1 INPUT                                          PAGE 28

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


1059          KK    S920   BASIN
1060          BA   3.291
1061          LG    0.25    0.25    5.60    0.25      30
1062          UI     326     603    1429    2144    2816    3058    3080    2765    2128    1632
1063          UI    1289     983     751     587     457     347     252     224     147      80
1064          UI      80      79      81      79       0       0       0       0       0       0
1065          UI       0       0       0       0       0       0       0       0       0       0
1066          UI       0       0       0       0       0       0       0       0       0       0
1067          KM        Compute runoff from subbasin 920
              *

1068          KK   D920V  DIVERT
1069          DT   CF20V   325.2     0.0
1070          DI     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1071          DQ     0.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1072          KM        Divert 100-yr 2-hr retention volume.
              *

1073          KK    C920 COMBINE
1074          HC       2
1075          KM        Combine flows in Trilby Wash tributary
1076          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   48       S100
              .
              .
   58         .------->   CF00V
   57      D100V
              .
              .
   62         .        S102
              .           .
              .           .
   72         .           .------->   CF02V
   71         .       D102V
              .           .
              .           .
   76       C102............
              V
              V
   79      RR102
              .
              .
   89         .------->    CF02
   88       D102
              V
              V
   94     100105
              .
              .
```

```
101          .        S105
             .           .
             .           .
111          .           .-------->   CF05V
110          .       D105V
             .           .
             .           .
116          .           .           .<--------    CF02
115          .           .        CF02
             .           .           V
             .           .           V
118          .           .      102105
             .           .           .
             .           .           .
125      C105U.......................
             .
             .
130          .        S110
             .           .
             .           .
140          .           .-------->   CF10V
139          .       D110V
             .           V
             .           V
144          .      11015I
             .           .
             .           .
152          .           .-------->    CF5I
151          .        D15I
             .           V
             .           V
156          .      15I15R
             .           .
             .           .
163          .           .        S115
             .           .           .
             .           .           .
173          .           .           .-------->   CF15V
172          .           .       D115V
             .           .           .
             .           .           .
177          .       C115U............
             .           .
             .           .
181          .           .           .<--------    CF5I
180          .           .        CF5I
             .           .           V
             .           .           V
183          .           .      15I15L
             .           .           .
             .           .           .
190          .       C115D............
             .           V
             .           V
194          .      115120
             .           .
             .           .
200          .           .        S120
             .           .           .
             .           .           .
210          .           .           .-------->   CF20V
209          .           .       D120V
             .           .           .
             .           .           .
214          .        C120............
             .           .
             .           .
217      C105D............
             V
             V
220      120135
             .
             .
227          .        S125
             .           .
             .           .
237          .           .-------->   CF25V
236          .       D125V
             .           V
             .           V
241          .      12535I
             .           .
             .           .
248          .           .        S150
             .           .           .
             .           .           .
258          .           .           .-------->   CF50V
257          .           .       D150V
             .           .           .
             .           .           .
263          .           .           .-------->    CF50
262          .           .        D150
             .           .           V
             .           .           V
268          .           .      150130
```

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                .           .           .
                .           .           .
274             .           .           .        S130
                .           .           .           .
                .           .           .           .
284             .           .           .           .-------->   CF30V
283             .           .           .       D130V
                .           .           .           .
                .           .           .           .
288             .           .        C130............
                .           .           .
                .           .           .
293             .           .           .-------->    CF30
292             .           .        D130
                .           .           V
                .           .           V
297             .           .      13035I
                .           .           .
                .           .           .
304             .       C135I............
                .           V
                .           V
307             .      35I135
                .           .
                .           .
314             .           .        S135
                .           .           .
                .           .           .
324             .           .           .-------->   CF35V
323             .           .       D135V
                .           .           .
                .           .           .
328             .       C135L............
                .           .
                .           .
331         C135............
                V
                V
334       135145
                .
                .
340             .         S140
                .           .
                .           .
350             .           .-------->   CF40V
349             .       D140V
                .           V
                .           V
354             .      140145
                .           .
                .           .
362             .           .           .<--------    CF30
361             .           .        CF30
                .           .           .
                .           .           .
365             .           .           .-------->   CF302
364             .           .       D1302
                .           .           V
                .           .           V
369             .           .      130145
                .           .           .
                .           .           .
376             .           .           .        S145
                .           .           .           .
                .           .           .           .
386             .           .           .           .-------->   CF45V
385             .           .           .       D145V
                .           .           .           .
                .           .           .           .
390             .           .       C145L............
                .           .           .
                .           .           .
394         C145........................
                V
                V
397       145155
                .
                .
404             .           .<--------    CF50
403             .         CF50
                .           V
                .           V
406             .      150155
                .           .
                .           .
413             .           .           .<--------   CF302
412             .           .       CF302
                .           .           V
                .           .           V
415             .           .      130155
                .           .           .
                .           .           .
421             .           .           .        S155
                .           .           .           .
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431          .           .           .           .-------->   CF55V
430          .           .           .       D155V
             .           .           .           .
             .           .           .           .
435          .       C155L.......................
             .           .
             .           .
439       C155............
             V
             V
442      155160
             .
             .
449          .        S160
             .           .
             .           .
459          .           .-------->   CF60V
458          .       D160V
             .           .
             .           .
463       C160............
             V
             V
466      160170
             .
             .
472          .        S165
             .           .
             .           .
482          .           .-------->   CF65V
481          .       D165V
             .           V
             .           V
486          .      165170
             .           .
             .           .
493          .           .        S170
             .           .           .
             .           .           .
503          .           .           .-------->   CF70V
502          .           .       D170V
             .           .           .
             .           .           .
507          .        C170............
             .           V
             .           V
510          .        170R
             .           .
             .           .
516       C170R...........
             V
             V
519      170180
             .
             .
525          .        S175
             .           .
             .           .
535          .           .-------->   CF75V
534          .       D175V
             .           V
             .           V
539          .        175R
             .           .
             .           .
546          .           .        S180
             .           .           .
             .           .           .
556          .           .           .-------->   CF80V
555          .           .       D180V
             .           .           V
             .           .           V
560          .           .        180R
             .           .           .
             .           .           .
567          .      C180RI...........
             .           V
             .           V
570          .      RI180R
             .           .
             .           .
576       C180R...........
             V
             V
579      180185
             .
             .
586          .        S185
             .           .
             .           .
596          .           .-------->   CF85V
595          .       D185V
             .           V
             .           V
600          .        185R
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                .           .
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606       C185R............
                V
                V
609      185190
                .
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615             .        S190
                .           .
                .           .
625             .           .-------->   CF90V
624             .       D190V
                .           .
                .           .
629        C190............
                V
                V
632      190195
                .
                .
638             .        S195
                .           .
                .           .
648             .           .-------->   CF95V
647             .       D195V
                .           .
                .           .
652        C195............
                .
                .
655             .        S400
                .           .
                .           .
665             .           .-------->   CF00V
664             .       D400V
                .           ..
                .           .
670             .           .-------->    CF00
669             .        D400
                .           .
                .           .
674             .           .        S410
                .           .           .
                .           .           .
684             .           .           .-------->   CF10V
683             .           .       D410V
                .           .           .
                .           .           .
688             .        C410............
                .           .
                .           .
692             .           .-------->    CF10
691             .        D410
                .           V
                .           V
696             .      410415
                .           .
                .           .
702             .           .        S415
                .           .           .
                .           .           .
712             .           .           .-------->   CF15V
711             .           .       D415V
                .           .           .
                .           .           .
716             .        C415............
                .           V
                .           V
719             .      415420
                .           .
                .           .
726             .           .        S420
                .           .           .
                .           .           .
736             .           .           .-------->   CF20V
735             .           .       D420V
                .           .           .
                .           .           .
740             .        C420............
                .           .
                .           .
744             .           .           .<--------    CF00
743             .           .        CF00
                .           .           .
                .           .           .
747             .           .           .           .<--------    CF10
746             .           .           .        CF10
                .           .           .           .
                .           .           .           .
749             .           .      C40010............
                .           .           V
                .           .           V
752             .           .      400430
                .           .           .
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758          .          .          .       S430
             .          .          .          .
             .          .          .          .
768          .          .          .          .-------->   CF30V
767          .          .          .      D430V
             .          .          .          .
             .          .          .          .
772          .          .      C430............
             .          .         V
             .          .         V
775          .          .    430440
             .          .          .
             .          .          .
782          .          .          .       S440
             .          .          .          .
             .          .          .          .
792          .          .          .          .-------->   CF40V
791          .          .          .      D440V
             .          .          .          .
             .          .          .          .
796          .          .      C440............
             .          .         V
             .          .         V
799          .          .    440450
             .          .          .
             .          .          .
806          .          .          .       S450
             .          .          .          .
             .          .          .          .
816          .          .          .          .-------->   CF50V
815          .          .          .      D450V
             .          .          .          .
             .          .          .          .
820          .          .          .          .       S435
             .          .          .          .          .
             .          .          .          .          .
830          .          .          .          .          .-------->   CF35V
829          .          .          .          .      D435V
             .          .          .          .          V
             .          .          .          .          V
834          .          .          .          .    435450
             .          .          .          .          .
             .          .          .          .          .
841          .          .      C450........................
             .          .          .
             .          .          .
844          .     ALL400............
             .          .
             .          .
847          .          .      S500
             .          .          .
             .          .          .
857          .          .          .-------->   CF00V
856          .          .     D500V
             .          .         V
             .          .         V
861          .          .    500510
             .          .          .
             .          .          .
868          .          .          .       S510
             .          .          .          .
             .          .          .          .
878          .          .          .          .-------->   CF10V
877          .          .          .      D510V
             .          .          .          .
             .          .          .          .
882          .          .      C510............
             .          .          .
             .          .          .
886          .          .          .-------->    CF10
885          .          .      D510
             .          .         V
             .          .         V
890          .          .    510520
             .          .          .
             .          .          .
897          .          .          .       S520
             .          .          .          .
             .          .          .          .
907          .          .          .          .-------->   CF20V
906          .          .          .      D520V
             .          .          .          .
             .          .          .          .
911          .          .      C520............
             .          .          .
             .          .          .
915          .          .          .       S530
             .          .          .          .
             .          .          .          .
925          .          .          .          .-------->   CF30V
924          .          .          .      D530V
             .          .          .          .
             .          .          .          .
930          .          .          .          .          .<--------    CF10
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 929          .          .          .          .        CF10
              .          .          .          .          V
              .          .          .          .          V
 932          .          .          .          .      510530
              .          .          .          .          .
              .          .          .          .          .
 939          .          .          .       C530............
              .          .          .          .
              .          .          .          .
 942          .          .     ALL500............
              .          .          .
              .          .          .
 945          .          .          .       S700
              .          .          .          .
              .          .          .          .
 955          .          .          .          .-------->   CF00V
 954          .          .          .      D700V
              .          .          .          .
              .          .          .          .
 959          .          .          .          .        S720
              .          .          .          .          .
              .          .          .          .          .
 969          .          .          .          .          .-------->   CF20V
 968          .          .          .          .      D720V
              .          .          .          .          .
              .          .          .          .          .
 973          .          .          .          .          .        S740
              .          .          .          .          .          .
              .          .          .          .          .          .
 983          .          .          .          .          .          .-------->   CF40V
 982          .          .          .          .          .      D740V
              .          .          .          .          .          .
              .          .          .          .          .          .
 987          .          .          .     ALL700........................
              .          .          .          .
              .          .          .          .
 990          .          .          .          .        S900
              .          .          .          .          .
              .          .          .          .          .
1000          .          .          .          .          .-------->   CF00V
 999          .          .          .          .      D900V
              .          .          .          .          V
              .          .          .          .          V
1004          .          .          .          .      900910
              .          .          .          .          .
              .          .          .          .          .
1011          .          .          .          .          .        S910
              .          .          .          .          .          .
              .          .          .          .          .          .
1021          .          .          .          .          .          .-------->   CF10V
1020          .          .          .          .          .      D910V
              .          .          .          .          .          .
              .          .          .          .          .          .
1025          .          .          .          .        C910............
              .          .          .          .          V
              .          .          .          .          V
1028          .          .          .          .      910915
              .          .          .          .          .
              .          .          .          .          .
1035          .          .          .          .          .        S915
              .          .          .          .          .          .
              .          .          .          .          .          .
1045          .          .          .          .          .          .-------->   CF15V
1044          .          .          .          .          .      D915V
              .          .          .          .          .          .
              .          .          .          .          .          .
1049          .          .          .          .        C915............
              .          .          .          .          V
              .          .          .          .          V
1052          .          .          .          .      915920
              .          .          .          .          .
              .          .          .          .          .
1059          .          .          .          .          .        S920
              .          .          .          .          .          .
              .          .          .          .          .          .
1069          .          .          .          .          .          .-------->   CF20V
1068          .          .          .          .          .      D920V
              .          .          .          .          .          .
              .          .          .          .          .          .
1073          .          .          .          .        C920............
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************                    ****************************************
 *                                      *                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUN   1998              *                    *    HYDROLOGIC ENGINEERING CENTER     *
 *           VERSION 4.1                *                    *          609 SECOND STREET           *
 *                                      *                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   16AUG06  TIME  10:01:44  *                    *           (916) 756-1104             *
 *                                      *                    *                                      *
 ****************************************                    ****************************************
```

```
                    SUN VALLEY AREA DRAINAGE MASTER PLAN (SVADMP) - FCD 2004C049
                     JE FULLER / HYDROLOGY & GEOMORPHOLOGY, INC.
                     FILENAME: A4_FU6.DAT

                     100-YEAR 6-HOUR MODEL
                     FUTURE CONDITIONS
                     AREA 4 WATERSHED AREA = 90.5 SQ. MILES
                             MODELED AREA = 76.8 SQ. MILES

                     GREEN-AMPT LOSS METHOD
                     S-GRAPH UNIT HYDROGRAPHS
                      - MOUNTAIN
                      - DESERT/RANGELAND
                     NORMAL-DEPTH CHANNEL ROUTING
                     LAND USE DATA FROM MASTER PLANNED COMMUNITY PLANS WHERE AVAILABLE.
                     STATE LAND AND OTHER NON-MASTER PLANNED AREAS ASSUMED AS SMALL LOT
                     RESIDENTIAL.  NATURAL AREAS IN WHITE TANK REGIONAL PARK ASSIGNED
                     BASED ON EXAMINATION OF SLOPE FROM 10-FT DTM TO DISTINGUISH
                      - UNDEVELOPED DESERT RANGELAND (NDR) - SLOPES < 5 %
                      - HILLSLOPES, SONORAN DESERT (NHS) - SLOPES 5 - 10 %
                      - MOUNTAIN TERRAIN (NMT) - SLOPES > 10 %
                    SOILS DATA FROM FCDMC GIS DATABASE (RECEIVED FROM FCDMC JULY 2005)

                         08/15/2006

27 IO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

   IT          HYDROGRAPH TIME DATA
                      NMIN           5  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1JAN99  STARTING DATE
                     ITIME        1200  STARTING TIME
                        NQ        2000  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      8JAN99  ENDING DATE
                    NDTIME        1035  ENDING TIME
                     ICENT          19  CENTURY MARK

              COMPUTATION INTERVAL     .08 HOURS
                   TOTAL TIME BASE  166.58 HOURS

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

28 JD          INDEX STORM NO. 1
                      STRM       3.20  PRECIPITATION DEPTH
                      TRDA        .10  TRANSPOSITION DRAINAGE AREA

29 PI            PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .01       .01       .01       .01       .01       .01       .03
                    .03       .03       .05       .05       .05       .15       .15       .15       .03       .03
                    .03       .01       .01       .01       .01       .01       .01       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00

32 JD          INDEX STORM NO. 2
                      STRM       3.18  PRECIPITATION DEPTH
                      TRDA        .50  TRANSPOSITION DRAINAGE AREA

33 PI            PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .01       .01       .01       .01       .01       .01       .03
                    .03       .03       .05       .05       .05       .15       .15       .15       .03       .03
                    .03       .01       .01       .01       .01       .01       .01       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00

36 JD          INDEX STORM NO. 3
                      STRM       3.12  PRECIPITATION DEPTH
                      TRDA       2.80  TRANSPOSITION DRAINAGE AREA

37 PI            PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .01       .01       .01       .01       .01       .01       .03
                    .03       .03       .07       .07       .07       .08       .08       .08       .05       .05
                    .05       .02       .02       .02       .01       .01       .01       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00

40 JD          INDEX STORM NO. 4
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                    STRM        2.95  PRECIPITATION DEPTH
                    TRDA       16.00  TRANSPOSITION DRAINAGE AREA

41 PI            PRECIPITATION PATTERN
                    .01       .01       .00       .00       .00       .00       .00       .00       .00       .01
                    .01       .01       .00       .01       .00       .00       .00       .00       .00       .00
                    .00       .00       .01       .00       .00       .00       .00       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .02       .02       .02       .03
                    .03       .03       .06       .06       .06       .07       .07       .07       .04       .04
                    .04       .02       .02       .02       .01       .01       .01       .01       .01       .01
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00

44 JD          INDEX STORM NO. 5
                    STRM        2.59  PRECIPITATION DEPTH
                    TRDA       90.00  TRANSPOSITION DRAINAGE AREA

45 PI            PRECIPITATION PATTERN
                    .01       .01       .01       .00       .00       .00       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .02       .02       .02       .03
                    .03       .03       .05       .05       .05       .05       .05       .05       .04       .04
                    .04       .02       .02       .02       .02       .02       .02       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                    .01       .01

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

            **************
            *            *
79 KK       *     RR102  *      STORAGE
            *            *
            **************

80 KO          OUTPUT CONTROL VARIABLES
                    IPRNT           5  PRINT CONTROL
                    IPLOT           0  PLOT CONTROL
                    QSCAL          0.  HYDROGRAPH PLOT SCALE
        WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
1
                                                RUNOFF SUMMARY
                                          FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES

                                      PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
        OPERATION        STATION      FLOW    PEAK                                           AREA      STAGE     MAX STAGE
+                                                          6-HOUR     24-HOUR     72-HOUR

        HYDROGRAPH AT
+                          S100      6425.    4.50        1424.        359.        120.      6.99

        DIVERSION TO
+                         CF00V      6425.    4.50        1350.        339.        113.      6.99

        HYDROGRAPH AT
+                         D100V       833.    5.42          77.         19.          6.      6.99

        HYDROGRAPH AT
+                          S102      3748.    4.25         608.        153.         51.      3.23

        DIVERSION TO
+                         CF02V      3748.    4.25         584.        146.         49.      3.23

        HYDROGRAPH AT
+                         D102V       313.    5.25          27.          7.          2.      3.23

        2 COMBINED AT
+                          C102       833.    5.42          81.         20.          7.     10.23

        ROUTED TO
+                         RR102         5.    7.33           5.          4.          3.     10.23

        DIVERSION TO
+                          CF02         3.    7.33           2.          2.          1.     10.23

        HYDROGRAPH AT
+                          D102         3.    7.33           2.          2.          1.     10.23

        ROUTED TO
+                        100105         2.   13.67           2.          2.          1.     10.23

        HYDROGRAPH AT
+                          S105      4048.    4.42         789.        199.         66.      4.37

        DIVERSION TO
+                         CF05V      4048.    4.42         789.        198.         66.      4.37

        HYDROGRAPH AT
+                         D105V        31.    6.75           2.          1.          0.      4.37

        HYDROGRAPH AT
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+	CF02	3.	7.33	2.	2.	1.	10.23
+ ROUTED TO	102105	2.	11.25	2.	2.	1.	10.23
+ 3 COMBINED AT	C105U	31.	6.75	13.	12.	9.	14.60
+ HYDROGRAPH AT	S110	688.	4.17	77.	19.	6.	.43
+ DIVERSION TO	CF10V	121.	3.83	5.	1.	0.	.43
+ HYDROGRAPH AT	D110V	688.	4.17	72.	18.	6.	.43
+ ROUTED TO	11015I	583.	4.42	72.	18.	6.	.43
+ DIVERSION TO	CF5I	117.	4.42	14.	4.	1.	.43
+ HYDROGRAPH AT	D15I	466.	4.42	58.	14.	5.	.43
+ ROUTED TO	15I15R	414.	4.75	58.	14.	5.	.43
+ HYDROGRAPH AT	S115	2199.	4.42	408.	102.	34.	2.25
+ DIVERSION TO	CF15V	2199.	4.42	336.	84.	28.	2.25
+ HYDROGRAPH AT	D115V	767.	5.08	74.	18.	6.	2.25
+ 2 COMBINED AT	C115U	1015.	5.08	115.	29.	10.	2.68
+ HYDROGRAPH AT	CF5I	117.	4.42	14.	4.	1.	.43
+ ROUTED TO	15I15L	58.	5.50	14.	4.	1.	.43
+ 2 COMBINED AT	C115D	1022.	5.08	127.	32.	11.	2.68
+ ROUTED TO	115120	765.	5.25	127.	32.	11.	2.68
+ HYDROGRAPH AT	S120	2504.	4.25	370.	93.	31.	2.00
+ DIVERSION TO	CF20V	2504.	4.25	325.	81.	27.	2.00
+ HYDROGRAPH AT	D120V	445.	4.92	47.	12.	4.	2.00
+ 2 COMBINED AT	C120	764.	5.25	134.	33.	11.	4.68
+ 2 COMBINED AT	C105D	584.	5.00	102.	26.	9.	19.28
+ ROUTED TO	120135	182.	5.25	43.	11.	4.	19.28
+ HYDROGRAPH AT	S125	231.	4.00	17.	4.	1.	.09
+ DIVERSION TO	CF25V	178.	4.00	8.	2.	1.	.09
+ HYDROGRAPH AT	D125V	227.	4.08	9.	2.	1.	.09
+ ROUTED TO	12535I	126.	4.17	9.	2.	1.	.09
+ HYDROGRAPH AT	S150	847.	4.33	126.	32.	11.	.77
+ DIVERSION TO	CF50V	113.	3.83	7.	2.	1.	.77
+ HYDROGRAPH AT	D150V	847.	4.33	120.	30.	10.	.77
+ DIVERSION TO	CF50	762.	4.33	108.	27.	9.	.77

+	HYDROGRAPH AT	D150	85.	4.33	12.	3.	1.	.77
+	ROUTED TO	150130	79.	4.50	12.	3.	1.	.77
+	HYDROGRAPH AT	S130	667.	4.08	56.	14.	5.	.31
+	DIVERSION TO	CF30V	667.	4.08	32.	8.	3.	.31
+	HYDROGRAPH AT	D130V	415.	4.17	24.	6.	2.	.31
+	2 COMBINED AT	C130	437.	4.17	36.	9.	3.	.31
+	DIVERSION TO	CF30	131.	4.17	11.	3.	1.	.31
+	HYDROGRAPH AT	D130	306.	4.17	25.	6.	2.	.31
+	ROUTED TO	13035I	312.	4.25	25.	6.	2.	.31
+	2 COMBINED AT	C135I	423.	4.25	34.	8.	3.	.40
+	ROUTED TO	35I135	218.	4.83	34.	8.	3.	.40
+	HYDROGRAPH AT	S135	1508.	4.17	184.	46.	15.	.88
+	DIVERSION TO	CF35V	1508.	4.17	175.	44.	15.	.88
+	HYDROGRAPH AT	D135V	116.	4.83	9.	2.	1.	.88
+	2 COMBINED AT	C135L	183.	4.83	34.	8.	3.	1.28
+	2 COMBINED AT	C135	181.	5.25	52.	13.	4.	20.56
+	ROUTED TO	135145	128.	6.25	51.	13.	4.	20.56
+	HYDROGRAPH AT	S140	2523.	4.08	304.	76.	25.	1.37
+	DIVERSION TO	CF40V	2523.	4.08	290.	73.	24.	1.37
+	HYDROGRAPH AT	D140V	182.	4.50	14.	3.	1.	1.37
+	ROUTED TO	140145	72.	5.00	14.	3.	1.	1.37
+	HYDROGRAPH AT	CF30	131.	4.17	11.	3.	1.	.31
+	DIVERSION TO	CF302	13.	4.17	1.	0.	0.	.31
+	HYDROGRAPH AT	D1302	118.	4.17	10.	2.	1.	.31
+	ROUTED TO	130145	49.	5.67	9.	2.	1.	.31
+	HYDROGRAPH AT	S145	2426.	4.25	389.	98.	33.	1.76
+	DIVERSION TO	CF45V	2426.	4.25	370.	92.	31.	1.76
+	HYDROGRAPH AT	D145V	185.	4.75	22.	5.	2.	1.76
+	2 COMBINED AT	C145L	121.	4.75	25.	6.	2.	2.07
+	3 COMBINED AT	C145	127.	6.33	52.	13.	4.	23.69
+	ROUTED TO	145155	122.	6.42	51.	13.	4.	23.69
+	HYDROGRAPH AT	CF50	762.	4.33	108.	27.	9.	.77

+	ROUTED TO	150155	501.	5.58	106.	27.	9.	.77
+	HYDROGRAPH AT	CF302	13.	4.17	1.	0.	0.	.31
+	ROUTED TO	130155	2.	8.17	1.	0.	0.	.31
+	HYDROGRAPH AT	S155	1933.	4.33	318.	80.	27.	1.83
+	DIVERSION TO	CF55V	1933.	4.33	275.	69.	23.	1.83
+	HYDROGRAPH AT	D155V	349.	5.17	45.	11.	4.	1.83
+	3 COMBINED AT	C155L	703.	5.17	124.	31.	10.	2.61
+	2 COMBINED AT	C155	275.	5.42	107.	28.	9.	26.30
+	ROUTED TO	155160	268.	5.58	107.	28.	9.	26.30
+	HYDROGRAPH AT	S160	1848.	4.17	220.	55.	18.	1.14
+	DIVERSION TO	CF60V	1848.	4.17	211.	53.	18.	1.14
+	HYDROGRAPH AT	D160V	116.	4.75	8.	2.	1.	1.14
+	2 COMBINED AT	C160	268.	5.58	107.	28.	9.	27.44
+	ROUTED TO	160170	205.	6.50	104.	27.	9.	27.44
+	HYDROGRAPH AT	S165	1353.	4.08	122.	31.	10.	.62
+	DIVERSION TO	CF65V	1353.	4.08	94.	23.	8.	.62
+	HYDROGRAPH AT	D165V	503.	4.33	29.	7.	2.	.62
+	ROUTED TO	165170	241.	4.83	29.	7.	2.	.62
+	HYDROGRAPH AT	S170	2252.	4.17	270.	68.	23.	1.46
+	DIVERSION TO	CF70V	2252.	4.17	266.	67.	22.	1.46
+	HYDROGRAPH AT	D170V	48.	4.83	5.	1.	0.	1.46
+	2 COMBINED AT	C170	206.	4.83	29.	7.	2.	2.08
+	ROUTED TO	170R	68.	5.67	18.	5.	2.	2.08
+	2 COMBINED AT	C170R	205.	6.50	104.	27.	9.	29.52
+	ROUTED TO	170180	182.	7.42	101.	27.	9.	29.52
+	HYDROGRAPH AT	S175	2112.	4.25	338.	85.	28.	1.80
+	DIVERSION TO	CF75V	2112.	4.25	329.	83.	28.	1.80
+	HYDROGRAPH AT	D175V	116.	5.00	10.	3.	1.	1.80
+	ROUTED TO	175R	78.	5.25	10.	3.	1.	1.80
	HYDROGRAPH AT							

+		S180	1672.	4.25	275.	69.	23.	1.44
+	DIVERSION TO	CF80V	1672.	4.25	260.	65.	22.	1.44
+	HYDROGRAPH AT	D180V	169.	5.00	17.	4.	1.	1.44
+	ROUTED TO	180R	115.	5.25	17.	4.	1.	1.44
+	2 COMBINED AT	C180RI	78.	7.08	14.	4.	1.	3.24
+	ROUTED TO	RI180R	5.	7.83	1.	0.	0.	3.24
+	2 COMBINED AT	C180R	182.	7.42	101.	27.	9.	32.76
+	ROUTED TO	180185	166.	7.75	96.	26.	9.	32.76
+	HYDROGRAPH AT	S185	2460.	4.25	425.	107.	36.	2.42
+	DIVERSION TO	CF85V	2460.	4.25	420.	106.	35.	2.42
+	HYDROGRAPH AT	D185V	55.	5.00	5.	1.	0.	2.42
+	ROUTED TO	185R	37.	5.42	5.	1.	0.	2.42
+	2 COMBINED AT	C185R	166.	7.75	96.	26.	9.	35.19
+	ROUTED TO	185190	153.	8.08	93.	25.	8.	35.19
+	HYDROGRAPH AT	S190	3133.	4.58	713.	180.	60.	4.05
+	DIVERSION TO	CF90V	3133.	4.58	680.	171.	57.	4.05
+	HYDROGRAPH AT	D190V	329.	5.92	37.	9.	3.	4.05
+	2 COMBINED AT	C190	153.	8.08	93.	25.	8.	39.24
+	ROUTED TO	190195	140.	8.75	89.	24.	8.	39.24
+	HYDROGRAPH AT	S195	1535.	4.50	298.	75.	25.	1.81
+	DIVERSION TO	CF95V	1535.	4.50	286.	72.	24.	1.81
+	HYDROGRAPH AT	D195V	124.	5.25	12.	3.	1.	1.81
+	2 COMBINED AT	C195	140.	8.75	89.	24.	8.	41.05
+	HYDROGRAPH AT	S400	1946.	4.17	286.	72.	24.	1.54
+	DIVERSION TO	CF00V	1946.	4.17	270.	67.	22.	1.54
+	HYDROGRAPH AT	D400V	213.	4.75	18.	4.	1.	1.54
+	DIVERSION TO	CF00	107.	4.75	9.	2.	1.	1.54
+	HYDROGRAPH AT	D400	107.	4.75	9.	2.	1.	1.54
+	HYDROGRAPH AT	S410	1142.	4.17	136.	34.	11.	.64
+	DIVERSION TO	CF10V	1142.	4.17	123.	31.	10.	.64
+	HYDROGRAPH AT	D410V	154.	4.75	13.	3.	1.	.64
+	2 COMBINED AT	C410	99.	4.75	9.	2.	1.	2.18

+	DIVERSION TO	CF10	7.	4.75	1.	0.	0.	2.18
+	HYDROGRAPH AT	D410	64.	4.75	6.	1.	0.	2.18
+	ROUTED TO	410415	35.	5.25	6.	1.	0.	2.18
+	HYDROGRAPH AT	S415	1033.	4.08	97.	24.	8.	.45
+	DIVERSION TO	CF15V	1033.	4.08	92.	23.	8.	.45
+	HYDROGRAPH AT	D415V	47.	4.83	5.	1.	0.	.45
+	2 COMBINED AT	C415	32.	5.25	6.	1.	0.	2.63
+	ROUTED TO	415420	6.	6.08	2.	1.	0.	2.63
+	HYDROGRAPH AT	S420	2035.	4.25	312.	78.	26.	1.77
+	DIVERSION TO	CF20V	2035.	4.25	301.	76.	25.	1.77
+	HYDROGRAPH AT	D420V	165.	4.83	12.	3.	1.	1.77
+	2 COMBINED AT	C420	6.	10.42	3.	1.	0.	4.40
+	HYDROGRAPH AT	CF00	107.	4.75	9.	2.	1.	1.54
+	HYDROGRAPH AT	CF10	7.	4.75	1.	0.	0.	2.18
+	2 COMBINED AT	C40010	124.	4.75	10.	3.	1.	1.54
+	ROUTED TO	400430	64.	5.25	10.	3.	1.	1.54
+	HYDROGRAPH AT	S430	1462.	4.17	149.	37.	12.	.80
+	DIVERSION TO	CF30V	1462.	4.17	133.	33.	11.	.80
+	HYDROGRAPH AT	D430V	340.	4.50	16.	4.	1.	.80
+	2 COMBINED AT	C430	85.	4.50	10.	3.	1.	2.34
+	ROUTED TO	430440	17.	5.75	6.	2.	1.	2.34
+	HYDROGRAPH AT	S440	1571.	4.17	195.	49.	16.	1.07
+	DIVERSION TO	CF40V	1571.	4.17	182.	46.	15.	1.07
+	HYDROGRAPH AT	D440V	222.	4.67	13.	3.	1.	1.07
+	2 COMBINED AT	C440	17.	9.25	6.	2.	1.	3.41
+	ROUTED TO	440450	3.	10.25	1.	0.	0.	3.41
+	HYDROGRAPH AT	S450	2335.	4.33	393.	99.	33.	2.52
+	DIVERSION TO	CF50V	2335.	4.33	389.	98.	33.	2.52
+	HYDROGRAPH AT	D450V	52.	4.92	4.	1.	0.	2.52
+	HYDROGRAPH AT	S435	1017.	4.08	78.	20.	7.	.39

+	DIVERSION TO	CF35V	1017.	4.08	74.	18.	6.	.39
+	HYDROGRAPH AT	D435V	82.	4.50	5.	1.	0.	.39
+	ROUTED TO	435450	10.	6.92	5.	1.	0.	.39
+	3 COMBINED AT	C450	52.	10.25	23.	6.	2.	6.32
+	2 COMBINED AT	ALL400	7.	10.33	3.	1.	0.	9.18
+	HYDROGRAPH AT	S500	2018.	4.67	511.	130.	43.	3.64
+	DIVERSION TO	CF00V	1707.	4.42	133.	33.	11.	3.64
+	HYDROGRAPH AT	D500V	2018.	4.67	385.	96.	32.	3.64
+	ROUTED TO	500510	1803.	5.08	384.	96.	32.	3.64
+	HYDROGRAPH AT	S510	2613.	4.17	375.	94.	31.	1.84
+	DIVERSION TO	CF10V	2613.	4.17	360.	90.	30.	1.84
+	HYDROGRAPH AT	D510V	192.	4.67	17.	4.	1.	1.84
+	2 COMBINED AT	C510	1762.	5.08	384.	96.	32.	5.48
+	DIVERSION TO	CF10	1063.	5.17	235.	59.	20.	5.48
+	HYDROGRAPH AT	D510	573.	5.17	126.	32.	11.	5.48
+	ROUTED TO	510520	431.	6.08	122.	32.	11.	5.48
+	HYDROGRAPH AT	S520	1767.	4.33	300.	75.	25.	1.48
+	DIVERSION TO	CF20V	1767.	4.33	276.	69.	23.	1.48
+	HYDROGRAPH AT	D520V	223.	4.92	26.	6.	2.	1.48
+	2 COMBINED AT	C520	438.	6.08	122.	32.	11.	6.96
+	HYDROGRAPH AT	S530	2622.	4.25	419.	105.	35.	2.23
+	DIVERSION TO	CF30V	2622.	4.25	412.	104.	35.	2.23
+	HYDROGRAPH AT	D530V	91.	4.83	7.	2.	1.	2.23
+	HYDROGRAPH AT	CF10	7.	4.75	1.	0.	0.	2.18
+	ROUTED TO	510530	1.	7.58	1.	0.	0.	2.18
+	2 COMBINED AT	C530	91.	8.83	34.	8.	3.	7.70
+	2 COMBINED AT	ALL500	438.	6.08	122.	32.	11.	9.19
+	HYDROGRAPH AT	S700	4285.	4.50	957.	241.	80.	5.24
+	DIVERSION TO	CF00V	4285.	4.50	957.	241.	80.	5.24
+	HYDROGRAPH AT	D700V	0.	.00	0.	0.	0.	5.24
+	HYDROGRAPH AT	S720	4043.	4.50	856.	216.	72.	4.63

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          DIVERSION TO
+                        CF20V     4043.    4.50        856.        216.        72.       4.63
          HYDROGRAPH AT
+                        D720V        0.     .00          0.          0.         0.       4.63
          HYDROGRAPH AT
+                         S740     2402.    4.08        233.         58.        19.       1.13
          DIVERSION TO
+                        CF40V     2402.    4.08        214.         53.        18.       1.13
          HYDROGRAPH AT
+                        D740V      404.    4.33         20.          5.         2.       1.13
          3 COMBINED AT
+                       ALL700        7.    5.33          1.          0.         0.      11.00
          HYDROGRAPH AT
+                         S900      936.    4.50        170.         43.        14.       1.03
          DIVERSION TO
+                        CF00V      936.    4.50        170.         43.        14.       1.03
          HYDROGRAPH AT
+                        D900V        0.     .00          0.          0.         0.       1.03
          ROUTED TO
+                       900910        0.     .00          0.          0.         0.       1.03
          HYDROGRAPH AT
+                         S910     2017.    4.08        195.         49.        16.        .98
          DIVERSION TO
+                        CF10V     2017.    4.08        178.         45.        15.        .98
          HYDROGRAPH AT
+                        D910V      349.    4.42         17.          4.         1.        .98
          2 COMBINED AT
+                         C910      109.    4.42          6.          2.         1.       2.02
          ROUTED TO
+                       910915       53.    4.58          6.          2.         1.       2.02
          HYDROGRAPH AT
+                         S915     1434.    4.33        223.         56.        19.       1.13
          DIVERSION TO
+                        CF15V     1345.    4.25         86.         22.         7.       1.13
          HYDROGRAPH AT
+                        D915V     1433.    4.42        137.         34.        11.       1.13
          2 COMBINED AT
+                         C915     1124.    4.50        123.         31.        10.       3.14
          ROUTED TO
+                       915920      646.    5.25        123.         31.        10.       3.14
          HYDROGRAPH AT
+                         S920     3466.    4.33        656.        165.        55.       3.29
          DIVERSION TO
+                        CF20V     3466.    4.33        647.        162.        54.       3.29
          HYDROGRAPH AT
+                        D920V      116.    6.08         11.          3.         1.       3.29
          2 COMBINED AT
+                         C920      644.    5.25        134.         33.        11.       6.43
1                   SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION     RR102
                  (PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED  DURING BREACH FORMATION)

PLAN  1 ...............                    INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                              ELEVATION        1550.00           1556.00          1556.00
                              STORAGE              553.              2705.            2705.
                              OUTFLOW                0.               600.             600.

                RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
                  OF     RESERVOIR     DEPTH      STORAGE    OUTFLOW    OVER TOP    MAX OUTFLOW   FAILURE
                 PMF     W.S.ELEV    OVER DAM      AC-FT       CFS        HOURS        HOURS       HOURS

                1.00      1550.67        .00        751.        43.        .00         7.00         .00

PLAN  2 ...............                    INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                              ELEVATION        1550.00           1556.00          1556.00
                              STORAGE              553.              2705.            2705.
                              OUTFLOW                0.               600.             600.

                RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
```

OF PMF	RESERVOIR W.S.ELEV	DEPTH OVER DAM	STORAGE AC-FT	OUTFLOW CFS	OVER TOP HOURS	MAX OUTFLOW HOURS	FAILURE HOURS
1.00	1550.64	.00	745.	41.	.00	7.00	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1550.00	1556.00	1556.00
STORAGE	553.	2705.	2705.
OUTFLOW	0.	600.	600.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1550.31	.00	644.	20.	.00	7.33	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1550.00	1556.00	1556.00
STORAGE	553.	2705.	2705.
OUTFLOW	0.	600.	600.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1550.00	.00	553.	0.	.00	.00	.00

PLAN 5 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1550.00	1556.00	1556.00
STORAGE	553.	2705.	2705.
OUTFLOW	0.	600.	600.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1550.00	.00	553.	0.	.00	.00	.00

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

D.3. Test of Rock Fragment Adjustments to XKSAT

- **Summary of Results**
- **Subbasin Soil Data**
- **Subbasin Data**
- **HEC-1 Model Output**

Rock Fragments Uncertainty Analysis - Summary of Results

TYPE	MODELID	AREA	Q100	TIMEPK100	VOL100	VOL100AF
		(sq.mi.)	(cfs)	(hrs)	(in)	(ac-ft)
Hydrograph	S100	6.99	5214	12.58	1.282	478
Hydrograph	S102	3.23	3434	12.33	1.207	208
Combined	C102	10.23	7803	12.42	1.243	678
Routed	RR102	10.23	149	14.42	1.163	634
Hydrograph	D102	10.23	75	14.42	0.581	317
Routed	100105	10.23	70	20.33	0.578	315
Hydrograph	S105	4.37	3492	12.50	1.139	265
Routed	102105	10.23	74	15.67	0.580	316
Combined	C105U	14.60	3492	12.50	1.166	908
Hydrograph	S110	0.43	599	12.17	1.726	40
Routed	11015I	0.43	524	12.42	1.726	40
Hydrograph	D15I	0.43	420	12.42	1.381	32
Routed	15I15R	0.43	378	12.75	1.381	32
Hydrograph	S115	2.25	1819	12.50	1.309	157
Combined	C115U	2.68	2037	12.58	1.311	187
Routed	15I15L	0.43	59	13.50	0.345	8
Combined	C115D	2.68	2038	12.58	1.364	195
Routed	115120	2.68	1996	12.75	1.364	195
Hydrograph	S120	2.00	2124	12.33	1.224	131
Combined	C120	4.68	3406	12.42	1.288	322
Combined	C105D	19.28	6432	12.42	1.117	1149
Routed	120135	19.28	6435	12.50	1.117	1149
Hydrograph	S125	0.09	181	12.08	1.497	7
Routed	12535I	0.09	158	12.17	1.497	7
Hydrograph	S150	0.77	854	12.33	1.699	70
Hydrograph	D150	0.77	85	12.33	0.170	7
Routed	150130	0.77	81	12.50	0.170	7
Hydrograph	S130	0.31	460	12.17	1.402	23
Combined	C130	0.31	493	12.17	1.832	30
Hydrograph	D130	0.31	345	12.17	1.282	21
Routed	13035I	0.31	341	12.17	1.282	21
Combined	C135I	0.40	494	12.17	1.320	28
Routed	35I135	0.40	353	12.75	1.320	28
Hydrograph	S135	0.88	1020	12.25	1.056	50
Combined	C135L	1.28	1016	12.25	1.126	77
Combined	C135	20.56	7029	12.50	1.105	1212
Routed	135145	20.56	6267	12.83	1.104	1211
Hydrograph	S140	1.37	2061	12.17	1.193	87
Routed	140145	1.37	1664	12.42	1.193	87
Hydrograph	D1302	0.31	133	12.17	0.495	8
Routed	130145	0.31	69	13.75	0.495	8
Hydrograph	S145	1.76	1957	12.25	1.029	96
Combined	C145L	2.07	1951	12.25	0.944	104
Combined	C145	23.69	6908	12.83	1.083	1368
Routed	145155	23.69	6907	12.83	1.083	1368
Routed	150155	0.77	522	13.58	1.529	63
Routed	130155	0.31	3	15.92	0.055	1
Hydrograph	S155	1.83	1862	12.33	1.178	115
Combined	C155L	2.61	1853	12.33	1.274	177
Combined	C155	26.30	7552	12.83	1.081	1516

Rock Fragments Uncertainty Analysis - Summary of Results

TYPE	MODELID	AREA	Q100	TIMEPK100	VOL100	VOL100AF
		(sq.mi.)	(cfs)	(hrs)	(in)	(ac-ft)
Routed	155160	26.30	7522	12.92	1.081	1516
Hydrograph	S160	1.14	1342	12.17	1.010	62
Combined	C160	27.44	7563	12.92	1.069	1564
Routed	160170	27.44	7416	13.08	1.068	1563
Hydrograph	S165	0.62	897	12.17	1.337	44
Routed	165170	0.62	701	12.58	1.337	44
Hydrograph	S170	1.46	1802	12.17	1.075	84
Combined	C170	2.08	1951	12.25	1.139	126
Routed	170R	2.08	1874	12.42	1.139	126
Combined	C170R	29.52	7957	13.00	1.058	1665
Routed	170180	29.52	7846	13.25	1.057	1665
Hydrograph	S175	1.80	1318	12.50	1.173	113
Routed	175R	1.80	1224	12.67	1.173	113
Hydrograph	S180	1.44	1111	12.50	1.215	94
Routed	180R	1.44	1037	12.58	1.215	94
Combined	C180RI	3.24	2216	12.67	1.176	204
Routed	RI180R	3.24	2132	12.75	1.176	204
Combined	C180R	32.76	9031	13.08	1.048	1832
Routed	180185	32.76	9009	13.17	1.048	1831
Hydrograph	S185	2.42	1724	12.50	1.170	151
Routed	185R	2.42	1477	12.92	1.170	151
Combined	C185R	35.19	10037	13.08	1.041	1954
Routed	185190	35.19	10023	13.17	1.041	1954
Hydrograph	S190	4.05	2590	12.58	1.027	222
Combined	C190	39.24	10861	13.08	1.017	2129
Routed	190195	39.24	10752	13.25	1.017	2128
Hydrograph	S195	1.81	1039	12.67	1.041	100
Combined	C195	41.05	11126	13.25	1.007	2205
Hydrograph	S400	1.54	1188	12.50	1.322	109
Hydrograph	D400	1.54	594	12.50	0.661	54
Hydrograph	S410	0.64	561	12.42	1.298	44
Combined	C410	2.18	1107	12.50	0.837	97
Hydrograph	D410	2.18	996	12.50	0.753	88
Routed	410415	2.18	774	12.92	0.753	88
Hydrograph	S415	0.45	624	12.17	1.032	25
Combined	C415	2.63	788	12.92	0.793	111
Routed	415420	2.63	687	13.75	0.793	111
Hydrograph	S420	1.77	1740	12.33	1.043	98
Combined	C420	4.40	1714	12.33	0.881	207
Combined	C40010	1.54	705	12.50	0.780	64
Routed	400430	1.54	661	12.75	0.780	64
Hydrograph	S430	0.80	1090	12.17	1.109	47
Combined	C430	2.34	1085	12.17	0.881	110
Routed	430440	2.34	995	12.50	0.881	110
Hydrograph	S440	1.07	1205	12.25	1.040	59
Combined	C440	3.41	1715	12.42	0.919	167
Routed	440450	3.41	1485	12.67	0.919	167
Hydrograph	S450	2.52	1624	12.58	1.058	142
Hydrograph	S435	0.39	656	12.08	1.107	23
Routed	435450	0.39	378	12.83	1.107	23

Rock Fragments Uncertainty Analysis - Summary of Results

TYPE	MODELID	AREA	Q100	TIMEPK100	VOL100	VOL100AF
		(sq.mi.)	(cfs)	(hrs)	(in)	(ac-ft)
Combined	C450	6.32	3346	12.67	0.970	327
Combined	ALL400	9.18	4423	12.67	1.080	529
Hydrograph	S500	3.64	2614	12.75	1.722	334
Routed	500510	3.64	2438	13.08	1.722	334
Hydrograph	S510	1.84	2099	12.25	1.074	105
Combined	C510	5.48	2534	13.00	1.489	435
Hydrograph	D510	5.48	887	13.00	0.521	152
Routed	510520	5.48	780	13.92	0.521	152
Hydrograph	S520	1.48	1288	12.42	1.091	86
Combined	C520	6.96	1260	12.42	0.634	235
Hydrograph	S530	2.23	1697	12.50	1.074	127
Routed	510530	2.18	60	13.83	0.084	10
Combined	C530	7.70	1697	12.50	0.334	137
Combined	ALL500	9.19	2900	12.42	0.751	368
Hydrograph	S700	5.24	3186	12.67	1.139	318
Hydrograph	S720	4.63	2742	12.67	1.144	282
Hydrograph	S740	1.13	1506	12.25	1.264	76
Combined	ALL700	11.00	6188	12.67	1.126	661
Hydrograph	S900	1.03	1012	12.50	1.809	100
Routed	900910	1.03	854	13.00	1.809	100
Hydrograph	S910	0.98	1512	12.17	1.151	60
Combined	C910	2.02	1581	12.17	1.471	158
Routed	910915	2.02	1300	12.33	1.471	158
Hydrograph	S915	1.13	1226	12.42	1.461	88
Combined	C915	3.14	2478	12.33	1.451	243
Routed	915920	3.14	1831	12.92	1.451	243
Hydrograph	S920	3.29	2794	12.50	1.210	212
Combined	C920	6.43	3603	12.67	1.311	450

FCDMC
Drainage Design Management System
SOILS
Project Reference: A4_RF24

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S100	64522	0.015	0.20	0.04	-	50
	64522	0.020	0.30	0.04	-	50
	64522	0.036	0.50	0.04	-	50
	64522	0.043	0.60	0.04	-	50
	64522	0.263	3.80	0.04	-	50
	64553	0.001	0.00	0.02	-	50
	64553	2.237	32.00	0.02	-	50
	64553	0.003	0.00	0.02	-	50
	64553	0.004	0.10	0.02	-	50
	64553	0.005	0.10	0.02	-	50
	64575	0.024	0.30	0.23	-	50
	64576	0.005	0.10	0.23	-	50
	64576	0.007	0.10	0.23	-	50
	64576	0.012	0.20	0.23	-	50
	64576	0.018	0.30	0.23	-	50
	64576	0.023	0.30	0.23	-	50
	64576	0.045	0.60	0.23	-	50
	64576	0.206	2.90	0.23	-	50
	64577	0.001	0.00	0.05	-	50
	64577	0.002	0.00	0.05	-	50
	64577	0.057	0.80	0.05	-	50
	64580	0.079	1.10	0.08	-	50
	645112	0.033	0.50	0.39	-	50
	645112	0.056	0.80	0.39	-	50
	645112	0.428	6.10	0.39	-	50
	645112	1.226	17.50	0.39	-	50
	645112	1.838	26.30	0.39	-	50
	645113	0.074	1.10	0.39	-	50
	645113	0.075	1.10	0.39	-	50
	645113	0.151	2.20	0.39	-	50
	645119	0.006	0.10	0.14	-	50

* Non default value

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S102	64553	0.032	1.00	0.02	-	50
	64553	0.124	3.80	0.02	-	50
	64553	0.721	22.30	0.02	-	50
	645112	0.934	28.90	0.39	-	50
	645113	0.041	1.30	0.39	-	50
	645113	0.075	2.30	0.39	-	50
	645113	0.192	5.90	0.39	-	50
	645113	0.309	9.60	0.39	-	50
	645113	0.807	25.00	0.39	-	50
	645119	0.001	0.00	0.14	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S105	6453	0.070	1.60	0.58	-	50
	64522	0.006	0.10	0.04	-	50
	64529	0.040	0.90	0.34	-	50
	64552	0.024	0.50	0.04	20.00	50
	64553	0.056	1.30	0.02	-	50
	64553	0.242	5.50	0.02	-	50
	64555	0.120	2.70	0.27	-	50
	64575	0.097	2.20	0.23	-	50
	64575	0.852	19.50	0.23	-	50
	64576	0.030	0.70	0.23	-	50
	64576	0.030	0.70	0.23	-	50
	64576	0.044	1.00	0.23	-	50
	64576	0.063	1.40	0.23	-	50
	64576	0.075	1.70	0.23	-	50
	64577	0.011	0.20	0.05	-	50
	64577	0.036	0.80	0.05	-	50
	64577	0.084	1.90	0.05	-	50
	64577	0.099	2.30	0.05	-	50
	64598	0.086	2.00	0.37	-	50
	645113	0.029	0.70	0.39	-	50
	645113	0.053	1.20	0.39	-	50
	645113	0.061	1.40	0.39	-	50
	645113	0.069	1.60	0.39	-	50
	645113	0.090	2.10	0.39	-	50
	645113	0.145	3.30	0.39	-	50
	645113	0.200	4.60	0.39	-	50
	645113	0.425	9.70	0.39	-	50
	645124	1.233	28.20	0.39	-	50
S110	64548	0.036	8.30	0.06	-	50
	64549	0.041	9.60	0.06	-	50
	645100	0.242	56.30	0.07	20.00	50
	645110	0.111	25.90	0.13	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S115	6453	0.499	22.20	0.58	-	50
	64545	0.001	0.00	0.03	-	50
	64548	0.476	21.20	0.06	-	50
	64549	0.001	0.00	0.06	-	50
	64549	0.060	2.60	0.06	-	50
	64549	0.084	3.70	0.06	-	50
	64598	0.269	12.00	0.37	-	50
	645100	0.010	0.40	0.07	20.00	50
	645100	0.031	1.40	0.07	20.00	50
	645100	0.425	18.90	0.07	20.00	50
	645110	0.046	2.00	0.13	-	50
	645113	0.025	1.10	0.39	-	50
	645113	0.088	3.90	0.39	-	50
	645115	0.039	1.70	0.39	-	50
	645124	0.195	8.70	0.39	-	50
S120	6453	0.001	0.10	0.58	-	50
	6453	0.010	0.50	0.58	-	50
	64529	0.109	5.40	0.34	-	50
	64545	0.203	10.10	0.03	-	50
	64552	0.018	0.90	0.04	20.00	50
	64598	0.458	22.90	0.37	-	50
	645100	0.003	0.20	0.07	20.00	50
	645100	0.006	0.30	0.07	20.00	50
	645100	0.014	0.70	0.07	20.00	50
	645100	0.224	11.20	0.07	20.00	50
	645110	0.183	9.10	0.13	-	50
	645113	0.235	11.70	0.39	-	50
	645115	0.001	0.10	0.39	-	50
	645115	0.453	22.60	0.39	-	50
	645123	0.013	0.60	0.37	-	50
	645123	0.016	0.80	0.37	-	50
	645123	0.055	2.70	0.37	-	50
	645124	0.001	0.10	0.39	-	50
S125	64529	0.039	41.70	0.34	-	50
	645100	0.045	48.80	0.07	20.00	50
	645115	0.009	9.60	0.39	-	50

* Non default value

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S130	64529	0.197	63.30	0.34	-	50
	645100	0.111	35.70	0.07	20.00	50
	645115	0.003	1.00	0.39	-	50
S135	6453	0.015	1.70	0.58	-	50
	64529	0.004	0.50	0.34	-	50
	64529	0.008	0.90	0.34	-	50
	64552	0.006	0.70	0.04	20.00	50
	64598	0.184	20.90	0.37	-	50
	645100	0.004	0.50	0.07	20.00	50
	645110	0.006	0.70	0.13	-	50
	645110	0.077	8.70	0.13	-	50
	645113	0.007	0.80	0.39	-	50
	645113	0.376	42.80	0.39	-	50
	645115	0.182	20.70	0.39	-	50
	645124	0.010	1.10	0.39	-	50
S140	64552	0.004	0.30	0.04	20.00	50
	64552	0.016	1.20	0.04	20.00	50
	64553	0.050	3.60	0.02	-	50
	64553	0.083	6.10	0.02	-	50
	64553	0.093	6.80	0.02	-	50
	64571	0.007	0.50	0.36	-	50
	64577	0.014	1.00	0.05	-	50
	64577	0.015	1.10	0.05	-	50
	645113	1.091	79.50	0.39	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S145	6453	0.149	8.50	0.58	-	50
	64529	0.024	1.40	0.34	-	50
	64552	0.011	0.60	0.04	20.00	50
	64553	0.002	0.10	0.02	-	50
	64553	0.006	0.40	0.02	-	50
	64553	0.010	0.60	0.02	-	50
	64555	0.012	0.70	0.27	-	50
	64555	0.030	1.70	0.27	-	50
	64577	0.012	0.70	0.05	-	50
	64577	0.022	1.30	0.05	-	50
	645100	0.013	0.80	0.07	20.00	50
	645110	0.011	0.60	0.13	-	50
	645112	0.076	4.30	0.39	-	50
	645112	0.320	18.20	0.39	-	50
	645113	0.003	0.20	0.39	-	50
	645113	0.090	5.10	0.39	-	50
	645113	0.180	10.30	0.39	-	50
	645115	0.409	23.30	0.39	-	50
	645124	0.376	21.40	0.39	-	50
S150	64514	0.029	3.80	1.04	-	50
	64529	0.066	8.50	0.34	-	50
	64547	0.002	0.30	0.11	-	50
	64549	0.161	20.80	0.06	-	50
	645100	0.513	66.20	0.07	20.00	50
	645110	0.003	0.40	0.13	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S155	6453	0.014	0.80	0.58	-	50
	64514	0.004	0.20	1.04	-	50
	64529	0.053	2.90	0.34	-	50
	64547	0.026	1.40	0.11	-	50
	64552	0.024	1.30	0.04	20.00	50
	64552	0.034	1.90	0.04	20.00	50
	64552	0.049	2.60	0.04	20.00	50
	64555	0.010	0.60	0.27	-	50
	64598	0.005	0.30	0.37	-	50
	64598	0.252	13.70	0.37	-	50
	645100	0.019	1.00	0.07	20.00	50
	645100	0.033	1.80	0.07	20.00	50
	645100	0.051	2.80	0.07	20.00	50
	645110	0.316	17.20	0.13	-	50
	645112	0.022	1.20	0.39	-	50
	645112	0.218	11.90	0.39	-	50
	645113	0.022	1.20	0.39	-	50
	645115	0.557	30.40	0.39	-	50
	645123	0.122	6.70	0.37	-	50
S160	6453	0.037	3.20	0.58	-	50
	64555	0.065	5.70	0.27	-	50
	64598	0.175	15.30	0.37	-	50
	645112	0.730	63.80	0.39	-	50
	645113	0.123	10.70	0.39	-	50
	645115	0.014	1.20	0.39	-	50
S165	64514	0.012	1.90	1.04	-	50
	64529	0.002	0.40	0.34	-	50
	64547	0.140	22.70	0.11	-	50
	64598	0.002	0.30	0.37	-	50
	645100	0.160	25.90	0.07	20.00	50
	645115	0.001	0.10	0.39	-	50
	645123	0.300	48.70	0.37	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S170	64515	0.453	30.90	0.54	-	50
	64598	0.344	23.50	0.37	-	50
	645106	0.506	34.60	0.18	-	50
	645110	0.048	3.30	0.13	-	50
	645112	0.089	6.10	0.39	-	50
	645123	0.023	1.60	0.37	-	50
S175	64515	0.167	9.30	0.54	-	50
	645100	0.102	5.60	0.07	20.00	50
	645106	0.102	5.70	0.18	-	50
	645107	0.525	29.10	0.18	-	50
	645123	0.906	50.30	0.37	-	50
S180	64515	0.347	24.00	0.54	-	50
	645100	0.221	15.30	0.07	20.00	50
	645107	0.346	24.00	0.18	-	50
	645123	0.530	36.70	0.37	-	50
S185	64515	0.025	1.00	0.54	-	50
	64571	0.768	31.70	0.36	-	50
	645100	0.204	8.40	0.07	20.00	50
	645107	0.167	6.90	0.18	-	50
	645107	0.280	11.60	0.18	-	50
	645123	0.977	40.40	0.37	-	50
S190	6452	0.007	0.20	0.41	-	50
	6453	0.142	3.50	0.58	-	50
	64510	0.228	5.60	0.94	-	50
	64515	1.971	48.60	0.54	-	50
	64553	0.089	2.20	0.02	-	50
	64555	0.071	1.70	0.27	-	50
	64571	0.004	0.10	0.36	-	50
	64571	0.025	0.60	0.36	-	50
	64598	0.014	0.30	0.37	-	50
	64598	0.931	23.00	0.37	-	50
	645107	0.066	1.60	0.18	-	50
	645112	0.174	4.30	0.39	-	50
	645113	0.332	8.20	0.39	-	50

* Non default value

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S195	64510	0.110	6.10	0.94	-	50
	64571	0.091	5.10	0.36	-	50
	64571	0.197	10.90	0.36	-	50
	64577	0.092	5.10	0.05	-	50
	64598	0.001	0.00	0.37	-	50
	64598	1.317	72.80	0.37	-	50
S400	64515	0.001	0.00	0.54	-	50
	64571	0.003	0.20	0.36	-	50
	645100	0.527	34.10	0.07	20.00	50
	645107	0.148	9.60	0.18	-	50
	645123	0.866	56.10	0.37	-	50
S410	64515	0.342	53.50	0.54 *	-	50
	645100	0.184	28.70	0.07	20.00	50
	645107	0.075	11.70	0.18	-	50
	645123	0.039	6.10	0.37	-	50
S415	64515	0.338	75.00	0.54	-	50
	64571	0.112	25.00	0.36	-	50
S420	6452	0.038	2.10	0.41	-	50
	64515	0.263	14.90	0.54	-	50
	64520	0.012	0.70	0.19	-	50
	64520	0.050	2.80	0.19	-	50
	64520	0.204	11.50	0.19	-	50
	64555	0.185	10.50	0.27	-	50
	64571	1.016	57.50	0.36	-	50
S430	64571	0.554	69.70	0.36	-	50
	645107	0.241	30.30	0.18	-	50
S435	64571	0.313	79.70	0.36	-	50
	645107	0.080	20.30	0.18	-	50
S440	64520	0.015	1.40	0.19	-	50
	64555	0.007	0.60	0.27	-	50
	64571	1.047	98.00	0.36	-	50

* Non default value

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S450	6452	0.012	0.50	0.41	-	50
	6452	0.239	9.50	0.41	-	50
	64515	0.133	5.30	0.54	-	50
	64520	0.012	0.50	0.19	-	50
	64520	0.052	2.00	0.19	-	50
	64555	0.339	13.40	0.27	-	50
	64571	0.206	8.20	0.36	-	50
	64571	1.321	52.40	0.36	-	50
	64598	0.210	8.30	0.37	-	50
S500	64515	0.082	2.20	0.54	-	50
	64569	0.001	0.00	0.63	-	50
	64592	0.070	1.90	0.93	-	50
	64598	0.142	3.90	0.37	-	50
	645100	0.002	0.10	0.07	20.00	50
	645100	3.341	91.80	0.07	20.00	50
S510	64515	0.503	27.40	0.54	-	50
	64569	0.277	15.00	0.63	-	50
	64592	0.281	15.30	0.93	-	50
	645107	0.658	35.70	0.18	-	50
	645123	0.122	6.60	0.37	-	50
S520	6452	0.151	10.20	0.41	-	50
	64515	0.105	7.10	0.54	-	50
	64520	0.076	5.10	0.19	-	50
	64520	0.147	9.90	0.19	-	50
	64555	0.010	0.70	0.27	-	50
	64571	0.613	41.40	0.36	-	50
	645102	0.121	8.20	0.40	-	50
	645107	0.259	17.50	0.18	-	50
S530	6452	0.178	8.00	0.41	-	50
	64515	0.232	10.40	0.54	-	50
	64520	0.087	3.90	0.19	-	50
	64520	0.242	10.90	0.19	-	50
	64555	0.061	2.70	0.27	-	50
	64571	1.425	64.00	0.36	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S700	64522	0.003	0.10	0.04	-	50
	64522	0.360	6.90	0.04	-	50
	64529	0.541	10.30	0.34	-	50
	64544	0.001	0.00	0.03	-	50
	64545	0.011	0.20	0.03	-	50
	64546	0.007	0.10	0.03	-	50
	64546	0.097	1.80	0.03	-	50
	64553	0.001	0.00	0.02	-	50
	64553	0.013	0.20	0.02	-	50
	64560	0.015	0.30	0.26	-	50
	64570	0.003	0.10	0.36	-	50
	64570	1.585	30.30	0.36	-	50
	64574	0.350	6.70	0.08	-	50
	64575	0.006	0.10	0.23	-	50
	64575	0.692	13.20	0.23	-	50
	64576	0.009	0.20	0.23	-	50
	64576	0.028	0.50	0.23	-	50
	64580	0.205	3.90	0.08	-	50
	64598	0.035	0.70	0.37	-	50
	64598	0.298	5.70	0.37	-	50
	64598	0.338	6.40	0.37	-	50
	645110	0.005	0.10	0.13	-	50
	645110	0.016	0.30	0.13	-	50
	645110	0.026	0.50	0.13	-	50
	645110	0.031	0.60	0.13	-	50
	645115	0.206	3.90	0.39	-	50
	645116	0.176	3.40	0.23	-	50
	645119	0.075	1.40	0.14	-	50
	645125	0.108	2.10	0.43	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S720	6451	0.070	1.50	0.41	-	50
	6451	0.085	1.80	0.41	-	50
	6454	0.133	2.90	0.58	-	50
	64553	0.013	0.30	0.02	-	50
	64553	0.202	4.40	0.02	-	50
	64570	0.030	0.60	0.36	-	50
	64571	0.883	19.10	0.36	-	50
	64574	0.035	0.80	0.08	-	50
	64575	0.039	0.80	0.23	-	50
	64575	0.149	3.20	0.23	-	50
	64575	0.163	3.50	0.23	-	50
	64576	0.004	0.10	0.23	-	50
	64576	0.038	0.80	0.23	-	50
	64576	0.084	1.80	0.23	-	50
	645112	0.327	7.10	0.39	-	50
	645113	0.926	20.00	0.39	-	50
	645119	0.001	0.00	0.14	-	50
	645119	0.162	3.50	0.14	-	50
	645119	1.282	27.70	0.14	-	50
S740	6452	0.012	1.10	0.41	-	50
	64511	0.023	2.00	0.94	-	50
	64520	1.091	96.40	0.19	-	50
	645102	0.006	0.50	0.40	-	50
S900	64548	0.140	13.50	0.06	-	50
	64549	0.238	23.00	0.06	-	50
	645100	0.002	0.20	0.07	20.00	50
	645100	0.632	61.10	0.07	20.00	50
	645115	0.002	0.20	0.39	-	50
	645115	0.021	2.10	0.39	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S910	6453	0.008	0.80	0.58	-	50
	6453	0.014	1.50	0.58	-	50
	6453	0.134	13.70	0.58	-	50
	64548	0.033	3.30	0.06	-	50
	64548	0.198	20.10	0.06	-	50
	64549	0.013	1.30	0.06	-	50
	645113	0.511	52.00	0.39	-	50
	645115	0.006	0.60	0.39	-	50
	645115	0.013	1.30	0.39	-	50
	645124	0.053	5.40	0.39	-	50
S915	6453	0.000	0.00	0.58	-	50
	64529	0.000	0.00	0.34	-	50
	64529	0.000	0.00	0.34	-	50
	64529	0.142	12.60	0.34	-	50
	64529	0.155	13.70	0.34	-	50
	64548	0.000	0.00	0.06	-	50
	64548	0.002	0.20	0.06	-	50
	64548	0.023	2.00	0.06	-	50
	64548	0.268	23.80	0.06	-	50
	64548	0.333	29.60	0.06	-	50
	64549	0.004	0.40	0.06	-	50
	64549	0.042	3.70	0.06	-	50
	64550	0.001	0.10	0.26	-	50
	645100	0.021	1.80	0.07	20.00	50
	645100	0.068	6.00	0.07	20.00	50
	645113	0.010	0.90	0.39	-	50
	645115	0.001	0.10	0.39	-	50
	645115	0.022	2.00	0.39	-	50
	645115	0.034	3.00	0.39	-	50

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S920	6452	0.008	0.20	0.41	-	50
	6452	0.013	0.40	0.41	-	50
	6453	0.019	0.60	0.58	-	50
	6453	0.027	0.80	0.58	-	50
	6453	0.036	1.10	0.58	-	50
	64522	0.274	8.30	0.04	-	50
	64529	0.004	0.10	0.34	-	50
	64548	0.002	0.10	0.06	-	50
	64548	0.019	0.60	0.06	-	50
	64550	0.002	0.10	0.26	-	50
	64550	0.030	0.90	0.26	-	50
	64550	0.033	1.00	0.26	-	50
	64550	0.036	1.10	0.26	-	50
	64550	0.059	1.80	0.26	-	50
	64550	0.091	2.80	0.26	-	50
	64550	0.365	11.10	0.26	-	50
	64553	0.030	0.90	0.02	-	50
	64553	0.050	1.50	0.02	-	50
	64575	0.030	0.90	0.23	-	50
	64575	0.048	1.50	0.23	-	50
	64575	0.050	1.50	0.23	-	50
	64575	0.053	1.60	0.23	-	50
	64575	0.053	1.60	0.23	-	50
	64575	0.065	2.00	0.23	-	50
	64575	0.412	12.50	0.23	-	50
	64576	0.014	0.40	0.23	-	50
	64576	0.018	0.50	0.23	-	50
	64576	0.025	0.80	0.23	-	50
	64576	0.108	3.30	0.23	-	50
	64576	0.134	4.10	0.23	-	50
	64577	0.008	0.30	0.05	-	50
	64577	0.042	1.30	0.05	-	50
	64577	0.044	1.30	0.05	-	50
	64577	0.051	1.50	0.05	-	50
	64577	0.068	2.10	0.05	-	50
	64577	0.185	5.60	0.05	-	50
	645113	0.022	0.70	0.39	-	50
	645113	0.047	1.40	0.39	-	50
	645113	0.065	2.00	0.39	-	50

* Non default value

Area ID	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
S920	645113	0.324	9.90	0.39	-	50
	645124	0.329	10.00	0.39	-	50

Rock Fragments Uncertainty Analysis - Subbasin Parameter Summary

Area ID	Area	Length	Slope	S-Graph	Lca	Lag	Velocity	Kn	IA	DTHETA	PSIF	XKSAT	RTIMP
	(sq.mi.)	(mi)	(ft/mi)		(im)	(min)	(ft/s)		(in)		(in)	(in/hr)	(%)
S100	6.994	6.15	33.2	DESERT/RANGELAND	2.48	52	623.2	0.025	0.35	0.38	6.40	0.16	
S102	3.234	3.46	32.4	DESERT/RANGELAND	1.26	33	561.4	0.025	0.35	0.38	5.60	0.22	
S105	4.370	5.07	34.5	DESERT/RANGELAND	1.81	43	627.4	0.025	0.35	0.35	4.90	0.29	
S110	0.430	1.72	430.3	MOUNTAIN	0.82	26	349.7	0.050	0.25	0.32	7.60	0.10	6
S115	2.247	5.42	188.2	DESERT/RANGELAND	2.88	47	610.4	0.031	0.32	0.39	5.70	0.20	2
S120	2.004	3.47	265.5	DESERT/RANGELAND	2.04	33	563.3	0.031	0.33	0.37	5.20	0.25	1
S125	0.093	0.75	783.4	MOUNTAIN	0.43	13	299.4	0.050	0.25	0.39	5.80	0.19	5
S135	0.879	2.87	92.9	DESERT/RANGELAND	1.36	26	593.9	0.025	0.35	0.35	4.30	0.41	
S130	0.310	1.26	360.3	MOUNTAIN	0.63	20	336.1	0.046	0.21	0.38	5.40	0.23	4
S140	1.373	1.47	40.3	DESERT/RANGELAND	0.94	20	384.0	0.025	0.35	0.36	5.10	0.26	
S145	1.756	3.24	75.4	DESERT/RANGELAND	1.15	26	654.9	0.025	0.35	0.35	4.20	0.43	
S150	0.774	2.44	404.4	MOUNTAIN	1.39	37	351.7	0.050	0.25	0.33	7.30	0.11	7
S155	1.832	3.65	99.2	DESERT/RANGELAND	2.16	33	584.9	0.025	0.35	0.35	4.80	0.30	1
S160	1.144	2.85	73.9	DESERT/RANGELAND	0.96	23	646.4	0.025	0.35	0.35	4.00	0.47	
S165	0.616	1.59	371.6	MOUNTAIN	0.83	20	424.2	0.038	0.30	0.38	5.40	0.23	3
S170	1.464	2.60	85.2	DESERT/RANGELAND	1.15	23	584.5	0.025	0.35	0.35	4.40	0.38	
S175	1.802	4.35	173.6	MOUNTAIN	1.87	48	479.2	0.040	0.29	0.35	4.65	0.32	1
S180	1.443	4.66	215.0	MOUNTAIN	2.04	45	544.2	0.037	0.25	0.35	4.65	0.32	2
S185	2.421	4.99	254.4	MOUNTAIN	1.99	49	534.4	0.041	0.16	0.35	4.60	0.34	1
S190	4.054	5.88	39.1	DESERT/RANGELAND	2.47	50	626.2	0.025	0.35	0.35	3.81	0.44	
S195	1.808	5.15	45.2	DESERT/RANGELAND	2.64	57	481.7	0.030	0.33	0.35	4.25	0.42	
S400	1.544	3.30	249.2	MOUNTAIN	1.75	49	354.8	0.050	0.25	0.37	5.30	0.24	3
S410	0.639	3.28	204.6	MOUNTAIN	1.70	40	430.4	0.040	0.15	0.35	4.70	0.31	3
S415	0.451	2.20	84.2	DESERT/RANGELAND	0.84	20	592.6	0.025	0.35	0.35	3.64	0.49	
S420	1.767	3.43	68.5	DESERT/RANGELAND	1.59	31	589.6	0.025	0.35	0.35	4.30	0.41	
S430	0.795	2.16	74.5	DESERT/RANGELAND	1.03	22	530.3	0.025	0.35	0.35	4.55	0.35	
S435	0.393	1.57	72.1	DESERT/RANGELAND	0.61	16	527.3	0.025	0.35	0.35	4.45	0.37	
S440	1.068	2.51	67.7	DESERT/RANGELAND	1.39	26	510.2	0.025	0.35	0.35	4.20	0.43	
S450	2.521	3.80	59.2	DESERT/RANGELAND	1.90	51	396.5	0.036	0.23	0.35	4.25	0.42	
S500	3.638	4.48	359.1	MOUNTAIN	3.39	66	357.5	0.050	0.25	0.32	7.60	0.10	9
S510	1.840	3.49	107.1	DESERT/RANGELAND	1.32	27	696.6	0.025	0.35	0.35	3.95	0.40	
S520	1.481	3.91	61.9	DESERT/RANGELAND	2.21	37	553.6	0.025	0.35	0.35	4.50	0.36	
S530	2.226	3.43	66.5	DESERT/RANGELAND	1.40	42	427.0	0.036	0.20	0.35	4.30	0.41	
S700	5.240	6.91	47.9	DESERT/RANGELAND	3.20	58	626.5	0.026	0.34	0.36	5.00	0.28	
S720	4.626	6.41	48.1	DESERT/RANGELAND	2.78	60	566.2	0.029	0.33	0.36	5.00	0.28	

Rock Fragments Uncertainty Analysis - Subbasin Parameter Summary

Area ID	Area	Length	Slope	S-Graph	Lca	Lag	Velocity	Kn	IA	DTHETA	PSIF	XKSAT	RTIMP
	(sq.mi.)	(mi)	(ft/mi)		(im)	(min)	(ft/s)		(in)		(in)	(in/hr)	(%)
S740	1.132	1.48	73.5	DESERT/RANGELAND	0.66	25	310.2	0.040	0.15	0.37	5.30	0.24	
S900	1.035	3.21	420.5	MOUNTAIN	1.94	46	370.1	0.050	0.25	0.30	8.00	0.08	6
S910	0.983	2.07	105.2	DESERT/RANGELAND	0.82	18	601.8	0.025	0.35	0.35	4.70	0.31	
S915	1.126	4.08	127.5	DESERT/RANGELAND	1.54	37	584.1	0.032	0.25	0.36	6.80	0.13	1
S920	3.291	3.63	40.2	DESERT/RANGELAND	2.65	42	454.7	0.025	0.35	0.38	5.60	0.22	

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 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUN  1998               *
 *           VERSION 4.1                *
 *                                      *
 *  RUN DATE   16JUN06  TIME  09:40:51  *
 *                                      *
 ****************************************
```

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

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

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

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

1 HEC-1 INPUT PAGE 1

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

  1           ID   SUN VALLEY AREA DRAINAGE MASTER PLAN (SVADMP) - FCD 2004C049
  2           ID    JE FULLER / HYDROLOGY & GEOMORPHOLOGY, INC.
  3           ID    FILENAME: A4_RF24.DAT
  4           ID    DATE: JUNE 16, 2006
  5           ID
  6           ID    100-YEAR 24-HOUR MODEL
  7           ID    EXISTING CONDITIONS - XKSAT ADJUSTED FOR ROCK FRAGMENTS
  8           ID    AREA 4 WATERSHED AREA = 90.5 SQ. MILES
  9           ID           MODELED AREA = 76.8 SQ. MILES
 10           ID
 11           ID    GREEN-AMPT LOSS METHOD
 12           ID    S-GRAPH UNIT HYDROGRAPHS
 13           ID     - MOUNTAIN
 14           ID     - DESERT/RANGELAND
 15           ID    NORMAL-DEPTH CHANNEL ROUTING
 16           ID    LAND USE DATA FROM EXAMINATION OF SLOPE FROM 10-FT DTM TO DISTINGUISH
 17           ID     - UNDEVELOPED DESERT RANGELAND (NDR) - SLOPES < 5 %
 18           ID     - HILLSLOPES, SONORAN DESERT (NHS) - SLOPES 5 - 10 %
 19           ID     - MOUNTAIN TERRAIN (NMT) - SLOPES > 10 %
 20           ID   SOILS DATA FROM FCDMC GIS DATABASE (RECEIVED FROM FCDMC JULY 2005)
 21           ID     - XKSAT FOR UNITS 52, 100, CO, AND RS ADJUSTED TO ACCOUNT FOR
 22           ID       PRESENCE OF ROCK FRAGMENTS IN THE SOIL PER ZHAO (2003).
 23           ID
 24           IT       5  1JAN99    1200    2000
 25           IN      15
 26           IO       5
              *DIAGRAM
              *
 27           JD   4.198  0.1000
 28           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
 29           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
 30           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
 31           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
 32           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
 33           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
 34           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
 35           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
 36           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
 37           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
 38           JD   3.990    10.0
 39           JD   3.780    30.0
 40           JD   3.654    60.0
 41           JD   3.578    90.0
              *

 42           KK    S100   BASIN
 43           BA   6.994
 44           LG    0.35    0.38    6.40    0.16       0
 45           UI     449     455     964    1717    2422    3046    3616    4050    4275    4281
 46           UI    4178    3867    3211    2766    2319    1968    1698    1387    1198     990
 47           UI     848     715     635     476     471     313     309     309     204     110
 48           UI     109     111     110     109     111     109     110     111       0       0
 49           UI       0       0       0       0       0       0       0       0       0       0
 50           KM        Compute runoff from subbasin 100
              *
```

1 HEC-1 INPUT PAGE 2

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

  51          KK    S102   BASIN
  52          BA   3.234
  53          LG    0.35    0.38    5.60    0.22       0
  54          UI     333     657    1539    2292    2943    3178    3083    2643    1985    1523
  55          UI    1179     890     674     542     377     300     232     193      81      82
  56          UI      81      81      83       0       0       0       0       0       0       0
  57          UI       0       0       0       0       0       0       0       0       0       0
  58          UI       0       0       0       0       0       0       0       0       0       0
  59          KM        Compute runoff from subbasin 102
              *

  60          KK    C102 COMBINE
  61          HC       2
  62          KM        Combine total inflow to detention area behind (north) of CAP Canal
              *

  63          KK   RR102 STORAGE
  64          KO
  65          RS       1    STOR      -1
  66          SV          553.00 1148.00 2316.00 2705.00
  67          SQ                  128.00  587.00  600.00
  68          SE  1543.0 1550.00 1552.00 1555.00 1556.00
  69          ST  1556.0  1320.0     3.2     1.5
  70          KM        Route flows through storage area behind CAP Canal
  71          KM        Stage-storage-discharge data from Wagner Wash FDS Hydrology (1991)
              *

  72          KK    D102  DIVERT
  73          DT    CF02     0.0     0.0
  74          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
  75          DQ     0.0    50.0   500.0  5000.0     0.0     0.0     0.0     0.0     0.0     0.0
  76          KM        Divide flow evenly over the two 18-foot wide CAP overchutes
  77          KM        although the inverts are 0.5 feet different in elevation
              *

  78          KK  100105   ROUTE
  79          RS       9    FLOW      -1
  80          RC   0.035   0.055   0.035   11235  0.0045  105.00
  81          RX    0.00  120.00  240.00  250.00  590.00  600.00  720.00  840.00
  82          RY  105.00  102.50  100.00  100.00  100.00  100.00  102.50  105.00
  83          KM        Route outflows from east CAP overchute to Sun Valley Parkway.
  84          KM        Slope = (1550-1500) / 11235
              *

  85          KK    S105   BASIN

  86          BA   4.370
  87          LG    0.35    0.35    4.90    0.29       0
  88          UI     345     380    1112    1723    2334    2867    3143    3344    3176    2865
  89          UI    2374    1903    1555    1291    1018     832     685     564     458     369
  90          UI     288     235     238     126      83      85      84      84      84      84
  91          UI      84       0       0       0       0       0       0       0       0       0
  92          UI       0       0       0       0       0       0       0       0       0       0
  93          KM        Compute runoff from subbasin 105
              *
1                                          HEC-1 INPUT                                          PAGE  3

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

  94          KK    CF02RETRIEVE
  95          DR    CF02
  96          KM        Retrieve flow from west CAP overchute.
              *

  97          KK  102105   ROUTE
  98          RS       6    FLOW      -1
  99          RC   0.045   0.050   0.045    7656  0.0065  104.00
 100          RX    0.00   40.00  120.00  130.00  250.00  260.00  340.00  380.00
 101          RY  104.00  102.00  101.00  100.00  100.00  101.00  102.00  104.00
 102          KM        Route retrieved flow from west overchute to C105.
 103          KM        Slope = (1550 - 1500) / 7656
              *

 104          KK   C105U COMBINE
 105          HC       3  14.598
 106          KM        Combine runoff from S105 with routed flow from 100105 and 102105
 107          KM        (CAP overchute flows). This is the total flow in Wagner Wash upstream
 108          KM        of Sun Valley Parkway.
              *

 109          KK    S110   BASIN
 110          BA   0.430
 111          LG    0.25    0.32    7.60    0.10       6
 112          UI      56     166     335     449     587     358     291     241     188     140
 113          UI     121      86      68      56      43      32      27      22      11      11
 114          UI      10      11      11       0       0       0       0       0       0       0
 115          UI       0       0       0       0       0       0       0       0       0       0
 116          UI       0       0       0       0       0       0       0       0       0       0
 117          KM        Compute runoff from subbasin 110
              *
```

```
118          KK  11015I   ROUTE
119          RS       2    FLOW      -1
120          RC   0.045   0.035   0.045    3783  0.0267  102.00
121          RX    0.00   50.00  100.00  110.00  120.00  130.00  180.00  230.00
122          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
123          KM        Route flow from C105 through subbasin 110 to C115.
124          KM        Slope = (1847-1746) / 3783
             *

125          KK    D15I  DIVERT
126          DT    CF5I     0.0     0.0
127          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
128          DQ     0.0    20.0   200.0  2000.0     0.0     0.0     0.0     0.0     0.0     0.0
129          KM        Divert flows to the left into S120
             *

130          KK  15I15R   ROUTE
131          RS       8    FLOW      -1
132          RC   0.035   0.030   0.035   14128  0.0151  105.00
133          RX    0.00   25.00   58.00   65.00   85.00   92.00  125.00  150.00
134          RY  105.00  102.50  102.00  100.00  100.00  102.00  102.50  105.00
135          KM        Route flows from split through S115 to C115.
```



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

136          KM        Slope = (1746-1532) / 14128
             *

137          KK    S115   BASIN
138          BA   2.247
139          LG    0.32    0.39    5.70    0.20       2
140          UI     160     163     434     709     984    1212    1401    1530    1539    1465
141          UI    1351    1100     918     773     632     528     444     351     304     252
142          UI     203     170     140     110     110      85      39      39      40      39
143          UI      39      39      40      39       0       0       0       0       0       0
144          UI       0       0       0       0       0       0       0       0       0       0
145          KM        Compute runoff from subbasin 115
             *

146          KK   C115U COMBINE
147          HC       2   2.677
148          KM        Combine runoff from S115 with routed flow.
             *

149          KK    CF5IRETRIEVE
150          DR    CF5I
151          KM        Retrieve diverted flow from D15I
             *

152          KK  15I15L   ROUTE
153          RS       7    FLOW      -1
154          RC   0.045   0.045   0.045   12775  0.0168  104.00
155          RX    0.00   50.00  100.00  130.00  170.00  200.00  250.00  300.00
156          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
157          KM        Route flows from split through S120 to C115.
158          KM        Slope =(1746-1532) / 12775
             *

159          KK   C115D COMBINE
160          HC       2   2.677
161          KM        Combine routed flows from split with remainder of flows in SVP channel
162          KM        just D/S of C115.
             *

163          KK  115120   ROUTE
164          RS       2    FLOW      -1
165          RC   0.030   0.025   0.030    4077  0.0093  105.00
166          RX    0.00   30.00   75.00   80.00  105.00  110.00  155.00  190.00
167          RY  105.00  101.50  101.00  100.00  100.00  101.00  101.50  105.00
168          KM        Route total flows from C115 to C120. Slope =(1532-1494) / 4077
             *

169          KK    S120   BASIN

170          BA   2.004
171          LG    0.33    0.37    5.20    0.25       1
172          UI     206     408     954    1419    1824    1969    1911    1637    1230     944
173          UI     731     551     418     336     234     186     143     120      50      51
174          UI      50      51      51       0       0       0       0       0       0       0
175          UI       0       0       0       0       0       0       0       0       0       0
176          UI       0       0       0       0       0       0       0       0       0       0
```



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

177          KM        Compute runoff from subbasin 120
             *

178          KK    C120 COMBINE
179          HC       2   4.681
180          KM        Combine flows at Wagner Wash at outlet of channel along SVP
             *

181          KK   C105D COMBINE
```

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182          HC       2  19.279
183          KM        Combine flows from C105 and C120 just D/S of Sun Valley Parkway
             *

184          KK  120135   ROUTE
185          RS       1    FLOW      -1
186          RC   0.045   0.035   0.045     951  0.0074  110.00
187          RX    0.00  225.00  450.00  455.00  485.00  490.00  615.00  840.00
188          RY  110.00  105.00  102.00  100.00  100.00  102.00  102.00  110.00
189          KM        Route flows in Wagner Wash from Sun Valley Parkway to C135.
190          KM        Slope = (1494-1487) / 951
             *

191          KK    S125   BASIN
192          BA   0.093
193          LG    0.25    0.39    5.80    0.19       5
194          UI      46     164     204     116      73      46      28      17      12       4
195          UI       5       4       0       0       0       0       0       0       0       0
196          UI       0       0       0       0       0       0       0       0       0       0
197          UI       0       0       0       0       0       0       0       0       0       0
198          UI       0       0       0       0       0       0       0       0       0       0
199          KM        Compute runoff from subbasin 125
             *

200          KK  12535I   ROUTE
201          RS       1    FLOW      -1
202          RC   0.055   0.040   0.055    2207  0.0254  103.00
203          RX    0.00   50.00  100.00  101.00  151.00  152.00  202.00  252.00
204          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
205          KM        Route flows from S125 to intermediate combination point in S135.
206          KM        Slope = (1754-1698) / 2207
             *

207          KK    S150   BASIN
208          BA   0.774
209          LG    0.25    0.33    7.30    0.11       7
210          UI      71     115     270     425     531     672     746     480     406     356
211          UI     312     262     212     181     159     132     106      89      77      65
212          UI      54      47      35      35      35      14      14      13      14      14
213          UI      13      14      14       0       0       0       0       0       0       0
214          UI       0       0       0       0       0       0       0       0       0       0
215          KM        Compute runoff from subbasin 150
             *
```



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

216          KK    D150  DIVERT
217          DT    CF50     0.0     0.0
218          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
219          DQ     0.0    90.0   900.0  9000.0     0.0     0.0     0.0     0.0     0.0     0.0
220          KM        Divert flows continuing west to apex of S150.
221          KM        Continuing flows exit S150 to S130 via small natural channel.
             *

222          KK  150130   ROUTE
223          RS       2    FLOW      -1
224          RC   0.045   0.035   0.045    3758  0.0300  104.00
225          RX    0.00   10.00   60.00   66.00   86.00   92.00  142.00  152.00
226          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
227          KM        Route flow through S130.  Slope = (1840 - 1727) / 3758
             *

228          KK    S130   BASIN
229          BA   0.310
230          LG    0.21    0.38    5.40    0.23       4
231          UI      61     239     399     514     313     240     176     128      94      64
232          UI      49      36      26      19      10      10      10      10       0       0
233          UI       0       0       0       0       0       0       0       0       0       0
234          UI       0       0       0       0       0       0       0       0       0       0
235          UI       0       0       0       0       0       0       0       0       0       0
236          KM        Compute runoff from subbasin 130
             *

237          KK    C130 COMBINE
238          HC       2    0.31
239          KM        Combine runoff from S130 with diverted flow from S150.
240          KM        Adjust drainage area to just that from S130 for JD.
             *

241          KK    D130  DIVERT
242          DT    CF30     0.0     0.0
243          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
244          DQ     0.0    30.0   300.0  3000.0     0.0     0.0     0.0     0.0     0.0     0.0
245          KM        Divert flow to the left into S155
             *

246          KK  13035I   ROUTE
247          RS       1    FLOW      -1
248          RC   0.045   0.035   0.045    1202  0.0241  103.00
249          RX    0.00   50.00  100.00  101.00  151.00  152.00  202.00  252.00
250          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
251          KM        Route continuing flow to intermediate point in S135.
252          KM        Slope = (1727-1698) / 1202
```

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                *
1                                   HEC-1 INPUT                                          PAGE  7

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

 253            KK   C135I COMBINE
 254            HC       2   0.403
 255            KM        Combine routed flow from C130 and S125
                *

 256            KK  35I135   ROUTE
 257            RS       8    FLOW      -1
 258            RC   0.050   0.035   0.050   12580  0.0168  102.00
 259            RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
 260            RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 261            KM        Route combined flows to C135 at Wagner Wash.
 262            KM        Slope = (1698-1487) / 12580
                *

 263            KK    S135   BASIN
 264            BA   0.879
 265            LG    0.35    0.35    4.30    0.41       0
 266            UI     115     362     709     992    1126     989     736     527     370     260
 267            UI     194     128      89      76      28      28      29      28       0       0
 268            UI       0       0       0       0       0       0       0       0       0       0
 269            UI       0       0       0       0       0       0       0       0       0       0
 270            UI       0       0       0       0       0       0       0       0       0       0
 271            KM        Compute runoff from subbasin 135
                *

 272            KK   C135L COMBINE
 273            HC       2   1.282
 274            KM        Combine all piedmont runoff inflow to Wagner Wash at C135
                *

 275            KK    C135 COMBINE
 276            HC       2  20.561
 277            KM        Combine all flows in Wagner Wash at C135
                *

 278            KK  135145   ROUTE
 279            RS       4    FLOW      -1
 280            RC   0.045   0.035   0.045    7938  0.0042  110.00
 281            RX    0.00  300.00  400.00  406.00  506.00  512.00  612.00  912.00
 282            RY  110.00  102.50  102.00  100.00  100.00  102.00  102.50  110.00
 283            KM        Route flow in Wagner Wash to C145.  Slope = (1487-1454) / 7938
                *

 284            KK    S140   BASIN
 285            BA   1.373
 286            LG    0.35    0.36    5.10    0.26       0
 287            UI     260    1034    1801    2168    1890    1235     809     517     339     211
 288            UI     157      56      55      57       0       0       0       0       0       0
 289            UI       0       0       0       0       0       0       0       0       0       0
 290            UI       0       0       0       0       0       0       0       0       0       0
 291            UI       0       0       0       0       0       0       0       0       0       0
 292            KM        Compute runoff from subbasin 140
                *
1                                   HEC-1 INPUT                                          PAGE  8

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

 293            KK  140145   ROUTE
 294            RS       3    FLOW      -1
 295            RC   0.040   0.050   0.040    3656  0.0074  103.00
 296            RX    0.00   70.00  140.00  150.00  250.00  260.00  330.00  400.00
 297            RY  102.00  101.00  100.00  100.00  100.00  100.00  101.00  102.00
 298            KM        Route runoff from S140 to C145 at Wagner Wash.
 299            KM        Slope = (1481-1454) / 3656
                *

 300            KK    CF30RETRIEVE
 301            DR    CF30
 302            KM        Retrieve diverted flow from C130
                *

 303            KK   D1302  DIVERT
 304            DT   CF302     0.0     0.0
 305            DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 306            DQ     0.0    10.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0
 307            KM        Divert flow continuing through S155 from flow entering S145
                *

 308            KK  130145   ROUTE
 309            RS      15    FLOW      -1
 310            RC   0.045   0.045   0.045   18285  0.0149  102.00
 311            RX    0.00   50.00  100.00  103.00  113.00  116.00  166.00  216.00
 312            RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 313            KM        Route flow to Wagner Wash through S145 to C145.
 314            KM        Slope = (1727 - 1454) / 18285
                *

 315            KK    S145   BASIN
```

```
 316          BA   1.756
 317          LG    0.35     0.35     4.20     0.43        0
 318          UI     226      672     1369     1903     2167     2003     1508     1085      777      544
 319          UI     399      279      198      157       80       55       56       54       55        0
 320          UI       0        0        0        0        0        0        0        0        0        0
 321          UI       0        0        0        0        0        0        0        0        0        0
 322          UI       0        0        0        0        0        0        0        0        0        0
 323          KM        Compute runoff from subbasin 145
              *

 324          KK   C145L COMBINE
 325          HC       2   2.066
 326          KM        Combine runoff from S145 with routed flows C130.
 327          KM        Adjust BA for JD (S130 + S145)
              *

 328          KK    C145 COMBINE
 329          HC       3   23.69
 330          KM        Combine all flows in Wagner Wash at C145
              *
1                                          HEC-1 INPUT                                                PAGE  9

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

 331          KK  145155   ROUTE
 332          RS       1    FLOW      -1
 333          RC   0.045   0.035   0.055     631  0.0032  110.00
 334          RX    0.00  150.00  300.00  309.00  379.00  388.00  538.00  838.00
 335          RY  110.00  106.50  103.00  100.00  100.00  103.00  106.50  110.00
 336          KM        Route flows in Wagner Wash form C145 to C155. Slope = (1454-1452)/631
              *

 337          KK    CF50RETRIEVE
 338          DR    CF50
 339          KM        Retrieve diverted flow from S150
              *

 340          KK  150155   ROUTE
 341          RS      12    FLOW      -1
 342          RC   0.045   0.040   0.045   19261  0.0188  102.00
 343          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
 344          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 345          KM        Route flow from S150 to Wagner Wash .  Slope = (1814 - 1452) / 19261
              *

 346          KK   CF302RETRIEVE
 347          DR   CF302
 348          KM        Retrieve diverted flow from C130
              *

 349          KK  130155   ROUTE
 350          RS      12    FLOW      -1
 351          RC   0.045   0.040   0.045   14782  0.0156  102.00
 352          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
 353          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 354          KM        Route retrieved flow to Wagner Wash.  Slope = (1682 - 1452) / 14782
              *

 355          KK    S155   BASIN
 356          BA   1.832
 357          LG    0.35     0.35     4.80     0.30        1
 358          UI     187      361      846     1266     1637     1771     1735     1497     1161      879
 359          UI     681      519      385      314      228      181      130      126       46       46
 360          UI      45       46       46       45        0        0        0        0        0        0
 361          UI       0        0        0        0        0        0        0        0        0        0
 362          UI       0        0        0        0        0        0        0        0        0        0
 363          KM        Compute runoff from subbasin 155
              *

 364          KK   C155L COMBINE
 365          HC       3   2.606
 366          KM        Combine runoff from S155 with routed flows at Wagner Wash.
 367          KM        Adjust BA for JD (S150 + S155).
              *
1                                          HEC-1 INPUT                                                PAGE 10

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

 368          KK    C155 COMBINE
 369          HC       2  26.296
 370          KM        Combine all flows at Wagner Wash at C155
              *

 371          KK  155160   ROUTE
 372          RS       5    FLOW      -1
 373          RC   0.035   0.035   0.035    2291  0.0052  110.00
 374          RX    0.00  200.00  400.00  406.00  506.00  512.00  712.00  912.00
 375          RY  110.00  106.50  103.00  100.00  100.00  103.00  106.50  110.00
 376          KM        Route flow in Wagner Wash to C160 (Sun Valley Parkway).
 377          KM        Slope = (1452-1440) / 2291
              *

 378          KK    S160   BASIN
```

```
379          BA   1.144
380          LG    0.35    0.35    4.00    0.47       0
381          UI     165     599    1121    1501    1557    1233     844     593     394     281
382          UI     190     122      93      40      40      40      41       0       0       0
383          UI       0       0       0       0       0       0       0       0       0       0
384          UI       0       0       0       0       0       0       0       0       0       0
385          UI       0       0       0       0       0       0       0       0       0       0
386          KM        Compute runoff from subbasin 160
             *

387          KK    C160 COMBINE
388          HC       2   27.44
389          KM        Combine flows at Sun Valley Parkway
             *

390          KK  160170   ROUTE
391          RS       3    FLOW      -1
392          RC   0.040   0.030   0.040    5248  0.0057  108.00
393          RX    0.00  200.00  400.00  406.00  606.00  612.00  812.00 1012.00
394          RY  108.00  103.00  102.00  100.00  100.00  102.00  103.00  108.00
395          KM        Route flows from Sun Valley Parkway to C170R. Slope = (1440-1410)/5248
             *

396          KK    S165   BASIN
397          BA   0.616
398          LG    0.30    0.38    5.40    0.23       3
399          UI     121     477     809    1022     617     474     347     254     185     127
400          UI      96      69      52      36      20      20      20      20       0       0
401          UI       0       0       0       0       0       0       0       0       0       0
402          UI       0       0       0       0       0       0       0       0       0       0
403          UI       0       0       0       0       0       0       0       0       0       0
404          KM        Compute runoff from subbasin 165
             *
```



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

405          KK  165170   ROUTE
406          RS       8    FLOW      -1
407          RC   0.050   0.035   0.050   13704  0.0161  104.00
408          RX    0.00   50.00  100.00  106.00  131.00  137.00  187.00  237.00
409          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
410          KM        Route runoff from S165 to Sun Valley Parkway (C170).
411          KM        Slope = (1677-1456) / 13704
             *

412          KK    S170   BASIN
413          BA   1.464
414          LG    0.35    0.35    4.40    0.38       0
415          UI     209     755    1427    1917    1973    1590    1086     762     513     360
416          UI     246     160     123      52      51      51      52       0       0       0
417          UI       0       0       0       0       0       0       0       0       0       0
418          UI       0       0       0       0       0       0       0       0       0       0
419          UI       0       0       0       0       0       0       0       0       0       0
420          KM        Compute runoff from subbasin 170
             *

421          KK    C170 COMBINE
422          HC       2
423          KM        Combine runoff from S170 with routed flow from S165
             *

424          KK    170R   ROUTE
425          RS       3    FLOW      -1
426          RC   0.045   0.045   0.045    3986  0.0115  104.00
427          RX    0.00   50.00  100.00  103.00  113.00  116.00  166.00  216.00
428          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
429          KM        Route flow from C170 to Wagner Wash.  Slope = (1456-1410) / 3986
             *

430          KK   C170R COMBINE
431          HC       2
432          KM        Combine routed flows from C170 and C160 in Wagner Wash
             *

433          KK  170180   ROUTE
434          RS       4    FLOW      -1
435          RC   0.045   0.035   0.045    6770  0.0065  110.00
436          RX    0.00  200.00  400.00  406.00  606.00  612.00  812.00 1012.00
437          RY  110.00  103.00  102.00  100.00  100.00  102.00  103.00  110.00
438          KM        Route flows in Wagner Wash to C180R.  Slope = (1410-1366) / 6770
             *

439          KK    S175   BASIN
440          BA   1.802
441          LG    0.29    0.35    4.65    0.32       1
442          UI     126     127     317     525     763     877    1013    1295    1376     895
443          UI     771     703     622     572     507     439     372     318     296     274
444          UI     227     192     163     148     138     116      96      97      73      62
445          UI      62      63      55      24      25      24      24      24      24      25
446          UI      24      24      24      25       0       0       0       0       0       0
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
447          KM        Compute runoff from subbasin 175
             *

448          KK    175R   ROUTE
449          RS       2    FLOW      -1
450          RC   0.045   0.045   0.045    3217  0.0134  103.00
451          RX    0.00   50.00  100.00  103.00  153.00  156.00  216.00  266.00
452          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
453          KM        Route runoff from S175 to intermediate point in S190 (C180RI).
454          KM        Slope = (1456 - 1413) / 3217
             *

455          KK    S180   BASIN
456          BA   1.443
457          LG    0.25    0.35    4.65    0.32       2
458          UI     107     108     311     490     677     785     927    1258     896     684
459          UI     622     547     497     440     379     315     275     250     228     185
460          UI     154     138     120     115      82      83      73      52      53      52
461          UI      50      21      20      21      20      21      21      20      21      21
462          UI      20       0       0       0       0       0       0       0       0       0
463          KM        Compute runoff from subbasin 180
             *

464          KK    180R   ROUTE
465          RS       2    FLOW      -1
466          RC   0.045   0.045   0.045    2965  0.0128  103.00
467          RX    0.00   50.00  100.00  103.00  128.00  131.00  181.00  231.00
468          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
469          KM        Route runoff from S180 to intermediate point in S190 (C180RI).
470          KM        Slope = (1451 - 1413) / 2965
             *

471          KK  C180RI COMBINE
472          HC       2
473          KM        Combine routed flows from S175 and S180
             *

474          KK  RI180R   ROUTE
475          RS       3    FLOW      -1
476          RC   0.045   0.040   0.045    3866  0.0122  104.00
477          RX    0.00   50.00  100.00  106.00  156.00  166.00  216.00  266.00
478          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
479          KM        Route combined flows to Wagner Wash.  Slope = (1413 - 1366) / 3866
             *

480          KK   C180R COMBINE
481          HC       2
482          KM        Combine flows in Wagner Wash
             *
```



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

483          KK  180185   ROUTE
484          RS       3    FLOW      -1
485          RC   0.045   0.035   0.045    3450  0.0075  106.00
486          RX    0.00  100.00  200.00  206.00  406.00  412.00  512.00  612.00
487          RY  106.00  104.00  102.00  100.00  100.00  102.00  104.00  106.00
488          KM        Route flows in Wagner Wash from C180R to C185R.
489          KM        Slope = (1366 - 1340) / 3450
             *

490          KK    S185   BASIN
491          BA   2.421
492          LG    0.16    0.35    4.60    0.34       1
493          UI     165     166     391     668     960    1130    1281    1613    1908    1239
494          UI    1060     936     847     785     677     614     534     438     399     375
495          UI     338     271     230     210     183     183     133     126     127      85
496          UI      80      82      81      67      32      31      32      32      31      32
497          UI      32      31      32      32      32       0       0       0       0       0
498          KM        Compute runoff from subbasin 185
             *

499          KK    185R   ROUTE
500          RS       5    FLOW      -1
501          RC   0.045   0.035   0.045    8534  0.0120  104.00
502          RX    0.00   30.00  100.00  106.00  156.00  162.00  232.00  262.00
503          RY  104.00  102.00  102.00  100.00  100.00  102.00  102.00  104.00
504          KM        Route runoff from S185 to Wagner Wash.  Slope = (1442-1340) / 8534
             *

505          KK   C185R COMBINE
506          HC       2
507          KM        Combine flows in Wagner Wash
             *

508          KK  185190   ROUTE
509          RS       2    FLOW      -1
510          RC   0.045   0.040   0.045    2700  0.0119  106.00
511          RX    0.00   80.00  160.00  166.00  416.00  422.00  502.00  582.00
512          RY  106.00  103.00  102.00  100.00  100.00  102.00  103.00  106.00
513          KM        Route flow in Wagner Wash to C190.  Slope = (1340-1308) / 2700
             *
```

```
514          KK    S190   BASIN
515          BA   4.054
516          LG    0.35    0.35    3.81    0.44       0
517          UI     274     278     647    1125    1573    1918    2319    2540    2637    2574
518          UI    2467    2112    1787    1506    1256    1044     891     745     605     522
519          UI     432     370     293     266     188     191     188      78      68      66
520          UI      67      67      67      67      67      67       0       0       0       0
521          UI       0       0       0       0       0       0       0       0       0       0
522          KM        Compute runoff from subbasin 190
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


523          KK    C190 COMBINE
524          HC       2   39.24
525          KM        Combine all flow in Wagner Wash at C190
             *

526          KK  190195   ROUTE
527          RS       2    FLOW      -1
528          RC   0.045   0.035   0.045    4941  0.0107  110.00
529          RX    0.00   50.00  200.00  206.00  356.00  366.00  516.00  566.00
530          RY  110.00  103.00  102.00  100.00  100.00  102.00  103.00  110.00
531          KM        Route flow from C190 to the Hassayampa River. Slope = (1308-1255)/4941
             *

532          KK    S195   BASIN
533          BA   1.808
534          LG    0.33    0.35    4.25    0.42       0
535          UI     107     108     188     366     523     660     786     925     975    1026
536          UI    1044     975     915     778     674     571     496     419     359     313
537          UI     260     223     202     165     146     115     114      76      74      74
538          UI      67      27      26      26      26      26      26      27      26      26
539          UI      27       0       0       0       0       0       0       0       0       0
540          KM        Compute runoff from subbasin 195
             *

541          KK    C195 COMBINE
542          HC       2   41.05
543          KM        Combine all flows in Wagner Wash at the Hassayampa River
             *

544          KK    S400   BASIN
545          BA   1.544
546          LG    0.25    0.37    5.30    0.24       3
547          UI     106     106     252     429     616     729     819    1050    1206     793
548          UI     665     601     543     493     440     385     339     276     254     239
549          UI     212     174     144     133     116     116      82      81      81      52
550          UI      51      53      51      39      21      20      20      21      20      20
551          UI      20      21      20      20      20       0       0       0       0       0
552          KM        Compute runoff from subbasin 400
             *

553          KK    D400  DIVERT
554          DT    CF00     0.0     0.0
555          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
556          DQ     0.0    50.0   500.0  5000.0     0.0     0.0     0.0     0.0     0.0     0.0
557          KM        Divert flow to the right into S430
             *

558          KK    S410   BASIN
559          BA   0.639
560          LG    0.15    0.35    4.70    0.31       3
561          UI      53      70     177     290     367     429     593     473     342     300
562          UI     268     232     202     173     136     126     115      89      72      65
563          UI      58      47      41      38      26      26      26      19      11      10
564          UI      10      10      11      10      10      10      11       0       0       0
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


565          UI       0       0       0       0       0       0       0       0       0       0
566          KM        Compute runoff from subbasin 410
             *

567          KK    C410 COMBINE
568          HC       2
569          KM        Combine runoff from S400 and S410
             *

570          KK    D410  DIVERT
571          DT    CF10     0.0     0.0
572          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
573          DQ     0.0    10.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0
574          KM        Divert additional flow to the right into S430
             *

575          KK  410415   ROUTE
576          RS       4    FLOW      -1
577          RC   0.045   0.035   0.045    6871  0.0143  103.00
578          RX    0.00   30.00  200.00  203.00  253.00  256.00  426.00  456.00
```

```
 579          RY  103.00  101.00  101.00  100.00  100.00  101.00  101.00  103.00
 580          KM        Route combined flows to Sun Valley Parkway. Slope = (1528-1430)/6871
              *

 581          KK    S415   BASIN
 582          BA   0.451
 583          LG    0.35    0.35    3.64    0.49       0
 584          UI      92     356     623     728     617     389     253     161     101      65
 585          UI      44      18      19      19       0       0       0       0       0       0
 586          UI       0       0       0       0       0       0       0       0       0       0
 587          UI       0       0       0       0       0       0       0       0       0       0
 588          UI       0       0       0       0       0       0       0       0       0       0
 589          KM        Compute runoff from subbasin 415
              *

 590          KK    C415 COMBINE
 591          HC       2
 592          KM        Combine runoff at Sun Valley Parkway
              *

 593          KK  415420   ROUTE
 594          RS      10    FLOW      -1
 595          RC   0.045   0.035   0.045   18114  0.0130  104.00
 596          RX    0.00   30.00   60.00   66.00   96.00  102.00  132.00  162.00
 597          RY  104.00  102.00  102.00  100.00  100.00  102.00  102.00  104.00
 598          KM        Route flow from Sun Valley Parkway to Hassayampa River.
 599          KM        Slope = (1430-1195) / 18114
              *

 600          KK    S420   BASIN
 601          BA   1.767
 602          LG    0.35    0.35    4.30    0.41       0
 603          UI     193     427     964    1407    1752    1846    1712    1346    1015     760
 604          UI     582     417     328     242     183     132     115      47      47      48
 605          UI      47      47       0       0       0       0       0       0       0       0
```



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

 606          UI       0       0       0       0       0       0       0       0       0       0
 607          UI       0       0       0       0       0       0       0       0       0       0
 608          KM        Compute runoff from subbasin 420
              *

 609          KK    C420 COMBINE
 610          HC       2
 611          KM        Combine flows from S400, S410, S415, and S420 at Hassayampa River
              *

 612          KK    CF00RETRIEVE
 613          DR    CF00
 614          KM        Retrieve diverted flows from S400
              *

 615          KK    CF10RETRIEVE
 616          DR    CF10
 617          KM        Retrieve diverted flows from S410
              *

 618          KK  C40010 COMBINE
 619          HC       2   1.544
 620          KM        Combine retrieved diverted flows
              *

 621          KK  400430   ROUTE
 622          RS       5    FLOW      -1
 623          RC   0.045   0.040   0.045    8383  0.0130  105.00
 624          RX    0.00   12.00   25.00   31.00   61.00   67.00   80.00   92.00
 625          RY  105.00  104.00  103.00  100.00  100.00  103.00  104.00  105.00
 626          KM        Route combined flows to Sun Valley Parkway. Slope = (1539-1430)/8383
              *

 627          KK    S430   BASIN
 628          BA   0.795
 629          LG    0.35    0.35    4.55    0.35       0
 630          UI     127     515     918    1163    1116     779     521     349     228     153
 631          UI     100      72      30      30      30       0       0       0       0       0
 632          UI       0       0       0       0       0       0       0       0       0       0
 633          UI       0       0       0       0       0       0       0       0       0       0
 634          UI       0       0       0       0       0       0       0       0       0       0
 635          KM        Compute runoff from subbasin 430
              *

 636          KK    C430 COMBINE
 637          HC       2
 638          KM        Combine runoff from S430 with routed flows at Sun Valley Parkway
              *

 639          KK  430440   ROUTE
 640          RS       7    FLOW      -1
 641          RC   0.035   0.035   0.035   13256  0.0128  106.00
 642          RX    0.00   16.00   32.00   38.00   68.00   74.00   90.00  106.00
 643          RY  106.00  104.50  103.00  100.00  100.00  103.00  104.50  106.00
 644          KM        Route flows from Sun Valley Parkway through S440.
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 645          KM        Slope = (1430-1260) / 13256
              *

 646          KK    S440   BASIN
 647          BA   1.068
 648          LG    0.35    0.35    4.20    0.43       0
 649          UI     137     414     838    1167    1323    1221     910     657     468     330
 650          UI     240     168     118     .95      46      33      35      33      34       0
 651          UI       0       0       0       0       0       0       0       0       0       0
 652          UI       0       0       0       0       0       0       0       0       0       0
 653          UI       0       0       0       0       0       0       0       0       0       0
 654          KM        Compute runoff from subbasin 440
              *

 655          KK    C440 COMBINE
 656          HC       2
 657          KM        Combine runoff from S440 with routed flows from Sun Valley Parkway.
              *

 658          KK  440450   ROUTE
 659          RS       3    FLOW      -1
 660          RC   0.035   0.040   0.035    4154  0.0104  103.00
 661          RX    0.00  150.00  300.00  303.00  333.00  336.00  486.00  636.00
 662          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 663          KM        Route combined flows to the Hassayampa River.
 664          KM        Slope = (1260-1217) / 4154
              *

 665          KK    S450   BASIN
 666          BA   2.521
 667          LG    0.23    0.35    4.25    0.42       0
 668          UI     167     169     381     664     938    1152    1392    1514    1599    1599
 669          UI    1528    1333    1142     951     803     683     567     481     395     336
 670          UI     287     255     184     177     130     116     115      88      41      41
 671          UI      41      41      41      41      41      40      41       0       0       0
 672          UI       0       0       0       0       0       0       0       0       0       0
 673          KM        Compute runoff from subbasin 450
              *

 674          KK    S435   BASIN
 675          BA   0.393
 676          LG    0.35    0.35    4.45    0.37       0
 677          UI     130     505     775     686     414     231     134      75      42      20
 678          UI      20       0       0       0       0       0       0       0       0       0
 679          UI       0       0       0       0       0       0       0       0       0       0
 680          UI       0       0       0       0       0       0       0       0       0       0
 681          UI       0       0       0       0       0       0       0       0       0       0
 682          KM        Compute runoff from subbasin 435
              *
```



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

 683          KK  435450   ROUTE

 684          RS      10    FLOW      -1
 685          RC   0.045   0.035   0.045   18781  0.0119  105.00
 686          RX    0.00   40.00  120.00  126.00  146.00  152.00  232.00  272.00
 687          RY  105.00  103.00  102.00  100.00  100.00  102.00  103.00  105.00
 688          KM        Route runoff from S435 at Sun Valley Parkway to Hassayampa River.
 689          KM        Slope = (1440 - 1217) / 18781
              *


 690          KK    C450 COMBINE
 691          HC       3
 692          KM        Combine flows from S430, S435, S440, and S450 at Hassayampa River
              *

 693          KK  ALL400 COMBINE
 694          HC      29.178000
 695          KM        Dummy combine of all 400 series hydrographs at the Hassayampa
              *

 696          KK    S500   BASIN
 697          BA   3.638
 698          LG    0.25    0.32    7.60    0.10       9
 699          UI     184     186     184     515     713     935    1143    1294    1413    1581
 700          UI    1968    2186    1462    1252    1119    1051     979     907     837     769
 701          UI     716     629     568     487     456     435     408     387     311     297
 702          UI     237     239     212     201     204     146     142     143     141      94
 703          UI      91      90      90      92      90      51      35      36      35      36
 704          KM        Compute runoff from subbasin 500
              *

 705          KK  500510   ROUTE
 706          RS       7    FLOW      -1
 707          RC   0.045   0.035   0.045   14544  0.0186  104.00
 708          RX    0.00   20.00  100.00  106.00  206.00  212.00  292.00  312.00
 709          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
 710          KM        Route runoff from S500 to Sun Valley Parkway.
```

```
711          KM        Slope = (1690-1420) / 14544
             *

712          KK    S510   BASIN
713          BA   1.840
714          LG    0.35    0.35    3.95    0.40       0
715          UI     232     677    1390    1950    2228    2094    1604    1165     828     599
716          UI     433     307     220     160     106      57      58      56      57       0
717          UI       0       0       0       0       0       0       0       0       0       0
718          UI       0       0       0       0       0       0       0       0       0       0
719          UI       0       0       0       0       0       0       0       0       0       0
720          KM        Compute runoff from subbasin 510
             *
1                                          HEC-1 INPUT                                          PAGE 19

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

721          KK    C510 COMBINE
722          HC       2
723          KM        Combine flows at Sun Valley Parkway
             *

724          KK    D510  DIVERT
725          DT    CF10     0.0     0.0

726          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
727          DQ     0.0    65.0   650.0  6500.0     0.0     0.0     0.0     0.0     0.0     0.0
728          KM        Divert flow to the right into S530
             *

729          KK  510520   ROUTE
730          RS      10    FLOW      -1
731          RC   0.045   0.035   0.045   20653  0.0117  105.00
732          RX    0.00   20.00  120.00  126.00  156.00  166.00  266.00  286.00
733          RY  105.00  103.00  102.00  100.00  100.00  102.00  103.00  105.00
734          KM        Route continuing flows from Sun Valley Parkway to Hassayampa River.
735          KM        Slope = (1420-1178) / 20653
             *

736          KK    S520   BASIN
737          BA   1.481
738          LG    0.35    0.35    4.50    0.36       0
739          UI     133     206     510     780    1043    1196    1285    1241    1061     847
740          UI     672     531     420     330     262     210     159     135      91      93
741          UI      54      33      33      32      33      32      33       0       0       0
742          UI       0       0       0       0       0       0       0       0       0       0
743          UI       0       0       0       0       0       0       0       0       0       0
744          KM        Compute runoff from subbasin 520
             *

745          KK    C520 COMBINE
746          HC       2   6.956
747          KM        Combine runoff from S520 with routed flows from Sun Valley Parkway
748          KM        at Hassayampa River
             *

749          KK    S530   BASIN
750          BA   2.226
751          LG    0.20    0.35    4.30    0.41       0
752          UI     176     194     574     895    1189    1473    1624    1704    1622    1456
753          UI    1198     964     787     657     513     417     348     283     227     189
754          UI     141     120     122      56      43      43      43      43      43      43
755          UI      43       0       0       0       0       0       0       0       0       0
756          UI       0       0       0       0       0       0       0       0       0       0
757          KM        Compute runoff from subbasin 530
             *
1                                          HEC-1 INPUT                                          PAGE 20

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

758          KK    CF10RETRIEVE
759          DR    CF10
760          KM        Retrieve diverted flows from C510
             *

761          KK  510530   ROUTE
762          RS       9    FLOW      -1
763          RC   0.045   0.040   0.045   18095  0.0126  106.00
764          RX    0.00   20.00   80.00   86.00  121.00  127.00  187.00  207.00
765          RY  106.00  102.00  102.00  100.00  100.00  102.00  102.00  106.00
766          KM        Route diverted flows through S530 to Hassayampa River.
767          KM        Slope = (1420-1192) / 18095
             *


768          KK    C530 COMBINE
769          HC       2   7.704
770          KM        Combine runoff from S530 with routed flows at the Hassayampa River
             *

771          KK  ALL500 COMBINE
772          HC       2   9.185
773          KM        Dummy combine of all 500 series hydrographs at Hassayampa
```

```
                *

 774            KK    S700   BASIN
 775            BA   5.240
 776            LG    0.34    0.36    5.00    0.28       0
 777            UI     302     306     485     986    1424    1796    2125    2542    2707    2882
 778            UI    2934    2807    2645    2359    2015    1713    1505    1280    1105     968
 779            UI     823     674     598     529     462     377     320     308     210     206
 780            UI     207     182      73      74      74      74      73      74      74      73
 781            UI      74      74       0       0       0       0       0       0       0       0
 782            KM        Compute runoff from subbasin 700
                *

 783            KK    S720   BASIN
 784            BA   4.626
 785            LG    0.33    0.36    5.00    0.28       0
 786            UI     260     262     382     820    1159    1518    1787    2118    2322    2417
 787            UI    2508    2445    2355    2135    1829    1563    1390    1173    1020     890
 788            UI     762     653     568     492     421     401     283     275     245     177
 789            UI     178     179     141      63      64      63      63      64      63      63
 790            UI      64      63      64       0       0       0       0       0       0       0
 791            KM        Compute runoff from subbasin 720
                *

 792            KK    S740   BASIN
 793            BA   1.132
 794            LG    0.15    0.37    5.30    0.24       0
 795            UI     150     472     931    1305    1445    1280     941     670     467     327
 796            UI     246     163     109      92      36      37      37      36       0       0
 797            UI       0       0       0       0       0       0       0       0       0       0
 798            UI       0       0       0       0       0       0       0       0       0       0
 799            UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 21

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

 800            KM        Compute runoff from subbasin 740
                *

 801            KK  ALL700 COMBINE
 802            HC       3
 803            KM        Dummy combination of all 700 series subbasins.
                *

 804            KK    S900   BASIN
 805            BA   1.035
 806            LG    0.25    0.30    8.00    0.08       6
 807            UI      75      77     215     338     472     551     650     871     671     496
 808            UI     448     394     356     320     277     233     197     180     165     140
 809            UI     116      97      89      83      65      59      58      37      38      37
 810            UI      37      23      14      15      14      15      14      15      15      14
 811            UI      15      14       0       0       0       0       0       0       0       0
 812            KM        Compute runoff from subbasin 900
                *

 813            KK  900910   ROUTE
 814            RS       7    FLOW      -1
 815            RC   0.045   0.035   0.045   10207  0.0192  103.00
 816            RX    0.00   80.00  160.00  163.00  178.00  181.00  261.00  341.00
 817            RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
 818            KM        Route runoff from subbasin 900 through subbasin 910.
 819            KM        Slope = (1856-1660) / 10207
                *

 820            KK    S910   BASIN
 821            BA   0.983
 822            LG    0.35    0.35    4.70    0.31       0
 823            UI     234     923    1540    1684    1252     768     471     298     172     120
 824            UI      45      44      44       0       0       0       0       0       0       0
 825            UI       0       0       0       0       0       0       0       0       0       0
 826            UI       0       0       0       0       0       0       0       0       0       0
 827            UI       0       0       0       0       0       0       0       0       0       0
 828            KM        Compute runoff from subbasin 910
                *

 829            KK    C910 COMBINE
 830            HC       2
 831            KM        Combine runoff from S910 with routed flow at Sun Valley Parkway
                *

 832            KK  910915   ROUTE
 833            RS       2    FLOW      -1
 834            RC   0.045   0.035   0.045    2998  0.0110  103.00
 835            RX    0.00  100.00  200.00  203.00  223.00  226.00  326.00  426.00
 836            RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
 837            KM        Route combined flow to C915.
 838            KM        Slope = (1660-1627) / 2998
                *
1                                          HEC-1 INPUT                                          PAGE 22

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

 839            KK    S915   BASIN
 840            BA   1.126
```

```
841          LG    0.25    0.36    6.80    0.13       1
842          UI     102     163     397     611     809     929     977     949     801     634
843          UI     506     395     311     248     194     158     113      96      70      71
844          UI      32      25      25      25      25      26      25       0       0       0
845          UI       0       0       0       0       0       0       0       0       0       0
846          UI       0       0       0       0       0       0       0       0       0       0
847          KM        Compute runoff from subbasin 915
             *

848          KK    C915 COMBINE
849          HC       2
850          KM        Combine flows at C915
             *

851          KK  915920   ROUTE
852          RS       5    FLOW      -1
853          RC   0.045   0.035   0.045    9456  0.0103  104.00
854          RX    0.00  100.00  200.00  203.00  223.00  226.00  326.00  426.00
855          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
856          KM        Route combined flow to C920, at tributary to Trilby Wash parallel to CAP
857          KM        Slope = (1627-1530) / 9456
             *

858          KK    S920   BASIN
859          BA   3.291
860          LG    0.35    0.38    5.60    0.22       0
861          UI     261     294     853    1330    1783    2190    2432    2520    2411    2144
862          UI    1767    1414    1151     954     759     617     508     410     326     282
863          UI     200     178     181      71      63      65      63      64      64      64
864          UI      64       0       0       0       0       0       0       0       0       0
865          UI       0       0       0       0       0       0       0       0       0       0
866          KM        Compute runoff from subbasin 920
             *

867          KK    C920 COMBINE
868          HC       2
869          KM        Combine flows in Trilby Wash tributary
870          ZZ
```

1

```
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    42       S100
                .
                .
    51          .        S102
                .           .
                .           .
    60       C102............
                V
                V
    63      RR102
                .
                .
    73          .------->    CF02
    72       D102
                V
                V
    78     100105
                .
                .
    85          .        S105
                .           .
                .           .
    95          .           .           .<-------    CF02
    94          .           .        CF02
                .           .           V
                .           .           V
    97          .           .      102105
                .           .           .
                .           .           .
   104      C105U........................
                .
                .
   109          .        S110
                .           V
                .           V
   118          .      11015I
                .           .
                .           .
   126          .           .------->    CF5I
   125          .        D15I
                .           V
                .           V
   130          .      15I15R
                .           .
                .           .
   137          .           .        S115
                .           .           .
                .           .           .
   146          .       C115U............
                .           .
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                .           .
150             .           .           .<-------    CF5I
149             .           .        CF5I
                .           .           V
                .           .           V
152             .           .      15I15L
                .           .           .
                .           .           .
159             .       C115D............
                .           V
                .           V
163             .      115120
                .           .
                .           .
169             .           .        S120
                .           .           .
                .           .           .
178             .        C120............
                .           .
                .           .
181        C105D............
               V
               V
184       120135
                .
                .
191             .        S125
                .           V
                .           V
200             .      12535I
                .           .
                .           .
207             .           .        S150
                .           .           .
                .           .           .
217             .           .           .------->    CF50
216             .           .        D150
                .           .           V
                .           .           V
222             .           .      150130
                .           .           .
                .           .           .
228             .           .           .        S130
                .           .           .           .
                .           .           .           .
237             .           .        C130............
                .           .           .
                .           .           .
242             .           .           .------->    CF30
241             .           .        D130
                .           .           V
                .           .           V
246             .           .      13035I
                .           .           .
                .           .           .
253             .       C135I............
                .           V
                .           V
256             .      35I135
                .           .
                .           .
263             .           .        S135
                .           .           .
                .           .           .
272             .       C135L............
                .           .
                .           .
275         C135............
               V
               V
278       135145
                .
                .
284             .        S140
                .           V
                .           V
293             .      140145
                .           .
                .           .
301             .           .           .<-------    CF30
300             .           .        CF30
                .           .           .
                .           .           .
304             .           .           .------->   CF302
303             .           .       D1302
                .           .           V
                .           .           V
308             .           .      130145
                .           .           .
                .           .           .
315             .           .           .        S145
                .           .           .           .
                .           .           .           .
324             .           .       C145L............
                .           .           .
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                .          .          .
328        C145.......................
              V
              V
331      145155
                .
                .
338             .          .<-------    CF50
337             .       CF50
                .          V
                .          V
340             .     150155
                .          .
                .          .
347             .          .          .<-------   CF302
346             .          .      CF302
                .          .          V
                .          .          V
349             .          .     130155
                .          .          .
                .          .          .
355             .          .          .        S155
                .          .          .           .
                .          .          .           .
364             .      C155L.......................
                .          .
                .          .
368        C155............
              V
              V
371      155160
                .
                .
378             .       S160
                .          .
                .          .
387        C160............
              V
              V
390      160170
                .
                .
396             .       S165
                .          V
                .          V
405             .     165170
                .          .
                .          .
412             .          .       S170
                .          .          .
                .          .          .
421             .       C170............
                .          V
                .          V
424             .       170R
                .          .
                .          .
430       C170R............
              V
              V
433      170180
                .
                .
439             .       S175
                .          V
                .          V
448             .       175R
                .          .
                .          .
455             .          .       S180
                .          .          V
                .          .          V
464             .          .       180R
                .          .          .
                .          .          .
471             .     C180RI............
                .          V
                .          V
474             .     RI180R
                .          .
                .          .
480       C180R............
              V
              V
483      180185
                .
                .
490             .       S185
                .          V
                .          V
499             .       185R
                .          .
                .          .
505       C185R............
              V
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                V
508       185190
                .
                .
514             .        S190
                .           .
                .           .
523         C190............
                V
                V
526       190195
                .
                .
532             .        S195
                .           .
                .           .
541         C195............
                .
                .
544             .        S400
                .           .
                .           .
554             .           .-------->    CF00
553             .        D400
                .           .
                .           .
558             .           .        S410
                .           .           .
                .           .           .
567             .        C410............
                .           .
                .           .
571             .           .-------->    CF10
570             .        D410
                .           V
                .           V
575             .      410415
                .           .
                .           .
581             .           .        S415
                .           .           .
                .           .           .
590             .        C415............
                .           V
                .           V
593             .      415420
                .           .
                .           .
600             .           .        S420
                .           .           .
                .           .           .
609             .        C420............
                .           .
                .           .
613             .           .           .<--------    CF00
612             .           .        CF00
                .           .           .
                .           .           .
616             .           .           .           .<--------    CF10
615             .           .           .        CF10
                .           .           .           .
                .           .           .           .
618             .           .      C40010............
                .           .           V
                .           .           V
621             .           .      400430
                .           .           .
                .           .           .
627             .           .           .        S430
                .           .           .           .
                .           .           .           .
636             .           .        C430............
                .           .           V
                .           .           V
639             .           .      430440
                .           .           .
                .           .           .
646             .           .           .        S440
                .           .           .           .
                .           .           .           .
655             .           .        C440............
                .           .           V
                .           .           V
658             .           .      440450
                .           .           .
                .           .           .
665             .           .           .        S450
                .           .           .           .
                .           .           .           .
674             .           .           .           .        S435
                .           .           .           .           V
                .           .           .           .           V
683             .           .           .           .      435450
                .           .           .           .           .
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690          .           .        C450.......................
             .           .           .
             .           .           .
693          .      ALL400............
             .           .
             .           .
696          .           .        S500
             .           .           V
             .           .           V
705          .           .      500510
             .           .           .
             .           .           .
712          .           .           .        S510
             .           .           .           .
             .           .           .           .
721          .           .        C510............
             .           .           .
             .           .           .
725          .           .           .-------->    CF10
724          .           .        D510
             .           .           V
             .           .           V
729          .           .      510520
             .           .           .
             .           .           .
736          .           .           .        S520
             .           .           .           .
             .           .           .           .
745          .           .        C520............
             .           .           .
             .           .           .
749          .           .           .        S530
             .           .           .           .
             .           .           .           .
759          .           .           .           .           .<--------    CF10
758          .           .           .           .        CF10
             .           .           .           .           V
             .           .           .           .           V
761          .           .           .           .      510530
             .           .           .           .           .
             .           .           .           .           .
768          .           .           .        C530............
             .           .           .           .
             .           .           .           .
771          .           .      ALL500............
             .           .           .
             .           .           .
774          .           .           .        S700
             .           .           .           .
             .           .           .           .
783          .           .           .           .        S720
             .           .           .           .           .
             .           .           .           .           .
792          .           .           .           .           .        S740
             .           .           .           .           .           .
             .           .           .           .           .           .
801          .           .           .      ALL700........................
             .           .           .           .
             .           .           .           .
804          .           .           .           .        S900
             .           .           .           .           V
             .           .           .           .           V
813          .           .           .           .      900910
             .           .           .           .           .
             .           .           .           .           .
820          .           .           .           .           .        S910
             .           .           .           .           .           .
             .           .           .           .           .           .
829          .           .           .           .        C910............
             .           .           .           .           V
             .           .           .           .           V
832          .           .           .           .      910915
             .           .           .           .           .
             .           .           .           .           .
839          .           .           .           .           .        S915
             .           .           .           .           .           .
             .           .           .           .           .           .
848          .           .           .           .        C915............
             .           .           .           .           V
             .           .           .           .           V
851          .           .           .           .      915920
             .           .           .           .           .
             .           .           .           .           .
858          .           .           .           .           .        S920
             .           .           .           .           .           .
             .           .           .           .           .           .
867          .           .           .           .        C920............
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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1****************************************                    ****************************************
 *                                      *                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *   U.S. ARMY CORPS OF ENGINEERS       *
 *              JUN   1998              *                    *   HYDROLOGIC ENGINEERING CENTER      *
 *           VERSION 4.1                *                    *         609 SECOND STREET            *
 *                                      *                    *      DAVIS, CALIFORNIA 95616         *
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                    SUN VALLEY AREA DRAINAGE MASTER PLAN (SVADMP) - FCD 2004C049
                     JE FULLER / HYDROLOGY & GEOMORPHOLOGY, INC.
                     FILENAME: A4_RF24.DAT
                     DATE: JUNE 16, 2006

                     100-YEAR 24-HOUR MODEL
                     EXISTING CONDITIONS - XKSAT ADJUSTED FOR ROCK FRAGMENTS
                     AREA 4 WATERSHED AREA = 90.5 SQ. MILES
                             MODELED AREA = 76.8 SQ. MILES

                     GREEN-AMPT LOSS METHOD
                     S-GRAPH UNIT HYDROGRAPHS
                      - MOUNTAIN
                      - DESERT/RANGELAND
                     NORMAL-DEPTH CHANNEL ROUTING
                     LAND USE DATA FROM EXAMINATION OF SLOPE FROM 10-FT DTM TO DISTINGUISH
                      - UNDEVELOPED DESERT RANGELAND (NDR) - SLOPES < 5 %
                      - HILLSLOPES, SONORAN DESERT (NHS) - SLOPES 5 - 10 %
                      - MOUNTAIN TERRAIN (NMT) - SLOPES > 10 %
                    SOILS DATA FROM FCDMC GIS DATABASE (RECEIVED FROM FCDMC JULY 2005)
                      - XKSAT FOR UNITS 52, 100, CO, AND RS ADJUSTED TO ACCOUNT FOR
                        PRESENCE OF ROCK FRAGMENTS IN THE SOIL PER ZHAO (2003).


 26 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN           5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1JAN99  STARTING DATE
                      ITIME        1200  STARTING TIME
                         NQ        2000  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      8JAN99  ENDING DATE
                     NDTIME        1035  ENDING TIME
                      ICENT          19  CENTURY MARK

                 COMPUTATION INTERVAL     .08 HOURS
                      TOTAL TIME BASE  166.58 HOURS

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

 27 JD          INDEX STORM NO. 1
                       STRM       4.20  PRECIPITATION DEPTH
                       TRDA        .10  TRANSPOSITION DRAINAGE AREA

 28 PI            PRECIPITATION PATTERN
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                     .00       .00       .00       .00       .00       .00       .00       .01       .00       .01
                     .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                     .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                     .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
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                     .00       .00       .00       .00       .00       .00       .00       .00

 38 JD          INDEX STORM NO. 2
                       STRM       3.99  PRECIPITATION DEPTH
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TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
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39 JD INDEX STORM NO. 3
STRM 3.78 PRECIPITATION DEPTH
TRDA 30.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
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40 JD INDEX STORM NO. 4
STRM 3.65 PRECIPITATION DEPTH
TRDA 60.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
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 41 JD          INDEX STORM NO. 5
                     STRM        3.58  PRECIPITATION DEPTH
                     TRDA       90.00  TRANSPOSITION DRAINAGE AREA

  0 PI           PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                    .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                    .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
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            *            *
 63 KK      *     RR102  *      STORAGE
            *            *
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 64 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
1
                                                RUNOFF SUMMARY
                                          FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES

                                   PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
        OPERATION        STATION   FLOW    PEAK                                           AREA      STAGE     MAX STAGE
+                                                      6-HOUR     24-HOUR     72-HOUR

        HYDROGRAPH AT
+                          S100    5214.   12.58        965.        241.         80.      6.99

        HYDROGRAPH AT
+                          S102    3434.   12.33        420.        105.         35.      3.23

        2 COMBINED AT
+                          C102    7803.   12.42       1367.        342.        114.     10.23

        ROUTED TO
+                         RR102     149.   14.42        141.        119.         82.     10.23

        DIVERSION TO
+                          CF02      75.   14.42         71.         59.         41.     10.23

        HYDROGRAPH AT
+                          D102      75.   14.42         71.         59.         41.     10.23

        ROUTED TO
+                        100105      70.   20.33         67.         58.         41.     10.23

        HYDROGRAPH AT
+                          S105    3492.   12.50        535.        134.         45.      4.37

        HYDROGRAPH AT
+                          CF02      75.   14.42         71.         59.         41.     10.23
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+	ROUTED TO	102105	74.	15.67	70.	59.	41.	10.23
+	3 COMBINED AT	C105U	3492.	12.50	592.	239.	126.	14.60
+	HYDROGRAPH AT	S110	599.	12.17	77.	20.	7.	.43
+	ROUTED TO	11015I	524.	12.42	76.	20.	7.	.43
+	DIVERSION TO	CF5I	105.	12.42	15.	4.	1.	.43
+	HYDROGRAPH AT	D15I	420.	12.42	61.	16.	5.	.43
+	ROUTED TO	15I15R	378.	12.75	61.	16.	5.	.43
+	HYDROGRAPH AT	S115	1819.	12.50	311.	79.	26.	2.25
+	2 COMBINED AT	C115U	2037.	12.58	369.	94.	31.	2.68
+	HYDROGRAPH AT	CF5I	105.	12.42	15.	4.	1.	.43
+	ROUTED TO	15I15L	59.	13.50	15.	4.	1.	.43
+	2 COMBINED AT	C115D	2038.	12.58	383.	98.	33.	2.68
+	ROUTED TO	115120	1996.	12.75	383.	98.	33.	2.68
+	HYDROGRAPH AT	S120	2124.	12.33	261.	66.	22.	2.00
+	2 COMBINED AT	C120	3406.	12.42	636.	162.	54.	4.68
+	2 COMBINED AT	C105D	6432.	12.42	1143.	372.	167.	19.28
+	ROUTED TO	120135	6435.	12.50	1143.	372.	167.	19.28
+	HYDROGRAPH AT	S125	181.	12.08	14.	4.	1.	.09
+	ROUTED TO	12535I	158.	12.17	14.	4.	1.	.09
+	HYDROGRAPH AT	S150	854.	12.33	134.	35.	12.	.77
+	DIVERSION TO	CF50	768.	12.33	121.	32.	11.	.77
+	HYDROGRAPH AT	D150	85.	12.33	13.	4.	1.	.77
+	ROUTED TO	150130	81.	12.50	13.	4.	1.	.77
+	HYDROGRAPH AT	S130	460.	12.17	45.	12.	4.	.31
+	2 COMBINED AT	C130	493.	12.17	59.	15.	5.	.31
+	DIVERSION TO	CF30	148.	12.17	18.	5.	2.	.31
+	HYDROGRAPH AT	D130	345.	12.17	41.	11.	4.	.31
+	ROUTED TO	13035I	341.	12.17	41.	11.	4.	.31
+	2 COMBINED AT	C135I	494.	12.17	55.	14.	5.	.40
+	ROUTED TO	35I135	353.	12.75	55.	14.	5.	.40
+	HYDROGRAPH AT	S135	1020.	12.25	100.	25.	8.	.88
+	2 COMBINED AT	C135L	1016.	12.25	153.	39.	13.	1.28

+	2 COMBINED AT	C135	7029.	12.50	1274.	405.	178.	20.56
+	ROUTED TO	135145	6267.	12.83	1262.	402.	178.	20.56
+	HYDROGRAPH AT	S140	2061.	12.17	176.	44.	15.	1.37
+	ROUTED TO	140145	1664.	12.42	176.	44.	15.	1.37
+	HYDROGRAPH AT	CF30	148.	12.17	18.	5.	2.	.31
+	DIVERSION TO	CF302	15.	12.17	2.	0.	0.	.31
+	HYDROGRAPH AT	D1302	133.	12.17	16.	4.	1.	.31
+	ROUTED TO	130145	69.	13.75	16.	4.	1.	.31
+	HYDROGRAPH AT	S145	1957.	12.25	194.	49.	16.	1.76
+	2 COMBINED AT	C145L	1951.	12.25	209.	52.	17.	2.07
+	3 COMBINED AT	C145	6908.	12.83	1584.	482.	204.	23.69
+	ROUTED TO	145155	6907.	12.83	1583.	482.	204.	23.69
+	HYDROGRAPH AT	CF50	768.	12.33	121.	32.	11.	.77
+	ROUTED TO	150155	522.	13.58	120.	32.	11.	.77
+	HYDROGRAPH AT	CF302	15.	12.17	2.	0.	0.	.31
+	ROUTED TO	130155	3.	15.92	2.	0.	0.	.31
+	HYDROGRAPH AT	S155	1862.	12.33	230.	58.	19.	1.83
+	3 COMBINED AT	C155L	1853.	12.33	346.	89.	30.	2.61
+	2 COMBINED AT	C155	7552.	12.83	1880.	557.	229.	26.30
+	ROUTED TO	155160	7522.	12.92	1878.	556.	229.	26.30
+	HYDROGRAPH AT	S160	1342.	12.17	124.	31.	10.	1.14
+	2 COMBINED AT	C160	7563.	12.92	1976.	581.	237.	27.44
+	ROUTED TO	160170	7416.	13.08	1968.	579.	237.	27.44
+	HYDROGRAPH AT	S165	897.	12.17	86.	22.	7.	.62
+	ROUTED TO	165170	701.	12.58	86.	22.	7.	.62
+	HYDROGRAPH AT	S170	1802.	12.17	169.	42.	14.	1.46
+	2 COMBINED AT	C170	1951.	12.25	252.	64.	21.	2.08
+	ROUTED TO	170R	1874.	12.42	252.	64.	21.	2.08
+	2 COMBINED AT	C170R	7957.	13.00	2176.	631.	254.	29.52
+	ROUTED TO	170180	7846.	13.25	2165.	629.	254.	29.52
+	HYDROGRAPH AT	S175	1318.	12.50	225.	57.	19.	1.80
	ROUTED TO							

+		175R	1224.	12.67	225.	57.	19.	1.80
+	HYDROGRAPH AT	S180	1111.	12.50	185.	47.	16.	1.44
+	ROUTED TO	180R	1037.	12.58	185.	47.	16.	1.44
+	2 COMBINED AT	C180RI	2216.	12.67	404.	103.	34.	3.24
+	ROUTED TO	RI180R	2132.	12.75	404.	103.	34.	3.24
+	2 COMBINED AT	C180R	9031.	13.08	2503.	714.	282.	32.76
+	ROUTED TO	180185	9009.	13.17	2497.	713.	281.	32.76
+	HYDROGRAPH AT	S185	1724.	12.50	302.	76.	25.	2.42
+	ROUTED TO	185R	1477.	12.92	301.	76.	25.	2.42
+	2 COMBINED AT	C185R	10037.	13.08	2745.	775.	302.	35.19
+	ROUTED TO	185190	10023.	13.17	2740.	774.	302.	35.19
+	HYDROGRAPH AT	S190	2590.	12.58	448.	112.	37.	4.05
+	2 COMBINED AT	C190	10861.	13.08	3087.	862.	331.	39.24
+	ROUTED TO	190195	10752.	13.25	3080.	861.	331.	39.24
+	HYDROGRAPH AT	S195	1039.	12.67	202.	51.	17.	1.81
+	2 COMBINED AT	C195	11126.	13.25	3235.	900.	344.	41.05
+	HYDROGRAPH AT	S400	1188.	12.50	214.	55.	18.	1.54
+	DIVERSION TO	CF00	594.	12.50	107.	27.	9.	1.54
+	HYDROGRAPH AT	D400	594.	12.50	107.	27.	9.	1.54
+	HYDROGRAPH AT	S410	561.	12.42	87.	22.	7.	.64
+	2 COMBINED AT	C410	1107.	12.50	191.	49.	16.	2.18
+	DIVERSION TO	CF10	111.	12.50	19.	5.	2.	2.18
+	HYDROGRAPH AT	D410	996.	12.50	172.	44.	15.	2.18
+	ROUTED TO	410415	774.	12.92	172.	44.	15.	2.18
+	HYDROGRAPH AT	S415	624.	12.17	50.	13.	4.	.45
+	2 COMBINED AT	C415	788.	12.92	219.	56.	19.	2.63
+	ROUTED TO	415420	687.	13.75	217.	56.	19.	2.63
+	HYDROGRAPH AT	S420	1740.	12.33	198.	50.	17.	1.77
+	2 COMBINED AT	C420	1714.	12.33	408.	104.	35.	4.40
+	HYDROGRAPH AT	CF00	594.	12.50	107.	27.	9.	1.54
+	HYDROGRAPH AT	CF10	111.	12.50	19.	5.	2.	2.18
+	2 COMBINED AT	C40010	705.	12.50	126.	32.	11.	1.54

+	ROUTED TO	400430	661.	12.75	126.	32.	11.	1.54
+	HYDROGRAPH AT	S430	1090.	12.17	95.	24.	8.	.80
+	2 COMBINED AT	C430	1085.	12.17	218.	55.	18.	2.34
+	ROUTED TO	430440	995.	12.50	217.	55.	18.	2.34
+	HYDROGRAPH AT	S440	1205.	12.25	119.	30.	10.	1.07
+	2 COMBINED AT	C440	1715.	12.42	331.	84.	28.	3.41
+	ROUTED TO	440450	1485.	12.67	330.	84.	28.	3.41
+	HYDROGRAPH AT	S450	1624.	12.58	287.	72.	24.	2.52
+	HYDROGRAPH AT	S435	656.	12.08	47.	12.	4.	.39
+	ROUTED TO	435450	378.	12.83	47.	12.	4.	.39
+	3 COMBINED AT	C450	3346.	12.67	651.	165.	55.	6.32
+	2 COMBINED AT	ALL400	4423.	12.67	1049.	266.	89.	9.18
+	HYDROGRAPH AT	S500	2614.	12.75	632.	168.	56.	3.64
+	ROUTED TO	500510	2438.	13.08	631.	168.	56.	3.64
+	HYDROGRAPH AT	S510	2099.	12.25	213.	53.	18.	1.84
+	2 COMBINED AT	C510	2534.	13.00	833.	219.	73.	5.48
+	DIVERSION TO	CF10	1647.	13.00	542.	142.	48.	5.48
+	HYDROGRAPH AT	D510	887.	13.00	292.	77.	26.	5.48
+	ROUTED TO	510520	780.	13.92	288.	77.	26.	5.48
+	HYDROGRAPH AT	S520	1288.	12.42	174.	43.	14.	1.48
+	2 COMBINED AT	C520	1260.	12.42	451.	119.	40.	6.96
+	HYDROGRAPH AT	S530	1697.	12.50	257.	64.	21.	2.23
+	HYDROGRAPH AT	CF10	111.	12.50	19.	5.	2.	2.18
+	ROUTED TO	510530	60.	13.83	19.	5.	2.	2.18
+	2 COMBINED AT	C530	1697.	12.50	276.	69.	23.	7.70
+	2 COMBINED AT	ALL500	2900.	12.42	717.	185.	62.	9.19
+	HYDROGRAPH AT	S700	3186.	12.67	642.	160.	53.	5.24
+	HYDROGRAPH AT	S720	2742.	12.67	569.	142.	47.	4.63
+	HYDROGRAPH AT	S740	1506.	12.25	154.	38.	13.	1.13
+	3 COMBINED AT	ALL700	6188.	12.67	1332.	333.	111.	11.00
+	HYDROGRAPH AT	S900	1012.	12.50	193.	50.	17.	1.03
+	ROUTED TO	900910	854.	13.00	193.	50.	17.	1.03

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        HYDROGRAPH AT
+                       S910      1512.   12.17        122.        30.        10.       .98
        2 COMBINED AT
+                       C910      1581.   12.17        311.        80.        27.      2.02
        ROUTED TO
+                     910915      1300.   12.33        311.        80.        27.      2.02
        HYDROGRAPH AT
+                       S915      1226.   12.42        176.        44.        15.      1.13
        2 COMBINED AT
+                       C915      2478.   12.33        481.       123.        41.      3.14
        ROUTED TO
+                     915920      1831.   12.92        481.       123.        41.      3.14
        HYDROGRAPH AT
+                       S920      2794.   12.50        428.       107.        36.      3.29
        2 COMBINED AT
+                       C920      3603.   12.67        897.       227.        76.      6.43
1                   SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION    RR102
                 (PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED  DURING BREACH FORMATION)

PLAN  1 ..............                 INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION       1550.00           1556.00           1556.00
                          STORAGE           553.             2705.             2705.
                          OUTFLOW             0.              600.              600.

              RATIO     MAXIMUM     MAXIMUM    MAXIMUM    MAXIMUM    DURATION    TIME OF     TIME OF
               OF      RESERVOIR    DEPTH     STORAGE    OUTFLOW    OVER TOP    MAX OUTFLOW  FAILURE
              PMF      W.S.ELEV    OVER DAM    AC-FT       CFS       HOURS        HOURS       HOURS

              1.00     1552.28       .00       1258.      171.       .00         14.42        .00

PLAN  2 ..............                 INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION       1550.00           1556.00           1556.00
                          STORAGE           553.             2705.             2705.
                          OUTFLOW             0.              600.              600.

              RATIO     MAXIMUM     MAXIMUM    MAXIMUM    MAXIMUM    DURATION    TIME OF     TIME OF
               OF      RESERVOIR    DEPTH     STORAGE    OUTFLOW    OVER TOP    MAX OUTFLOW  FAILURE
              PMF      W.S.ELEV    OVER DAM    AC-FT       CFS       HOURS        HOURS       HOURS

              1.00     1552.14       .00       1204.      150.       .00         14.42        .00

PLAN  3 ..............                 INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION       1550.00           1556.00           1556.00
                          STORAGE           553.             2705.             2705.
                          OUTFLOW             0.              600.              600.

              RATIO     MAXIMUM     MAXIMUM    MAXIMUM    MAXIMUM    DURATION    TIME OF     TIME OF
               OF      RESERVOIR    DEPTH     STORAGE    OUTFLOW    OVER TOP    MAX OUTFLOW  FAILURE
              PMF      W.S.ELEV    OVER DAM    AC-FT       CFS       HOURS        HOURS       HOURS

              1.00     1552.00       .00       1149.      128.       .00         14.50        .00

PLAN  4 ..............                 INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION       1550.00           1556.00           1556.00
                          STORAGE           553.             2705.             2705.
                          OUTFLOW             0.              600.              600.

              RATIO     MAXIMUM     MAXIMUM    MAXIMUM    MAXIMUM    DURATION    TIME OF     TIME OF
               OF      RESERVOIR    DEPTH     STORAGE    OUTFLOW    OVER TOP    MAX OUTFLOW  FAILURE
              PMF      W.S.ELEV    OVER DAM    AC-FT       CFS       HOURS        HOURS       HOURS

              1.00     1551.89       .00       1115.      121.       .00         14.50        .00

PLAN  5 ..............                 INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION       1550.00           1556.00           1556.00

                          STORAGE           553.             2705.             2705.
                          OUTFLOW             0.              600.              600.

              RATIO     MAXIMUM     MAXIMUM    MAXIMUM    MAXIMUM    DURATION    TIME OF     TIME OF
               OF      RESERVOIR    DEPTH     STORAGE    OUTFLOW    OVER TOP    MAX OUTFLOW  FAILURE
              PMF      W.S.ELEV    OVER DAM    AC-FT       CFS       HOURS        HOURS       HOURS

              1.00     1551.82       .00       1095.      117.       .00         14.50        .00
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*** NORMAL END OF HEC-1 ***
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D.4. Test of Percent Effectiveness of Rock Outcrops

- **Summary of Results**
- **Subbasin Data**

D.4.1. HEC-1 Model Output for 0 % Effective Rock Outcrop

D.4.2. HEC-1 Model Output for 100 %Effective Rock Outcrop

Rock Outcrops Uncertainty Analysis - Summary of Results

			Rock Outcrop 0% Effective				Rock Outcrop 100% Effective				100% - 0% Result	
TYPE	MODELID	AREA	Q100	TIMEPK100	VOL100	VOL100AF	Q100	TIMEPK100	VOL100	VOL100AF	Diff Q	Diff V
		(sq.mi)	(cfs)	(hrs)	(in)	(ac-ft)	(cfs)	(hrs)	(in)	(ac-ft)	(%)	(%)
Hydrograph	S100	6.99	5214	12.58	1.282	478	5214	12.58	1.282	478	0.0%	0.0%
Hydrograph	S102	3.23	3434	12.33	1.207	208	3434	12.33	1.207	208	0.0%	0.0%
Combined	C102	10.23	7803	12.42	1.243	678	7803	12.42	1.243	678	0.0%	0.0%
Routed	RR102	10.23	149	14.42	1.163	634	149	14.42	1.163	634	0.0%	0.0%
Hydrograph	D102	10.23	75	14.42	0.581	317	75	14.42	0.581	317	0.0%	0.0%
Routed	100105	10.23	70	20.33	0.578	315	70	20.33	0.578	315	0.0%	0.0%
Hydrograph	S105	4.37	3466	12.50	1.129	263	3466	12.50	1.129	263	0.0%	0.0%
Routed	102105	10.23	74	15.67	0.580	316	74	15.67	0.580	316	0.0%	0.0%
Combined	C105U	14.60	3466	12.50	1.164	906	3466	12.50	1.164	906	0.0%	0.0%
Hydrograph	S110	0.43	522	12.17	1.250	29	540	12.17	1.566	36	3.4%	25.3%
Routed	11015I	0.43	446	12.42	1.250	29	464	12.42	1.566	36	4.0%	25.3%
Hydrograph	D15I	0.43	357	12.42	1.000	23	372	12.42	1.253	29	4.2%	25.2%
Routed	15I15R	0.43	315	12.83	1.000	23	330	12.83	1.253	29	4.8%	25.2%
Hydrograph	S115	2.25	1675	12.50	1.151	138	1711	12.50	1.267	152	2.1%	10.1%
Combined	C115U	2.68	1800	12.67	1.119	160	1879	12.58	1.256	179	4.4%	12.3%
Routed	15I15L	0.43	42	13.58	0.250	6	48	13.58	0.313	7	14.3%	25.3%
Combined	C115D	2.68	1800	12.67	1.157	165	1880	12.58	1.305	186	4.4%	12.7%
Routed	115120	2.68	1767	12.75	1.157	165	1841	12.75	1.305	186	4.2%	12.7%
Hydrograph	S120	2.00	2023	12.33	1.129	121	2051	12.33	1.216	130	1.4%	7.8%
Combined	C120	4.68	3165	12.42	1.130	282	3239	12.42	1.251	312	2.3%	10.7%
Combined	C105D	19.28	6181	12.42	1.079	1109	6256	12.42	1.107	1139	1.2%	2.6%
Routed	120135	19.28	6174	12.50	1.079	1109	6253	12.50	1.107	1138	1.3%	2.6%
Hydrograph	S125	0.09	159	12.08	1.103	5	164	12.08	1.412	7	3.1%	28.2%
Routed	12535I	0.09	133	12.17	1.103	5	139	12.17	1.412	7	4.5%	28.2%
Hydrograph	S150	0.77	707	12.33	1.170	48	747	12.33	1.551	64	5.7%	32.5%
Hydrograph	D150	0.77	71	12.33	0.117	5	75	12.33	0.155	6	5.6%	32.5%
Routed	150130	0.77	65	12.50	0.117	5	69	12.50	0.155	6	6.2%	32.5%
Hydrograph	S130	0.31	408	12.17	1.095	18	420	12.17	1.309	22	2.9%	19.5%
Combined	C130	0.31	428	12.17	1.392	23	446	12.17	1.701	28	4.2%	22.2%
Hydrograph	D130	0.31	300	12.17	0.975	16	312	12.17	1.191	20	4.0%	22.2%
Routed	13035I	0.31	296	12.17	0.975	16	308	12.17	1.191	20	4.1%	22.2%
Combined	C135I	0.40	424	12.17	0.994	21	442	12.17	1.231	26	4.2%	23.8%
Routed	35I135	0.40	300	12.75	0.994	21	319	12.75	1.231	26	6.3%	23.8%
Hydrograph	S135	0.88	1015	12.25	1.048	49	1015	12.25	1.048	49	0.0%	0.0%
Combined	C135L	1.28	1008	12.25	1.019	70	1011	12.25	1.093	75	0.3%	7.2%
Combined	C135	20.56	6665	12.50	1.063	1166	6801	12.50	1.094	1200	2.0%	2.9%
Routed	135145	20.56	5932	12.83	1.062	1165	6056	12.83	1.093	1199	2.1%	2.9%
Hydrograph	S140	1.37	2029	12.17	1.164	85	2029	12.17	1.164	85	0.0%	0.0%
Routed	140145	1.37	1632	12.42	1.164	85	1632	12.42	1.164	85	0.0%	0.0%
Hydrograph	D1302	0.31	116	12.17	0.376	6	120	12.17	0.459	8	3.4%	22.2%
Routed	130145	0.31	60	13.67	0.376	6	63	13.67	0.459	8	5.0%	22.2%
Hydrograph	S145	1.76	1945	12.25	1.022	96	1945	12.25	1.022	96	0.0%	0.0%
Combined	C145L	2.07	1940	12.25	0.920	101	1940	12.25	0.933	103	0.0%	1.3%
Combined	C145	23.69	6567	12.83	1.043	1318	6691	12.83	1.071	1353	1.9%	2.7%
Routed	145155	23.69	6572	12.83	1.043	1318	6692	12.83	1.071	1353	1.8%	2.7%
Routed	150155	0.77	420	13.50	1.053	43	451	13.50	1.396	58	7.4%	32.5%
Routed	130155	0.31	3	15.92	0.042	1	3	15.92	0.051	1	0.0%	21.7%
Hydrograph	S155	1.83	1772	12.33	1.087	106	1790	12.33	1.147	112	1.0%	5.5%
Combined	C155L	2.61	1761	12.33	1.070	149	1785	12.33	1.213	169	1.4%	13.4%
Combined	C155	26.30	7039	12.83	1.027	1440	7313	12.83	1.065	1494	3.9%	3.8%
Routed	155160	26.30	7025	12.92	1.026	1440	7287	12.92	1.065	1494	3.7%	3.8%
Hydrograph	S160	1.14	1342	12.17	1.010	62	1342	12.17	1.010	62	0.0%	0.0%
Combined	C160	27.44	7072	12.83	1.017	1488	7328	12.92	1.054	1542	3.6%	3.6%
Routed	160170	27.44	6964	13.08	1.016	1487	7191	13.08	1.053	1541	3.3%	3.6%
Hydrograph	S165	0.62	833	12.17	1.129	37	848	12.17	1.279	42	1.8%	13.2%
Routed	165170	0.62	650	12.58	1.129	37	663	12.58	1.279	42	2.0%	13.2%
Hydrograph	S170	1.46	1802	12.17	1.075	84	1802	12.17	1.075	84	0.0%	0.0%
Combined	C170	2.08	1870	12.25	1.079	120	1921	12.25	1.122	125	2.7%	4.1%
Routed	170R	2.08	1800	12.42	1.079	120	1842	12.42	1.122	125	2.3%	4.1%
Combined	C170R	29.52	7505	12.92	1.006	1584	7722	13.00	1.043	1642	2.9%	3.7%
Routed	170180	29.52	7406	13.17	1.005	1583	7608	13.25	1.043	1641	2.7%	3.7%
Hydrograph	S175	1.80	1271	12.50	1.102	106	1278	12.50	1.131	109	0.6%	2.7%
Routed	175R	1.80	1177	12.67	1.102	106	1185	12.67	1.131	109	0.7%	2.7%
Hydrograph	S180	1.44	1026	12.50	1.063	82	1045	12.50	1.154	89	1.9%	8.5%
Routed	180R	1.44	949	12.58	1.063	82	968	12.58	1.154	89	2.0%	8.5%
Combined	C180RI	3.24	2090	12.67	1.071	185	2116	12.67	1.127	195	1.2%	5.2%
Routed	RI180R	3.24	2000	12.75	1.071	185	2027	12.75	1.127	195	1.4%	5.2%

Rock Outcrops Uncertainty Analysis - Summary of Results

			Rock Outcrop 0% Effective				Rock Outcrop 100% Effective				100% - 0% Result	
TYPE	MODELID	AREA	Q100	TIMEPK100	VOL100	VOL100AF	Q100	TIMEPK100	VOL100	VOL100AF	Diff Q	Diff V
		(sq.mi)	(cfs)	(hrs)	(in)	(ac-ft)	(cfs)	(hrs)	(in)	(ac-ft)	(%)	(%)
Combined	C180R	32.76	8559	13.08	0.992	1733	8743	13.08	1.030	1800	2.1%	3.9%
Routed	180185	32.76	8545	13.17	0.991	1732	8729	13.17	1.030	1800	2.2%	3.9%
Hydrograph	S185	2.42	1646	12.50	1.087	140	1665	12.50	1.146	148	1.2%	5.4%
Routed	185R	2.42	1400	12.92	1.087	140	1421	12.92	1.146	148	1.5%	5.4%
Combined	C185R	35.19	9554	13.08	0.983	1845	9739	13.08	1.023	1920	1.9%	4.0%
Routed	185190	35.19	9536	13.17	0.983	1845	9724	13.17	1.023	1920	2.0%	4.0%
Hydrograph	S190	4.05	2590	12.58	1.027	222	2590	12.58	1.027	222	0.0%	0.0%
Combined	C190	39.24	10375	13.08	0.966	2021	10564	13.08	1.001	2095	1.8%	3.7%
Routed	190195	39.24	10254	13.25	0.965	2020	10448	13.25	1.001	2094	1.9%	3.7%
Hydrograph	S195	1.81	1039	12.67	1.041	100	1039	12.67	1.041	100	0.0%	0.0%
Combined	C195	41.05	10629	13.25	0.958	2098	10822	13.25	0.992	2172	1.8%	3.5%
Hydrograph	S400	1.54	1027	12.50	1.056	87	1073	12.50	1.267	104	4.5%	20.0%
Hydrograph	D400	1.54	514	12.50	0.528	43	537	12.50	0.633	52	4.5%	20.0%
Hydrograph	S410	0.64	517	12.42	1.113	38	534	12.42	1.293	44	3.3%	16.2%
Combined	C410	2.18	985	12.50	0.690	80	1025	12.50	0.816	95	4.1%	18.3%
Hydrograph	D410	2.18	887	12.50	0.621	72	922	12.50	0.735	86	3.9%	18.4%
Routed	410415	2.18	662	12.92	0.621	72	702	12.92	0.735	86	6.0%	18.4%
Hydrograph	S415	0.45	624	12.17	1.032	25	624	12.17	1.032	25	0.0%	0.0%
Combined	C415	2.63	676	12.92	0.683	96	716	12.92	0.777	109	5.9%	13.8%
Routed	415420	2.63	597	13.75	0.683	96	630	13.75	0.777	109	5.5%	13.8%
Hydrograph	S420	1.77	1740	12.33	1.043	98	1740	12.33	1.043	98	0.0%	0.0%
Combined	C420	4.40	1712	12.33	0.816	192	1717	12.33	0.872	205	0.3%	6.9%
Combined	C40010	1.54	613	12.50	0.626	52	640	12.50	0.749	62	4.4%	19.7%
Routed	400430	1.54	569	12.75	0.626	52	597	12.75	0.749	62	4.9%	19.7%
Hydrograph	S430	0.80	1090	12.17	1.109	47	1090	12.17	1.109	47	0.0%	0.0%
Combined	C430	2.34	1075	12.17	0.779	97	1091	12.17	0.861	107	1.5%	10.4%
Routed	430440	2.34	952	12.50	0.779	97	988	12.50	0.861	107	3.8%	10.4%
Hydrograph	S440	1.07	1205	12.25	1.040	59	1205	12.25	1.040	59	0.0%	0.0%
Combined	C440	3.41	1689	12.42	0.850	154	1722	12.42	0.905	165	2.0%	6.5%
Routed	440450	3.41	1441	12.67	0.850	154	1486	12.67	0.905	165	3.1%	6.5%
Hydrograph	S450	2.52	1624	12.58	1.058	142	1624	12.58	1.058	142	0.0%	0.0%
Hydrograph	S435	0.39	656	12.08	1.107	23	656	12.08	1.107	23	0.0%	0.0%
Routed	435450	0.39	378	12.83	1.107	23	378	12.83	1.107	23	0.0%	0.0%
Combined	C450	6.32	3302	12.67	0.933	314	3347	12.67	0.962	324	1.4%	3.2%
Combined	ALL400	9.18	4341	12.67	1.023	501	4447	12.67	1.071	524	2.4%	4.6%
Hydrograph	S500	3.64	1944	12.75	1.061	206	2183	12.75	1.586	308	12.3%	49.5%
Routed	500510	3.64	1792	13.08	1.061	206	2028	13.08	1.586	308	13.2%	49.5%
Hydrograph	S510	1.84	2099	12.25	1.074	105	2099	12.25	1.074	105	0.0%	0.0%
Combined	C510	5.48	2060	12.25	1.053	308	2170	12.25	1.400	409	5.3%	33.0%
Hydrograph	D510	5.48	721	12.25	0.368	108	760	12.25	0.490	143	5.4%	33.0%
Routed	510520	5.48	582	13.75	0.368	108	677	13.75	0.490	143	16.3%	33.0%
Hydrograph	S520	1.48	1288	12.42	1.091	86	1288	12.42	1.091	86	0.0%	0.0%
Combined	C520	6.96	1254	12.42	0.514	191	1268	12.42	0.610	226	1.1%	18.6%
Hydrograph	S530	2.23	1697	12.50	1.074	127	1697	12.50	1.074	127	0.0%	0.0%
Routed	510530	2.18	50	13.92	0.069	8	55	13.92	0.082	10	10.0%	18.3%
Combined	C530	7.70	1697	12.50	0.330	136	1697	12.50	0.333	137	0.0%	1.0%
Combined	ALL500	9.19	2894	12.42	0.657	322	2909	12.42	0.732	359	0.5%	11.4%
Hydrograph	S700	5.24	3186	12.67	1.139	318	3186	12.67	1.139	318	0.0%	0.0%
Hydrograph	S720	4.63	2742	12.67	1.144	282	2742	12.67	1.144	282	0.0%	0.0%
Hydrograph	S740	1.13	1506	12.25	1.264	76	1506	12.25	1.264	76	0.0%	0.0%
Combined	ALL700	11.00	6188	12.67	1.126	661	6188	12.67	1.126	661	0.0%	0.0%
Hydrograph	S900	1.03	832	12.50	1.246	69	874	12.50	1.587	88	5.0%	27.4%
Routed	900910	1.03	674	13.00	1.246	69	718	13.00	1.587	88	6.5%	27.4%
Hydrograph	S910	0.98	1512	12.17	1.151	60	1512	12.17	1.151	60	0.0%	0.0%
Combined	C910	2.02	1509	12.17	1.185	127	1571	12.17	1.359	146	4.1%	14.7%
Routed	910915	2.02	1247	12.33	1.185	127	1294	12.33	1.359	146	3.8%	14.7%
Hydrograph	S915	1.13	1207	12.42	1.404	84	1213	12.42	1.458	88	0.5%	3.8%
Combined	C915	3.14	2406	12.33	1.248	209	2459	12.33	1.379	231	2.2%	10.4%
Routed	915920	3.14	1760	12.92	1.248	209	1804	12.92	1.379	231	2.5%	10.4%
Hydrograph	S920	3.29	2794	12.50	1.210	212	2794	12.50	1.210	212	0.0%	0.0%
Combined	C920	6.43	3544	12.67	1.213	416	3598	12.67	1.276	438	1.5%	5.2%
										Average All Basins =	**2.6%**	**10.5%**
										Average Non-Zero Rock Basins Only =	**3.2%**	**17.2%**

Rock Outcrops 0% Effective - Summary of Subbasin Parameters

Area ID	Area	Length	Slope	S-Graph	Lca	Lag	Velocity	Kn	IA	DTHETA	PSIF	XKSAT	RTIMP
	(sq.mi.)	(mi)	(ft/mi)		(mi)	(min)	(ft/s)		(in)		(in)	(in/hr)	(%)
S100	6.994	6.15	33.2	DESERT/RANGELAND	2.48	52.1	6.22	0.025	0.35	0.38	6.40	0.16	
S102	3.234	3.46	32.4	DESERT/RANGELAND	1.26	32.5	5.61	0.025	0.35	0.38	5.60	0.22	
S105	4.370	5.07	34.5	DESERT/RANGELAND	1.81	42.6	6.27	0.025	0.35	0.35	4.80	0.30	
S110	0.430	1.72	430.3	MOUNTAIN	0.82	25.9	3.49	0.050	0.25	0.37	5.20	0.25	
S115	2.247	5.42	188.2	DESERT/RANGELAND	2.88	46.9	6.09	0.031	0.32	0.35	4.80	0.30	
S120	2.004	3.47	265.5	DESERT/RANGELAND	2.04	32.5	5.62	0.031	0.33	0.35	4.65	0.32	
S125	0.093	0.75	783.4	MOUNTAIN	0.43	13.2	2.99	0.050	0.25	0.35	4.15	0.44	
S135	0.879	2.87	92.9	DESERT/RANGELAND	1.36	25.5	5.94	0.025	0.35	0.35	4.25	0.42	
S130	0.310	1.26	360.3	MOUNTAIN	0.63	19.8	3.36	0.046	0.21	0.35	4.20	0.43	
S140	1.373	1.47	40.3	DESERT/RANGELAND	0.94	20.1	3.84	0.025	0.35	0.36	5.00	0.28	
S145	1.756	3.24	75.4	DESERT/RANGELAND	1.15	26.1	6.53	0.025	0.35	0.35	4.15	0.44	
S150	0.774	2.44	404.4	MOUNTAIN	1.39	36.6	3.51	0.050	0.25	0.35	4.65	0.32	
S155	1.832	3.65	99.2	DESERT/RANGELAND	2.16	32.9	5.84	0.025	0.35	0.35	4.50	0.36	
S160	1.144	2.85	73.9	DESERT/RANGELAND	0.96	23.3	6.45	0.025	0.35	0.35	4.00	0.47	
S165	0.616	1.59	371.6	MOUNTAIN	0.83	19.7	4.24	0.038	0.30	0.35	4.55	0.35	
S170	1.464	2.60	85.2	DESERT/RANGELAND	1.15	23.4	5.84	0.025	0.35	0.35	4.40	0.38	
S175	1.802	4.35	173.6	MOUNTAIN	1.87	48.0	4.78	0.040	0.29	0.35	4.50	0.36	
S180	1.443	4.66	215.0	MOUNTAIN	2.04	45.2	5.43	0.037	0.25	0.35	4.25	0.42	
S185	2.421	4.99	254.4	MOUNTAIN	1.99	49.3	5.34	0.041	0.16	0.35	4.35	0.40	
S190	4.054	5.88	39.1	DESERT/RANGELAND	2.47	49.6	6.25	0.025	0.35	0.35	3.81	0.44	
S195	1.808	5.15	45.2	DESERT/RANGELAND	2.64	56.5	4.80	0.030	0.33	0.35	4.25	0.42	
S400	1.544	3.30	249.2	MOUNTAIN	1.75	49.1	3.54	0.050	0.25	0.35	4.20	0.43	
S410	0.639	3.28	204.6	MOUNTAIN	1.70	40.3	4.29	0.040	0.15	0.35	3.85	0.43	
S415	0.451	2.20	84.2	DESERT/RANGELAND	0.84	19.6	5.90	0.025	0.35	0.35	3.64	0.49	
S420	1.767	3.43	68.5	DESERT/RANGELAND	1.59	30.7	5.89	0.025	0.35	0.35	4.30	0.41	
S430	0.795	2.16	74.5	DESERT/RANGELAND	1.03	21.5	5.29	0.025	0.35	0.35	4.55	0.35	
S435	0.393	1.57	72.1	DESERT/RANGELAND	0.61	15.7	5.26	0.025	0.35	0.35	4.45	0.37	
S440	1.068	2.51	67.7	DESERT/RANGELAND	1.39	26.0	5.09	0.025	0.35	0.35	4.20	0.43	
S450	2.521	3.80	59.2	DESERT/RANGELAND	1.90	50.6	3.96	0.036	0.23	0.35	4.25	0.42	
S500	3.638	4.48	359.1	MOUNTAIN	3.39	66.2	3.57	0.050	0.25	0.35	3.92	0.41	
S510	1.840	3.49	107.1	DESERT/RANGELAND	1.32	26.5	6.95	0.025	0.35	0.35	3.95	0.40	
S520	1.481	3.91	61.9	DESERT/RANGELAND	2.21	37.3	5.53	0.025	0.35	0.35	4.50	0.36	
S530	2.226	3.43	66.5	DESERT/RANGELAND	1.40	42.4	4.26	0.036	0.20	0.35	4.30	0.41	
S700	5.240	6.91	47.9	DESERT/RANGELAND	3.20	58.2	6.25	0.026	0.34	0.36	5.00	0.28	
S720	4.626	6.41	48.1	DESERT/RANGELAND	2.78	59.8	5.65	0.029	0.33	0.36	5.00	0.28	
S740	1.132	1.48	73.5	DESERT/RANGELAND	0.66	25.3	3.09	0.040	0.15	0.37	5.30	0.24	
S900	1.035	3.21	420.5	MOUNTAIN	1.94	45.8	3.69	0.050	0.25	0.37	5.30	0.24	
S910	0.983	2.07	105.2	DESERT/RANGELAND	0.82	18.2	6.00	0.025	0.35	0.35	4.70	0.31	
S915	1.126	4.08	127.5	DESERT/RANGELAND	1.54	36.9	5.83	0.032	0.25	0.37	6.60	0.14	
S920	3.291	3.63	40.2	DESERT/RANGELAND	2.65	42.2	4.54	0.025	0.35	0.38	5.60	0.22	

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1****************************************                                    ****************************************
*                                      *                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              JUN  1998               *                                    *    HYDROLOGIC ENGINEERING CENTER     *
*            VERSION 4.1               *                                    *          609 SECOND STREET           *
*                                      *                                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE   16JUN06  TIME  10:34:23  *                                    *           (916) 756-1104             *
*                                      *                                    *                                      *
****************************************                                    ****************************************

                                        X     X  XXXXXXX   XXXXX           X
                                        X     X  X        X     X         XX
                                        X     X  X        X                X
                                        XXXXXXX  XXXX     X        XXXXX   X
                                        X     X  X        X                X
                                        X     X  X        X     X          X
                                        X     X  XXXXXXX   XXXXX         XXX


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

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

1                                                HEC-1 INPUT                                                    PAGE  1

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

        1           ID   SUN VALLEY AREA DRAINAGE MASTER PLAN (SVADMP) - FCD 2004C049
        2           ID    JE FULLER / HYDROLOGY & GEOMORPHOLOGY, INC.
        3           ID    FILENAME: A4_RO024.DAT
        4           ID    DATE:  JUNE 16, 2006
        5           ID
        6           ID    100-YEAR 24-HOUR MODEL
        7           ID    EXISTING CONDITIONS - ROCK OUTCROP 0% EFFECTIVE
        8           ID    AREA 4 WATERSHED AREA = 90.5 SQ. MILES
        9           ID           MODELED AREA = 76.8 SQ. MILES
       10           ID
       11           ID    GREEN-AMPT LOSS METHOD
       12           ID    S-GRAPH UNIT HYDROGRAPHS
       13           ID     - MOUNTAIN
       14           ID     - DESERT/RANGELAND
       15           ID    NORMAL-DEPTH CHANNEL ROUTING
       16           ID    LAND USE DATA FROM EXAMINATION OF SLOPE FROM 10-FT DTM TO DISTINGUISH
       17           ID     - UNDEVELOPED DESERT RANGELAND (NDR) - SLOPES < 5 %
       18           ID     - HILLSLOPES, SONORAN DESERT (NHS) - SLOPES 5 - 10 %
       19           ID     - MOUNTAIN TERRAIN (NMT) - SLOPES > 10 %
       20           ID   SOILS DATA FROM FCDMC GIS DATABASE (RECEIVED FROM FCDMC JULY 2005)
       21           ID     - ROCK OUTCROP ASSUMED 0% EFFECTIVE
       22           ID
       23           IT       5  1JAN99    1200    2000
       24           IN      15
       25           IO       5
                    *DIAGRAM
                    *
       26           JD   4.198  0.1000
       27           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
       28           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
       29           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
       30           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
       31           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
       32           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
       33           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
       34           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
       35           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
       36           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
       37           JD   3.990    10.0
       38           JD   3.780    30.0
       39           JD   3.654    60.0
       40           JD   3.578    90.0
                    *

       41           KK    S100   BASIN
       42           BA   6.994
       43           LG    0.35    0.38    6.40    0.16       0
       44           UI     449     455     964    1717    2422    3046    3616    4050    4275    4281
       45           UI    4178    3867    3211    2766    2319    1968    1698    1387    1198     990
       46           UI     848     715     635     476     471     313     309     309     204     110
       47           UI     109     111     110     109     111     109     110     111       0       0
       48           UI       0       0       0       0       0       0       0       0       0       0
       49           KM        Compute runoff from subbasin 100
                    *
1                                                HEC-1 INPUT                                                    PAGE  2

      LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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 50          KK    S102   BASIN
 51          BA   3.234
 52          LG    0.35    0.38    5.60    0.22       0
 53          UI     333     657    1539    2292    2943    3178    3083    2643    1985    1523
 54          UI    1179     890     674     542     377     300     232     193      81      82
 55          UI      81      81      83       0       0       0       0       0       0       0
 56          UI       0       0       0       0       0       0       0       0       0       0
 57          UI       0       0       0       0       0       0       0       0       0       0
 58          KM        Compute runoff from subbasin 102
             *

 59          KK    C102 COMBINE
 60          HC       2
 61          KM        Combine total inflow to detention area behind (north) of CAP Canal
             *

 62          KK   RR102 STORAGE
 63          KO
 64          RS       1    STOR      -1
 65          SV          553.00 1148.00 2316.00 2705.00
 66          SQ                  128.00  587.00  600.00
 67          SE  1543.0 1550.00 1552.00 1555.00 1556.00
 68          ST  1556.0  1320.0     3.2     1.5
 69          KM        Route flows through storage area behind CAP Canal
 70          KM        Stage-storage-discharge data from Wagner Wash FDS Hydrology (1991)
             *

 71          KK    D102  DIVERT
 72          DT    CF02     0.0     0.0
 73          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 74          DQ     0.0    50.0   500.0  5000.0     0.0     0.0     0.0     0.0     0.0     0.0
 75          KM        Divide flow evenly over the two 18-foot wide CAP overchutes
 76          KM        although the inverts are 0.5 feet different in elevation
             *

 77          KK  100105   ROUTE
 78          RS       9    FLOW      -1
 79          RC   0.035   0.055   0.035   11235  0.0045  105.00
 80          RX    0.00  120.00  240.00  250.00  590.00  600.00  720.00  840.00
 81          RY  105.00  102.50  100.00  100.00  100.00  100.00  102.50  105.00
 82          KM        Route outflows from east CAP overchute to Sun Valley Parkway.
 83          KM        Slope = (1550-1500) / 11235
             *

 84          KK    S105   BASIN
 85          BA   4.370

 86          LG    0.35    0.35    4.80    0.30       0
 87          UI     345     380    1112    1723    2334    2867    3143    3344    3176    2865
 88          UI    2374    1903    1555    1291    1018     832     685     564     458     369
 89          UI     288     235     238     126      83      85      84      84      84      84
 90          UI      84       0       0       0       0       0       0       0       0       0
 91          UI       0       0       0       0       0       0       0       0       0       0
 92          KM        Compute runoff from subbasin 105
             *
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1 HEC-1 INPUT PAGE 3

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

 93          KK    CF02RETRIEVE
 94          DR    CF02
 95          KM        Retrieve flow from west CAP overchute.
             *

 96          KK  102105   ROUTE
 97          RS       6    FLOW      -1
 98          RC   0.045   0.050   0.045    7656  0.0065  104.00
 99          RX    0.00   40.00  120.00  130.00  250.00  260.00  340.00  380.00
100          RY  104.00  102.00  101.00  100.00  100.00  101.00  102.00  104.00
101          KM        Route retrieved flow from west overchute to C105.
102          KM        Slope = (1550 - 1500) / 7656
             *

103          KK   C105U COMBINE
104          HC       3  14.598
105          KM        Combine runoff from S105 with routed flow from 100105 and 102105
106          KM        (CAP overchute flows). This is the total flow in Wagner Wash upstream
107          KM        of Sun Valley Parkway.
             *

108          KK    S110   BASIN
109          BA   0.430
110          LG    0.25    0.37    5.20    0.25       0
111          UI      56     166     335     449     587     358     291     241     188     140
112          UI     121      86      68      56      43      32      27      22      11      11
113          UI      10      11      11       0       0       0       0       0       0       0
114          UI       0       0       0       0       0       0       0       0       0       0
115          UI       0       0       0       0       0       0       0       0       0       0
116          KM        Compute runoff from subbasin 110
             *

117          KK  11015I   ROUTE
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 118          RS       2    FLOW      -1
 119          RC   0.045   0.035   0.045    3783  0.0267  102.00
 120          RX    0.00   50.00  100.00  110.00  120.00  130.00  180.00  230.00
 121          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 122          KM        Route flow from C105 through subbasin 110 to C115.
 123          KM        Slope = (1847-1746) / 3783
              *

 124          KK    D15I  DIVERT
 125          DT    CF5I     0.0     0.0
 126          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 127          DQ     0.0    20.0   200.0  2000.0     0.0     0.0     0.0     0.0     0.0     0.0
 128          KM        Divert flows to the left into S120
              *

 129          KK  15I15R   ROUTE
 130          RS       8    FLOW      -1
 131          RC   0.035   0.030   0.035   14128  0.0151  105.00
 132          RX    0.00   25.00   58.00   65.00   85.00   92.00  125.00  150.00
 133          RY  105.00  102.50  102.00  100.00  100.00  102.00  102.50  105.00
 134          KM        Route flows from split through S115 to C115.
1                                          HEC-1 INPUT                                          PAGE  4

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

 135          KM        Slope = (1746-1532) / 14128
              *

 136          KK    S115   BASIN
 137          BA   2.247
 138          LG    0.32    0.35    4.80    0.30       0
 139          UI     160     163     434     709     984    1212    1401    1530    1539    1465
 140          UI    1351    1100     918     773     632     528     444     351     304     252
 141          UI     203     170     140     110     110      85      39      39      40      39
 142          UI      39      39      40      39       0       0       0       0       0       0
 143          UI       0       0       0       0       0       0       0       0       0       0
 144          KM        Compute runoff from subbasin 115
              *

 145          KK   C115U COMBINE
 146          HC       2   2.677
 147          KM        Combine runoff from S115 with routed flow.
              *

 148          KK    CF5IRETRIEVE
 149          DR    CF5I
 150          KM        Retrieve diverted flow from D15I
              *

 151          KK  15I15L   ROUTE
 152          RS       7    FLOW      -1
 153          RC   0.045   0.045   0.045   12775  0.0168  104.00
 154          RX    0.00   50.00  100.00  130.00  170.00  200.00  250.00  300.00
 155          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
 156          KM        Route flows from split through S120 to C115.
 157          KM        Slope =(1746-1532) / 12775
              *

 158          KK   C115D COMBINE
 159          HC       2   2.677
 160          KM        Combine routed flows from split with remainder of flows in SVP channel
 161          KM        just D/S of C115.
              *

 162          KK  115120   ROUTE
 163          RS       2    FLOW      -1
 164          RC   0.030   0.025   0.030    4077  0.0093  105.00
 165          RX    0.00   30.00   75.00   80.00  105.00  110.00  155.00  190.00
 166          RY  105.00  101.50  101.00  100.00  100.00  101.00  101.50  105.00
 167          KM        Route total flows from C115 to C120. Slope =(1532-1494) / 4077
              *

 168          KK    S120   BASIN
 169          BA   2.004

 170          LG    0.33    0.35    4.65    0.32       0
 171          UI     206     408     954    1419    1824    1969    1911    1637    1230     944
 172          UI     731     551     418     336     234     186     143     120      50      51
 173          UI      50      51      51       0       0       0       0       0       0       0
 174          UI       0       0       0       0       0       0       0       0       0       0
 175          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE  5

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

 176          KM        Compute runoff from subbasin 120
              *

 177          KK    C120 COMBINE
 178          HC       2   4.681
 179          KM        Combine flows at Wagner Wash at outlet of channel along SVP
              *

 180          KK   C105D COMBINE
 181          HC       2  19.279
```

```
182          KM        Combine flows from C105 and C120 just D/S of Sun Valley Parkway
             *

183          KK  120135   ROUTE
184          RS       1    FLOW      -1
185          RC   0.045   0.035   0.045     951  0.0074  110.00
186          RX    0.00  225.00  450.00  455.00  485.00  490.00  615.00  840.00
187          RY  110.00  105.00  102.00  100.00  100.00  102.00  102.00  110.00
188          KM        Route flows in Wagner Wash from Sun Valley Parkway to C135.
189          KM        Slope = (1494-1487) / 951
             *

190          KK    S125   BASIN
191          BA   0.093
192          LG    0.25    0.35    4.15    0.44       0
193          UI      46     164     204     116      73      46      28      17      12       4
194          UI       5       4       0       0       0       0       0       0       0       0
195          UI       0       0       0       0       0       0       0       0       0       0
196          UI       0       0       0       0       0       0       0       0       0       0
197          UI       0       0       0       0       0       0       0       0       0       0
198          KM        Compute runoff from subbasin 125
             *

199          KK  12535I   ROUTE
200          RS       1    FLOW      -1
201          RC   0.055   0.040   0.055    2207  0.0254  103.00
202          RX    0.00   50.00  100.00  101.00  151.00  152.00  202.00  252.00
203          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
204          KM        Route flows from S125 to intermediate combination point in S135.
205          KM        Slope = (1754-1698) / 2207
             *

206          KK    S150   BASIN
207          BA   0.774
208          LG    0.25    0.35    4.65    0.32       0
209          UI      71     115     270     425     531     672     746     480     406     356
210          UI     312     262     212     181     159     132     106      89      77      65
211          UI      54      47      35      35      35      14      14      13      14      14
212          UI      13      14      14       0       0       0       0       0       0       0
213          UI       0       0       0       0       0       0       0       0       0       0
214          KM        Compute runoff from subbasin 150
             *
```



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

215          KK    D150  DIVERT
216          DT    CF50     0.0     0.0
217          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
218          DQ     0.0    90.0   900.0  9000.0     0.0     0.0     0.0     0.0     0.0     0.0
219          KM        Divert flows continuing west to apex of S150.
220          KM        Continuing flows exit S150 to S130 via small natural channel.
             *

221          KK  150130   ROUTE
222          RS       2    FLOW      -1
223          RC   0.045   0.035   0.045    3758  0.0300  104.00
224          RX    0.00   10.00   60.00   66.00   86.00   92.00  142.00  152.00
225          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
226          KM        Route flow through S130.  Slope = (1840 - 1727) / 3758
             *

227          KK    S130   BASIN
228          BA   0.310
229          LG    0.21    0.35    4.20    0.43       0
230          UI      61     239     399     514     313     240     176     128      94      64
231          UI      49      36      26      19      10      10      10      10       0       0
232          UI       0       0       0       0       0       0       0       0       0       0
233          UI       0       0       0       0       0       0       0       0       0       0
234          UI       0       0       0       0       0       0       0       0       0       0
235          KM        Compute runoff from subbasin 130
             *

236          KK    C130 COMBINE
237          HC       2    0.31
238          KM        Combine runoff from S130 with diverted flow from S150.
239          KM        Adjust drainage area to just that from S130 for JD.
             *

240          KK    D130  DIVERT
241          DT    CF30     0.0     0.0
242          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
243          DQ     0.0    30.0   300.0  3000.0     0.0     0.0     0.0     0.0     0.0     0.0
244          KM        Divert flow to the left into S155
             *

245          KK  13035I   ROUTE
246          RS       1    FLOW      -1
247          RC   0.045   0.035   0.045    1202  0.0241  103.00
248          RX    0.00   50.00  100.00  101.00  151.00  152.00  202.00  252.00
249          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
250          KM        Route continuing flow to intermediate point in S135.
251          KM        Slope = (1727-1698) / 1202
             *
```

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

 252          KK   C135I COMBINE
 253          HC       2   0.403
 254          KM        Combine routed flow from C130 and S125
              *

 255          KK  35I135   ROUTE
 256          RS       8    FLOW      -1
 257          RC   0.050   0.035   0.050   12580  0.0168  102.00
 258          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
 259          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 260          KM        Route combined flows to C135 at Wagner Wash.
 261          KM        Slope = (1698-1487) / 12580
              *

 262          KK    S135   BASIN
 263          BA   0.879
 264          LG    0.35    0.35    4.25    0.42       0
 265          UI     115     362     709     992    1126     989     736     527     370     260
 266          UI     194     128      89      76      28      28      29      28       0       0
 267          UI       0       0       0       0       0       0       0       0       0       0
 268          UI       0       0       0       0       0       0       0       0       0       0
 269          UI       0       0       0       0       0       0       0       0       0       0
 270          KM        Compute runoff from subbasin 135
              *

 271          KK   C135L COMBINE
 272          HC       2   1.282
 273          KM        Combine all piedmont runoff inflow to Wagner Wash at C135
              *

 274          KK    C135 COMBINE
 275          HC       2  20.561
 276          KM        Combine all flows in Wagner Wash at C135
              *

 277          KK  135145   ROUTE
 278          RS       4    FLOW      -1
 279          RC   0.045   0.035   0.045    7938  0.0042  110.00
 280          RX    0.00  300.00  400.00  406.00  506.00  512.00  612.00  912.00
 281          RY  110.00  102.50  102.00  100.00  100.00  102.00  102.50  110.00
 282          KM        Route flow in Wagner Wash to C145.  Slope = (1487-1454) / 7938
              *

 283          KK    S140   BASIN
 284          BA   1.373
 285          LG    0.35    0.36    5.00    0.28       0
 286          UI     260    1034    1801    2168    1890    1235     809     517     339     211
 287          UI     157      56      55      57       0       0       0       0       0       0
 288          UI       0       0       0       0       0       0       0       0       0       0
 289          UI       0       0       0       0       0       0       0       0       0       0
 290          UI       0       0       0       0       0       0       0       0       0       0
 291          KM        Compute runoff from subbasin 140
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 292          KK  140145   ROUTE
 293          RS       3    FLOW      -1
 294          RC   0.040   0.050   0.040    3656  0.0074  103.00
 295          RX    0.00   70.00  140.00  150.00  250.00  260.00  330.00  400.00
 296          RY  102.00  101.00  100.00  100.00  100.00  100.00  101.00  102.00
 297          KM        Route runoff from S140 to C145 at Wagner Wash.
 298          KM        Slope = (1481-1454) / 3656
              *

 299          KK    CF30RETRIEVE
 300          DR    CF30
 301          KM        Retrieve diverted flow from C130
              *

 302          KK   D1302  DIVERT
 303          DT   CF302     0.0     0.0
 304          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 305          DQ     0.0    10.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0
 306          KM        Divert flow continuing through S155 from flow entering S145
              *

 307          KK  130145   ROUTE
 308          RS      15    FLOW      -1
 309          RC   0.045   0.045   0.045   18285  0.0149  102.00
 310          RX    0.00   50.00  100.00  103.00  113.00  116.00  166.00  216.00
 311          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 312          KM        Route flow to Wagner Wash through S145 to C145.
 313          KM        Slope = (1727 - 1454) / 18285
              *

 314          KK    S145   BASIN
 315          BA   1.756
```

```
 316          LG    0.35    0.35    4.15    0.44       0
 317          UI     226     672    1369    1903    2167    2003    1508    1085     777     544
 318          UI     399     279     198     157      80      55      56      54      55       0
 319          UI       0       0       0       0       0       0       0       0       0       0
 320          UI       0       0       0       0       0       0       0       0       0       0
 321          UI       0       0       0       0       0       0       0       0       0       0
 322          KM        Compute runoff from subbasin 145
              *

 323          KK   C145L COMBINE
 324          HC       2   2.066
 325          KM        Combine runoff from S145 with routed flows C130.
 326          KM        Adjust BA for JD (S130 + S145)
              *

 327          KK    C145 COMBINE
 328          HC       3   23.69
 329          KM        Combine all flows in Wagner Wash at C145
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 330          KK  145155   ROUTE
 331          RS       1    FLOW      -1
 332          RC   0.045   0.035   0.055     631  0.0032  110.00
 333          RX    0.00  150.00  300.00  309.00  379.00  388.00  538.00  838.00
 334          RY  110.00  106.50  103.00  100.00  100.00  103.00  106.50  110.00
 335          KM        Route flows in Wagner Wash form C145 to C155. Slope = (1454-1452)/631
              *

 336          KK    CF50RETRIEVE
 337          DR    CF50
 338          KM        Retrieve diverted flow from S150
              *

 339          KK  150155   ROUTE
 340          RS      12    FLOW      -1
 341          RC   0.045   0.040   0.045   19261  0.0188  102.00
 342          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
 343          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 344          KM        Route flow from S150 to Wagner Wash .  Slope = (1814 - 1452) / 19261
              *

 345          KK   CF302RETRIEVE
 346          DR   CF302
 347          KM        Retrieve diverted flow from C130
              *

 348          KK  130155   ROUTE
 349          RS      12    FLOW      -1
 350          RC   0.045   0.040   0.045   14782  0.0156  102.00
 351          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
 352          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 353          KM        Route retrieved flow to Wagner Wash.  Slope = (1682 - 1452) / 14782
              *

 354          KK    S155   BASIN
 355          BA   1.832
 356          LG    0.35    0.35    4.50    0.36       0
 357          UI     187     361     846    1266    1637    1771    1735    1497    1161     879
 358          UI     681     519     385     314     228     181     130     126      46      46
 359          UI      45      46      46      45       0       0       0       0       0       0
 360          UI       0       0       0       0       0       0       0       0       0       0
 361          UI       0       0       0       0       0       0       0       0       0       0
 362          KM        Compute runoff from subbasin 155
              *

 363          KK   C155L COMBINE
 364          HC       3   2.606
 365          KM        Combine runoff from S155 with routed flows at Wagner Wash.
 366          KM        Adjust BA for JD (S150 + S155).
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 367          KK    C155 COMBINE
 368          HC       2  26.296
 369          KM        Combine all flows at Wagner Wash at C155
              *

 370          KK  155160   ROUTE
 371          RS       5    FLOW      -1
 372          RC   0.035   0.035   0.035    2291  0.0052  110.00
 373          RX    0.00  200.00  400.00  406.00  506.00  512.00  712.00  912.00
 374          RY  110.00  106.50  103.00  100.00  100.00  103.00  106.50  110.00
 375          KM        Route flow in Wagner Wash to C160 (Sun Valley Parkway).
 376          KM        Slope = (1452-1440) / 2291
              *

 377          KK    S160   BASIN
 378          BA   1.144
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```
379          LG    0.35    0.35    4.00    0.47       0
380          UI     165     599    1121    1501    1557    1233     844     593     394     281
381          UI     190     122      93      40      40      40      41       0       0       0
382          UI       0       0       0       0       0       0       0       0       0       0
383          UI       0       0       0       0       0       0       0       0       0       0
384          UI       0       0       0       0       0       0       0       0       0       0
385          KM        Compute runoff from subbasin 160
             *

386          KK    C160 COMBINE
387          HC       2   27.44
388          KM        Combine flows at Sun Valley Parkway
             *

389          KK  160170   ROUTE
390          RS       3    FLOW      -1
391          RC   0.040   0.030   0.040    5248  0.0057  108.00
392          RX    0.00  200.00  400.00  406.00  606.00  612.00  812.00 1012.00
393          RY  108.00  103.00  102.00  100.00  100.00  102.00  103.00  108.00
394          KM        Route flows from Sun Valley Parkway to C170R. Slope = (1440-1410)/5248
             *

395          KK    S165   BASIN
396          BA   0.616
397          LG    0.30    0.35    4.55    0.35       0
398          UI     121     477     809    1022     617     474     347     254     185     127
399          UI      96      69      52      36      20      20      20      20       0       0
400          UI       0       0       0       0       0       0       0       0       0       0
401          UI       0       0       0       0       0       0       0       0       0       0
402          UI       0       0       0       0       0       0       0       0       0       0
403          KM        Compute runoff from subbasin 165
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

404          KK  165170   ROUTE
405          RS       8    FLOW      -1
406          RC   0.050   0.035   0.050   13704  0.0161  104.00
407          RX    0.00   50.00  100.00  106.00  131.00  137.00  187.00  237.00
408          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
409          KM        Route runoff from S165 to Sun Valley Parkway (C170).
410          KM        Slope = (1677-1456) / 13704
             *

411          KK    S170   BASIN
412          BA   1.464
413          LG    0.35    0.35    4.40    0.38       0
414          UI     209     755    1427    1917    1973    1590    1086     762     513     360
415          UI     246     160     123      52      51      51      52       0       0       0
416          UI       0       0       0       0       0       0       0       0       0       0
417          UI       0       0       0       0       0       0       0       0       0       0
418          UI       0       0       0       0       0       0       0       0       0       0
419          KM        Compute runoff from subbasin 170
             *

420          KK    C170 COMBINE
421          HC       2
422          KM        Combine runoff from S170 with routed flow from S165
             *

423          KK    170R   ROUTE
424          RS       3    FLOW      -1
425          RC   0.045   0.045   0.045    3986  0.0115  104.00
426          RX    0.00   50.00  100.00  103.00  113.00  116.00  166.00  216.00
427          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
428          KM        Route flow from C170 to Wagner Wash.  Slope = (1456-1410) / 3986
             *

429          KK   C170R COMBINE
430          HC       2
431          KM        Combine routed flows from C170 and C160 in Wagner Wash
             *

432          KK  170180   ROUTE
433          RS       4    FLOW      -1
434          RC   0.045   0.035   0.045    6770  0.0065  110.00
435          RX    0.00  200.00  400.00  406.00  606.00  612.00  812.00 1012.00
436          RY  110.00  103.00  102.00  100.00  100.00  102.00  103.00  110.00
437          KM        Route flows in Wagner Wash to C180R.  Slope = (1410-1366) / 6770
             *

438          KK    S175   BASIN
439          BA   1.802
440          LG    0.29    0.35    4.50    0.36       0
441          UI     126     127     317     525     763     877    1013    1295    1376     895
442          UI     771     703     622     572     507     439     372     318     296     274
443          UI     227     192     163     148     138     116      96      97      73      62
444          UI      62      63      55      24      25      24      24      24      24      25
445          UI      24      24      24      25       0       0       0       0       0       0
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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446          KM        Compute runoff from subbasin 175
             *

447          KK    175R   ROUTE
448          RS       2    FLOW      -1
449          RC   0.045   0.045   0.045    3217  0.0134  103.00
450          RX    0.00   50.00  100.00  103.00  153.00  156.00  216.00  266.00
451          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
452          KM        Route runoff from S175 to intermediate point in S190 (C180RI).
453          KM        Slope = (1456 - 1413) / 3217
             *

454          KK    S180   BASIN
455          BA   1.443
456          LG    0.25    0.35    4.25    0.42       0
457          UI     107     108     311     490     677     785     927    1258     896     684
458          UI     622     547     497     440     379     315     275     250     228     185
459          UI     154     138     120     115      82      83      73      52      53      52
460          UI      50      21      20      21      20      21      21      20      21      21
461          UI      20       0       0       0       0       0       0       0       0       0
462          KM        Compute runoff from subbasin 180
             *

463          KK    180R   ROUTE
464          RS       2    FLOW      -1
465          RC   0.045   0.045   0.045    2965  0.0128  103.00
466          RX    0.00   50.00  100.00  103.00  128.00  131.00  181.00  231.00
467          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
468          KM        Route runoff from S180 to intermediate point in S190 (C180RI).
469          KM        Slope = (1451 - 1413) / 2965
             *

470          KK  C180RI COMBINE
471          HC       2
472          KM        Combine routed flows from S175 and S180
             *

473          KK  RI180R   ROUTE
474          RS       3    FLOW      -1
475          RC   0.045   0.040   0.045    3866  0.0122  104.00
476          RX    0.00   50.00  100.00  106.00  156.00  166.00  216.00  266.00
477          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
478          KM        Route combined flows to Wagner Wash.  Slope = (1413 - 1366) / 3866
             *

479          KK   C180R COMBINE
480          HC       2
481          KM        Combine flows in Wagner Wash
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

482          KK  180185   ROUTE
483          RS       3    FLOW      -1
484          RC   0.045   0.035   0.045    3450  0.0075  106.00
485          RX    0.00  100.00  200.00  206.00  406.00  412.00  512.00  612.00
486          RY  106.00  104.00  102.00  100.00  100.00  102.00  104.00  106.00
487          KM        Route flows in Wagner Wash from C180R to C185R.
488          KM        Slope = (1366 - 1340) / 3450
             *

489          KK    S185   BASIN
490          BA   2.421
491          LG    0.16    0.35    4.35    0.40       0
492          UI     165     166     391     668     960    1130    1281    1613    1908    1239
493          UI    1060     936     847     785     677     614     534     438     399     375
494          UI     338     271     230     210     183     183     133     126     127      85
495          UI      80      82      81      67      32      31      32      32      31      32
496          UI      32      31      32      32      32       0       0       0       0       0
497          KM        Compute runoff from subbasin 185
             *

498          KK    185R   ROUTE
499          RS       5    FLOW      -1
500          RC   0.045   0.035   0.045    8534  0.0120  104.00
501          RX    0.00   30.00  100.00  106.00  156.00  162.00  232.00  262.00
502          RY  104.00  102.00  102.00  100.00  100.00  102.00  102.00  104.00
503          KM        Route runoff from S185 to Wagner Wash.  Slope = (1442-1340) / 8534
             *

504          KK   C185R COMBINE
505          HC       2
506          KM        Combine flows in Wagner Wash
             *

507          KK  185190   ROUTE
508          RS       2    FLOW      -1
509          RC   0.045   0.040   0.045    2700  0.0119  106.00
510          RX    0.00   80.00  160.00  166.00  416.00  422.00  502.00  582.00
511          RY  106.00  103.00  102.00  100.00  100.00  102.00  103.00  106.00
512          KM        Route flow in Wagner Wash to C190.  Slope = (1340-1308) / 2700
             *
```

```
513          KK    S190   BASIN
514          BA   4.054
515          LG    0.35    0.35    3.81    0.44       0
516          UI     274     278     647    1125    1573    1918    2319    2540    2637    2574
517          UI    2467    2112    1787    1506    1256    1044     891     745     605     522
518          UI     432     370     293     266     188     191     188      78      68      66
519          UI      67      67      67      67      67      67       0       0       0       0
520          UI       0       0       0       0       0       0       0       0       0       0
521          KM        Compute runoff from subbasin 190
             *
1                                          HEC-1 INPUT                                          PAGE 14

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


522          KK    C190 COMBINE
523          HC       2   39.24
524          KM        Combine all flow in Wagner Wash at C190
             *

525          KK  190195   ROUTE
526          RS       2    FLOW      -1
527          RC   0.045   0.035   0.045    4941  0.0107  110.00
528          RX    0.00   50.00  200.00  206.00  356.00  366.00  516.00  566.00
529          RY  110.00  103.00  102.00  100.00  100.00  102.00  103.00  110.00
530          KM        Route flow from C190 to the Hassayampa River. Slope = (1308-1255)/4941
             *

531          KK    S195   BASIN
532          BA   1.808
533          LG    0.33    0.35    4.25    0.42       0
534          UI     107     108     188     366     523     660     786     925     975    1026
535          UI    1044     975     915     778     674     571     496     419     359     313
536          UI     260     223     202     165     146     115     114      76      74      74
537          UI      67      27      26      26      26      26      26      27      26      26
538          UI      27       0       0       0       0       0       0       0       0       0
539          KM        Compute runoff from subbasin 195
             *

540          KK    C195 COMBINE
541          HC       2   41.05
542          KM        Combine all flows in Wagner Wash at the Hassayampa River
             *

543          KK    S400   BASIN
544          BA   1.544
545          LG    0.25    0.35    4.20    0.43       0
546          UI     106     106     252     429     616     729     819    1050    1206     793
547          UI     665     601     543     493     440     385     339     276     254     239
548          UI     212     174     144     133     116     116      82      81      81      52
549          UI      51      53      51      39      21      20      20      21      20      20
550          UI      20      21      20      20      20       0       0       0       0       0
551          KM        Compute runoff from subbasin 400
             *

552          KK    D400  DIVERT
553          DT    CF00     0.0     0.0
554          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
555          DQ     0.0    50.0   500.0  5000.0     0.0     0.0     0.0     0.0     0.0     0.0
556          KM        Divert flow to the right into S430
             *

557          KK    S410   BASIN
558          BA   0.639
559          LG    0.15    0.35    3.85    0.43       0
560          UI      53      70     177     290     367     429     593     473     342     300
561          UI     268     232     202     173     136     126     115      89      72      65
562          UI      58      47      41      38      26      26      26      19      11      10
563          UI      10      10      11      10      10      10      11       0       0       0
1                                          HEC-1 INPUT                                          PAGE 15

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

564          UI       0       0       0       0       0       0       0       0       0       0
565          KM        Compute runoff from subbasin 410
             *

566          KK    C410 COMBINE
567          HC       2
568          KM        Combine runoff from S400 and S410
             *

569          KK    D410  DIVERT
570          DT    CF10     0.0     0.0
571          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
572          DQ     0.0    10.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0
573          KM        Divert additional flow to the right into S430
             *

574          KK  410415   ROUTE
575          RS       4    FLOW      -1
576          RC   0.045   0.035   0.045    6871  0.0143  103.00
577          RX    0.00   30.00  200.00  203.00  253.00  256.00  426.00  456.00
578          RY  103.00  101.00  101.00  100.00  100.00  101.00  101.00  103.00
```

```
579          KM        Route combined flows to Sun Valley Parkway. Slope = (1528-1430)/6871
             *

580          KK    S415   BASIN
581          BA   0.451
582          LG    0.35    0.35    3.64    0.49       0
583          UI      92     356     623     728     617     389     253     161     101      65
584          UI      44      18      19      19       0       0       0       0       0       0
585          UI       0       0       0       0       0       0       0       0       0       0
586          UI       0       0       0       0       0       0       0       0       0       0
587          UI       0       0       0       0       0       0       0       0       0       0
588          KM        Compute runoff from subbasin 415
             *

589          KK    C415 COMBINE
590          HC       2
591          KM        Combine runoff at Sun Valley Parkway
             *

592          KK  415420   ROUTE
593          RS      10    FLOW      -1
594          RC   0.045   0.035   0.045   18114  0.0130  104.00
595          RX    0.00   30.00   60.00   66.00   96.00  102.00  132.00  162.00
596          RY  104.00  102.00  102.00  100.00  100.00  102.00  102.00  104.00
597          KM        Route flow from Sun Valley Parkway to Hassayampa River.
598          KM        Slope = (1430-1195) / 18114
             *

599          KK    S420   BASIN
600          BA   1.767
601          LG    0.35    0.35    4.30    0.41       0
602          UI     193     427     964    1407    1752    1846    1712    1346    1015     760
603          UI     582     417     328     242     183     132     115      47      47      48
604          UI      47      47       0       0       0       0       0       0       0       0
```



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

605          UI       0       0       0       0       0       0       0       0       0       0
606          UI       0       0       0       0       0       0       0       0       0       0
607          KM        Compute runoff from subbasin 420
             *

608          KK    C420 COMBINE
609          HC       2
610          KM        Combine flows from S400, S410, S415, and S420 at Hassayampa River
             *

611          KK    CF00RETRIEVE
612          DR    CF00
613          KM        Retrieve diverted flows from S400
             *

614          KK    CF10RETRIEVE
615          DR    CF10
616          KM        Retrieve diverted flows from S410
             *

617          KK  C40010 COMBINE
618          HC       2   1.544
619          KM        Combine retrieved diverted flows
             *

620          KK  400430   ROUTE
621          RS       5    FLOW      -1
622          RC   0.045   0.040   0.045    8383  0.0130  105.00
623          RX    0.00   12.00   25.00   31.00   61.00   67.00   80.00   92.00
624          RY  105.00  104.00  103.00  100.00  100.00  103.00  104.00  105.00
625          KM        Route combined flows to Sun Valley Parkway. Slope = (1539-1430)/8383
             *

626          KK    S430   BASIN
627          BA   0.795
628          LG    0.35    0.35    4.55    0.35       0
629          UI     127     515     918    1163    1116     779     521     349     228     153
630          UI     100      72      30      30      30       0       0       0       0       0
631          UI       0       0       0       0       0       0       0       0       0       0
632          UI       0       0       0       0       0       0       0       0       0       0
633          UI       0       0       0       0       0       0       0       0       0       0
634          KM        Compute runoff from subbasin 430
             *

635          KK    C430 COMBINE
636          HC       2
637          KM        Combine runoff from S430 with routed flows at Sun Valley Parkway
             *

638          KK  430440   ROUTE
639          RS       7    FLOW      -1
640          RC   0.035   0.035   0.035   13256  0.0128  106.00
641          RX    0.00   16.00   32.00   38.00   68.00   74.00   90.00  106.00
642          RY  106.00  104.50  103.00  100.00  100.00  103.00  104.50  106.00
643          KM        Route flows from Sun Valley Parkway through S440.
```

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

 644          KM        Slope = (1430-1260) / 13256
              *

 645          KK    S440   BASIN
 646          BA   1.068
 647          LG    0.35    0.35    4.20    0.43       0
 648          UI     137     414     838    1167    1323    1221     910     657     468     330
 649          UI     240     168     118      95      46      33      35      33      34       0
 650          UI       0       0       0       0       0       0       0       0       0       0
 651          UI       0       0       0       0       0       0       0       0       0       0
 652          UI       0       0       0       0       0       0       0       0       0       0
 653          KM        Compute runoff from subbasin 440
              *

 654          KK    C440 COMBINE
 655          HC       2
 656          KM        Combine runoff from S440 with routed flows from Sun Valley Parkway.
              *

 657          KK  440450   ROUTE
 658          RS       3    FLOW      -1
 659          RC   0.035   0.040   0.035    4154  0.0104  103.00
 660          RX    0.00  150.00  300.00  303.00  333.00  336.00  486.00  636.00
 661          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 662          KM        Route combined flows to the Hassayampa River.
 663          KM        Slope = (1260-1217) / 4154
              *

 664          KK    S450   BASIN
 665          BA   2.521
 666          LG    0.23    0.35    4.25    0.42       0
 667          UI     167     169     381     664     938    1152    1392    1514    1599    1599
 668          UI    1528    1333    1142     951     803     683     567     481     395     336
 669          UI     287     255     184     177     130     116     115      88      41      41
 670          UI      41      41      41      41      41      40      41       0       0       0
 671          UI       0       0       0       0       0       0       0       0       0       0
 672          KM        Compute runoff from subbasin 450
              *

 673          KK    S435   BASIN
 674          BA   0.393
 675          LG    0.35    0.35    4.45    0.37       0
 676          UI     130     505     775     686     414     231     134      75      42      20
 677          UI      20       0       0       0       0       0       0       0       0       0
 678          UI       0       0       0       0       0       0       0       0       0       0
 679          UI       0       0       0       0       0       0       0       0       0       0
 680          UI       0       0       0       0       0       0       0       0       0       0
 681          KM        Compute runoff from subbasin 435
              *
```



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

 682          KK  435450   ROUTE
 683          RS      10    FLOW      -1

 684          RC   0.045   0.035   0.045   18781  0.0119  105.00
 685          RX    0.00   40.00  120.00  126.00  146.00  152.00  232.00  272.00
 686          RY  105.00  103.00  102.00  100.00  100.00  102.00  103.00  105.00
 687          KM        Route runoff from S435 at Sun Valley Parkway to Hassayampa River.
 688          KM        Slope = (1440 - 1217) / 18781
              *

 689          KK    C450 COMBINE
 690          HC       3
 691          KM        Combine flows from S430, S435, S440, and S450 at Hassayampa River
              *

 692          KK  ALL400 COMBINE
 693          HC       29.178000
 694          KM        Dummy combine of all 400 series hydrographs at the Hassayampa
              *

 695          KK    S500   BASIN
 696          BA   3.638
 697          LG    0.25    0.35    3.92    0.41       0
 698          UI     184     186     184     515     713     935    1143    1294    1413    1581
 699          UI    1968    2186    1462    1252    1119    1051     979     907     837     769
 700          UI     716     629     568     487     456     435     408     387     311     297
 701          UI     237     239     212     201     204     146     142     143     141      94
 702          UI      91      90      90      92      90      51      35      36      35      36
 703          KM        Compute runoff from subbasin 500
              *

 704          KK  500510   ROUTE
 705          RS       7    FLOW      -1
 706          RC   0.045   0.035   0.045   14544  0.0186  104.00
 707          RX    0.00   20.00  100.00  106.00  206.00  212.00  292.00  312.00
 708          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
 709          KM        Route runoff from S500 to Sun Valley Parkway.
 710          KM        Slope = (1690-1420) / 14544
              *
```

```
711          KK    S510   BASIN
712          BA   1.840
713          LG    0.35    0.35    3.95    0.40       0
714          UI     232     677    1390    1950    2228    2094    1604    1165     828     599
715          UI     433     307     220     160     106      57      58      56      57       0
716          UI       0       0       0       0       0       0       0       0       0       0
717          UI       0       0       0       0       0       0       0       0       0       0
718          UI       0       0       0       0       0       0       0       0       0       0
719          KM        Compute runoff from subbasin 510
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


720          KK    C510 COMBINE
721          HC       2
722          KM        Combine flows at Sun Valley Parkway
             *

723          KK    D510  DIVERT
724          DT    CF10     0.0     0.0
725          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0

726          DQ     0.0    65.0   650.0  6500.0     0.0     0.0     0.0     0.0     0.0     0.0
727          KM        Divert flow to the right into S530
             *

728          KK  510520   ROUTE
729          RS      10    FLOW      -1
730          RC   0.045   0.035   0.045   20653  0.0117  105.00
731          RX    0.00   20.00  120.00  126.00  156.00  166.00  266.00  286.00
732          RY  105.00  103.00  102.00  100.00  100.00  102.00  103.00  105.00
733          KM        Route continuing flows from Sun Valley Parkway to Hassayampa River.
734          KM        Slope = (1420-1178) / 20653
             *

735          KK    S520   BASIN
736          BA   1.481
737          LG    0.35    0.35    4.50    0.36       0
738          UI     133     206     510     780    1043    1196    1285    1241    1061     847
739          UI     672     531     420     330     262     210     159     135      91      93
740          UI      54      33      33      32      33      32      33       0       0       0
741          UI       0       0       0       0       0       0       0       0       0       0
742          UI       0       0       0       0       0       0       0       0       0       0
743          KM        Compute runoff from subbasin 520
             *

744          KK    C520 COMBINE
745          HC       2   6.956
746          KM        Combine runoff from S520 with routed flows from Sun Valley Parkway
747          KM        at Hassayampa River
             *

748          KK    S530   BASIN
749          BA   2.226
750          LG    0.20    0.35    4.30    0.41       0
751          UI     176     194     574     895    1189    1473    1624    1704    1622    1456
752          UI    1198     964     787     657     513     417     348     283     227     189
753          UI     141     120     122      56      43      43      43      43      43      43
754          UI      43       0       0       0       0       0       0       0       0       0
755          UI       0       0       0       0       0       0       0       0       0       0
756          KM        Compute runoff from subbasin 530
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


757          KK    CF10RETRIEVE
758          DR    CF10
759          KM        Retrieve diverted flows from C510
             *

760          KK  510530   ROUTE
761          RS       9    FLOW      -1
762          RC   0.045   0.040   0.045   18095  0.0126  106.00
763          RX    0.00   20.00   80.00   86.00  121.00  127.00  187.00  207.00
764          RY  106.00  102.00  102.00  100.00  100.00  102.00  102.00  106.00
765          KM        Route diverted flows through S530 to Hassayampa River.
766          KM        Slope = (1420-1192) / 18095
             *

767          KK    C530 COMBINE

768          HC       2   7.704
769          KM        Combine runoff from S530 with routed flows at the Hassayampa River
             *

770          KK  ALL500 COMBINE
771          HC       2   9.185
772          KM        Dummy combine of all 500 series hydrographs at Hassayampa
             *
```

```
773          KK    S700   BASIN
774          BA   5.240
775          LG    0.34    0.36    5.00    0.28       0
776          UI     302     306     485     986    1424    1796    2125    2542    2707    2882
777          UI    2934    2807    2645    2359    2015    1713    1505    1280    1105     968
778          UI     823     674     598     529     462     377     320     308     210     206
779          UI     207     182      73      74      74      74      73      74      74      73
780          UI      74      74       0       0       0       0       0       0       0       0
781          KM        Compute runoff from subbasin 700
             *

782          KK    S720   BASIN
783          BA   4.626
784          LG    0.33    0.36    5.00    0.28       0
785          UI     260     262     382     820    1159    1518    1787    2118    2322    2417
786          UI    2508    2445    2355    2135    1829    1563    1390    1173    1020     890
787          UI     762     653     568     492     421     401     283     275     245     177
788          UI     178     179     141      63      64      63      63      64      63      63
789          UI      64      63      64       0       0       0       0       0       0       0
790          KM        Compute runoff from subbasin 720
             *

791          KK    S740   BASIN
792          BA   1.132
793          LG    0.15    0.37    5.30    0.24       0
794          UI     150     472     931    1305    1445    1280     941     670     467     327
795          UI     246     163     109      92      36      37      37      36       0       0
796          UI       0       0       0       0       0       0       0       0       0       0
797          UI       0       0       0       0       0       0       0       0       0       0
798          UI       0       0       0       0       0       0       0       0       0       0
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

799          KM        Compute runoff from subbasin 740
             *

800          KK  ALL700 COMBINE
801          HC       3
802          KM        Dummy combination of all 700 series subbasins.
             *

803          KK    S900   BASIN
804          BA   1.035
805          LG    0.25    0.37    5.30    0.24       0
806          UI      75      77     215     338     472     551     650     871     671     496
807          UI     448     394     356     320     277     233     197     180     165     140
808          UI     116      97      89      83      65      59      58      37      38      37
809          UI      37      23      14      15      14      15      14      15      15      14
810          UI      15      14       0       0       0       0       0       0       0       0
811          KM        Compute runoff from subbasin 900
             *

812          KK  900910   ROUTE
813          RS       7    FLOW      -1
814          RC   0.045   0.035   0.045   10207  0.0192  103.00
815          RX    0.00   80.00  160.00  163.00  178.00  181.00  261.00  341.00
816          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
817          KM        Route runoff from subbasin 900 through subbasin 910.
818          KM        Slope = (1856-1660) / 10207
             *

819          KK    S910   BASIN
820          BA   0.983
821          LG    0.35    0.35    4.70    0.31       0
822          UI     234     923    1540    1684    1252     768     471     298     172     120
823          UI      45      44      44       0       0       0       0       0       0       0
824          UI       0       0       0       0       0       0       0       0       0       0
825          UI       0       0       0       0       0       0       0       0       0       0
826          UI       0       0       0       0       0       0       0       0       0       0
827          KM        Compute runoff from subbasin 910
             *

828          KK    C910 COMBINE
829          HC       2
830          KM        Combine runoff from S910 with routed flow at Sun Valley Parkway
             *

831          KK  910915   ROUTE
832          RS       2    FLOW      -1
833          RC   0.045   0.035   0.045    2998  0.0110  103.00
834          RX    0.00  100.00  200.00  203.00  223.00  226.00  326.00  426.00
835          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
836          KM        Route combined flow to C915.
837          KM        Slope = (1660-1627) / 2998
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

838          KK    S915   BASIN
839          BA   1.126
840          LG    0.25    0.37    6.60    0.14       0
841          UI     102     163     397     611     809     929     977     949     801     634
```

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842          UI     506     395     311     248     194     158     113      96      70      71
843          UI      32      25      25      25      25      26      25       0       0       0
844          UI       0       0       0       0       0       0       0       0       0       0
845          UI       0       0       0       0       0       0       0       0       0       0
846          KM        Compute runoff from subbasin 915
             *

847          KK    C915 COMBINE
848          HC       2
849          KM        Combine flows at C915
             *

850          KK  915920   ROUTE
851          RS       5    FLOW      -1
852          RC   0.045   0.035   0.045    9456  0.0103  104.00
853          RX    0.00  100.00  200.00  203.00  223.00  226.00  326.00  426.00
854          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
855          KM        Route combined flow to C920, at tributary to Trilby Wash parallel to CAP
856          KM        Slope = (1627-1530) / 9456
             *

857          KK    S920   BASIN
858          BA   3.291
859          LG    0.35    0.38    5.60    0.22       0
860          UI     261     294     853    1330    1783    2190    2432    2520    2411    2144
861          UI    1767    1414    1151     954     759     617     508     410     326     282
862          UI     200     178     181      71      63      65      63      64      64      64
863          UI      64       0       0       0       0       0       0       0       0       0
864          UI       0       0       0       0       0       0       0       0       0       0
865          KM        Compute runoff from subbasin 920
             *

866          KK    C920 COMBINE
867          HC       2
868          KM        Combine flows in Trilby Wash tributary
869          ZZ
```

1

```
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   41       S100
              .
              .
   50         .        S102
              .           .
              .           .
   59       C102............
              V
              V
   62      RR102
              .
              .
   72         .------->    CF02
   71       D102
              V
              V
   77     100105
              .
              .
   84         .        S105
              .           .
              .           .
   94         .           .           .<-------    CF02
   93         .           .        CF02
              .           .           V
              .           .           V
   96         .           .      102105
              .           .           .
              .           .           .
  103      C105U......................
              .
              .
  108         .        S110
              .           V
              .           V
  117         .      11015I
              .           .
              .           .
  125         .           .------->    CF5I
  124         .        D15I
              .           V
              .           V
  129         .      15I15R
              .           .
              .           .
  136         .           .        S115
              .           .           .
              .           .           .
  145         .       C115U............
              .           .
              .           .
  149         .           .           .<-------    CF5I
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148          .           .        CF5I
             .           .           V
             .           .           V
151          .           .      15I15L
             .           .           .
             .           .           .
158          .       C115D............
             .           V
             .           V
162          .      115120
             .           .
             .           .
168          .           .        S120
             .           .           .
             .           .           .
177          .        C120............
             .           .
             .           .
180      C105D............
             V
             V
183     120135
             .
             .
190          .        S125
             .           V
             .           V
199          .      12535I
             .           .
             .           .
206          .           .        S150
             .           .           .
             .           .           .
216          .           .           .-------->    CF50
215          .           .        D150
             .           .           V
             .           .           V
221          .           .      150130
             .           .           .
             .           .           .
227          .           .           .        S130
             .           .           .           .
             .           .           .           .
236          .           .        C130............
             .           .           .
             .           .           .
241          .           .           .-------->    CF30
240          .           .        D130
             .           .           V
             .           .           V
245          .           .      13035I
             .           .           .
             .           .           .
252          .       C135I............
             .           V
             .           V
255          .      35I135
             .           .
             .           .
262          .           .        S135
             .           .           .
             .           .           .
271          .       C135L............
             .           .
             .           .
274       C135............
             V
             V
277     135145
             .
             .
283          .        S140
             .           V
             .           V
292          .      140145
             .           .
             .           .
300          .           .           .<--------    CF30
299          .           .        CF30
             .           .           .
             .           .           .
303          .           .           .-------->   CF302
302          .           .       D1302
             .           .           V
             .           .           V
307          .           .      130145
             .           .           .
             .           .           .
314          .           .           .        S145
             .           .           .           .
             .           .           .           .
323          .           .       C145L............
             .           .           .
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327       C145........................
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                V
                V
330       145155
                .
                .
337             .           .<-------    CF50
336             .        CF50
                .           V
                .           V
339             .      150155
                .           .
                .           .
346             .           .           .<-------   CF302
345             .           .       CF302
                .           .           V
                .           .           V
348             .           .      130155
                .           .           .
                .           .           .
354             .           .           .        S155
                .           .           .           .
                .           .           .           .
363             .        C155L.......................
                .           .
                .           .
367         C155............
                V
                V
370       155160
                .
                .
377             .        S160
                .           .
                .           .
386         C160............
                V
                V
389       160170
                .
                .
395             .        S165
                .           V
                .           V
404             .      165170
                .           .
                .           .
411             .           .        S170
                .           .           .
                .           .           .
420             .        C170............
                .           V
                .           V
423             .        170R
                .           .
                .           .
429        C170R............
                V
                V
432       170180
                .
                .
438             .        S175
                .           V
                .           V
447             .        175R
                .           .
                .           .
454             .           .        S180
                .           .           V
                .           .           V
463             .           .        180R
                .           .           .
                .           .           .
470             .      C180RI............
                .           V
                .           V
473             .      RI180R
                .           .
                .           .
479        C180R............
                V
                V
482       180185
                .
                .
489             .        S185
                .           V
                .           V
498             .        185R
                .           .
                .           .
504        C185R............
                V
                V
507       185190
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                .
                .
513             .        S190
                .          .
                .          .
522         C190............
                V
                V
525       190195
                .
                .
531             .        S195
                .          .
                .          .
540         C195............
                .
                .
543             .        S400
                .          .
                .          .
553             .          .-------->    CF00
552             .        D400
                .          .
                .          .
557             .          .        S410
                .          .          .
                .          .          .
566             .        C410............
                .          .
                .          .
570             .          .-------->    CF10
569             .        D410
                .          V
                .          V
574             .      410415
                .          .
                .          .
580             .          .        S415
                .          .          .
                .          .          .
589             .        C415............
                .          V
                .          V
592             .      415420
                .          .
                .          .
599             .          .        S420
                .          .          .
                .          .          .
608             .        C420............
                .          .
                .          .
612             .          .          .<--------    CF00
611             .          .        CF00
                .          .          .
                .          .          .
615             .          .          .          .<--------    CF10
614             .          .          .        CF10
                .          .          .          .
                .          .          .          .
617             .          .      C40010............
                .          .          V
                .          .          V
620             .          .      400430
                .          .          .
                .          .          .
626             .          .          .        S430
                .          .          .          .
                .          .          .          .
635             .          .        C430............
                .          .          V
                .          .          V
638             .          .      430440
                .          .          .
                .          .          .
645             .          .          .        S440
                .          .          .          .
                .          .          .          .
654             .          .        C440............
                .          .          V
                .          .          V
657             .          .      440450
                .          .          .
                .          .          .
664             .          .          .        S450
                .          .          .          .
                .          .          .          .
673             .          .          .          .        S435
                .          .          .          .          V
                .          .          .          .          V
682             .          .          .          .      435450
                .          .          .          .          .
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689             .          .        C450........................
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                .          .          .
692             .     ALL400...........
                .          .
                .          .
695             .          .       S500
                .          .          V
                .          .          V
704             .          .     500510
                .          .          .
                .          .          .
711             .          .          .       S510
                .          .          .          .
                .          .          .          .
720             .          .       C510...........
                .          .          .
                .          .          .
724             .          .          .------->    CF10
723             .          .       D510
                .          .          V
                .          .          V
728             .          .     510520
                .          .          .
                .          .          .
735             .          .          .       S520
                .          .          .          .
                .          .          .          .
744             .          .       C520...........
                .          .          .
                .          .          .
748             .          .          .       S530
                .          .          .          .
                .          .          .          .
758             .          .          .          .          .<-------    CF10
757             .          .          .          .       CF10
                .          .          .          .          V
                .          .          .          .          V
760             .          .          .          .     510530
                .          .          .          .          .
                .          .          .          .          .
767             .          .          .       C530...........
                .          .          .          .
                .          .          .          .
770             .          .     ALL500...........
                .          .          .
                .          .          .
773             .          .          .       S700
                .          .          .          .
                .          .          .          .
782             .          .          .          .       S720
                .          .          .          .          .
                .          .          .          .          .
791             .          .          .          .          .       S740
                .          .          .          .          .          .
                .          .          .          .          .          .
800             .          .          .     ALL700........................
                .          .          .          .
                .          .          .          .
803             .          .          .          .       S900
                .          .          .          .          V
                .          .          .          .          V
812             .          .          .          .     900910
                .          .          .          .          .
                .          .          .          .          .
819             .          .          .          .          .       S910
                .          .          .          .          .          .
                .          .          .          .          .          .
828             .          .          .          .       C910...........
                .          .          .          .          V
                .          .          .          .          V
831             .          .          .          .     910915
                .          .          .          .          .
                .          .          .          .          .
838             .          .          .          .          .       S915
                .          .          .          .          .          .
                .          .          .          .          .          .
847             .          .          .          .       C915...........
                .          .          .          .          V
                .          .          .          .          V
850             .          .          .          .     915920
                .          .          .          .          .
                .          .          .          .          .
857             .          .          .          .          .       S920
                .          .          .          .          .          .
                .          .          .          .          .          .
866             .          .          .          .       C920...........
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```
(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                    ****************************************
*                                        *                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *                    *   U.S. ARMY CORPS OF ENGINEERS       *
*              JUN   1998                *                    *   HYDROLOGIC ENGINEERING CENTER      *
*            VERSION 4.1                 *                    *         609 SECOND STREET            *
*                                        *                    *      DAVIS, CALIFORNIA 95616         *
*  RUN DATE   16JUN06  TIME  10:34:23    *                    *          (916) 756-1104              *
*                                        *                    *                                      *
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****************************************                                    ****************************************

                    SUN VALLEY AREA DRAINAGE MASTER PLAN (SVADMP) - FCD 2004C049
                     JE FULLER / HYDROLOGY & GEOMORPHOLOGY, INC.
                     FILENAME: A4_RO024.DAT
                     DATE:  JUNE 16, 2006

                     100-YEAR 24-HOUR MODEL
                     EXISTING CONDITIONS - ROCK OUTCROP 0% EFFECTIVE
                     AREA 4 WATERSHED AREA = 90.5 SQ. MILES
                            MODELED AREA = 76.8 SQ. MILES

                     GREEN-AMPT LOSS METHOD
                     S-GRAPH UNIT HYDROGRAPHS
                      - MOUNTAIN
                      - DESERT/RANGELAND
                     NORMAL-DEPTH CHANNEL ROUTING
                     LAND USE DATA FROM EXAMINATION OF SLOPE FROM 10-FT DTM TO DISTINGUISH
                      - UNDEVELOPED DESERT RANGELAND (NDR) - SLOPES < 5 %
                      - HILLSLOPES, SONORAN DESERT (NHS) - SLOPES 5 - 10 %
                      - MOUNTAIN TERRAIN (NMT) - SLOPES > 10 %
                    SOILS DATA FROM FCDMC GIS DATABASE (RECEIVED FROM FCDMC JULY 2005)
                      - ROCK OUTCROP ASSUMED 0% EFFECTIVE


25 IO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

   IT          HYDROGRAPH TIME DATA
                      NMIN           5  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1JAN99  STARTING DATE
                     ITIME        1200  STARTING TIME
                        NQ        2000  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      8JAN99  ENDING DATE
                    NDTIME        1035  ENDING TIME
                     ICENT          19  CENTURY MARK

               COMPUTATION INTERVAL     .08 HOURS
                    TOTAL TIME BASE  166.58 HOURS

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

26 JD          INDEX STORM NO. 1
                     STRM        4.20  PRECIPITATION DEPTH
                     TRDA         .10  TRANSPOSITION DRAINAGE AREA

27 PI            PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .01       .00       .01
                    .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                    .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00

37 JD          INDEX STORM NO. 2
                     STRM        3.99  PRECIPITATION DEPTH
                     TRDA       10.00  TRANSPOSITION DRAINAGE AREA

 0 PI            PRECIPITATION PATTERN
```

```
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .01     .00     .01
               .01     .01     .01     .01     .01     .01     .01     .01     .03     .03
               .03     .09     .09     .09     .01     .01     .01     .01     .01     .01
               .01     .01     .01     .01     .01     .01     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
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               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
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               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00

38 JD         INDEX STORM NO. 3
                  STRM       3.78  PRECIPITATION DEPTH
                  TRDA      30.00  TRANSPOSITION DRAINAGE AREA

 0 PI           PRECIPITATION PATTERN
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .01     .00     .01
               .01     .01     .01     .01     .01     .01     .01     .01     .03     .03
               .03     .09     .09     .09     .01     .01     .01     .01     .01     .01
               .01     .01     .01     .01     .01     .01     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
               .00     .00     .00     .00     .00     .00     .00     .00

39 JD         INDEX STORM NO. 4
                  STRM       3.65  PRECIPITATION DEPTH
                  TRDA      60.00  TRANSPOSITION DRAINAGE AREA

 0 PI           PRECIPITATION PATTERN
               .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
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               .01     .01     .01     .01     .01     .01     .01     .01     .03     .03
               .03     .09     .09     .09     .01     .01     .01     .01     .01     .01
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 40 JD          INDEX STORM NO. 5
                       STRM        3.58  PRECIPITATION DEPTH
                       TRDA       90.00  TRANSPOSITION DRAINAGE AREA

  0 PI            PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                    .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
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            *            *
 62 KK      *     RR102  *      STORAGE
            *            *
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 63 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
1
                                                RUNOFF SUMMARY
                                        FLOW IN CUBIC FEET PER SECOND
                                      TIME IN HOURS,  AREA IN SQUARE MILES

                                   PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
        OPERATION        STATION   FLOW    PEAK                                           AREA      STAGE     MAX STAGE
+                                                      6-HOUR     24-HOUR     72-HOUR

        HYDROGRAPH AT
+                          S100    5214.   12.58        965.        241.         80.      6.99

        HYDROGRAPH AT
+                          S102    3434.   12.33        420.        105.         35.      3.23

        2 COMBINED AT
+                          C102    7803.   12.42       1367.        342.        114.     10.23

        ROUTED TO
+                         RR102     149.   14.42        141.        119.         82.     10.23

        DIVERSION TO
+                          CF02      75.   14.42         71.         59.         41.     10.23

        HYDROGRAPH AT
+                          D102      75.   14.42         71.         59.         41.     10.23

        ROUTED TO
+                        100105      70.   20.33         67.         58.         41.     10.23

        HYDROGRAPH AT
+                          S105    3466.   12.50        531.        133.         44.      4.37

        HYDROGRAPH AT
+                          CF02      75.   14.42         71.         59.         41.     10.23

        ROUTED TO
+                        102105      74.   15.67         70.         59.         41.     10.23
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+	3 COMBINED AT C105U	3466.	12.50	587.	238.	125.	14.60
+	HYDROGRAPH AT S110	522.	12.17	58.	14.	5.	.43
+	ROUTED TO 11015I	446.	12.42	58.	14.	5.	.43
+	DIVERSION TO CF5I	89.	12.42	12.	3.	1.	.43
+	HYDROGRAPH AT D15I	357.	12.42	46.	12.	4.	.43
+	ROUTED TO 15I15R	315.	12.83	46.	12.	4.	.43
+	HYDROGRAPH AT S115	1675.	12.50	278.	70.	23.	2.25
+	2 COMBINED AT C115U	1800.	12.67	322.	81.	27.	2.68
+	HYDROGRAPH AT CF5I	89.	12.42	12.	3.	1.	.43
+	ROUTED TO 15I15L	42.	13.58	12.	3.	1.	.43
+	2 COMBINED AT C115D	1800.	12.67	333.	83.	28.	2.68
+	ROUTED TO 115120	1767.	12.75	333.	83.	28.	2.68
+	HYDROGRAPH AT S120	2023.	12.33	243.	61.	20.	2.00
+	2 COMBINED AT C120	3165.	12.42	569.	142.	47.	4.68
+	2 COMBINED AT C105D	6181.	12.42	1076.	354.	161.	19.28
+	ROUTED TO 120135	6174.	12.50	1075.	354.	161.	19.28
+	HYDROGRAPH AT S125	159.	12.08	11.	3.	1.	.09
+	ROUTED TO 12535I	133.	12.17	11.	3.	1.	.09
+	HYDROGRAPH AT S150	707.	12.33	97.	24.	8.	.77
+	DIVERSION TO CF50	636.	12.33	88.	22.	7.	.77
+	HYDROGRAPH AT D150	71.	12.33	10.	2.	1.	.77
+	ROUTED TO 150130	65.	12.50	10.	2.	1.	.77
+	HYDROGRAPH AT S130	408.	12.17	37.	9.	3.	.31
+	2 COMBINED AT C130	428.	12.17	46.	12.	4.	.31
+	DIVERSION TO CF30	128.	12.17	14.	3.	1.	.31
+	HYDROGRAPH AT D130	300.	12.17	32.	8.	3.	.31
+	ROUTED TO 13035I	296.	12.17	32.	8.	3.	.31
+	2 COMBINED AT C135I	424.	12.17	43.	11.	4.	.40
+	ROUTED TO 35I135	300.	12.75	43.	11.	4.	.40
+	HYDROGRAPH AT S135	1015.	12.25	99.	25.	8.	.88
+	2 COMBINED AT C135L	1008.	12.25	140.	35.	12.	1.28

+	2 COMBINED AT C135	6665.	12.50	1195.	383.	171.	20.56
+	ROUTED TO 135145	5932.	12.83	1181.	380.	170.	20.56
+	HYDROGRAPH AT S140	2029.	12.17	172.	43.	14.	1.37
+	ROUTED TO 140145	1632.	12.42	172.	43.	14.	1.37
+	HYDROGRAPH AT CF30	128.	12.17	14.	3.	1.	.31
+	DIVERSION TO CF302	13.	12.17	1.	0.	0.	.31
+	HYDROGRAPH AT D1302	116.	12.17	13.	3.	1.	.31
+	ROUTED TO 130145	60.	13.67	12.	3.	1.	.31
+	HYDROGRAPH AT S145	1945.	12.25	193.	48.	16.	1.76
+	2 COMBINED AT C145L	1940.	12.25	204.	51.	17.	2.07
+	3 COMBINED AT C145	6567.	12.83	1496.	458.	196.	23.69
+	ROUTED TO 145155	6572.	12.83	1496.	458.	196.	23.69
+	HYDROGRAPH AT CF50	636.	12.33	88.	22.	7.	.77
+	ROUTED TO 150155	420.	13.50	86.	22.	7.	.77
+	HYDROGRAPH AT CF302	13.	12.17	1.	0.	0.	.31
+	ROUTED TO 130155	3.	15.92	1.	0.	0.	.31
+	HYDROGRAPH AT S155	1772.	12.33	214.	54.	18.	1.83
+	3 COMBINED AT C155L	1761.	12.33	297.	75.	25.	2.61
+	2 COMBINED AT C155	7039.	12.83	1747.	521.	217.	26.30
+	ROUTED TO 155160	7025.	12.92	1745.	520.	217.	26.30
+	HYDROGRAPH AT S160	1342.	12.17	124.	31.	10.	1.14
+	2 COMBINED AT C160	7072.	12.83	1843.	544.	225.	27.44
+	ROUTED TO 160170	6964.	13.08	1835.	543.	225.	27.44
+	HYDROGRAPH AT S165	833.	12.17	75.	19.	6.	.62
+	ROUTED TO 165170	650.	12.58	75.	19.	6.	.62
+	HYDROGRAPH AT S170	1802.	12.17	169.	42.	14.	1.46
+	2 COMBINED AT C170	1870.	12.25	241.	60.	20.	2.08
+	ROUTED TO 170R	1800.	12.42	241.	60.	20.	2.08
+	2 COMBINED AT C170R	7505.	12.92	2034.	592.	241.	29.52
+	ROUTED TO 170180	7406.	13.17	2024.	590.	241.	29.52
+	HYDROGRAPH AT S175	1271.	12.50	214.	53.	18.	1.80
	ROUTED TO						

+		175R	1177.	12.67	213.	53.	18.	1.80
+	HYDROGRAPH AT	S180	1026.	12.50	165.	41.	14.	1.44
+	ROUTED TO	180R	949.	12.58	165.	41.	14.	1.44
+	2 COMBINED AT	C180RI	2090.	12.67	374.	93.	31.	3.24
+	ROUTED TO	RI180R	2000.	12.75	374.	93.	31.	3.24
+	2 COMBINED AT	C180R	8559.	13.08	2333.	667.	266.	32.76
+	ROUTED TO	180185	8545.	13.17	2327.	666.	266.	32.76
+	HYDROGRAPH AT	S185	1646.	12.50	283.	71.	24.	2.42
+	ROUTED TO	185R	1400.	12.92	283.	71.	24.	2.42
+	2 COMBINED AT	C185R	9554.	13.08	2558.	723.	285.	35.19
+	ROUTED TO	185190	9536.	13.17	2552.	722.	285.	35.19
+	HYDROGRAPH AT	S190	2590.	12.58	448.	112.	37.	4.05
+	2 COMBINED AT	C190	10375.	13.08	2900.	810.	314.	39.24
+	ROUTED TO	190195	10254.	13.25	2893.	809.	314.	39.24
+	HYDROGRAPH AT	S195	1039.	12.67	202.	51.	17.	1.81
+	2 COMBINED AT	C195	10629.	13.25	3048.	848.	327.	41.05
+	HYDROGRAPH AT	S400	1027.	12.50	175.	44.	15.	1.54
+	DIVERSION TO	CF00	514.	12.50	88.	22.	7.	1.54
+	HYDROGRAPH AT	D400	514.	12.50	88.	22.	7.	1.54
+	HYDROGRAPH AT	S410	517.	12.42	76.	19.	6.	.64
+	2 COMBINED AT	C410	985.	12.50	162.	40.	13.	2.18
+	DIVERSION TO	CF10	99.	12.50	16.	4.	1.	2.18
+	HYDROGRAPH AT	D410	887.	12.50	146.	36.	12.	2.18
+	ROUTED TO	410415	662.	12.92	146.	36.	12.	2.18
+	HYDROGRAPH AT	S415	624.	12.17	50.	13.	4.	.45
+	2 COMBINED AT	C415	676.	12.92	193.	48.	16.	2.63
+	ROUTED TO	415420	597.	13.75	191.	48.	16.	2.63
+	HYDROGRAPH AT	S420	1740.	12.33	198.	50.	17.	1.77
+	2 COMBINED AT	C420	1712.	12.33	382.	97.	32.	4.40
+	HYDROGRAPH AT	CF00	514.	12.50	88.	22.	7.	1.54
+	HYDROGRAPH AT	CF10	99.	12.50	16.	4.	1.	2.18
+	2 COMBINED AT	C40010	613.	12.50	104.	26.	9.	1.54

+	ROUTED TO	400430	569.	12.75	104.	26.	9.	1.54
+	HYDROGRAPH AT	S430	1090.	12.17	95.	24.	8.	.80
+	2 COMBINED AT	C430	1075.	12.17	196.	49.	16.	2.34
+	ROUTED TO	430440	952.	12.50	195.	49.	16.	2.34
+	HYDROGRAPH AT	S440	1205.	12.25	119.	30.	10.	1.07
+	2 COMBINED AT	C440	1689.	12.42	309.	78.	26.	3.41
+	ROUTED TO	440450	1441.	12.67	308.	78.	26.	3.41
+	HYDROGRAPH AT	S450	1624.	12.58	287.	72.	24.	2.52
+	HYDROGRAPH AT	S435	656.	12.08	47.	12.	4.	.39
+	ROUTED TO	435450	378.	12.83	47.	12.	4.	.39
+	3 COMBINED AT	C450	3302.	12.67	630.	158.	53.	6.32
+	2 COMBINED AT	ALL400	4341.	12.67	1002.	253.	84.	9.18
+	HYDROGRAPH AT	S500	1944.	12.75	415.	104.	35.	3.64
+	ROUTED TO	500510	1792.	13.08	414.	104.	35.	3.64
+	HYDROGRAPH AT	S510	2099.	12.25	213.	53.	18.	1.84
+	2 COMBINED AT	C510	2060.	12.25	616.	155.	52.	5.48
+	DIVERSION TO	CF10	1339.	12.25	401.	101.	34.	5.48
+	HYDROGRAPH AT	D510	721.	12.25	216.	54.	18.	5.48
+	ROUTED TO	510520	582.	13.75	210.	54.	18.	5.48
+	HYDROGRAPH AT	S520	1288.	12.42	174.	43.	14.	1.48
+	2 COMBINED AT	C520	1254.	12.42	374.	96.	32.	6.96
+	HYDROGRAPH AT	S530	1697.	12.50	257.	64.	21.	2.23
+	HYDROGRAPH AT	CF10	99.	12.50	16.	4.	1.	2.18
+	ROUTED TO	510530	50.	13.92	16.	4.	1.	2.18
+	2 COMBINED AT	C530	1697.	12.50	273.	68.	23.	7.70
+	2 COMBINED AT	ALL500	2894.	12.42	638.	162.	54.	9.19
+	HYDROGRAPH AT	S700	3186.	12.67	642.	160.	53.	5.24
+	HYDROGRAPH AT	S720	2742.	12.67	569.	142.	47.	4.63
+	HYDROGRAPH AT	S740	1506.	12.25	154.	38.	13.	1.13
+	3 COMBINED AT	ALL700	6188.	12.67	1332.	333.	111.	11.00
+	HYDROGRAPH AT	S900	832.	12.50	139.	35.	12.	1.03
+	ROUTED TO	900910	674.	13.00	139.	35.	12.	1.03

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          HYDROGRAPH AT
+                         S910      1512.   12.17         122.         30.         10.        .98

          2 COMBINED AT
+                         C910      1509.   12.17         257.         64.         21.       2.02

          ROUTED TO
+                       910915      1247.   12.33         257.         64.         21.       2.02

          HYDROGRAPH AT
+                         S915      1207.   12.42         170.         43.         14.       1.13

          2 COMBINED AT
+                         C915      2406.   12.33         422.        106.         35.       3.14

          ROUTED TO
+                       915920      1760.   12.92         421.        106.         35.       3.14

          HYDROGRAPH AT
+                         S920      2794.   12.50         428.        107.         36.       3.29

          2 COMBINED AT
+                         C920      3544.   12.67         837.        210.         70.       6.43
1                       SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION    RR102
                      (PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED  DURING BREACH FORMATION)

     PLAN  1 ...............                    INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                                   ELEVATION        1550.00           1556.00          1556.00
                                   STORAGE              553.             2705.            2705.
                                   OUTFLOW                0.              600.             600.

                    RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
                      OF     RESERVOIR     DEPTH     STORAGE    OUTFLOW    OVER TOP   MAX OUTFLOW   FAILURE
                     PMF      W.S.ELEV    OVER DAM     AC-FT       CFS       HOURS        HOURS       HOURS

                    1.00      1552.28        .00       1258.      171.        .00        14.42         .00

     PLAN  2 ...............                    INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                                   ELEVATION        1550.00           1556.00          1556.00
                                   STORAGE              553.             2705.            2705.
                                   OUTFLOW                0.              600.             600.

                    RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
                      OF     RESERVOIR     DEPTH     STORAGE    OUTFLOW    OVER TOP   MAX OUTFLOW   FAILURE
                     PMF      W.S.ELEV    OVER DAM     AC-FT       CFS       HOURS        HOURS       HOURS

                    1.00      1552.14        .00       1204.      150.        .00        14.42         .00

     PLAN  3 ...............                    INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                                   ELEVATION        1550.00           1556.00          1556.00
                                   STORAGE              553.             2705.            2705.
                                   OUTFLOW                0.              600.             600.

                    RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
                      OF     RESERVOIR     DEPTH     STORAGE    OUTFLOW    OVER TOP   MAX OUTFLOW   FAILURE
                     PMF      W.S.ELEV    OVER DAM     AC-FT       CFS       HOURS        HOURS       HOURS

                    1.00      1552.00        .00       1149.      128.        .00        14.50         .00

     PLAN  4 ...............                    INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                                   ELEVATION        1550.00           1556.00          1556.00
                                   STORAGE              553.             2705.            2705.
                                   OUTFLOW                0.              600.             600.

                    RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
                      OF     RESERVOIR     DEPTH     STORAGE    OUTFLOW    OVER TOP   MAX OUTFLOW   FAILURE
                     PMF      W.S.ELEV    OVER DAM     AC-FT       CFS       HOURS        HOURS       HOURS

                    1.00      1551.89        .00       1115.      121.        .00        14.50         .00

     PLAN  5 ...............                    INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                                   ELEVATION        1550.00           1556.00          1556.00
                                   STORAGE              553.             2705.            2705.
                                   OUTFLOW                0.              600.             600.

                    RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
                      OF     RESERVOIR     DEPTH     STORAGE    OUTFLOW    OVER TOP   MAX OUTFLOW   FAILURE
                     PMF      W.S.ELEV    OVER DAM     AC-FT       CFS       HOURS        HOURS       HOURS

                    1.00      1551.82        .00       1095.      117.        .00        14.50         .00

*** NORMAL END OF HEC-1 ***
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Rock Outcrops 100% Effective - Summary of Subbasin Parameters

Area ID	Area	Length	Slope	S-Graph	Lca	Lag	Velocity	Kn	IA	DTHETA	PSIF	XKSAT	RTIMP
	(sq.mi.)	(mi)	(ft/mi)		(im)	(min)	(ft/s)		(in)		(in)	(in/hr)	(%)
S100	6.994	6.15	33.2	DESERT/RANGELAND	2.48	52	6.2	0.025	0.35	0.38	6.40	0.16	
S102	3.234	3.46	32.4	DESERT/RANGELAND	1.26	33	5.6	0.025	0.35	0.38	5.60	0.22	
S105	4.370	5.07	34.5	DESERT/RANGELAND	1.81	43	6.3	0.025	0.35	0.35	4.80	0.30	
S110	0.430	1.72	430.3	MOUNTAIN	0.82	26	3.5	0.050	0.25	0.37	5.20	0.25	11
S115	2.247	5.42	188.2	DESERT/RANGELAND	2.88	47	6.1	0.031	0.32	0.35	4.80	0.30	4
S120	2.004	3.47	265.5	DESERT/RANGELAND	2.04	33	5.6	0.031	0.33	0.35	4.65	0.32	3
S125	0.093	0.75	783.4	MOUNTAIN	0.43	13	3.0	0.050	0.25	0.35	4.15	0.44	10
S135	0.879	2.87	92.9	DESERT/RANGELAND	1.36	26	5.9	0.025	0.35	0.35	4.25	0.42	
S130	0.310	1.26	360.3	MOUNTAIN	0.63	20	3.4	0.046	0.21	0.35	4.20	0.43	7
S140	1.373	1.47	40.3	DESERT/RANGELAND	0.94	20	3.8	0.025	0.35	0.36	5.00	0.28	
S145	1.756	3.24	75.4	DESERT/RANGELAND	1.15	26	6.5	0.025	0.35	0.35	4.15	0.44	
S150	0.774	2.44	404.4	MOUNTAIN	1.39	37	3.5	0.050	0.25	0.35	4.65	0.32	13
S155	1.832	3.65	99.2	DESERT/RANGELAND	2.16	33	5.8	0.025	0.35	0.35	4.50	0.36	2
S160	1.144	2.85	73.9	DESERT/RANGELAND	0.96	23	6.5	0.025	0.35	0.35	4.00	0.47	
S165	0.616	1.59	371.6	MOUNTAIN	0.83	20	4.2	0.038	0.30	0.35	4.55	0.35	5
S170	1.464	2.60	85.2	DESERT/RANGELAND	1.15	23	5.8	0.025	0.35	0.35	4.40	0.38	
S175	1.802	4.35	173.6	MOUNTAIN	1.87	48	4.8	0.040	0.29	0.35	4.50	0.36	1
S180	1.443	4.66	215.0	MOUNTAIN	2.04	45	5.4	0.037	0.25	0.35	4.25	0.42	3
S185	2.421	4.99	254.4	MOUNTAIN	1.99	49	5.3	0.041	0.16	0.35	4.35	0.40	2
S190	4.054	5.88	39.1	DESERT/RANGELAND	2.47	50	6.2	0.025	0.35	0.35	3.81	0.44	
S195	1.808	5.15	45.2	DESERT/RANGELAND	2.64	57	4.8	0.030	0.33	0.35	4.25	0.42	
S400	1.544	3.30	249.2	MOUNTAIN	1.75	49	3.5	0.050	0.25	0.35	4.20	0.43	7
S410	0.639	3.28	204.6	MOUNTAIN	1.70	40	4.3	0.040	0.15	0.35	3.85	0.43	6
S415	0.451	2.20	84.2	DESERT/RANGELAND	0.84	20	5.9	0.025	0.35	0.35	3.64	0.49	
S420	1.767	3.43	68.5	DESERT/RANGELAND	1.59	31	5.9	0.025	0.35	0.35	4.30	0.41	
S430	0.795	2.16	74.5	DESERT/RANGELAND	1.03	22	5.3	0.025	0.35	0.35	4.55	0.35	
S435	0.393	1.57	72.1	DESERT/RANGELAND	0.61	16	5.3	0.025	0.35	0.35	4.45	0.37	
S440	1.068	2.51	67.7	DESERT/RANGELAND	1.39	26	5.1	0.025	0.35	0.35	4.20	0.43	
S450	2.521	3.80	59.2	DESERT/RANGELAND	1.90	51	4.0	0.036	0.23	0.35	4.25	0.42	
S500	3.638	4.48	359.1	MOUNTAIN	3.39	66	3.6	0.050	0.25	0.35	3.92	0.41	18
S510	1.840	3.49	107.1	DESERT/RANGELAND	1.32	27	6.9	0.025	0.35	0.35	3.95	0.40	
S520	1.481	3.91	61.9	DESERT/RANGELAND	2.21	37	5.5	0.025	0.35	0.35	4.50	0.36	
S530	2.226	3.43	66.5	DESERT/RANGELAND	1.40	42	4.3	0.036	0.20	0.35	4.30	0.41	
S700	5.240	6.91	47.9	DESERT/RANGELAND	3.20	58	6.3	0.026	0.34	0.36	5.00	0.28	
S720	4.626	6.41	48.1	DESERT/RANGELAND	2.78	60	5.6	0.029	0.33	0.36	5.00	0.28	
S740	1.132	1.48	73.5	DESERT/RANGELAND	0.66	25	3.1	0.040	0.15	0.37	5.30	0.24	
S900	1.035	3.21	420.5	MOUNTAIN	1.94	46	3.7	0.050	0.25	0.37	5.30	0.24	12
S910	0.983	2.07	105.2	DESERT/RANGELAND	0.82	18	6.0	0.025	0.35	0.35	4.70	0.31	
S915	1.126	4.08	127.5	DESERT/RANGELAND	1.54	37	5.8	0.032	0.25	0.37	6.60	0.14	2
S920	3.291	3.63	40.2	DESERT/RANGELAND	2.65	42	4.5	0.025	0.35	0.38	5.60	0.22	

```
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUN   1998              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1               *                                    *          609 SECOND STREET           *
 *                                      *                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   16JUN06  TIME  10:47:47  *                                    *           (916) 756-1104             *
 *                                      *                                    *                                      *
 ****************************************                                    ****************************************


                                        X     X  XXXXXXX   XXXXX           X
                                        X     X  X        X     X         XX
                                        X     X  X        X                X
                                        XXXXXXX  XXXX     X        XXXXX   X
                                        X     X  X        X                X
                                        X     X  X        X     X          X
                                        X     X  XXXXXXX   XXXXX         XXX


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

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

1                                                HEC-1 INPUT                                                    PAGE  1

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

        1           ID   SUN VALLEY AREA DRAINAGE MASTER PLAN (SVADMP) - FCD 2004C049
        2           ID    JE FULLER / HYDROLOGY & GEOMORPHOLOGY, INC.
        3           ID    FILENAME: A4_RO124.DAT
        4           ID    DATE: JUNE 16, 2006
        5           ID
        6           ID    100-YEAR 24-HOUR MODEL
        7           ID    EXISTING CONDITIONS - ROCK OUTCROP 100% EFFECTIVE
        8           ID    AREA 4 WATERSHED AREA = 90.5 SQ. MILES
        9           ID           MODELED AREA = 76.8 SQ. MILES
       10           ID
       11           ID    GREEN-AMPT LOSS METHOD
       12           ID    S-GRAPH UNIT HYDROGRAPHS
       13           ID     - MOUNTAIN
       14           ID     - DESERT/RANGELAND
       15           ID    NORMAL-DEPTH CHANNEL ROUTING
       16           ID    LAND USE DATA FROM EXAMINATION OF SLOPE FROM 10-FT DTM TO DISTINGUISH
       17           ID     - UNDEVELOPED DESERT RANGELAND (NDR) - SLOPES < 5 %
       18           ID     - HILLSLOPES, SONORAN DESERT (NHS) - SLOPES 5 - 10 %
       19           ID     - MOUNTAIN TERRAIN (NMT) - SLOPES > 10 %
       20           ID   SOILS DATA FROM FCDMC GIS DATABASE (RECEIVED FROM FCDMC JULY 2005)
       21           ID     - ROCK OUTCROP ASSUMED 100% EFFECTIVE
       22           ID
       23           IT       5  1JAN99    1200    2000
       24           IN      15
       25           IO       5
                    *DIAGRAM
                    *
       26           JD   4.198  0.1000
       27           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
       28           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
       29           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
       30           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
       31           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
       32           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
       33           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
       34           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
       35           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
       36           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
       37           JD   3.990    10.0
       38           JD   3.780    30.0
       39           JD   3.654    60.0
       40           JD   3.578    90.0
                    *

       41           KK    S100   BASIN
       42           BA   6.994
       43           LG    0.35    0.38    6.40    0.16       0
       44           UI     449     455     964    1717    2422    3046    3616    4050    4275    4281
       45           UI    4178    3867    3211    2766    2319    1968    1698    1387    1198     990
       46           UI     848     715     635     476     471     313     309     309     204     110
       47           UI     109     111     110     109     111     109     110     111       0       0
       48           UI       0       0       0       0       0       0       0       0       0       0
       49           KM        Compute runoff from subbasin 100
                    *
1                                                HEC-1 INPUT                                                    PAGE  2

      LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
 50          KK    S102   BASIN
 51          BA   3.234
 52          LG    0.35    0.38    5.60    0.22       0
 53          UI     333     657    1539    2292    2943    3178    3083    2643    1985    1523
 54          UI    1179     890     674     542     377     300     232     193      81      82
 55          UI      81      81      83       0       0       0       0       0       0       0
 56          UI       0       0       0       0       0       0       0       0       0       0
 57          UI       0       0       0       0       0       0       0       0       0       0
 58          KM        Compute runoff from subbasin 102
             *

 59          KK    C102 COMBINE
 60          HC       2
 61          KM        Combine total inflow to detention area behind (north) of CAP Canal
             *

 62          KK   RR102 STORAGE
 63          KO
 64          RS       1    STOR      -1
 65          SV          553.00 1148.00 2316.00 2705.00
 66          SQ                  128.00  587.00  600.00
 67          SE  1543.0 1550.00 1552.00 1555.00 1556.00
 68          ST  1556.0  1320.0     3.2     1.5
 69          KM        Route flows through storage area behind CAP Canal
 70          KM        Stage-storage-discharge data from Wagner Wash FDS Hydrology (1991)
             *

 71          KK    D102  DIVERT
 72          DT    CF02     0.0     0.0
 73          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 74          DQ     0.0    50.0   500.0  5000.0     0.0     0.0     0.0     0.0     0.0     0.0
 75          KM        Divide flow evenly over the two 18-foot wide CAP overchutes
 76          KM        although the inverts are 0.5 feet different in elevation
             *

 77          KK  100105   ROUTE
 78          RS       9    FLOW      -1
 79          RC   0.035   0.055   0.035   11235  0.0045  105.00
 80          RX    0.00  120.00  240.00  250.00  590.00  600.00  720.00  840.00
 81          RY  105.00  102.50  100.00  100.00  100.00  100.00  102.50  105.00
 82          KM        Route outflows from east CAP overchute to Sun Valley Parkway.
 83          KM        Slope = (1550-1500) / 11235
             *

 84          KK    S105   BASIN
 85          BA   4.370

 86          LG    0.35    0.35    4.80    0.30       0
 87          UI     345     380    1112    1723    2334    2867    3143    3344    3176    2865
 88          UI    2374    1903    1555    1291    1018     832     685     564     458     369
 89          UI     288     235     238     126      83      85      84      84      84      84
 90          UI      84       0       0       0       0       0       0       0       0       0
 91          UI       0       0       0       0       0       0       0       0       0       0
 92          KM        Compute runoff from subbasin 105
             *
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1 HEC-1 INPUT PAGE 3

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

 93          KK    CF02RETRIEVE
 94          DR    CF02
 95          KM        Retrieve flow from west CAP overchute.
             *

 96          KK  102105   ROUTE
 97          RS       6    FLOW      -1
 98          RC   0.045   0.050   0.045    7656  0.0065  104.00
 99          RX    0.00   40.00  120.00  130.00  250.00  260.00  340.00  380.00
100          RY  104.00  102.00  101.00  100.00  100.00  101.00  102.00  104.00
101          KM        Route retrieved flow from west overchute to C105.
102          KM        Slope = (1550 - 1500) / 7656
             *

103          KK   C105U COMBINE
104          HC       3  14.598
105          KM        Combine runoff from S105 with routed flow from 100105 and 102105
106          KM        (CAP overchute flows). This is the total flow in Wagner Wash upstream
107          KM        of Sun Valley Parkway.
             *

108          KK    S110   BASIN
109          BA   0.430
110          LG    0.25    0.37    5.20    0.25      11
111          UI      56     166     335     449     587     358     291     241     188     140
112          UI     121      86      68      56      43      32      27      22      11      11
113          UI      10      11      11       0       0       0       0       0       0       0
114          UI       0       0       0       0       0       0       0       0       0       0
115          UI       0       0       0       0       0       0       0       0       0       0
116          KM        Compute runoff from subbasin 110
             *

117          KK  110151   ROUTE
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 118          RS       2    FLOW      -1
 119          RC   0.045   0.035   0.045    3783  0.0267  102.00
 120          RX    0.00   50.00  100.00  110.00  120.00  130.00  180.00  230.00
 121          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 122          KM        Route flow from C105 through subbasin 110 to C115.
 123          KM        Slope = (1847-1746) / 3783
              *

 124          KK    D15I  DIVERT
 125          DT    CF5I     0.0     0.0
 126          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 127          DQ     0.0    20.0   200.0  2000.0     0.0     0.0     0.0     0.0     0.0     0.0
 128          KM        Divert flows to the left into S120
              *

 129          KK  15I15R   ROUTE
 130          RS       8    FLOW      -1
 131          RC   0.035   0.030   0.035   14128  0.0151  105.00
 132          RX    0.00   25.00   58.00   65.00   85.00   92.00  125.00  150.00
 133          RY  105.00  102.50  102.00  100.00  100.00  102.00  102.50  105.00
 134          KM        Route flows from split through S115 to C115.
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 135          KM        Slope = (1746-1532) / 14128
              *

 136          KK    S115   BASIN
 137          BA   2.247
 138          LG    0.32    0.35    4.80    0.30       4
 139          UI     160     163     434     709     984    1212    1401    1530    1539    1465
 140          UI    1351    1100     918     773     632     528     444     351     304     252
 141          UI     203     170     140     110     110      85      39      39      40      39
 142          UI      39      39      40      39       0       0       0       0       0       0
 143          UI       0       0       0       0       0       0       0       0       0       0
 144          KM        Compute runoff from subbasin 115
              *

 145          KK   C115U COMBINE
 146          HC       2   2.677
 147          KM        Combine runoff from S115 with routed flow.
              *

 148          KK    CF5IRETRIEVE
 149          DR    CF5I
 150          KM        Retrieve diverted flow from D15I
              *

 151          KK  15I15L   ROUTE
 152          RS       7    FLOW      -1
 153          RC   0.045   0.045   0.045   12775  0.0168  104.00
 154          RX    0.00   50.00  100.00  130.00  170.00  200.00  250.00  300.00
 155          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
 156          KM        Route flows from split through S120 to C115.
 157          KM        Slope =(1746-1532) / 12775
              *

 158          KK   C115D COMBINE
 159          HC       2   2.677
 160          KM        Combine routed flows from split with remainder of flows in SVP channel
 161          KM        just D/S of C115.
              *

 162          KK  115120   ROUTE
 163          RS       2    FLOW      -1
 164          RC   0.030   0.025   0.030    4077  0.0093  105.00
 165          RX    0.00   30.00   75.00   80.00  105.00  110.00  155.00  190.00
 166          RY  105.00  101.50  101.00  100.00  100.00  101.00  101.50  105.00
 167          KM        Route total flows from C115 to C120. Slope =(1532-1494) / 4077
              *

 168          KK    S120   BASIN
 169          BA   2.004

 170          LG    0.33    0.35    4.65    0.32       3
 171          UI     206     408     954    1419    1824    1969    1911    1637    1230     944
 172          UI     731     551     418     336     234     186     143     120      50      51
 173          UI      50      51      51       0       0       0       0       0       0       0
 174          UI       0       0       0       0       0       0       0       0       0       0
 175          UI       0       0       0       0       0       0       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 176          KM        Compute runoff from subbasin 120
              *

 177          KK    C120 COMBINE
 178          HC       2   4.681
 179          KM        Combine flows at Wagner Wash at outlet of channel along SVP
              *

 180          KK   C105D COMBINE
 181          HC       2  19.279
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182          KM        Combine flows from C105 and C120 just D/S of Sun Valley Parkway
             *

183          KK  120135   ROUTE
184          RS       1    FLOW      -1
185          RC   0.045   0.035   0.045     951  0.0074  110.00
186          RX    0.00  225.00  450.00  455.00  485.00  490.00  615.00  840.00
187          RY  110.00  105.00  102.00  100.00  100.00  102.00  102.00  110.00
188          KM        Route flows in Wagner Wash from Sun Valley Parkway to C135.
189          KM        Slope = (1494-1487) / 951
             *

190          KK    S125   BASIN
191          BA   0.093
192          LG    0.25    0.35    4.15    0.44      10
193          UI      46     164     204     116      73      46      28      17      12       4
194          UI       5       4       0       0       0       0       0       0       0       0
195          UI       0       0       0       0       0       0       0       0       0       0
196          UI       0       0       0       0       0       0       0       0       0       0
197          UI       0       0       0       0       0       0       0       0       0       0
198          KM        Compute runoff from subbasin 125
             *

199          KK  12535I   ROUTE
200          RS       1    FLOW      -1
201          RC   0.055   0.040   0.055    2207  0.0254  103.00
202          RX    0.00   50.00  100.00  101.00  151.00  152.00  202.00  252.00
203          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
204          KM        Route flows from S125 to intermediate combination point in S135.
205          KM        Slope = (1754-1698) / 2207
             *

206          KK    S150   BASIN
207          BA   0.774
208          LG    0.25    0.35    4.65    0.32      13
209          UI      71     115     270     425     531     672     746     480     406     356
210          UI     312     262     212     181     159     132     106      89      77      65
211          UI      54      47      35      35      35      14      14      13      14      14
212          UI      13      14      14       0       0       0       0       0       0       0
213          UI       0       0       0       0       0       0       0       0       0       0
214          KM        Compute runoff from subbasin 150
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

215          KK    D150  DIVERT
216          DT    CF50     0.0     0.0
217          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
218          DQ     0.0    90.0   900.0  9000.0     0.0     0.0     0.0     0.0     0.0     0.0
219          KM        Divert flows continuing west to apex of S150.
220          KM        Continuing flows exit S150 to S130 via small natural channel.
             *

221          KK  150130   ROUTE
222          RS       2    FLOW      -1
223          RC   0.045   0.035   0.045    3758  0.0300  104.00
224          RX    0.00   10.00   60.00   66.00   86.00   92.00  142.00  152.00
225          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
226          KM        Route flow through S130.  Slope = (1840 - 1727) / 3758
             *

227          KK    S130   BASIN
228          BA   0.310
229          LG    0.21    0.35    4.20    0.43       7
230          UI      61     239     399     514     313     240     176     128      94      64
231          UI      49      36      26      19      10      10      10      10       0       0
232          UI       0       0       0       0       0       0       0       0       0       0
233          UI       0       0       0       0       0       0       0       0       0       0
234          UI       0       0       0       0       0       0       0       0       0       0
235          KM        Compute runoff from subbasin 130
             *

236          KK    C130 COMBINE
237          HC       2    0.31
238          KM        Combine runoff from S130 with diverted flow from S150.
239          KM        Adjust drainage area to just that from S130 for JD.
             *

240          KK    D130  DIVERT
241          DT    CF30     0.0     0.0
242          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
243          DQ     0.0    30.0   300.0  3000.0     0.0     0.0     0.0     0.0     0.0     0.0
244          KM        Divert flow to the left into S155
             *

245          KK  130351   ROUTE
246          RS       1    FLOW      -1
247          RC   0.045   0.035   0.045    1202  0.0241  103.00
248          RX    0.00   50.00  100.00  101.00  151.00  152.00  202.00  252.00
249          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
250          KM        Route continuing flow to intermediate point in S135.
251          KM        Slope = (1727-1698) / 1202
             *
```

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

 252          KK   C135I COMBINE
 253          HC       2   0.403
 254          KM        Combine routed flow from C130 and S125
              *

 255          KK  35I135   ROUTE
 256          RS       8    FLOW      -1
 257          RC   0.050   0.035   0.050   12580  0.0168  102.00
 258          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
 259          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 260          KM        Route combined flows to C135 at Wagner Wash.
 261          KM        Slope = (1698-1487) / 12580
              *

 262          KK    S135   BASIN
 263          BA   0.879
 264          LG    0.35    0.35    4.25    0.42       0
 265          UI     115     362     709     992    1126     989     736     527     370     260
 266          UI     194     128      89      76      28      28      29      28       0       0
 267          UI       0       0       0       0       0       0       0       0       0       0
 268          UI       0       0       0       0       0       0       0       0       0       0
 269          UI       0       0       0       0       0       0       0       0       0       0
 270          KM        Compute runoff from subbasin 135
              *

 271          KK   C135L COMBINE
 272          HC       2   1.282
 273          KM        Combine all piedmont runoff inflow to Wagner Wash at C135
              *

 274          KK    C135 COMBINE
 275          HC       2  20.561
 276          KM        Combine all flows in Wagner Wash at C135
              *

 277          KK  135145   ROUTE
 278          RS       4    FLOW      -1
 279          RC   0.045   0.035   0.045    7938  0.0042  110.00
 280          RX    0.00  300.00  400.00  406.00  506.00  512.00  612.00  912.00
 281          RY  110.00  102.50  102.00  100.00  100.00  102.00  102.50  110.00
 282          KM        Route flow in Wagner Wash to C145.  Slope = (1487-1454) / 7938
              *

 283          KK    S140   BASIN
 284          BA   1.373
 285          LG    0.35    0.36    5.00    0.28       0
 286          UI     260    1034    1801    2168    1890    1235     809     517     339     211
 287          UI     157      56      55      57       0       0       0       0       0       0
 288          UI       0       0       0       0       0       0       0       0       0       0
 289          UI       0       0       0       0       0       0       0       0       0       0
 290          UI       0       0       0       0       0       0       0       0       0       0
 291          KM        Compute runoff from subbasin 140
              *
```



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

 292          KK  140145   ROUTE
 293          RS       3    FLOW      -1
 294          RC   0.040   0.050   0.040    3656  0.0074  103.00
 295          RX    0.00   70.00  140.00  150.00  250.00  260.00  330.00  400.00
 296          RY  102.00  101.00  100.00  100.00  100.00  100.00  101.00  102.00
 297          KM        Route runoff from S140 to C145 at Wagner Wash.
 298          KM        Slope = (1481-1454) / 3656
              *

 299          KK    CF30RETRIEVE
 300          DR    CF30
 301          KM        Retrieve diverted flow from C130
              *

 302          KK   D1302  DIVERT
 303          DT   CF302     0.0     0.0
 304          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 305          DQ     0.0    10.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0
 306          KM        Divert flow continuing through S155 from flow entering S145
              *

 307          KK  130145   ROUTE
 308          RS      15    FLOW      -1
 309          RC   0.045   0.045   0.045   18285  0.0149  102.00
 310          RX    0.00   50.00  100.00  103.00  113.00  116.00  166.00  216.00
 311          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 312          KM        Route flow to Wagner Wash through S145 to C145.
 313          KM        Slope = (1727 - 1454) / 18285
              *

 314          KK    S145   BASIN
 315          BA   1.756
```

```
 316          LG    0.35    0.35    4.15    0.44       0
 317          UI     226     672    1369    1903    2167    2003    1508    1085     777     544
 318          UI     399     279     198     157      80      55      56      54      55       0
 319          UI       0       0       0       0       0       0       0       0       0       0
 320          UI       0       0       0       0       0       0       0       0       0       0
 321          UI       0       0       0       0       0       0       0       0       0       0
 322          KM        Compute runoff from subbasin 145
              *

 323          KK   C145L COMBINE
 324          HC       2   2.066
 325          KM        Combine runoff from S145 with routed flows C130.
 326          KM        Adjust BA for JD (S130 + S145)
              *

 327          KK    C145 COMBINE
 328          HC       3   23.69
 329          KM        Combine all flows in Wagner Wash at C145
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 330          KK  145155   ROUTE
 331          RS       1    FLOW      -1
 332          RC   0.045   0.035   0.055     631  0.0032  110.00
 333          RX    0.00  150.00  300.00  309.00  379.00  388.00  538.00  838.00
 334          RY  110.00  106.50  103.00  100.00  100.00  103.00  106.50  110.00
 335          KM        Route flows in Wagner Wash form C145 to C155. Slope = (1454-1452)/631
              *

 336          KK    CF50RETRIEVE
 337          DR    CF50
 338          KM        Retrieve diverted flow from S150
              *

 339          KK  150155   ROUTE
 340          RS      12    FLOW      -1
 341          RC   0.045   0.040   0.045   19261  0.0188  102.00
 342          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
 343          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 344          KM        Route flow from S150 to Wagner Wash .  Slope = (1814 - 1452) / 19261
              *

 345          KK   CF302RETRIEVE
 346          DR   CF302
 347          KM        Retrieve diverted flow from C130
              *

 348          KK  130155   ROUTE
 349          RS      12    FLOW      -1
 350          RC   0.045   0.040   0.045   14782  0.0156  102.00
 351          RX    0.00  100.00  200.00  203.00  253.00  256.00  356.00  456.00
 352          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 353          KM        Route retrieved flow to Wagner Wash.  Slope = (1682 - 1452) / 14782
              *

 354          KK    S155   BASIN
 355          BA   1.832
 356          LG    0.35    0.35    4.50    0.36       2
 357          UI     187     361     846    1266    1637    1771    1735    1497    1161     879
 358          UI     681     519     385     314     228     181     130     126      46      46
 359          UI      45      46      46      45       0       0       0       0       0       0
 360          UI       0       0       0       0       0       0       0       0       0       0
 361          UI       0       0       0       0       0       0       0       0       0       0
 362          KM        Compute runoff from subbasin 155
              *

 363          KK   C155L COMBINE
 364          HC       3   2.606
 365          KM        Combine runoff from S155 with routed flows at Wagner Wash.
 366          KM        Adjust BA for JD (S150 + S155).
              *
1                                        HEC-1 INPUT                                          PAGE 10

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

 367          KK    C155 COMBINE
 368          HC       2  26.296
 369          KM        Combine all flows at Wagner Wash at C155
              *

 370          KK  155160   ROUTE
 371          RS       5    FLOW      -1
 372          RC   0.035   0.035   0.035    2291  0.0052  110.00
 373          RX    0.00  200.00  400.00  406.00  506.00  512.00  712.00  912.00
 374          RY  110.00  106.50  103.00  100.00  100.00  103.00  106.50  110.00
 375          KM        Route flow in Wagner Wash to C160 (Sun Valley Parkway).
 376          KM        Slope = (1452-1440) / 2291
              *

 377          KK    S160   BASIN
 378          BA   1.144
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```
379          LG    0.35    0.35    4.00    0.47       0
380          UI     165     599    1121    1501    1557    1233     844     593     394     281
381          UI     190     122      93      40      40      40      41       0       0       0
382          UI       0       0       0       0       0       0       0       0       0       0
383          UI       0       0       0       0       0       0       0       0       0       0
384          UI       0       0       0       0       0       0       0       0       0       0
385          KM        Compute runoff from subbasin 160
             *

386          KK    C160 COMBINE
387          HC       2   27.44
388          KM        Combine flows at Sun Valley Parkway
             *

389          KK  160170   ROUTE
390          RS       3    FLOW      -1
391          RC   0.040   0.030   0.040    5248  0.0057  108.00
392          RX    0.00  200.00  400.00  406.00  606.00  612.00  812.00 1012.00
393          RY  108.00  103.00  102.00  100.00  100.00  102.00  103.00  108.00
394          KM        Route flows from Sun Valley Parkway to C170R. Slope = (1440-1410)/5248
             *

395          KK    S165   BASIN
396          BA   0.616
397          LG    0.30    0.35    4.55    0.35       5
398          UI     121     477     809    1022     617     474     347     254     185     127
399          UI      96      69      52      36      20      20      20      20       0       0
400          UI       0       0       0       0       0       0       0       0       0       0
401          UI       0       0       0       0       0       0       0       0       0       0
402          UI       0       0       0       0       0       0       0       0       0       0
403          KM        Compute runoff from subbasin 165
             *
```



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

404          KK  165170   ROUTE
405          RS       8    FLOW      -1
406          RC   0.050   0.035   0.050   13704  0.0161  104.00
407          RX    0.00   50.00  100.00  106.00  131.00  137.00  187.00  237.00
408          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
409          KM        Route runoff from S165 to Sun Valley Parkway (C170).
410          KM        Slope = (1677-1456) / 13704
             *

411          KK    S170   BASIN
412          BA   1.464
413          LG    0.35    0.35    4.40    0.38       0
414          UI     209     755    1427    1917    1973    1590    1086     762     513     360
415          UI     246     160     123      52      51      51      52       0       0       0
416          UI       0       0       0       0       0       0       0       0       0       0
417          UI       0       0       0       0       0       0       0       0       0       0
418          UI       0       0       0       0       0       0       0       0       0       0
419          KM        Compute runoff from subbasin 170
             *

420          KK    C170 COMBINE
421          HC       2
422          KM        Combine runoff from S170 with routed flow from S165
             *

423          KK    170R   ROUTE
424          RS       3    FLOW      -1
425          RC   0.045   0.045   0.045    3986  0.0115  104.00
426          RX    0.00   50.00  100.00  103.00  113.00  116.00  166.00  216.00
427          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
428          KM        Route flow from C170 to Wagner Wash.  Slope = (1456-1410) / 3986
             *

429          KK   C170R COMBINE
430          HC       2
431          KM        Combine routed flows from C170 and C160 in Wagner Wash
             *

432          KK  170180   ROUTE
433          RS       4    FLOW      -1
434          RC   0.045   0.035   0.045    6770  0.0065  110.00
435          RX    0.00  200.00  400.00  406.00  606.00  612.00  812.00 1012.00
436          RY  110.00  103.00  102.00  100.00  100.00  102.00  103.00  110.00
437          KM        Route flows in Wagner Wash to C180R.  Slope = (1410-1366) / 6770
             *

438          KK    S175   BASIN
439          BA   1.802
440          LG    0.29    0.35    4.50    0.36       1
441          UI     126     127     317     525     763     877    1013    1295    1376     895
442          UI     771     703     622     572     507     439     372     318     296     274
443          UI     227     192     163     148     138     116      96      97      73      62
444          UI      62      63      55      24      25      24      24      24      24      25
445          UI      24      24      24      25       0       0       0       0       0       0
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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446          KM        Compute runoff from subbasin 175
             *

447          KK    175R   ROUTE
448          RS       2    FLOW      -1
449          RC   0.045   0.045   0.045    3217  0.0134  103.00
450          RX    0.00   50.00  100.00  103.00  153.00  156.00  216.00  266.00
451          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
452          KM        Route runoff from S175 to intermediate point in S190 (C180RI).
453          KM        Slope = (1456 - 1413) / 3217
             *

454          KK    S180   BASIN
455          BA   1.443
456          LG    0.25    0.35    4.25    0.42       3
457          UI     107     108     311     490     677     785     927    1258     896     684
458          UI     622     547     497     440     379     315     275     250     228     185
459          UI     154     138     120     115      82      83      73      52      53      52
460          UI      50      21      20      21      20      21      21      20      21      21
461          UI      20       0       0       0       0       0       0       0       0       0
462          KM        Compute runoff from subbasin 180
             *

463          KK    180R   ROUTE
464          RS       2    FLOW      -1
465          RC   0.045   0.045   0.045    2965  0.0128  103.00
466          RX    0.00   50.00  100.00  103.00  128.00  131.00  181.00  231.00
467          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
468          KM        Route runoff from S180 to intermediate point in S190 (C180RI).
469          KM        Slope = (1451 - 1413) / 2965
             *

470          KK  C180RI COMBINE
471          HC       2
472          KM        Combine routed flows from S175 and S180
             *

473          KK  RI180R   ROUTE
474          RS       3    FLOW      -1
475          RC   0.045   0.040   0.045    3866  0.0122  104.00
476          RX    0.00   50.00  100.00  106.00  156.00  166.00  216.00  266.00
477          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
478          KM        Route combined flows to Wagner Wash.  Slope = (1413 - 1366) / 3866
             *

479          KK   C180R COMBINE
480          HC       2
481          KM        Combine flows in Wagner Wash
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

482          KK  180185   ROUTE
483          RS       3    FLOW      -1
484          RC   0.045   0.035   0.045    3450  0.0075  106.00
485          RX    0.00  100.00  200.00  206.00  406.00  412.00  512.00  612.00
486          RY  106.00  104.00  102.00  100.00  100.00  102.00  104.00  106.00
487          KM        Route flows in Wagner Wash from C180R to C185R.
488          KM        Slope = (1366 - 1340) / 3450
             *

489          KK    S185   BASIN
490          BA   2.421
491          LG    0.16    0.35    4.35    0.40       2
492          UI     165     166     391     668     960    1130    1281    1613    1908    1239
493          UI    1060     936     847     785     677     614     534     438     399     375
494          UI     338     271     230     210     183     183     133     126     127      85
495          UI      80      82      81      67      32      31      32      32      31      32
496          UI      32      31      32      32      32       0       0       0       0       0
497          KM        Compute runoff from subbasin 185
             *

498          KK    185R   ROUTE
499          RS       5    FLOW      -1
500          RC   0.045   0.035   0.045    8534  0.0120  104.00
501          RX    0.00   30.00  100.00  106.00  156.00  162.00  232.00  262.00
502          RY  104.00  102.00  102.00  100.00  100.00  102.00  102.00  104.00
503          KM        Route runoff from S185 to Wagner Wash.  Slope = (1442-1340) / 8534
             *

504          KK   C185R COMBINE
505          HC       2
506          KM        Combine flows in Wagner Wash
             *

507          KK  185190   ROUTE
508          RS       2    FLOW      -1
509          RC   0.045   0.040   0.045    2700  0.0119  106.00
510          RX    0.00   80.00  160.00  166.00  416.00  422.00  502.00  582.00
511          RY  106.00  103.00  102.00  100.00  100.00  102.00  103.00  106.00
512          KM        Route flow in Wagner Wash to C190.  Slope = (1340-1308) / 2700
             *
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```
513          KK    S190   BASIN
514          BA   4.054
515          LG    0.35    0.35    3.81    0.44       0
516          UI     274     278     647    1125    1573    1918    2319    2540    2637    2574
517          UI    2467    2112    1787    1506    1256    1044     891     745     605     522
518          UI     432     370     293     266     188     191     188      78      68      66
519          UI      67      67      67      67      67      67       0       0       0       0
520          UI       0       0       0       0       0       0       0       0       0       0
521          KM        Compute runoff from subbasin 190
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


522          KK    C190 COMBINE
523          HC       2   39.24
524          KM        Combine all flow in Wagner Wash at C190
             *

525          KK  190195   ROUTE
526          RS       2    FLOW      -1
527          RC   0.045   0.035   0.045    4941  0.0107  110.00
528          RX    0.00   50.00  200.00  206.00  356.00  366.00  516.00  566.00
529          RY  110.00  103.00  102.00  100.00  100.00  102.00  103.00  110.00
530          KM        Route flow from C190 to the Hassayampa River. Slope = (1308-1255)/4941
             *

531          KK    S195   BASIN
532          BA   1.808
533          LG    0.33    0.35    4.25    0.42       0
534          UI     107     108     188     366     523     660     786     925     975    1026
535          UI    1044     975     915     778     674     571     496     419     359     313
536          UI     260     223     202     165     146     115     114      76      74      74
537          UI      67      27      26      26      26      26      26      27      26      26
538          UI      27       0       0       0       0       0       0       0       0       0
539          KM        Compute runoff from subbasin 195
             *

540          KK    C195 COMBINE
541          HC       2   41.05
542          KM        Combine all flows in Wagner Wash at the Hassayampa River
             *

543          KK    S400   BASIN
544          BA   1.544
545          LG    0.25    0.35    4.20    0.43       7
546          UI     106     106     252     429     616     729     819    1050    1206     793
547          UI     665     601     543     493     440     385     339     276     254     239
548          UI     212     174     144     133     116     116      82      81      81      52
549          UI      51      53      51      39      21      20      20      21      20      20
550          UI      20      21      20      20      20       0       0       0       0       0
551          KM        Compute runoff from subbasin 400
             *

552          KK    D400  DIVERT
553          DT    CF00     0.0     0.0
554          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
555          DQ     0.0    50.0   500.0  5000.0     0.0     0.0     0.0     0.0     0.0     0.0
556          KM        Divert flow to the right into S430
             *

557          KK    S410   BASIN
558          BA   0.639
559          LG    0.15    0.35    3.85    0.43       6
560          UI      53      70     177     290     367     429     593     473     342     300
561          UI     268     232     202     173     136     126     115      89      72      65
562          UI      58      47      41      38      26      26      26      19      11      10
563          UI      10      10      11      10      10      10      11       0       0       0
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

564          UI       0       0       0       0       0       0       0       0       0       0
565          KM        Compute runoff from subbasin 410
             *

566          KK    C410 COMBINE
567          HC       2
568          KM        Combine runoff from S400 and S410
             *

569          KK    D410  DIVERT
570          DT    CF10     0.0     0.0
571          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
572          DQ     0.0    10.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0
573          KM        Divert additional flow to the right into S430
             *

574          KK  410415   ROUTE
575          RS       4    FLOW      -1
576          RC   0.045   0.035   0.045    6871  0.0143  103.00
577          RX    0.00   30.00  200.00  203.00  253.00  256.00  426.00  456.00
578          RY  103.00  101.00  101.00  100.00  100.00  101.00  101.00  103.00
```

```
 579          KM        Route combined flows to Sun Valley Parkway. Slope = (1528-1430)/6871
              *

 580          KK    S415   BASIN
 581          BA   0.451
 582          LG    0.35    0.35    3.64    0.49       0
 583          UI      92     356     623     728     617     389     253     161     101      65
 584          UI      44      18      19      19       0       0       0       0       0       0
 585          UI       0       0       0       0       0       0       0       0       0       0
 586          UI       0       0       0       0       0       0       0       0       0       0
 587          UI       0       0       0       0       0       0       0       0       0       0
 588          KM        Compute runoff from subbasin 415
              *

 589          KK    C415 COMBINE
 590          HC       2
 591          KM        Combine runoff at Sun Valley Parkway
              *

 592          KK  415420   ROUTE
 593          RS      10    FLOW      -1
 594          RC   0.045   0.035   0.045   18114  0.0130  104.00
 595          RX    0.00   30.00   60.00   66.00   96.00  102.00  132.00  162.00
 596          RY  104.00  102.00  102.00  100.00  100.00  102.00  102.00  104.00
 597          KM        Route flow from Sun Valley Parkway to Hassayampa River.
 598          KM        Slope = (1430-1195) / 18114
              *

 599          KK    S420   BASIN
 600          BA   1.767
 601          LG    0.35    0.35    4.30    0.41       0
 602          UI     193     427     964    1407    1752    1846    1712    1346    1015     760
 603          UI     582     417     328     242     183     132     115      47      47      48
 604          UI      47      47       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 16

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

 605          UI       0       0       0       0       0       0       0       0       0       0
 606          UI       0       0       0       0       0       0       0       0       0       0
 607          KM        Compute runoff from subbasin 420
              *

 608          KK    C420 COMBINE
 609          HC       2
 610          KM        Combine flows from S400, S410, S415, and S420 at Hassayampa River
              *

 611          KK    CF00RETRIEVE
 612          DR    CF00
 613          KM        Retrieve diverted flows from S400
              *

 614          KK    CF10RETRIEVE
 615          DR    CF10
 616          KM        Retrieve diverted flows from S410
              *

 617          KK  C40010 COMBINE
 618          HC       2   1.544
 619          KM        Combine retrieved diverted flows
              *

 620          KK  400430   ROUTE
 621          RS       5    FLOW      -1
 622          RC   0.045   0.040   0.045    8383  0.0130  105.00
 623          RX    0.00   12.00   25.00   31.00   61.00   67.00   80.00   92.00
 624          RY  105.00  104.00  103.00  100.00  100.00  103.00  104.00  105.00
 625          KM        Route combined flows to Sun Valley Parkway. Slope = (1539-1430)/8383
              *

 626          KK    S430   BASIN
 627          BA   0.795
 628          LG    0.35    0.35    4.55    0.35       0
 629          UI     127     515     918    1163    1116     779     521     349     228     153
 630          UI     100      72      30      30      30       0       0       0       0       0
 631          UI       0       0       0       0       0       0       0       0       0       0
 632          UI       0       0       0       0       0       0       0       0       0       0
 633          UI       0       0       0       0       0       0       0       0       0       0
 634          KM        Compute runoff from subbasin 430
              *

 635          KK    C430 COMBINE
 636          HC       2
 637          KM        Combine runoff from S430 with routed flows at Sun Valley Parkway
              *

 638          KK  430440   ROUTE
 639          RS       7    FLOW      -1
 640          RC   0.035   0.035   0.035   13256  0.0128  106.00
 641          RX    0.00   16.00   32.00   38.00   68.00   74.00   90.00  106.00
 642          RY  106.00  104.50  103.00  100.00  100.00  103.00  104.50  106.00
 643          KM        Route flows from Sun Valley Parkway through S440.
1                                          HEC-1 INPUT                                          PAGE 17
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 644          KM        Slope = (1430-1260) / 13256
              *

 645          KK    S440   BASIN
 646          BA   1.068
 647          LG    0.35    0.35    4.20    0.43       0
 648          UI     137     414     838    1167    1323    1221     910     657     468     330
 649          UI     240     168     118      95      46      33      35      33      34       0
 650          UI       0       0       0       0       0       0       0       0       0       0
 651          UI       0       0       0       0       0       0       0       0       0       0
 652          UI       0       0       0       0       0       0       0       0       0       0
 653          KM        Compute runoff from subbasin 440
              *

 654          KK    C440 COMBINE
 655          HC       2
 656          KM        Combine runoff from S440 with routed flows from Sun Valley Parkway.
              *

 657          KK  440450   ROUTE
 658          RS       3    FLOW      -1
 659          RC   0.035   0.040   0.035    4154  0.0104  103.00
 660          RX    0.00  150.00  300.00  303.00  333.00  336.00  486.00  636.00
 661          RY  102.00  101.50  101.00  100.00  100.00  101.00  101.50  102.00
 662          KM        Route combined flows to the Hassayampa River.
 663          KM        Slope = (1260-1217) / 4154
              *

 664          KK    S450   BASIN
 665          BA   2.521
 666          LG    0.23    0.35    4.25    0.42       0
 667          UI     167     169     381     664     938    1152    1392    1514    1599    1599
 668          UI    1528    1333    1142     951     803     683     567     481     395     336
 669          UI     287     255     184     177     130     116     115      88      41      41
 670          UI      41      41      41      41      41      40      41       0       0       0
 671          UI       0       0       0       0       0       0       0       0       0       0
 672          KM        Compute runoff from subbasin 450
              *

 673          KK    S435   BASIN
 674          BA   0.393
 675          LG    0.35    0.35    4.45    0.37       0
 676          UI     130     505     775     686     414     231     134      75      42      20
 677          UI      20       0       0       0       0       0       0       0       0       0
 678          UI       0       0       0       0       0       0       0       0       0       0
 679          UI       0       0       0       0       0       0       0       0       0       0
 680          UI       0       0       0       0       0       0       0       0       0       0
 681          KM        Compute runoff from subbasin 435
              *
```



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

 682          KK  435450   ROUTE
 683          RS      10    FLOW      -1

 684          RC   0.045   0.035   0.045   18781  0.0119  105.00
 685          RX    0.00   40.00  120.00  126.00  146.00  152.00  232.00  272.00
 686          RY  105.00  103.00  102.00  100.00  100.00  102.00  103.00  105.00
 687          KM        Route runoff from S435 at Sun Valley Parkway to Hassayampa River.
 688          KM        Slope = (1440 - 1217) / 18781
              *

 689          KK    C450 COMBINE
 690          HC       3
 691          KM        Combine flows from S430, S435, S440, and S450 at Hassayampa River
              *

 692          KK  ALL400 COMBINE
 693          HC      29.178000
 694          KM        Dummy combine of all 400 series hydrographs at the Hassayampa
              *

 695          KK    S500   BASIN
 696          BA   3.638
 697          LG    0.25    0.35    3.92    0.41      18
 698          UI     184     186     184     515     713     935    1143    1294    1413    1581
 699          UI    1968    2186    1462    1252    1119    1051     979     907     837     769
 700          UI     716     629     568     487     456     435     408     387     311     297
 701          UI     237     239     212     201     204     146     142     143     141      94
 702          UI      91      90      90      92      90      51      35      36      35      36
 703          KM        Compute runoff from subbasin 500
              *

 704          KK  500510   ROUTE
 705          RS       7    FLOW      -1
 706          RC   0.045   0.035   0.045   14544  0.0186  104.00
 707          RX    0.00   20.00  100.00  106.00  206.00  212.00  292.00  312.00
 708          RY  104.00  103.00  102.00  100.00  100.00  102.00  103.00  104.00
 709          KM        Route runoff from S500 to Sun Valley Parkway.
 710          KM        Slope = (1690-1420) / 14544
              *
```

```
711          KK    S510   BASIN
712          BA   1.840
713          LG    0.35    0.35    3.95    0.40       0
714          UI     232     677    1390    1950    2228    2094    1604    1165     828     599
715          UI     433     307     220     160     106      57      58      56      57       0
716          UI       0       0       0       0       0       0       0       0       0       0
717          UI       0       0       0       0       0       0       0       0       0       0
718          UI       0       0       0       0       0       0       0       0       0       0
719          KM        Compute runoff from subbasin 510
             *
1                                          HEC-1 INPUT                                          PAGE 19

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

720          KK    C510 COMBINE
721          HC       2
722          KM        Combine flows at Sun Valley Parkway
             *

723          KK    D510  DIVERT
724          DT    CF10     0.0     0.0
725          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0

726          DQ     0.0    65.0   650.0  6500.0     0.0     0.0     0.0     0.0     0.0     0.0
727          KM        Divert flow to the right into S530
             *

728          KK  510520   ROUTE
729          RS      10    FLOW      -1
730          RC   0.045   0.035   0.045   20653  0.0117  105.00
731          RX    0.00   20.00  120.00  126.00  156.00  166.00  266.00  286.00
732          RY  105.00  103.00  102.00  100.00  100.00  102.00  103.00  105.00
733          KM        Route continuing flows from Sun Valley Parkway to Hassayampa River.
734          KM        Slope = (1420-1178) / 20653
             *

735          KK    S520   BASIN
736          BA   1.481
737          LG    0.35    0.35    4.50    0.36       0
738          UI     133     206     510     780    1043    1196    1285    1241    1061     847
739          UI     672     531     420     330     262     210     159     135      91      93
740          UI      54      33      33      32      33      32      33       0       0       0
741          UI       0       0       0       0       0       0       0       0       0       0
742          UI       0       0       0       0       0       0       0       0       0       0
743          KM        Compute runoff from subbasin 520
             *

744          KK    C520 COMBINE
745          HC       2   6.956
746          KM        Combine runoff from S520 with routed flows from Sun Valley Parkway
747          KM        at Hassayampa River
             *

748          KK    S530   BASIN
749          BA   2.226
750          LG    0.20    0.35    4.30    0.41       0
751          UI     176     194     574     895    1189    1473    1624    1704    1622    1456
752          UI    1198     964     787     657     513     417     348     283     227     189
753          UI     141     120     122      56      43      43      43      43      43      43
754          UI      43       0       0       0       0       0       0       0       0       0
755          UI       0       0       0       0       0       0       0       0       0       0
756          KM        Compute runoff from subbasin 530
             *
1                                          HEC-1 INPUT                                          PAGE 20

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

757          KK    CF10RETRIEVE
758          DR    CF10
759          KM        Retrieve diverted flows from C510
             *

760          KK  510530   ROUTE
761          RS       9    FLOW      -1
762          RC   0.045   0.040   0.045   18095  0.0126  106.00
763          RX    0.00   20.00   80.00   86.00  121.00  127.00  187.00  207.00
764          RY  106.00  102.00  102.00  100.00  100.00  102.00  102.00  106.00
765          KM        Route diverted flows through S530 to Hassayampa River.
766          KM        Slope = (1420-1192) / 18095
             *

767          KK    C530 COMBINE

768          HC       2   7.704
769          KM        Combine runoff from S530 with routed flows at the Hassayampa River
             *

770          KK  ALL500 COMBINE
771          HC       2   9.185
772          KM        Dummy combine of all 500 series hydrographs at Hassayampa
             *
```

```
773          KK    S700   BASIN
774          BA   5.240
775          LG    0.34    0.36    5.00    0.28       0
776          UI     302     306     485     986    1424    1796    2125    2542    2707    2882
777          UI    2934    2807    2645    2359    2015    1713    1505    1280    1105     968
778          UI     823     674     598     529     462     377     320     308     210     206
779          UI     207     182      73      74      74      74      73      74      74      73
780          UI      74      74       0       0       0       0       0       0       0       0
781          KM        Compute runoff from subbasin 700
             *

782          KK    S720   BASIN
783          BA   4.626
784          LG    0.33    0.36    5.00    0.28       0
785          UI     260     262     382     820    1159    1518    1787    2118    2322    2417
786          UI    2508    2445    2355    2135    1829    1563    1390    1173    1020     890
787          UI     762     653     568     492     421     401     283     275     245     177
788          UI     178     179     141      63      64      63      63      64      63      63
789          UI      64      63      64       0       0       0       0       0       0       0
790          KM        Compute runoff from subbasin 720
             *

791          KK    S740   BASIN
792          BA   1.132
793          LG    0.15    0.37    5.30    0.24       0
794          UI     150     472     931    1305    1445    1280     941     670     467     327
795          UI     246     163     109      92      36      37      37      36       0       0
796          UI       0       0       0       0       0       0       0       0       0       0
797          UI       0       0       0       0       0       0       0       0       0       0
798          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 21

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

799          KM        Compute runoff from subbasin 740
             *

800          KK  ALL700 COMBINE
801          HC       3
802          KM        Dummy combination of all 700 series subbasins.
             *

803          KK    S900   BASIN
804          BA   1.035
805          LG    0.25    0.37    5.30    0.24      12
806          UI      75      77     215     338     472     551     650     871     671     496
807          UI     448     394     356     320     277     233     197     180     165     140
808          UI     116      97      89      83      65      59      58      37      38      37
809          UI      37      23      14      15      14      15      14      15      15      14
810          UI      15      14       0       0       0       0       0       0       0       0
811          KM        Compute runoff from subbasin 900
             *

812          KK  900910   ROUTE
813          RS       7    FLOW      -1
814          RC   0.045   0.035   0.045   10207  0.0192  103.00
815          RX    0.00   80.00  160.00  163.00  178.00  181.00  261.00  341.00
816          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
817          KM        Route runoff from subbasin 900 through subbasin 910.
818          KM        Slope = (1856-1660) / 10207
             *

819          KK    S910   BASIN
820          BA   0.983
821          LG    0.35    0.35    4.70    0.31       0
822          UI     234     923    1540    1684    1252     768     471     298     172     120
823          UI      45      44      44       0       0       0       0       0       0       0
824          UI       0       0       0       0       0       0       0       0       0       0
825          UI       0       0       0       0       0       0       0       0       0       0
826          UI       0       0       0       0       0       0       0       0       0       0
827          KM        Compute runoff from subbasin 910
             *

828          KK    C910 COMBINE
829          HC       2
830          KM        Combine runoff from S910 with routed flow at Sun Valley Parkway
             *

831          KK  910915   ROUTE
832          RS       2    FLOW      -1
833          RC   0.045   0.035   0.045    2998  0.0110  103.00
834          RX    0.00  100.00  200.00  203.00  223.00  226.00  326.00  426.00
835          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
836          KM        Route combined flow to C915.
837          KM        Slope = (1660-1627) / 2998
             *
1                                          HEC-1 INPUT                                          PAGE 22

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

838          KK    S915   BASIN
839          BA   1.126
840          LG    0.25    0.37    6.60    0.14       2
841          UI     102     163     397     611     809     929     977     949     801     634
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```
842          UI     506     395     311     248     194     158     113      96      70      71
843          UI      32      25      25      25      25      26      25       0       0       0
844          UI       0       0       0       0       0       0       0       0       0       0
845          UI       0       0       0       0       0       0       0       0       0       0
846          KM        Compute runoff from subbasin 915
             *

847          KK    C915 COMBINE
848          HC       2
849          KM        Combine flows at C915
             *

850          KK  915920   ROUTE
851          RS       5    FLOW      -1
852          RC   0.045   0.035   0.045    9456  0.0103  104.00
853          RX    0.00  100.00  200.00  203.00  223.00  226.00  326.00  426.00
854          RY  103.00  102.00  101.00  100.00  100.00  101.00  102.00  103.00
855          KM        Route combined flow to C920, at tributary to Trilby Wash parallel to CAP
856          KM        Slope = (1627-1530) / 9456
             *

857          KK    S920   BASIN
858          BA   3.291
859          LG    0.35    0.38    5.60    0.22       0
860          UI     261     294     853    1330    1783    2190    2432    2520    2411    2144
861          UI    1767    1414    1151     954     759     617     508     410     326     282
862          UI     200     178     181      71      63      65      63      64      64      64
863          UI      64       0       0       0       0       0       0       0       0       0
864          UI       0       0       0       0       0       0       0       0       0       0
865          KM        Compute runoff from subbasin 920
             *

866          KK    C920 COMBINE
867          HC       2
868          KM        Combine flows in Trilby Wash tributary
869          ZZ
```

1

```
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

  41        S100
              .
              .
  50          .        S102
              .           .
              .           .
  59        C102............
              V
              V
  62       RR102
              .
              .
  72          .------->    CF02
  71        D102
              V
              V
  77      100105
              .
              .
  84          .        S105
              .           .
              .           .
  94          .           .           .<-------    CF02
  93          .           .        CF02
              .           .           V
              .           .           V
  96          .           .      102105
              .           .           .
              .           .           .
 103       C105U......................
              .
              .
 108          .        S110
              .           V
              .           V
 117          .      11015I
              .           .
              .           .
 125          .           .------->    CF5I
 124          .        D15I
              .           V
              .           V
 129          .      15I15R
              .           .
              .           .
 136          .           .        S115
              .           .           .
              .           .           .
 145          .       C115U............
              .           .
              .           .
 149          .           .           .<-------    CF5I
```

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148          .           .        CF5I
             .           .           V
             .           .           V
151          .           .      15I15L
             .           .           .
             .           .           .
158          .       C115D............
             .           V
             .           V
162          .      115120
             .           .
             .           .
168          .           .        S120
             .           .           .
             .           .           .
177          .        C120............
             .           .
             .           .
180      C105D............
             V
             V
183     120135
             .
             .
190          .        S125
             .           V
             .           V
199          .      125351
             .           .
             .           .
206          .           .        S150
             .           .           .
             .           .           .
216          .           .           .-------->    CF50
215          .           .        D150
             .           .           V
             .           .           V
221          .           .      150130
             .           .           .
             .           .           .
227          .           .           .        S130
             .           .           .           .
             .           .           .           .
236          .           .        C130............
             .           .           .
             .           .           .
241          .           .           .-------->    CF30
240          .           .        D130
             .           .           V
             .           .           V
245          .           .      13035I
             .           .           .
             .           .           .
252          .       C135I............
             .           V
             .           V
255          .      35I135
             .           .
             .           .
262          .           .        S135
             .           .           .
             .           .           .
271          .       C135L............
             .           .
             .           .
274      C135............
             V
             V
277     135145
             .
             .
283          .        S140
             .           V
             .           V
292          .      140145
             .           .
             .           .
300          .           .           .<--------    CF30
299          .           .        CF30
             .           .           .
             .           .           .
303          .           .           .-------->   CF302
302          .           .       D1302
             .           .           V
             .           .           V
307          .           .      130145
             .           .           .
             .           .           .
314          .           .           .        S145
             .           .           .           .
             .           .           .           .
323          .           .       C145L............
             .           .           .
             .           .           .
327      C145........................
```

```
                V
                V
330        145155
                .
                .
337             .           .<-------    CF50
336             .        CF50
                .           V
                .           V
339             .      150155
                .           .
                .           .
346             .           .           .<-------   CF302
345             .           .       CF302
                .           .           V
                .           .           V
348             .           .      130155
                .           .           .
                .           .           .
354             .           .           .        S155
                .           .           .           .
                .           .           .           .
363             .       C155L.......................
                .           .
                .           .
367          C155............
                V
                V
370        155160
                .
                .
377             .        S160
                .           .
                .           .
386          C160............
                V
                V
389        160170
                .
                .
395             .        S165
                .           V
                .           V
404             .      165170
                .           .
                .           .
411             .           .        S170
                .           .           .
                .           .           .
420             .        C170............
                .           V
                .           V
423             .        170R
                .           .
                .           .
429         C170R............
                V
                V
432        170180
                .
                .
438             .        S175
                .           V
                .           V
447             .        175R
                .           .
                .           .
454             .           .        S180
                .           .           V
                .           .           V
463             .           .        180R
                .           .           .
                .           .           .
470             .      C180RI............
                .           V
                .           V
473             .      RI180R
                .           .
                .           .
479         C180R............
                V
                V
482        180185
                .
                .
489             .        S185
                .           V
                .           V
498             .        185R
                .           .
                .           .
504         C185R............
                V
                V
507        185190
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513             .        S190
                .          .
                .          .
522         C190............
                V
                V
525       190195
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                .
531             .        S195
                .          .
                .          .
540         C195............
                .
                .
543             .        S400
                .          .
                .          .
553             .          .-------->    CF00
552             .        D400
                .          .
                .          .
557             .          .        S410
                .          .          .
                .          .          .
566             .        C410............
                .          .
                .          .
570             .          .-------->    CF10
569             .        D410
                .          V
                .          V
574             .      410415
                .          .
                .          .
580             .          .        S415
                .          .          .
                .          .          .
589             .        C415............
                .          V
                .          V
592             .      415420
                .          .
                .          .
599             .          .        S420
                .          .          .
                .          .          .
608             .        C420............
                .          .
                .          .
612             .          .           .<-------    CF00
611             .          .        CF00
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615             .          .          .           .<-------    CF10
614             .          .          .        CF10
                .          .          .          .
                .          .          .          .
617             .          .      C40010............
                .          .          V
                .          .          V
620             .          .      400430
                .          .          .
                .          .          .
626             .          .          .        S430
                .          .          .          .
                .          .          .          .
635             .          .        C430............
                .          .          V
                .          .          V
638             .          .      430440
                .          .          .
                .          .          .
645             .          .          .        S440
                .          .          .          .
                .          .          .          .
654             .          .        C440............
                .          .          V
                .          .          V
657             .          .      440450
                .          .          .
                .          .          .
664             .          .          .        S450
                .          .          .          .
                .          .          .          .
673             .          .          .          .        S435
                .          .          .          .          V
                .          .          .          .          V
682             .          .          .          .      435450
                .          .          .          .          .
                .          .          .          .          .
689             .          .        C450........................
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692          .      ALL400...........
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             .
695          .        S500
             .          V
             .          V
704          .      500510
             .          .
             .          .
711          .          .        S510
             .          .          .
             .          .          .
720          .        C510............
             .          .
             .          .
724          .          .-------->    CF10
723          .        D510
             .          V
             .          V
728          .      510520
             .          .
             .          .
735          .          .        S520
             .          .          .
             .          .          .
744          .        C520............
             .          .
             .          .
748          .          .        S530
             .          .          .
             .          .          .
758          .          .          .          .<-------    CF10
757          .          .          .        CF10
             .          .          .          V
             .          .          .          V
760          .          .          .      510530
             .          .          .          .
             .          .          .          .
767          .          .        C530............
             .          .          .
             .          .          .
770          .      ALL500...........
             .          .
             .          .
773          .          .        S700
             .          .          .
             .          .          .
782          .          .          .        S720
             .          .          .          .
             .          .          .          .
791          .          .          .          .        S740
             .          .          .          .          .
             .          .          .          .          .
800          .          .      ALL700........................
             .          .          .
             .          .          .
803          .          .          .        S900
             .          .          .          V
             .          .          .          V
812          .          .          .      900910
             .          .          .          .
             .          .          .          .
819          .          .          .          .        S910
             .          .          .          .          .
             .          .          .          .          .
828          .          .          .        C910............
             .          .          .          V
             .          .          .          V
831          .          .          .      910915
             .          .          .          .
             .          .          .          .
838          .          .          .          .        S915
             .          .          .          .          .
             .          .          .          .          .
847          .          .          .        C915............
             .          .          .          V
             .          .          .          V
850          .          .          .      915920
             .          .          .          .
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857          .          .          .          .        S920
             .          .          .          .          .
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866          .          .          .        C920............
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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1*************************************                    *************************************
*                                   *                    *                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                *   U.S. ARMY CORPS OF ENGINEERS    *
*              JUN   1998           *                    *   HYDROLOGIC ENGINEERING CENTER   *
*            VERSION 4.1            *                    *         609 SECOND STREET         *
*                                   *                    *      DAVIS, CALIFORNIA 95616      *
*  RUN DATE   16JUN06  TIME  10:47:47   *                *          (916) 756-1104           *
*                                   *                    *                                   *
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*****************************************                                    ****************************************

                    SUN VALLEY AREA DRAINAGE MASTER PLAN (SVADMP) - FCD 2004C049
                     JE FULLER / HYDROLOGY & GEOMORPHOLOGY, INC.
                     FILENAME: A4_RO124.DAT
                     DATE: JUNE 16, 2006

                     100-YEAR 24-HOUR MODEL
                     EXISTING CONDITIONS - ROCK OUTCROP 100% EFFECTIVE
                     AREA 4 WATERSHED AREA = 90.5 SQ. MILES
                            MODELED AREA = 76.8 SQ. MILES

                     GREEN-AMPT LOSS METHOD
                     S-GRAPH UNIT HYDROGRAPHS
                      - MOUNTAIN
                      - DESERT/RANGELAND
                     NORMAL-DEPTH CHANNEL ROUTING
                     LAND USE DATA FROM EXAMINATION OF SLOPE FROM 10-FT DTM TO DISTINGUISH
                      - UNDEVELOPED DESERT RANGELAND (NDR) - SLOPES < 5 %
                      - HILLSLOPES, SONORAN DESERT (NHS) - SLOPES 5 - 10 %
                      - MOUNTAIN TERRAIN (NMT) - SLOPES > 10 %
                    SOILS DATA FROM FCDMC GIS DATABASE (RECEIVED FROM FCDMC JULY 2005)
                      - ROCK OUTCROP ASSUMED 100% EFFECTIVE


25 IO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

   IT          HYDROGRAPH TIME DATA
                      NMIN           5  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1JAN99  STARTING DATE
                     ITIME        1200  STARTING TIME
                        NQ        2000  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      8JAN99  ENDING DATE
                    NDTIME        1035  ENDING TIME
                     ICENT          19  CENTURY MARK

               COMPUTATION INTERVAL     .08 HOURS
                    TOTAL TIME BASE  166.58 HOURS

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

26 JD          INDEX STORM NO. 1
                      STRM        4.20  PRECIPITATION DEPTH
                      TRDA         .10  TRANSPOSITION DRAINAGE AREA

27 PI            PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .01       .00       .01
                    .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                    .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00

37 JD          INDEX STORM NO. 2
                      STRM        3.99  PRECIPITATION DEPTH
                      TRDA       10.00  TRANSPOSITION DRAINAGE AREA

 0 PI            PRECIPITATION PATTERN
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             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .01       .00       .01
             .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
             .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
             .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00

 38 JD        INDEX STORM NO. 3
                 STRM       3.78  PRECIPITATION DEPTH
                 TRDA      30.00  TRANSPOSITION DRAINAGE AREA

  0 PI          PRECIPITATION PATTERN
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .01       .00       .01
             .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
             .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
             .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00

 39 JD        INDEX STORM NO. 4
                 STRM       3.65  PRECIPITATION DEPTH
                 TRDA      60.00  TRANSPOSITION DRAINAGE AREA

  0 PI          PRECIPITATION PATTERN
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .01       .00       .01
             .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
             .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
             .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
             .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00

 40 JD          INDEX STORM NO. 5
                     STRM        3.58  PRECIPITATION DEPTH
                     TRDA       90.00  TRANSPOSITION DRAINAGE AREA

  0 PI            PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00

                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .01       .00       .01
                    .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                    .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00
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            **************
            *            *
 62 KK      *     RR102  *      STORAGE
            *            *
            **************

 63 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
1
                                                RUNOFF SUMMARY
                                        FLOW IN CUBIC FEET PER SECOND
                                      TIME IN HOURS,  AREA IN SQUARE MILES

                                   PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
        OPERATION        STATION   FLOW    PEAK                                           AREA      STAGE     MAX STAGE
+                                                      6-HOUR     24-HOUR     72-HOUR

        HYDROGRAPH AT
+                          S100    5214.   12.58        965.        241.         80.      6.99

        HYDROGRAPH AT
+                          S102    3434.   12.33        420.        105.         35.      3.23

        2 COMBINED AT
+                          C102    7803.   12.42       1367.        342.        114.     10.23

        ROUTED TO
+                         RR102     149.   14.42        141.        119.         82.     10.23

        DIVERSION TO
+                          CF02      75.   14.42         71.         59.         41.     10.23

        HYDROGRAPH AT
+                          D102      75.   14.42         71.         59.         41.     10.23

        ROUTED TO
+                        100105      70.   20.33         67.         58.         41.     10.23

        HYDROGRAPH AT
+                          S105    3466.   12.50        531.        133.         44.      4.37

        HYDROGRAPH AT
+                          CF02      75.   14.42         71.         59.         41.     10.23

        ROUTED TO
+                        102105      74.   15.67         70.         59.         41.     10.23
```

	3 COMBINED AT						
+	C105U	3466.	12.50	587.	238.	125.	14.60
	HYDROGRAPH AT						
+	S110	540.	12.17	66.	18.	6.	.43
	ROUTED TO						
+	11015I	464.	12.42	66.	18.	6.	.43
	DIVERSION TO						
+	CF5I	93.	12.42	13.	4.	1.	.43
	HYDROGRAPH AT						
+	D15I	372.	12.42	53.	14.	5.	.43
	ROUTED TO						
+	15I15R	330.	12.83	53.	14.	5.	.43
	HYDROGRAPH AT						
+	S115	1711.	12.50	295.	77.	26.	2.25
	2 COMBINED AT						
+	C115U	1879.	12.58	345.	90.	30.	2.68
	HYDROGRAPH AT						
+	CF5I	93.	12.42	13.	4.	1.	.43
	ROUTED TO						
+	15I15L	48.	13.58	13.	4.	1.	.43
	2 COMBINED AT						
+	C115D	1880.	12.58	357.	94.	31.	2.68
	ROUTED TO						
+	115120	1841.	12.75	357.	94.	31.	2.68
	HYDROGRAPH AT						
+	S120	2051.	12.33	255.	66.	22.	2.00
	2 COMBINED AT						
+	C120	3239.	12.42	604.	157.	52.	4.68
	2 COMBINED AT						
+	C105D	6256.	12.42	1109.	365.	165.	19.28
	ROUTED TO						
+	120135	6253.	12.50	1109.	364.	165.	19.28
	HYDROGRAPH AT						
+	S125	164.	12.08	13.	4.	1.	.09
	ROUTED TO						
+	12535I	139.	12.17	13.	4.	1.	.09
	HYDROGRAPH AT						
+	S150	747.	12.33	116.	32.	11.	.77
	DIVERSION TO						
+	CF50	673.	12.33	105.	29.	10.	.77
	HYDROGRAPH AT						
+	D150	75.	12.33	12.	3.	1.	.77
	ROUTED TO						
+	150130	69.	12.50	12.	3.	1.	.77
	HYDROGRAPH AT						
+	S130	420.	12.17	41.	11.	4.	.31
	2 COMBINED AT						
+	C130	446.	12.17	53.	14.	5.	.31
	DIVERSION TO						
+	CF30	134.	12.17	16.	4.	1.	.31
	HYDROGRAPH AT						
+	D130	312.	12.17	37.	10.	3.	.31
	ROUTED TO						
+	13035I	308.	12.17	37.	10.	3.	.31
	2 COMBINED AT						
+	C135I	442.	12.17	49.	13.	4.	.40
	ROUTED TO						
+	35I135	319.	12.75	49.	13.	4.	.40
	HYDROGRAPH AT						
+	S135	1015.	12.25	99.	25.	8.	.88
	2 COMBINED AT						
+	C135L	1011.	12.25	146.	38.	13.	1.28

	2 COMBINED AT						
+	C135	6801.	12.50	1234.	396.	175.	20.56
	ROUTED TO						
+	135145	6056.	12.83	1223.	394.	175.	20.56
	HYDROGRAPH AT						
+	S140	2029.	12.17	172.	43.	14.	1.37
	ROUTED TO						
+	140145	1632.	12.42	172.	43.	14.	1.37
	HYDROGRAPH AT						
+	CF30	134.	12.17	16.	4.	1.	.31
	DIVERSION TO						
+	CF302	13.	12.17	2.	0.	0.	.31
	HYDROGRAPH AT						
+	D1302	120.	12.17	14.	4.	1.	.31
	ROUTED TO						
+	130145	63.	13.67	14.	4.	1.	.31
	HYDROGRAPH AT						
+	S145	1945.	12.25	193.	48.	16.	1.76
	2 COMBINED AT						
+	C145L	1940.	12.25	206.	52.	17.	2.07
	3 COMBINED AT						
+	C145	6691.	12.83	1540.	472.	201.	23.69
	ROUTED TO						
+	145155	6692.	12.83	1539.	472.	201.	23.69
	HYDROGRAPH AT						
+	CF50	673.	12.33	105.	29.	10.	.77
	ROUTED TO						
+	150155	451.	13.50	104.	29.	10.	.77
	HYDROGRAPH AT						
+	CF302	13.	12.17	2.	0.	0.	.31
	ROUTED TO						
+	130155	3.	15.92	2.	0.	0.	.31
	HYDROGRAPH AT						
+	S155	1790.	12.33	221.	56.	19.	1.83
	3 COMBINED AT						
+	C155L	1785.	12.33	322.	85.	28.	2.61
	2 COMBINED AT						
+	C155	7313.	12.83	1815.	543.	224.	26.30
	ROUTED TO						
+	155160	7287.	12.92	1813.	543.	224.	26.30
	HYDROGRAPH AT						
+	S160	1342.	12.17	124.	31.	10.	1.14
	2 COMBINED AT						
+	C160	7328.	12.92	1912.	567.	232.	27.44
	ROUTED TO						
+	160170	7191.	13.08	1904.	566.	232.	27.44
	HYDROGRAPH AT						
+	S165	848.	12.17	81.	21.	7.	.62
	ROUTED TO						
+	165170	663.	12.58	81.	21.	7.	.62
	HYDROGRAPH AT						
+	S170	1802.	12.17	169.	42.	14.	1.46
	2 COMBINED AT						
+	C170	1921.	12.25	247.	63.	21.	2.08
	ROUTED TO						
+	170R	1842.	12.42	247.	63.	21.	2.08
	2 COMBINED AT						
+	C170R	7722.	13.00	2108.	617.	249.	29.52
	ROUTED TO						
+	170180	7608.	13.25	2098.	615.	249.	29.52
	HYDROGRAPH AT						
+	S175	1278.	12.50	217.	55.	18.	1.80
	ROUTED TO						

+		175R	1185.	12.67	217.	55.	18.	1.80
+	HYDROGRAPH AT	S180	1045.	12.50	173.	45.	15.	1.44
+	ROUTED TO	180R	968.	12.58	173.	45.	15.	1.44
+	2 COMBINED AT	C180RI	2116.	12.67	385.	98.	33.	3.24
+	ROUTED TO	RI180R	2027.	12.75	385.	98.	33.	3.24
+	2 COMBINED AT	C180R	8743.	13.08	2418.	696.	276.	32.76
+	ROUTED TO	180185	8729.	13.17	2412.	695.	276.	32.76
+	HYDROGRAPH AT	S185	1665.	12.50	292.	75.	25.	2.42
+	ROUTED TO	185R	1421.	12.92	292.	75.	25.	2.42
+	2 COMBINED AT	C185R	9739.	13.08	2652.	755.	295.	35.19
+	ROUTED TO	185190	9724.	13.17	2647.	755.	295.	35.19
+	HYDROGRAPH AT	S190	2590.	12.58	448.	112.	37.	4.05
+	2 COMBINED AT	C190	10564.	13.08	2995.	843.	325.	39.24
+	ROUTED TO	190195	10448.	13.25	2988.	842.	325.	39.24
+	HYDROGRAPH AT	S195	1039.	12.67	202.	51.	17.	1.81
+	2 COMBINED AT	C195	10822.	13.25	3143.	881.	338.	41.05
+	HYDROGRAPH AT	S400	1073.	12.50	196.	53.	18.	1.54
+	DIVERSION TO	CF00	537.	12.50	98.	26.	9.	1.54
+	HYDROGRAPH AT	D400	537.	12.50	98.	26.	9.	1.54
+	HYDROGRAPH AT	S410	534.	12.42	84.	22.	7.	.64
+	2 COMBINED AT	C410	1025.	12.50	180.	48.	16.	2.18
+	DIVERSION TO	CF10	102.	12.50	18.	5.	2.	2.18
+	HYDROGRAPH AT	D410	922.	12.50	162.	43.	14.	2.18
+	ROUTED TO	410415	702.	12.92	162.	43.	14.	2.18
+	HYDROGRAPH AT	S415	624.	12.17	50.	13.	4.	.45
+	2 COMBINED AT	C415	716.	12.92	209.	55.	18.	2.63
+	ROUTED TO	415420	630.	13.75	208.	55.	18.	2.63
+	HYDROGRAPH AT	S420	1740.	12.33	198.	50.	17.	1.77
+	2 COMBINED AT	C420	1717.	12.33	399.	103.	34.	4.40
+	HYDROGRAPH AT	CF00	537.	12.50	98.	26.	9.	1.54
+	HYDROGRAPH AT	CF10	102.	12.50	18.	5.	2.	2.18
+	2 COMBINED AT	C40010	640.	12.50	116.	31.	10.	1.54

+	ROUTED TO	400430	597.	12.75	116.	31.	10.	1.54
+	HYDROGRAPH AT	S430	1090.	12.17	95.	24.	8.	.80
+	2 COMBINED AT	C430	1091.	12.17	208.	54.	18.	2.34
+	ROUTED TO	430440	988.	12.50	207.	54.	18.	2.34
+	HYDROGRAPH AT	S440	1205.	12.25	119.	30.	10.	1.07
+	2 COMBINED AT	C440	1722.	12.42	321.	83.	28.	3.41
+	ROUTED TO	440450	1486.	12.67	321.	83.	28.	3.41
+	HYDROGRAPH AT	S450	1624.	12.58	287.	72.	24.	2.52
+	HYDROGRAPH AT	S435	656.	12.08	47.	12.	4.	.39
+	ROUTED TO	435450	378.	12.83	47.	12.	4.	.39
+	3 COMBINED AT	C450	3347.	12.67	642.	163.	55.	6.32
+	2 COMBINED AT	ALL400	4447.	12.67	1032.	264.	88.	9.18
+	HYDROGRAPH AT	S500	2183.	12.75	538.	155.	52.	3.64
+	ROUTED TO	500510	2028.	13.08	537.	155.	52.	3.64
+	HYDROGRAPH AT	S510	2099.	12.25	213.	53.	18.	1.84
+	2 COMBINED AT	C510	2170.	12.25	742.	206.	69.	5.48
+	DIVERSION TO	CF10	1411.	12.25	482.	134.	45.	5.48
+	HYDROGRAPH AT	D510	760.	12.25	260.	72.	24.	5.48
+	ROUTED TO	510520	677.	13.75	258.	72.	24.	5.48
+	HYDROGRAPH AT	S520	1288.	12.42	174.	43.	14.	1.48
+	2 COMBINED AT	C520	1268.	12.42	422.	114.	38.	6.96
+	HYDROGRAPH AT	S530	1697.	12.50	257.	64.	21.	2.23
+	HYDROGRAPH AT	CF10	102.	12.50	18.	5.	2.	2.18
+	ROUTED TO	510530	55.	13.92	18.	5.	2.	2.18
+	2 COMBINED AT	C530	1697.	12.50	274.	69.	23.	7.70
+	2 COMBINED AT	ALL500	2909.	12.42	687.	180.	60.	9.19
+	HYDROGRAPH AT	S700	3186.	12.67	642.	160.	53.	5.24
+	HYDROGRAPH AT	S720	2742.	12.67	569.	142.	47.	4.63
+	HYDROGRAPH AT	S740	1506.	12.25	154.	38.	13.	1.13
+	3 COMBINED AT	ALL700	6188.	12.67	1332.	333.	111.	11.00
+	HYDROGRAPH AT	S900	874.	12.50	161.	44.	15.	1.03
+	ROUTED TO	900910	718.	13.00	161.	44.	15.	1.03

```
        HYDROGRAPH AT
+                       S910      1512.   12.17        122.        30.        10.       .98

        2 COMBINED AT
+                       C910      1571.   12.17        279.        74.        25.      2.02

        ROUTED TO
+                     910915      1294.   12.33        279.        74.        25.      2.02

        HYDROGRAPH AT
+                       S915      1213.   12.42        174.        44.        15.      1.13

        2 COMBINED AT
+                       C915      2459.   12.33        447.       116.        39.      3.14

        ROUTED TO
+                     915920      1804.   12.92        447.       116.        39.      3.14

        HYDROGRAPH AT
+                       S920      2794.   12.50        428.       107.        36.      3.29

        2 COMBINED AT
+                       C920      3598.   12.67        864.       221.        74.      6.43
1                 SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION    RR102
                 (PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED  DURING BREACH FORMATION)

PLAN  1 ..............                 INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION        1550.00           1556.00          1556.00
                          STORAGE            553.             2705.            2705.
                          OUTFLOW              0.              600.             600.

                RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
                  OF     RESERVOIR      DEPTH     STORAGE    OUTFLOW    OVER TOP   MAX OUTFLOW   FAILURE
                 PMF      W.S.ELEV    OVER DAM     AC-FT       CFS       HOURS        HOURS       HOURS

                1.00      1552.28         .00       1258.       171.       .00        14.42         .00

PLAN  2 ..............                 INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION        1550.00           1556.00          1556.00
                          STORAGE            553.             2705.            2705.
                          OUTFLOW              0.              600.             600.

                RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
                  OF     RESERVOIR      DEPTH     STORAGE    OUTFLOW    OVER TOP   MAX OUTFLOW   FAILURE
                 PMF      W.S.ELEV    OVER DAM     AC-FT       CFS       HOURS        HOURS       HOURS

                1.00      1552.14         .00       1204.       150.       .00        14.42         .00

PLAN  3 ..............                 INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION        1550.00           1556.00          1556.00
                          STORAGE            553.             2705.            2705.
                          OUTFLOW              0.              600.             600.

                RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
                  OF     RESERVOIR      DEPTH     STORAGE    OUTFLOW    OVER TOP   MAX OUTFLOW   FAILURE
                 PMF      W.S.ELEV    OVER DAM     AC-FT       CFS       HOURS        HOURS       HOURS

                1.00      1552.00         .00       1149.       128.       .00        14.50         .00

PLAN  4 ..............                 INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION        1550.00           1556.00          1556.00
                          STORAGE            553.             2705.            2705.
                          OUTFLOW              0.              600.             600.

                RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
                  OF     RESERVOIR      DEPTH     STORAGE    OUTFLOW    OVER TOP   MAX OUTFLOW   FAILURE
                 PMF      W.S.ELEV    OVER DAM     AC-FT       CFS       HOURS        HOURS       HOURS

                1.00      1551.89         .00       1115.       121.       .00        14.50         .00

PLAN  5 ..............                 INITIAL VALUE     SPILLWAY CREST     TOP OF DAM
                          ELEVATION        1550.00           1556.00          1556.00
                          STORAGE            553.             2705.            2705.
                          OUTFLOW              0.              600.             600.

                RATIO     MAXIMUM      MAXIMUM    MAXIMUM    MAXIMUM    DURATION     TIME OF     TIME OF
                  OF     RESERVOIR      DEPTH     STORAGE    OUTFLOW    OVER TOP   MAX OUTFLOW   FAILURE
                 PMF      W.S.ELEV    OVER DAM     AC-FT       CFS       HOURS        HOURS       HOURS

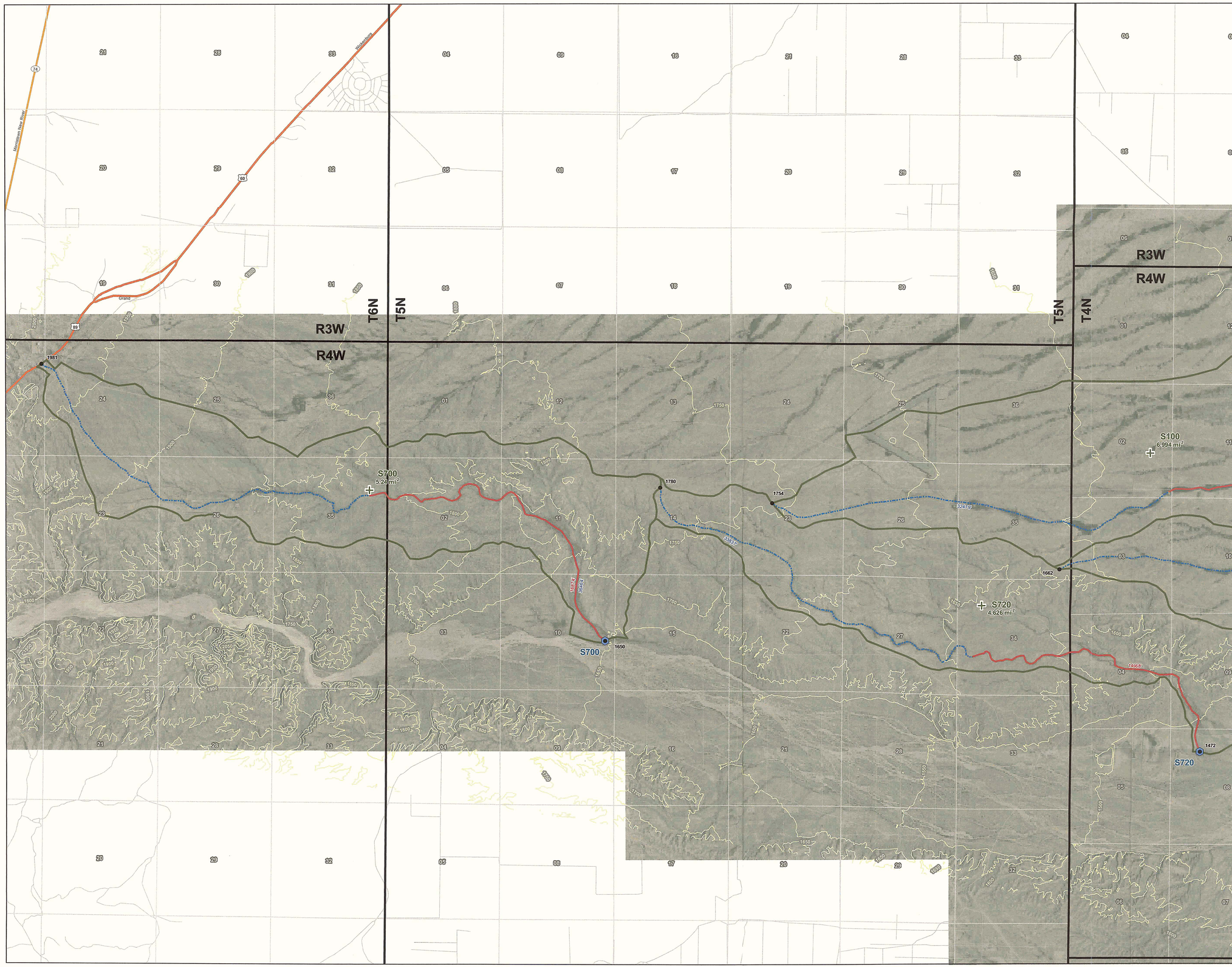
                1.00      1551.82         .00       1095.       117.       .00        14.50         .00

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

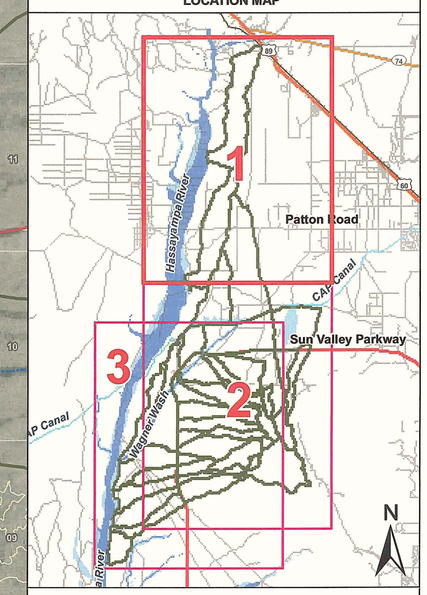
PLATE 1

LEGEND

- Subbasin Boundaries
- Lca Paths
- Lag & Routing Paths
- Subbasin Centroids
- 50-ft Index Contours
- Alluvial Fan Apices
- HEC-1 Model Operation Points
- Tc Elevation Points



LOCATION MAP



FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

AREA 4 HYDROLOGY

WATERSHED BOUNDARY MAP

SHEET 1 OF 3

FCD 2004C049
SUN VALLEY
AREA DRAINAGE MASTER PLAN
AUGUST 2006

Feet
0 2,000 4,000
1 inch equals 2,000 feet

JE FULLER
HYDROLOGY & GEOMORPHOLOGY, INC.

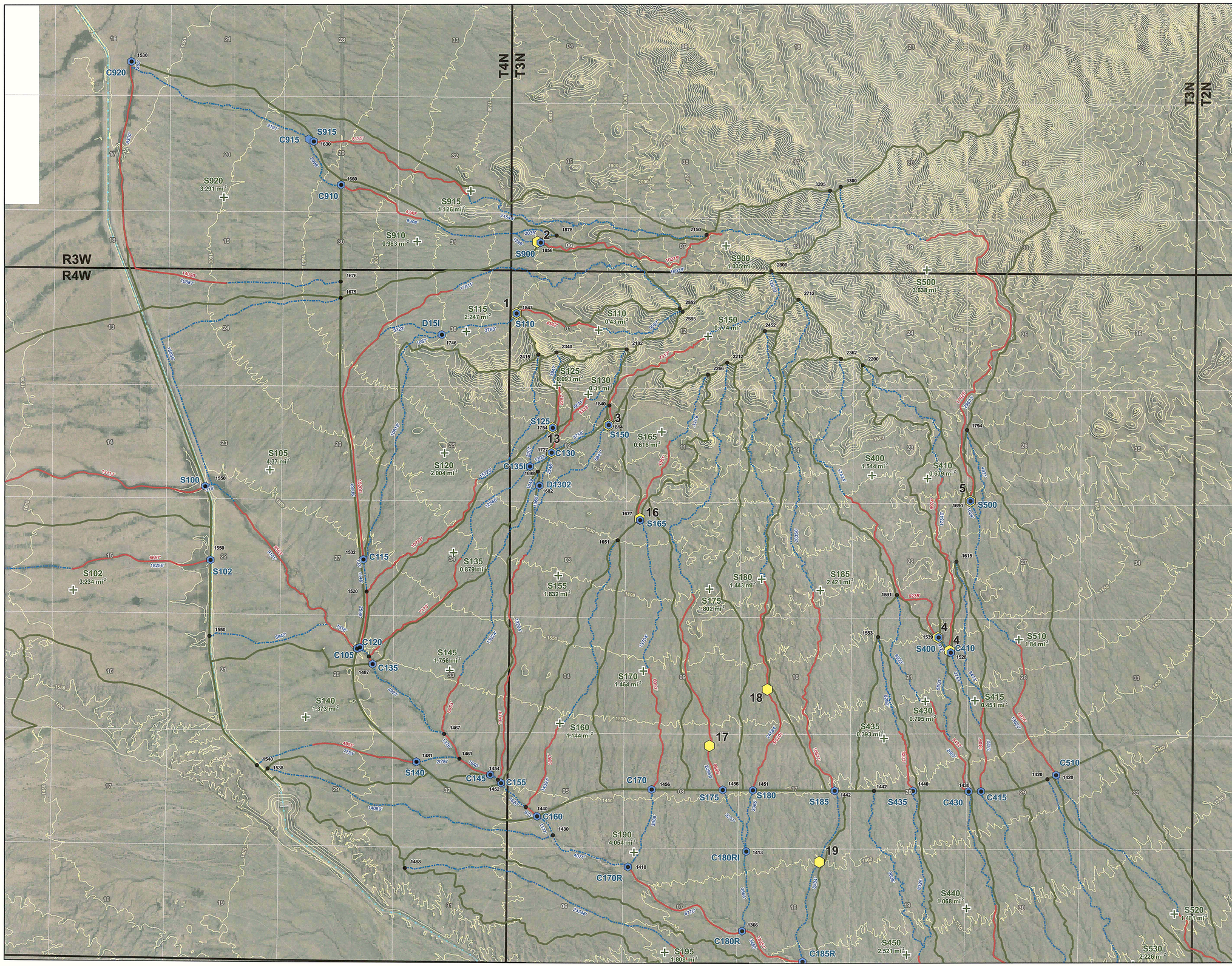
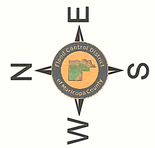


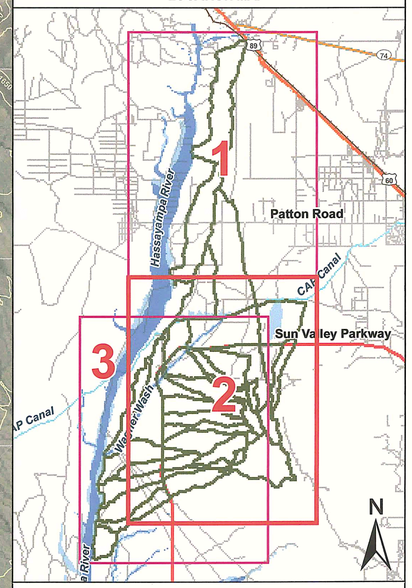
PLATE 1

LEGEND

- Subbasin Boundaries
- Lca Paths
- Lag & Routing Paths
- Subbasin Centroids
- 50-ft Index Contours
- Alluvial Fan Apices
- HEC-1 Model Operation Points
- Tc Elevation Points



LOCATION MAP



FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

AREA 4 HYDROLOGY

WATERSHED BOUNDARY MAP

SHEET 2 OF 3

FCD 2004C049
SUN VALLEY
AREA DRAINAGE MASTER PLAN
AUGUST 2006

Feet
0 2,000 4,000
1 inch equals 2,000 feet

JE FULLER
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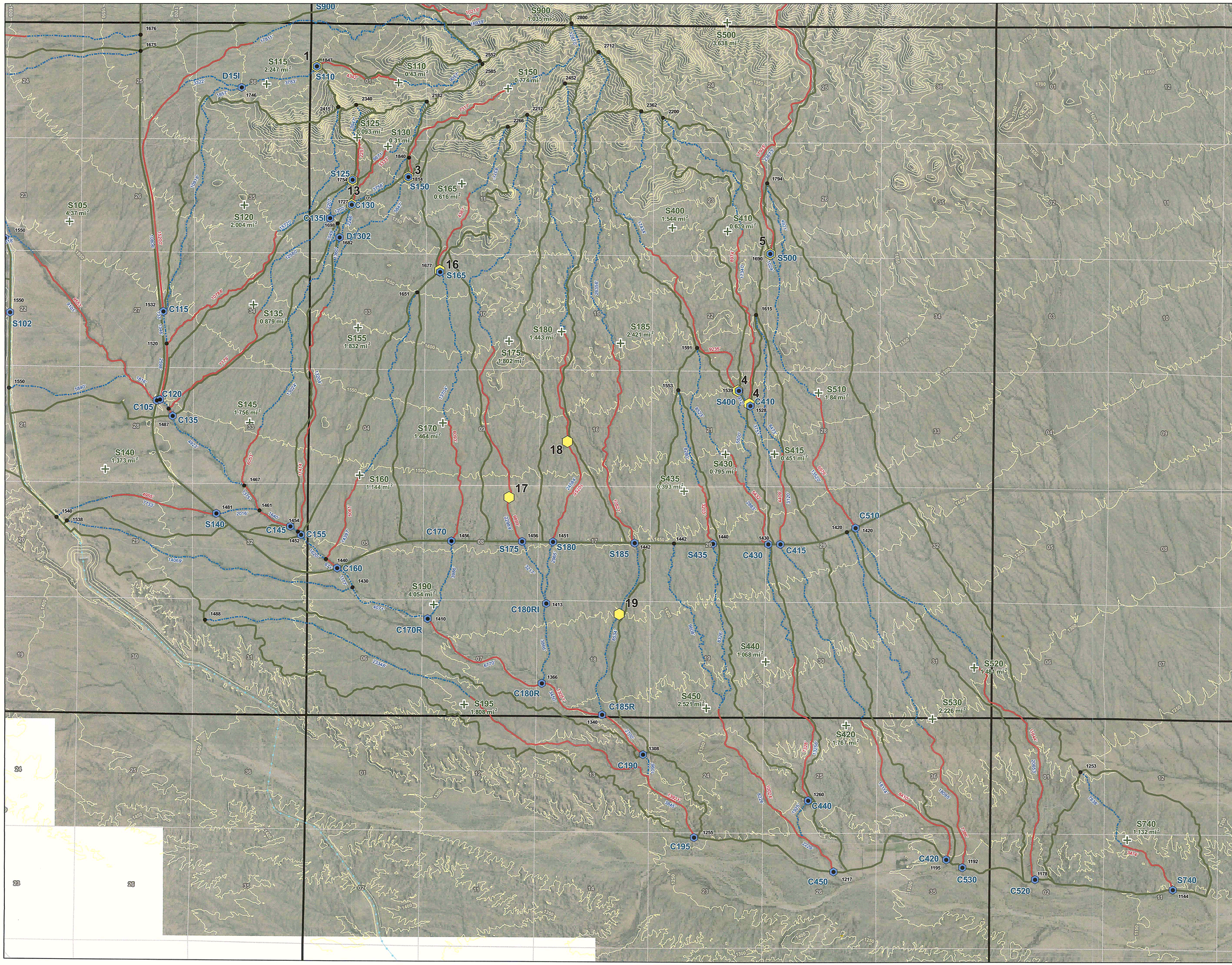
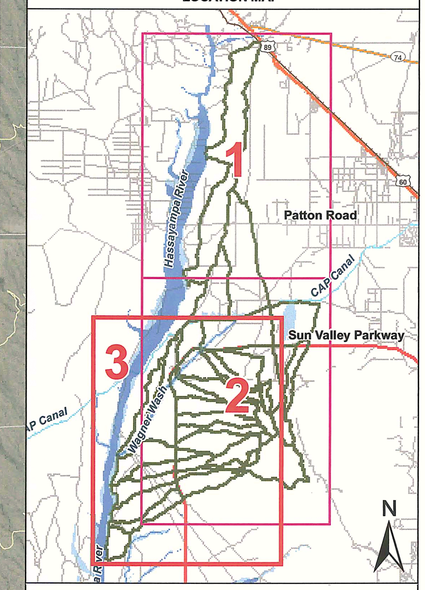
PLATE 1

LEGEND

- Subbasin Boundaries
- Lca Paths
- Lag & Routing Paths
- Subbasin Centroids
- 50-ft Index Contours
- Alluvial Fan Apices
- HEC-1 Model Operation Points
- Tc Elevation Points

LOCATION MAP





FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

AREA 4 HYDROLOGY

WATERSHED BOUNDARY MAP

SHEET 3 OF 3

FCD 2004C049
SUN VALLEY
AREA DRAINAGE MASTER PLAN
AUGUST 2006

Feet
0 2,000 4,000
1 inch equals 2,000 feet

JE FULLER
HYDROLOGY & GEOMORPHOLOGY, INC.

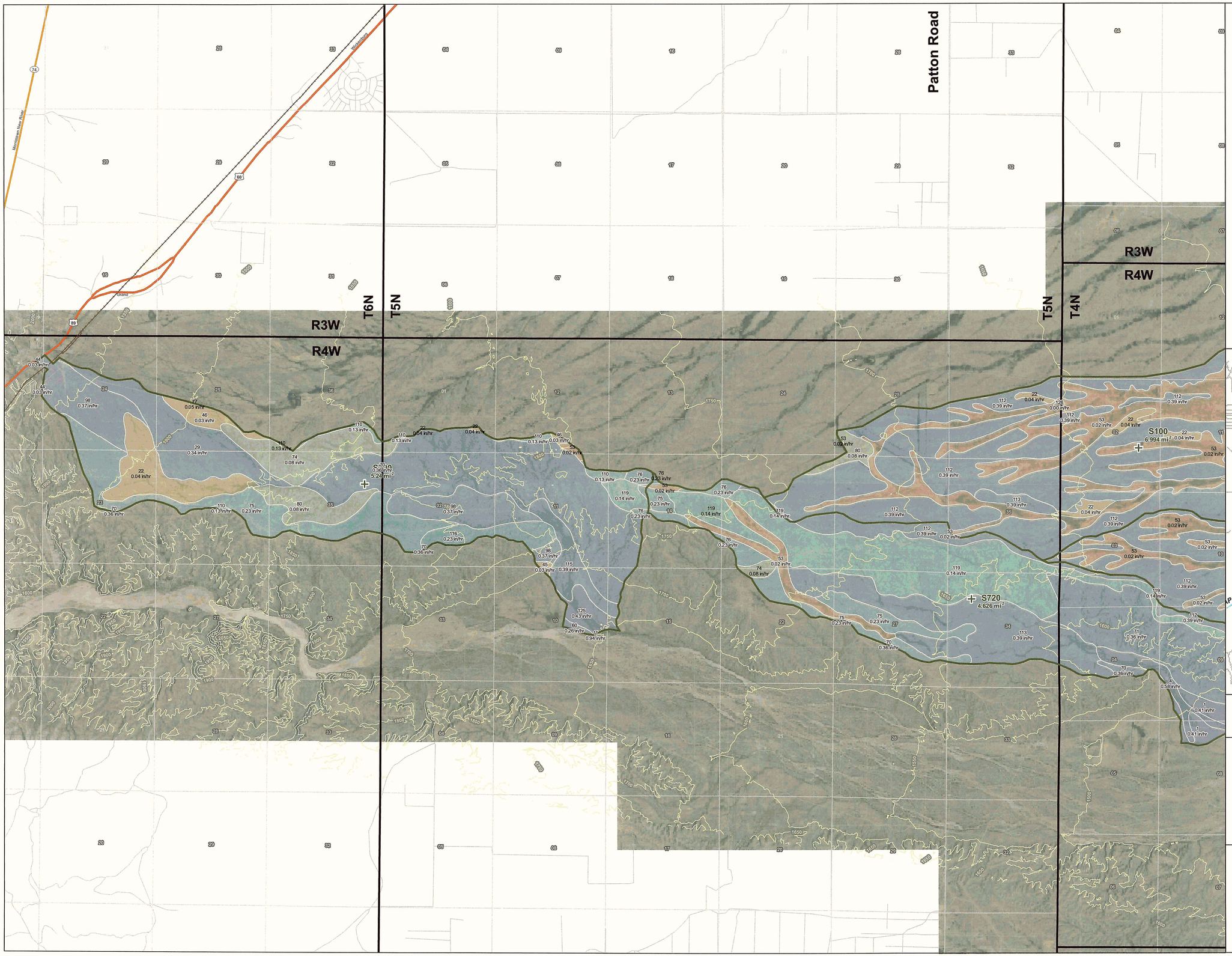


PLATE 2

LEGEND

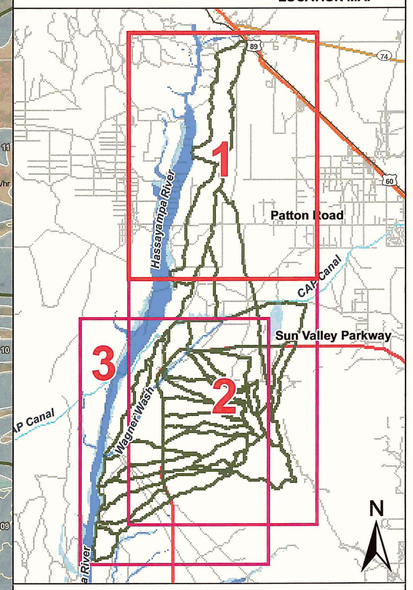
- Subbasin Boundaries
- Subbasin Centroids

NRCS Soil Data

XKSAT (in/hr)

- 0.00
- 0.01 - 0.02
- 0.03 - 0.04
- 0.05 - 0.06
- 0.07 - 0.10
- 0.11 - 0.15
- 0.16 - 0.25
- 0.26 - 0.40
- 0.41 - 1.20
- 50-ft Index Contours
- Alluvial Fan Apices

LOCATION MAP



FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

AREA 4 HYDROLOGY

NRCS SOIL MAP

SHEET 1 OF 3

FCD 2004C049
SUN VALLEY
AREA DRAINAGE MASTER PLAN
AUGUST 2006

Feet
0 2,000 4,000
1 inch equals 2,000 feet

JE FULLER HYDROLOGY & GEOMORPHOLOGY, INC.

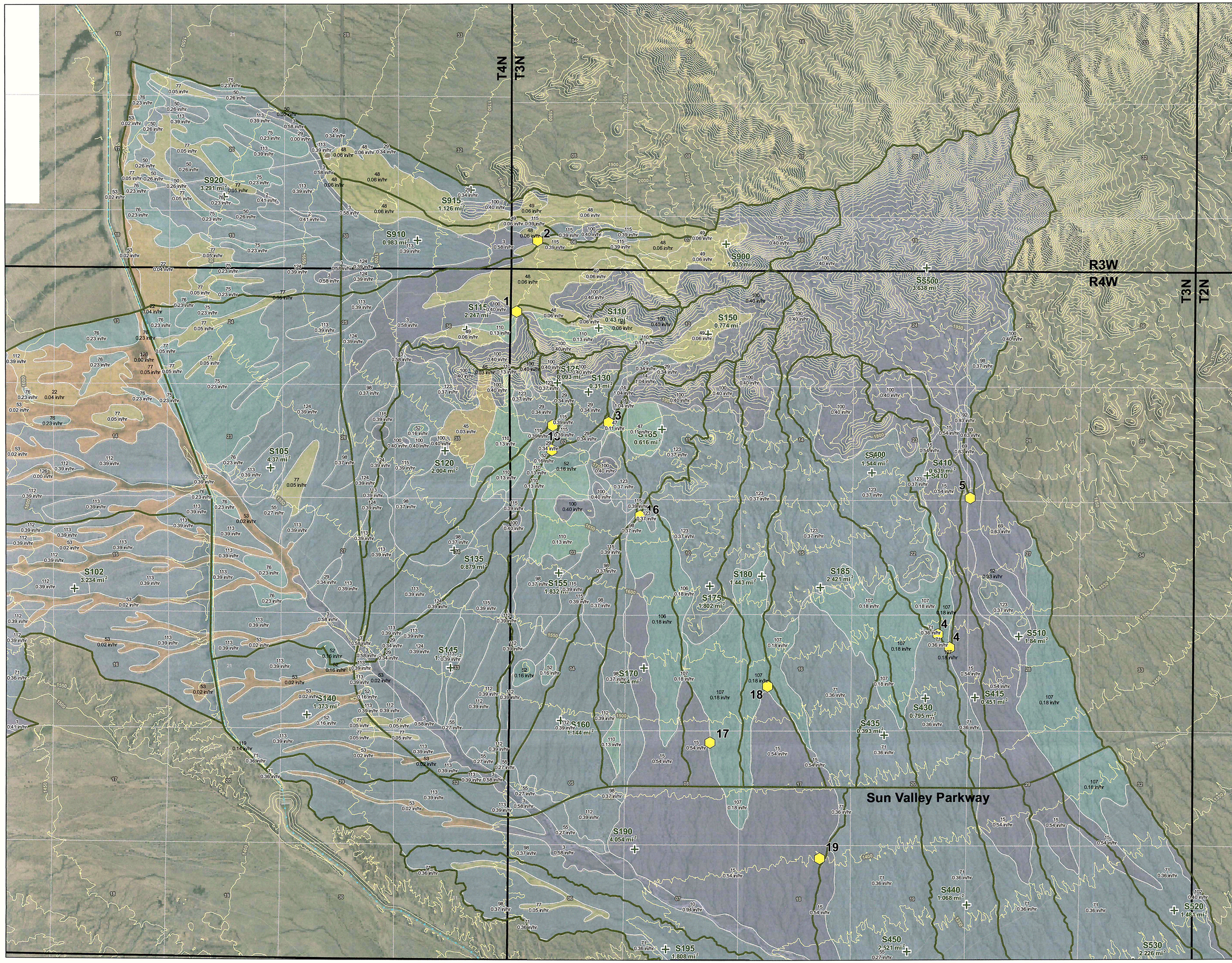


PLATE 2

LEGEND

- Subbasin Boundaries
- Subbasin Centroids

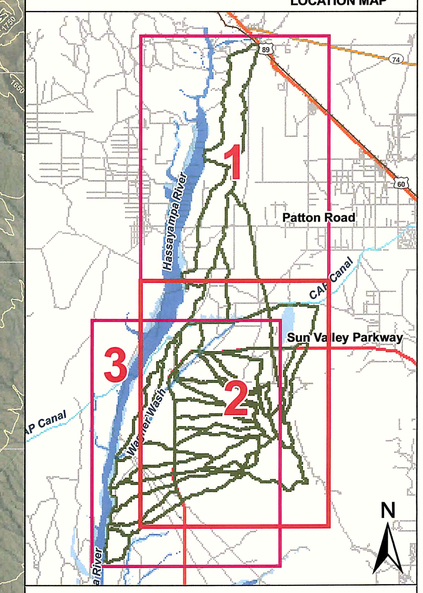
NRCS Soil Data

XKSAT (in/hr)

- 0.00
- 0.01 - 0.02
- 0.03 - 0.04
- 0.05 - 0.06
- 0.07 - 0.10
- 0.11 - 0.15
- 0.16 - 0.25
- 0.26 - 0.40
- 0.41 - 1.20
- 50-ft Index Contours
- Alluvial Fan Apices

N E S W

LOCATION MAP



FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

AREA 4 HYDROLOGY

NRCS SOIL MAP

SHEET 2 OF 3

FCD 2004C049
SUN VALLEY
AREA DRAINAGE MASTER PLAN
AUGUST 2006

Feet

0 2,000 4,000

1 inch equals 2,000 feet

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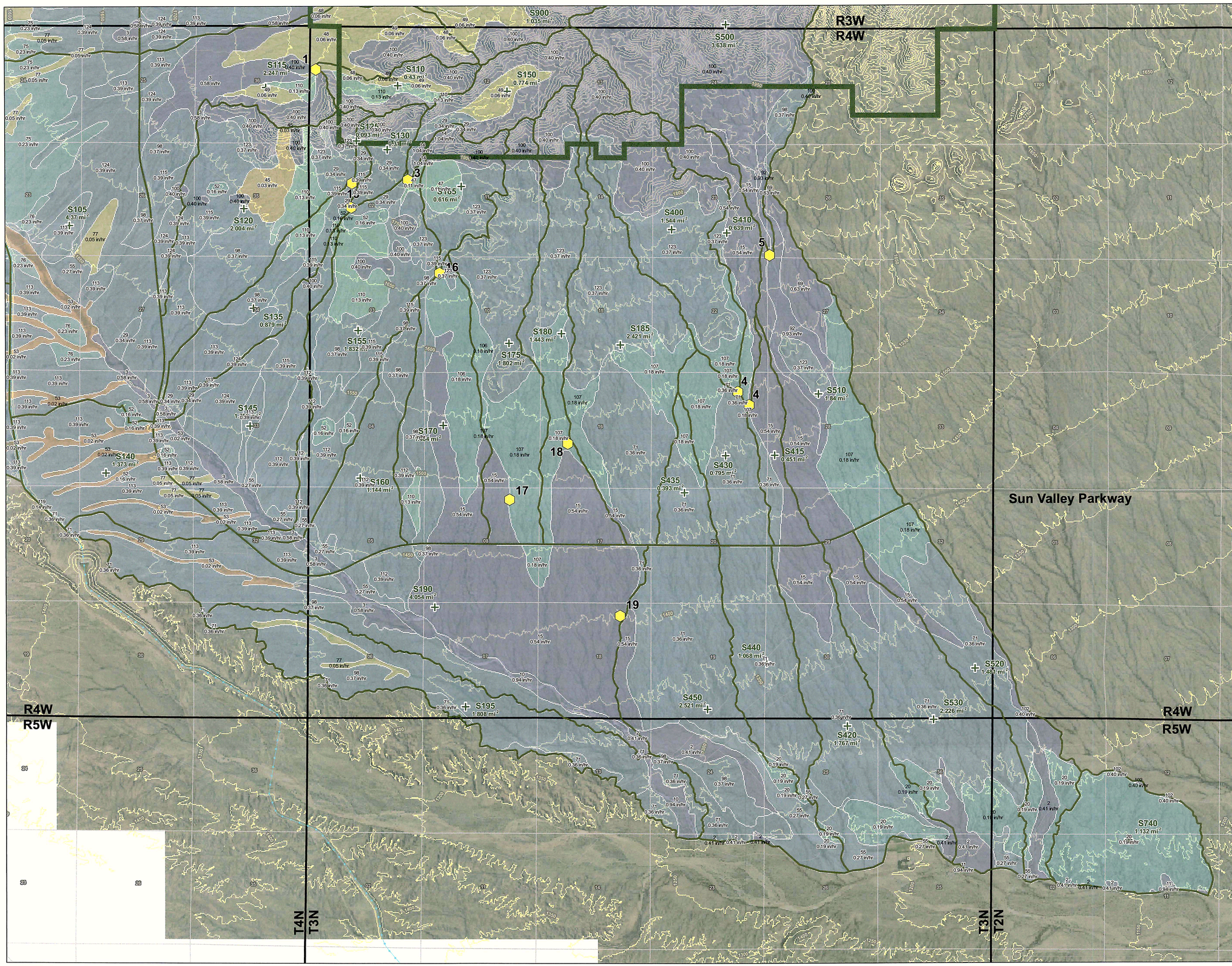


PLATE 2

LEGEND

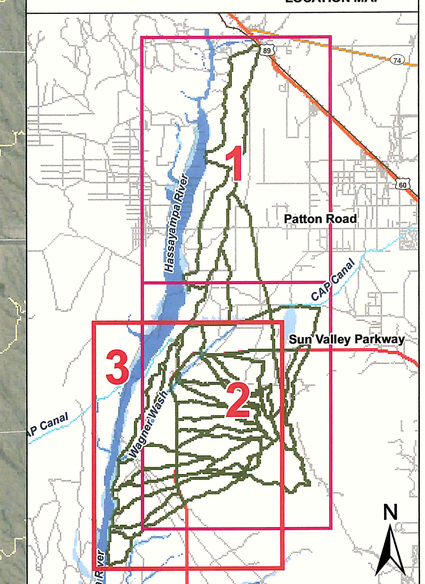
- Subbasin Boundaries
- Subbasin Centroids

NRCS Soil Data

XKSAT (in/hr)

- 0.00
- 0.01 - 0.02
- 0.03 - 0.04
- 0.05 - 0.06
- 0.07 - 0.10
- 0.11 - 0.15
- 0.16 - 0.25
- 0.26 - 0.40
- 0.41 - 1.20
- 50-ft Index Contours
- Alluvial Fan Apices

LOCATION MAP



FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

AREA 4 HYDROLOGY

NRCS SOIL MAP

SHEET 3 OF 3

FCD 2004C049
SUN VALLEY
AREA DRAINAGE MASTER PLAN
AUGUST 2006

Feet
0 2,000 4,000
1 inch equals 2,000 feet

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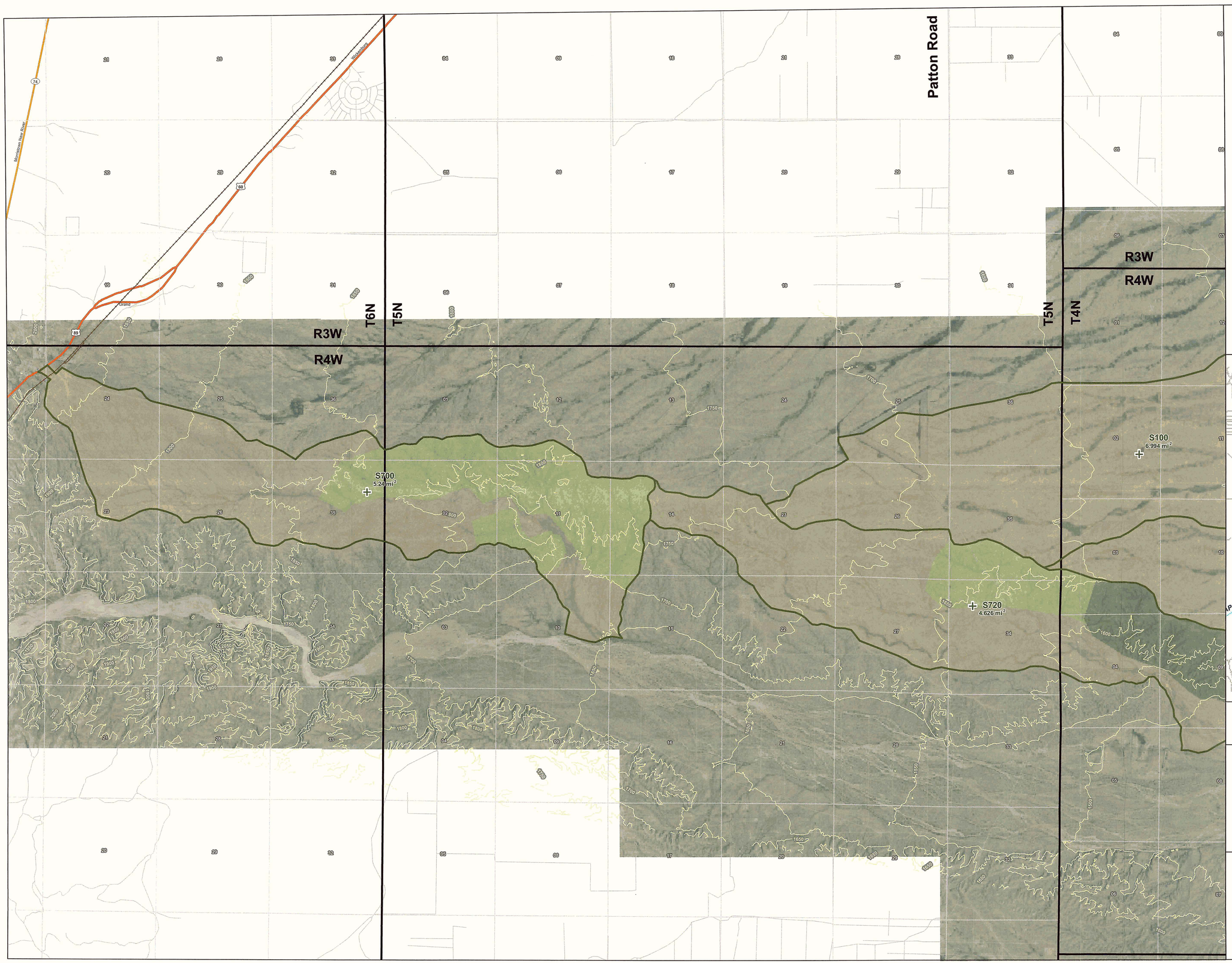
PLATE 3

LEGEND

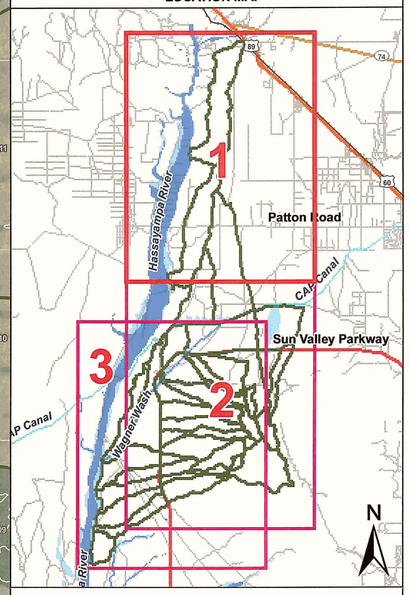
- Subbasin Boundaries
- Subbasin Centroids

Existing Land Use

- Desert/Rangeland - 0 - 5% slopes
- Natural Hillslopes - 5 - 10% slopes
- Mountain Terrain - > 10% slopes
- 50-ft Index Contours
- Alluvial Fan Apices



LOCATION MAP



FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

AREA 4 HYDROLOGY

EXISTING LAND USE MAP

SHEET 1 OF 3

FCD 2004C049
SUN VALLEY
AREA DRAINAGE MASTER PLAN
AUGUST 2006

Feet
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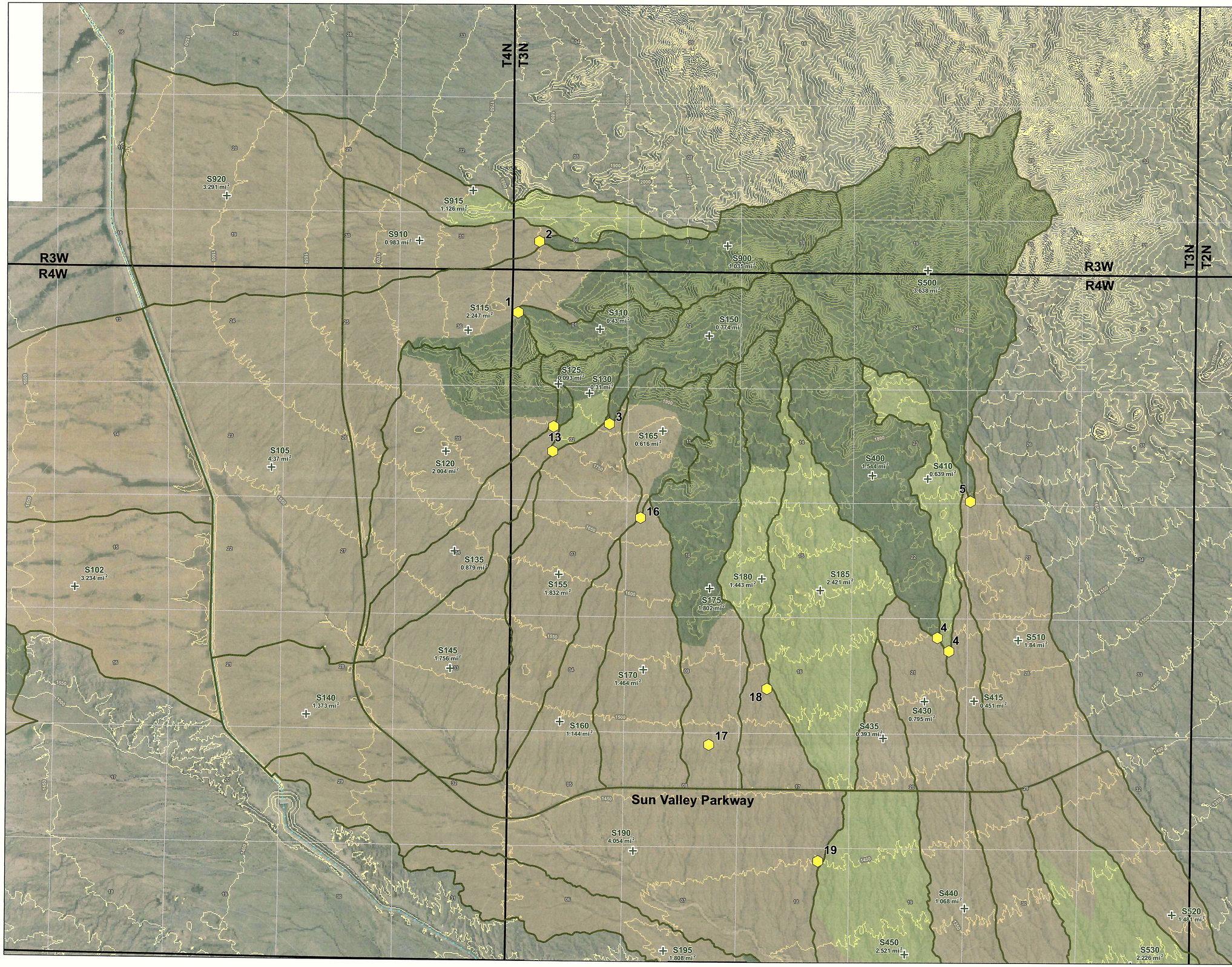


PLATE 3

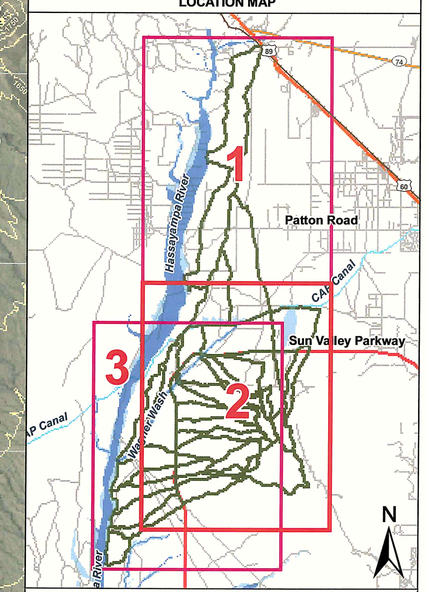
LEGEND

- Subbasin Boundaries
- Subbasin Centroids

Existing Land Use

- Desert/Rangeland - 0 - 5% slopes
- Natural Hillslopes - 5 - 10% slopes
- Mountain Terrain - > 10% slopes
- 50-ft Index Contours
- Alluvial Fan Apices

LOCATION MAP



FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

AREA 4 HYDROLOGY

EXISTING LAND USE MAP

SHEET 2 OF 3

FCD 2004C049
SUN VALLEY
AREA DRAINAGE MASTER PLAN
AUGUST 2006

Feet
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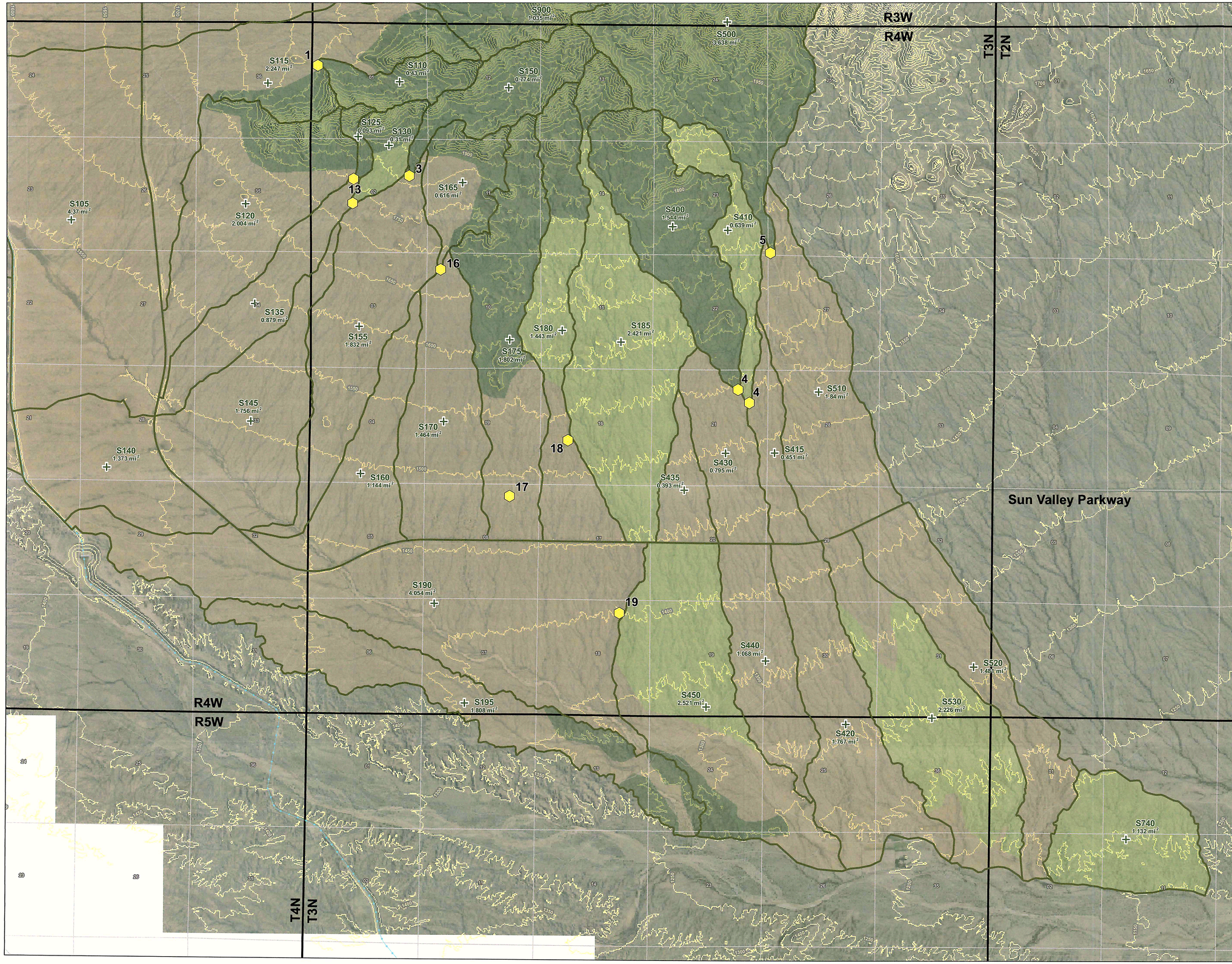

PLATE 3

LEGEND

- Subbasin Boundaries
- Subbasin Centroids

Existing Land Use

- Desert/Rangeland - 0 - 5% slopes
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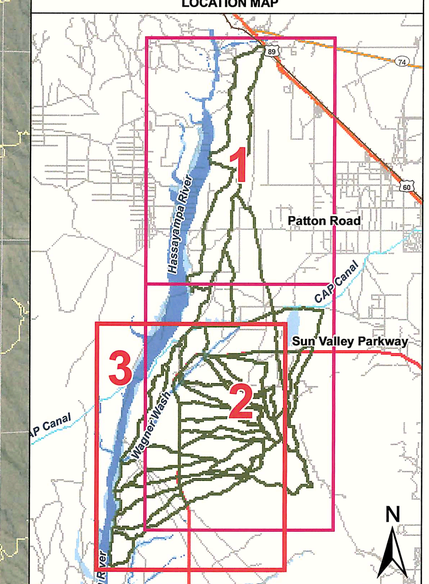
- 50-ft Index Contours
- Alluvial Fan Apices

E N S W

LOCATION MAP



FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

AREA 4 HYDROLOGY

EXISTING LAND USE MAP

SHEET 3 OF 3

FCD 2004C049
SUN VALLEY
AREA DRAINAGE MASTER PLAN
AUGUST 2006

Feet
0 2,000 4,000
1 inch equals 2,000 feet

JE FULLER
HYDROLOGY & GEOMORPHOLOGY, INC.

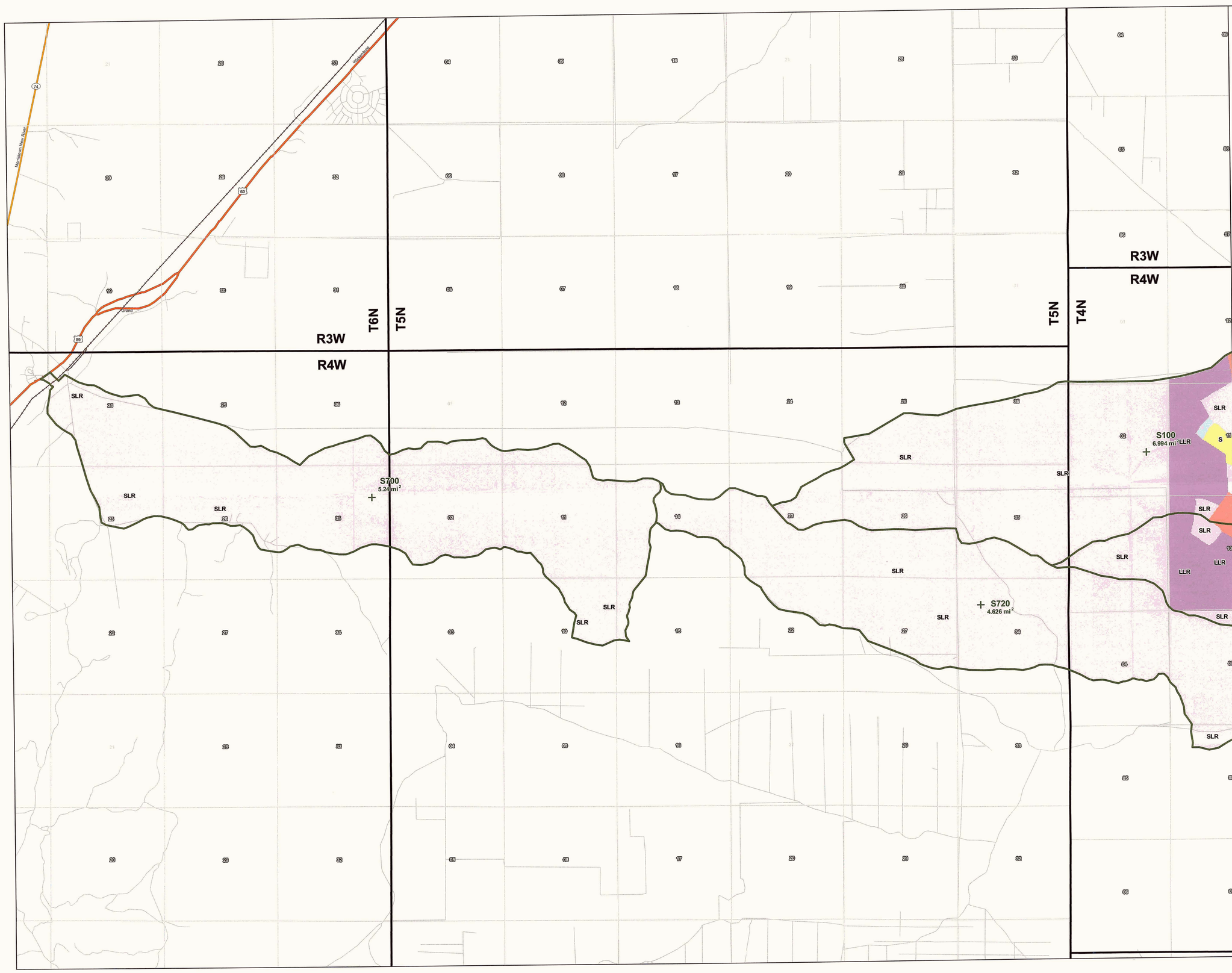


PLATE 4

LEGEND

- Subbasin Boundaries
- Subbasin Centroids
- Alluvial Fan Apices

Future Land Use

- Desert Rangeland (NDR)
- Natural Hillslopes (NHS)
- Mountain Terrain (NMT)
- Passive Open Space (OS)
- Developed Park (PARK)
- High Density Residential (HDR)
- Small Lot Residential (SLR)
- Large Lot Residential (LLR)
- Industrial (IND)
- Commercial (COMM)
- Schools (S)

LOCATION MAP

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

AREA 4 HYDROLOGY

FUTURE LAND USE MAP

SHEET 1 OF 3

FCD 2004C049
SUN VALLEY
AREA DRAINAGE MASTER PLAN
AUGUST 2006

Feet
0 2,000 4,000
1 inch equals 2,000 feet

JE FULLER
HYDROLOGY & GEOMORPHOLOGY, INC.

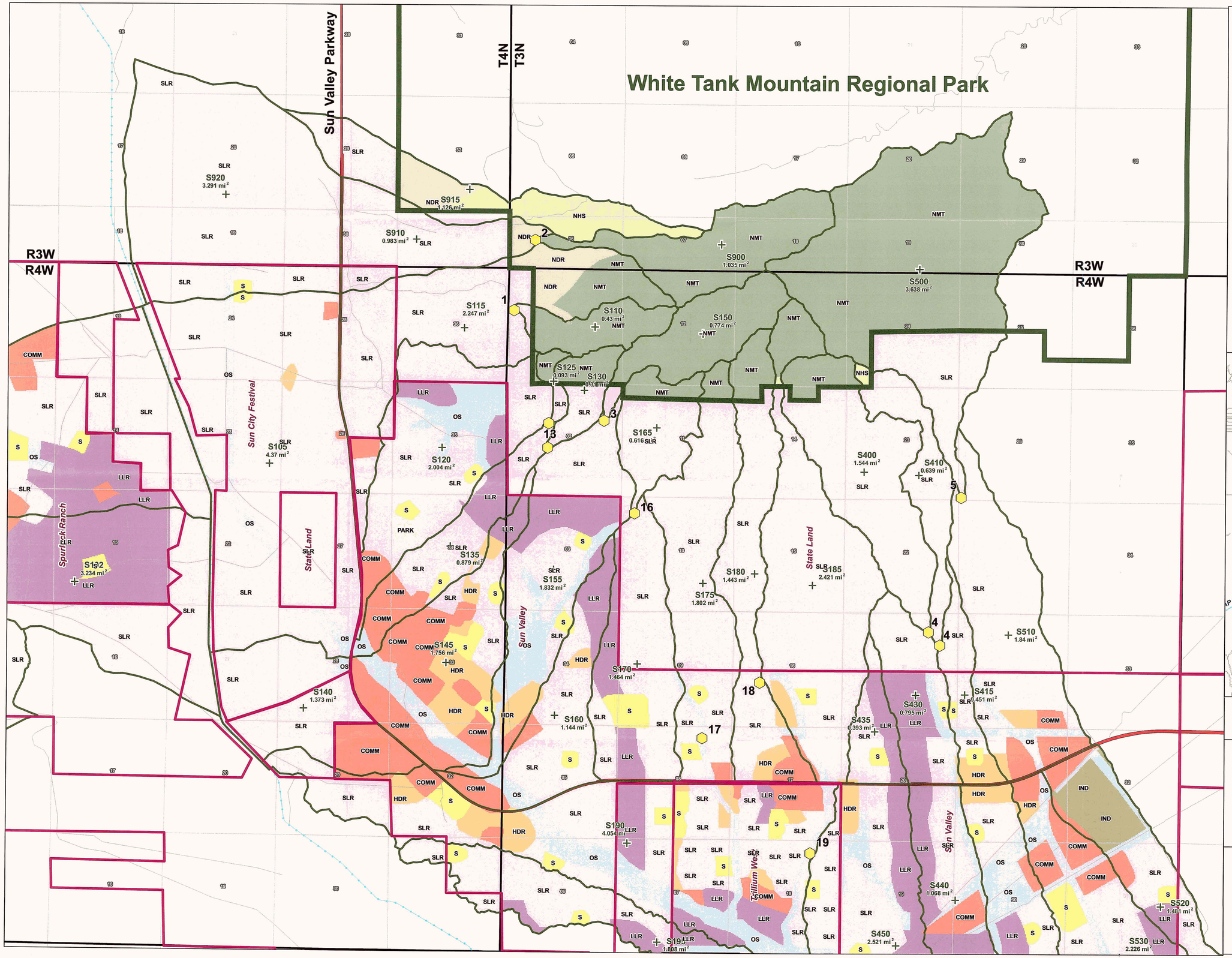


PLATE 4

LEGEND

- Subbasin Boundaries
- Subbasin Centroids
- Alluvial Fan Apices

Future Land Use

- Desert Rangeland (NDR)
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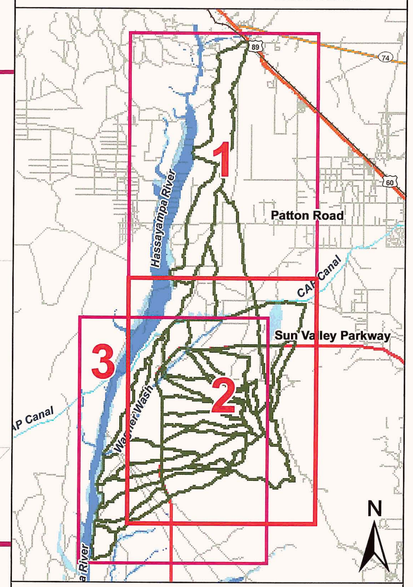
LOCATION MAP



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

AREA 4 HYDROLOGY

FUTURE LAND USE MAP

SHEET 2 OF 3

FCD 2004C049
SUN VALLEY
AREA DRAINAGE MASTER PLAN
AUGUST 2006

Feet
0 2,000 4,000
1 inch equals 2,000 feet

JE FULLER HYDROLOGY & GEOMORPHOLOGY, INC.

PLATE 4

LEGEND

- Subbasin Boundaries
- Subbasin Centroids
- Alluvial Fan Apices

Future Land Use

- Desert Rangeland (NDR)
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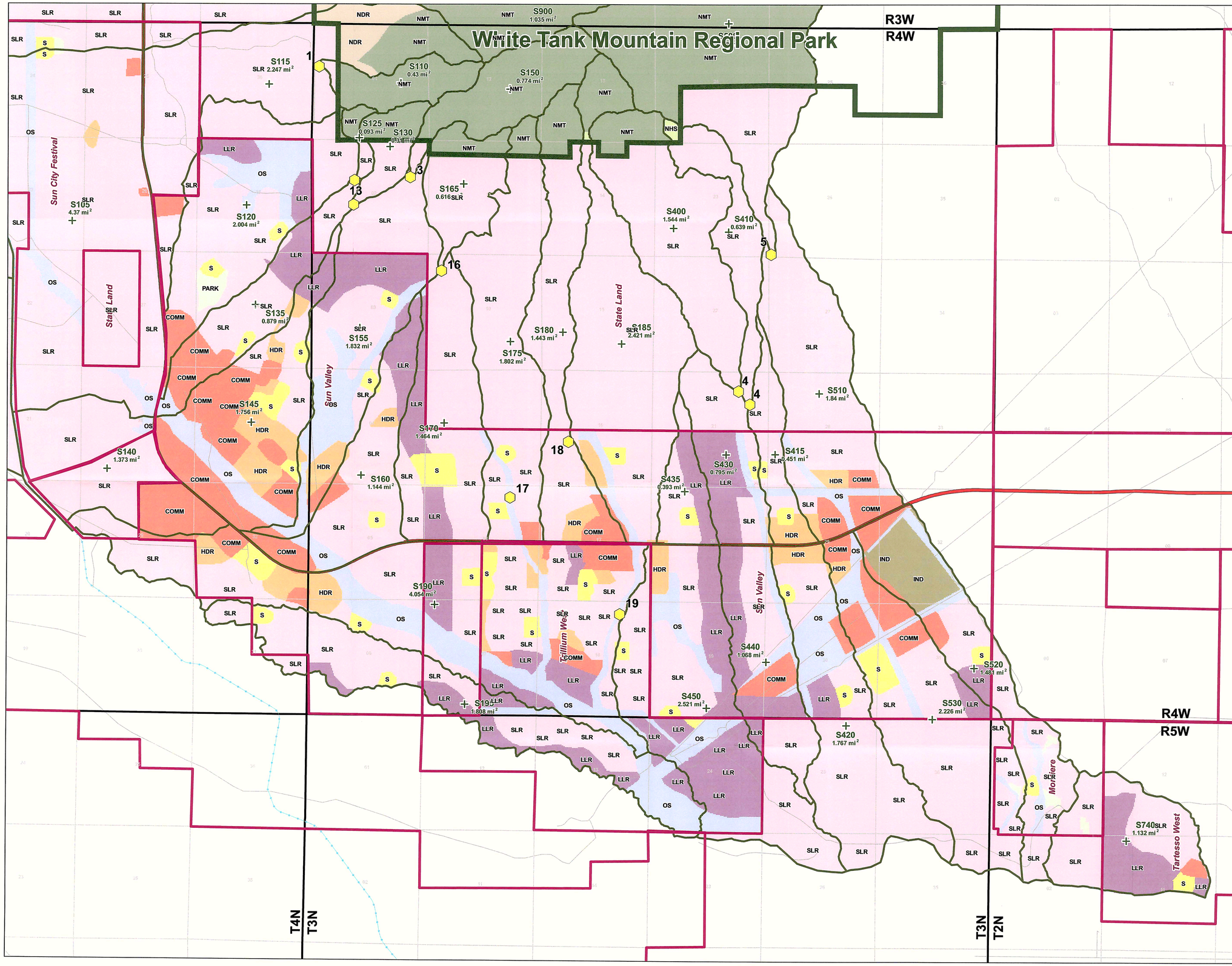
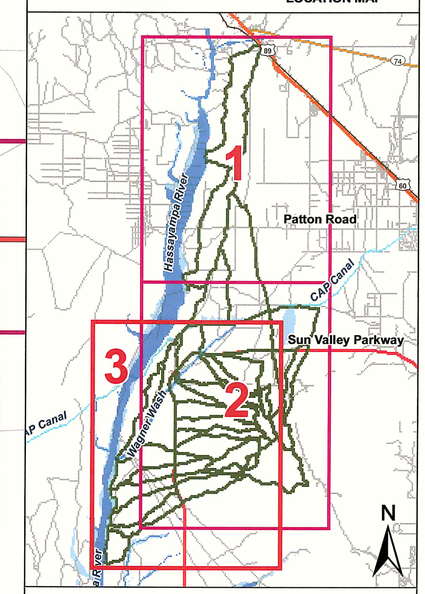


LOCATION MAP



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

AREA 4 HYDROLOGY

FUTURE LAND USE MAP

SHEET 3 OF 3

FCD 2004C049
SUN VALLEY
AREA DRAINAGE MASTER PLAN
AUGUST 2006

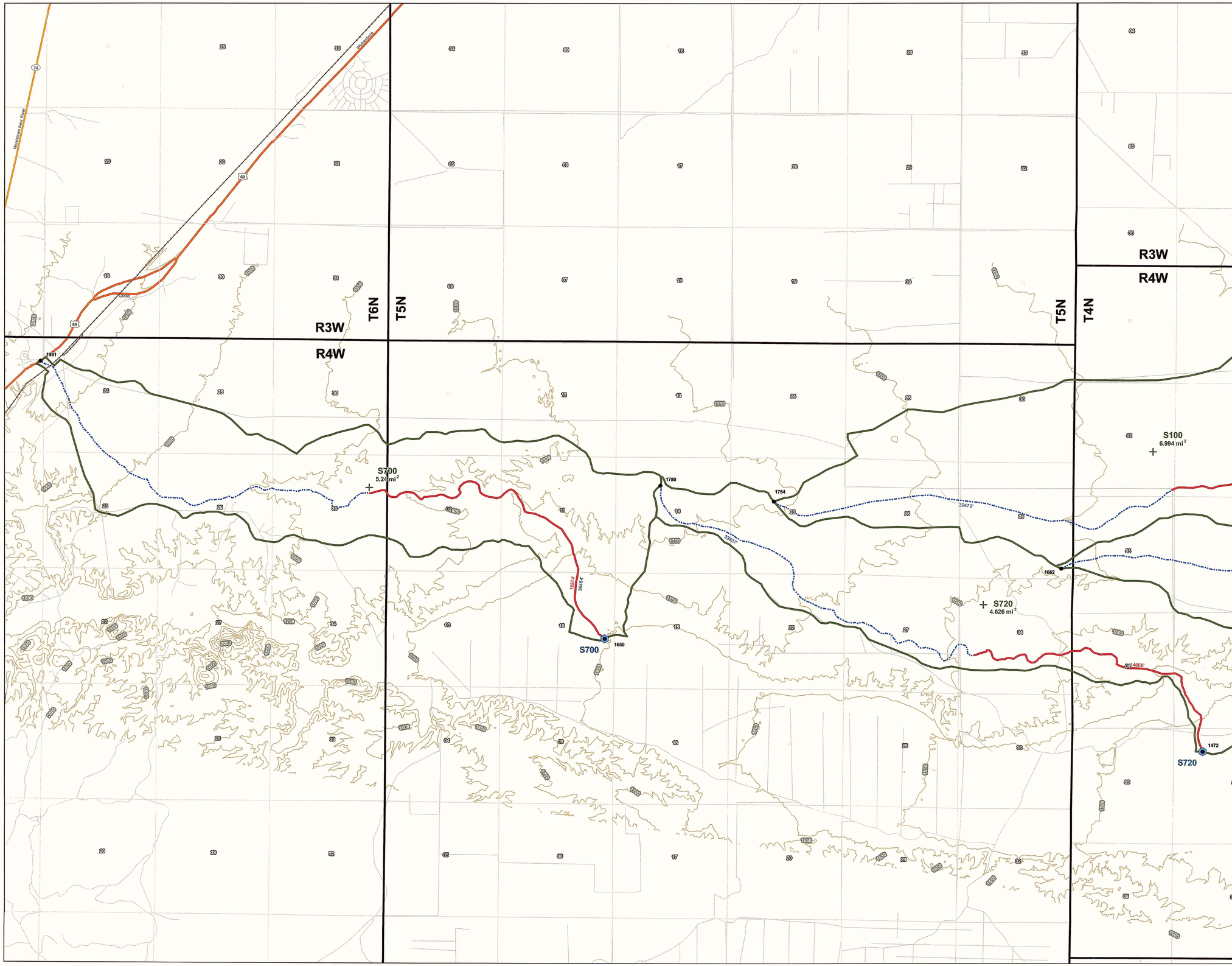
Feet
0 2,000 4,000
1 inch equals 2,000 feet

JE FULLER HYDROLOGY & GEOMORPHOLOGY, INC.

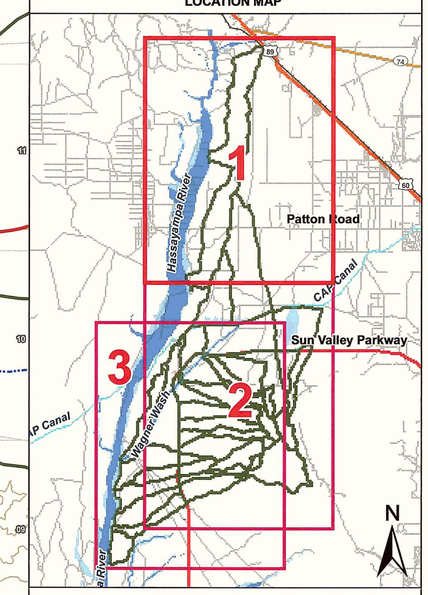
PLATE 5

LEGEND

- Subbasin Boundaries
- Lca Paths
- Lag & Routing Paths
- Subbasin Centroids
- Tc Elevation Points
- 50-ft Index Contours
- Alluvial Fan Apices
- HEC-1 Model Operation Points



LOCATION MAP



FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

AREA 4 HYDROLOGY
FLOW & LAG PATH MAP

SHEET 1 OF 3

FCD 2004C049
SUN VALLEY
AREA DRAINAGE MASTER PLAN
AUGUST 2006

Feet
0 2,000 4,000
1 inch equals 2,000 feet

JE FULLER
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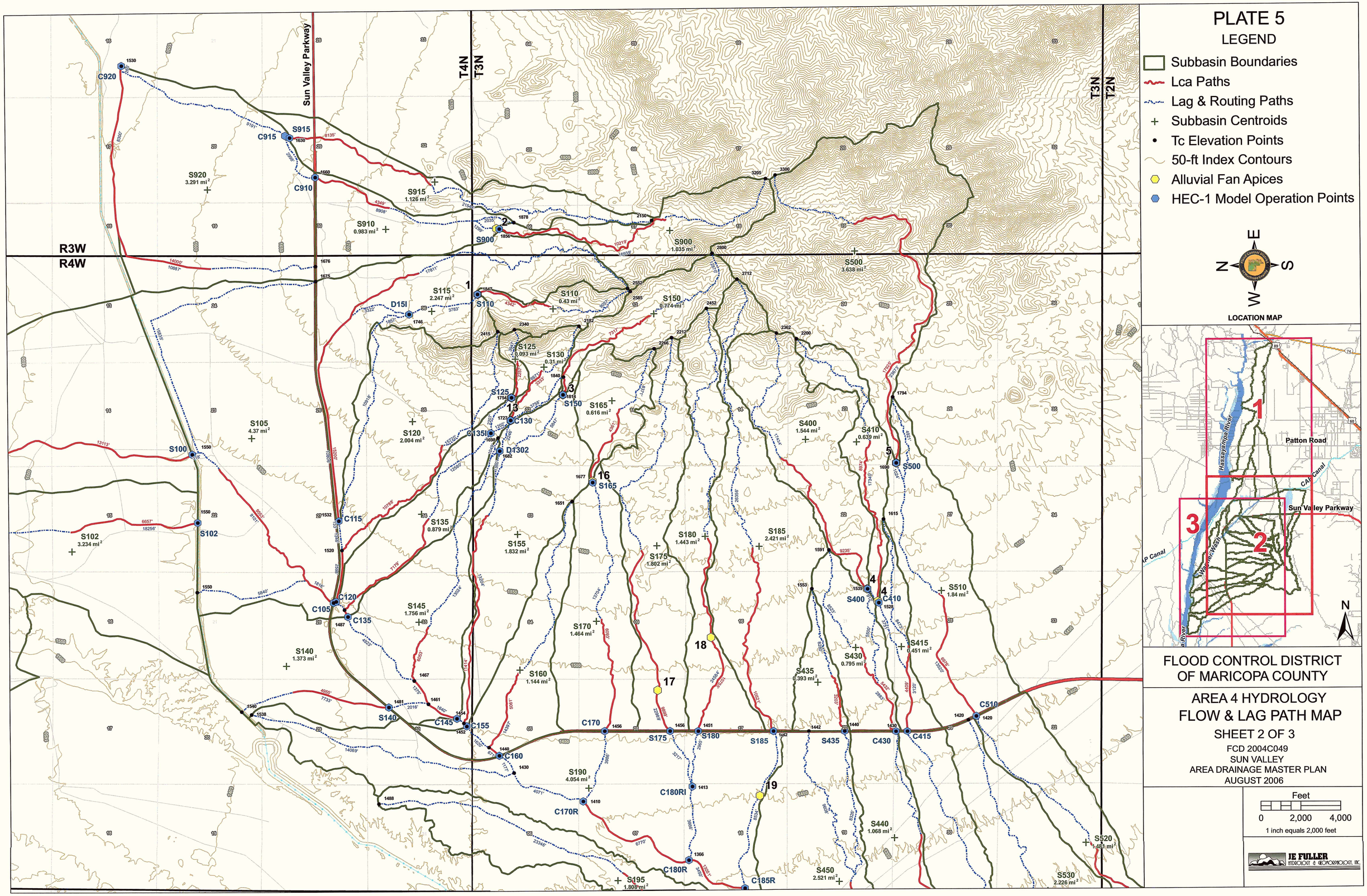


PLATE 5
LEGEND
Subbasin Boundaries
Lca Paths
Lag & Routing Paths
Subbasin Centroids
Tc Elevation Points
50-ft Index Contours
Alluvial Fan Apices
HEC-1 Model Operation Points
LOCATION MAP
Sun Valley Parkway
T4N
T3N
T2N
R3W
R4W
Patton Road
Hassayampa River
CAP Canal
Wagner Wash
FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
AREA 4 HYDROLOGY
FLOW & LAG PATH MAP
SHEET 2 OF 3
FCD 2004C049
SUN VALLEY
AREA DRAINAGE MASTER PLAN
AUGUST 2006
Feet
0 2,000 4,000
1 inch equals 2,000 feet
JE FULLER

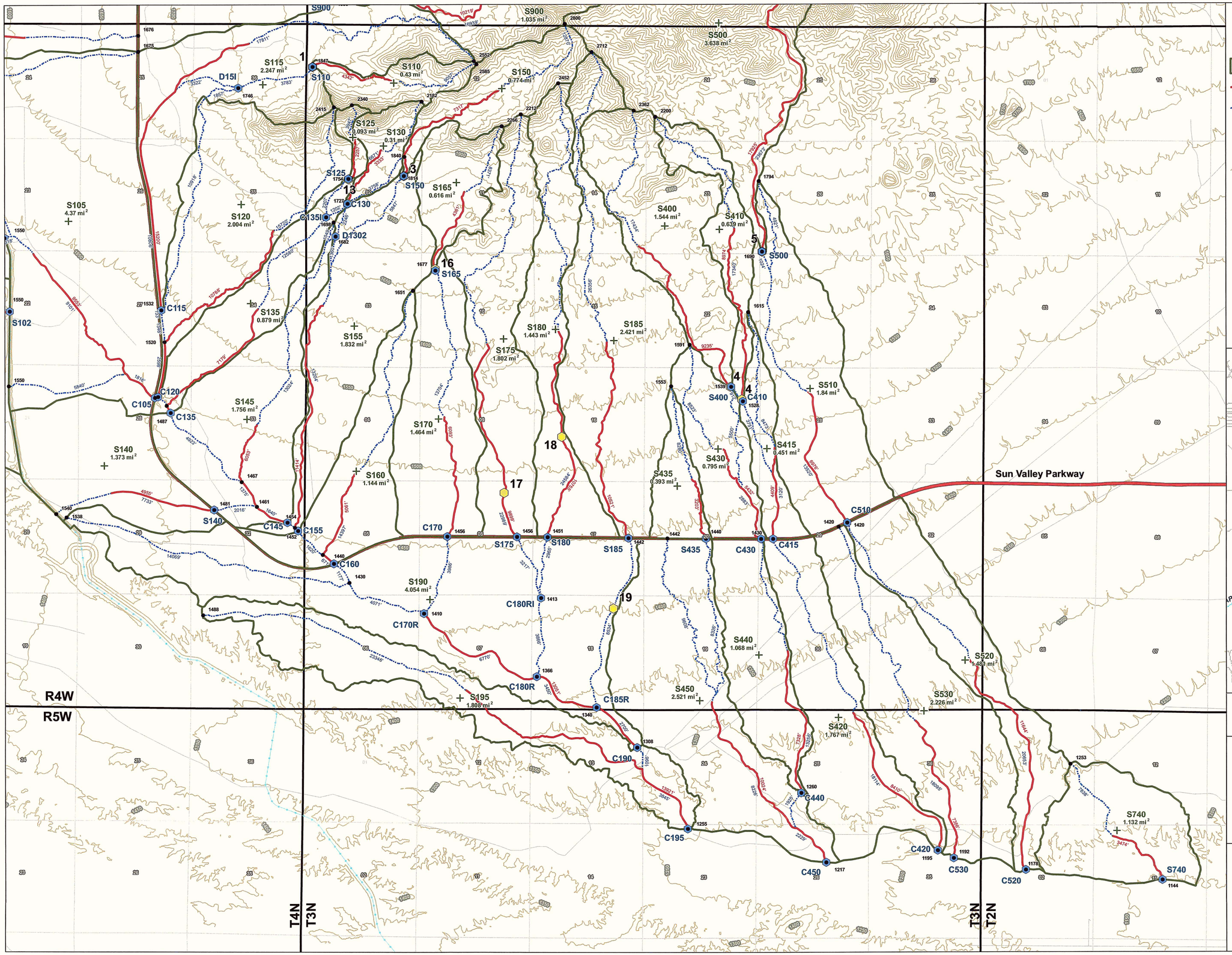
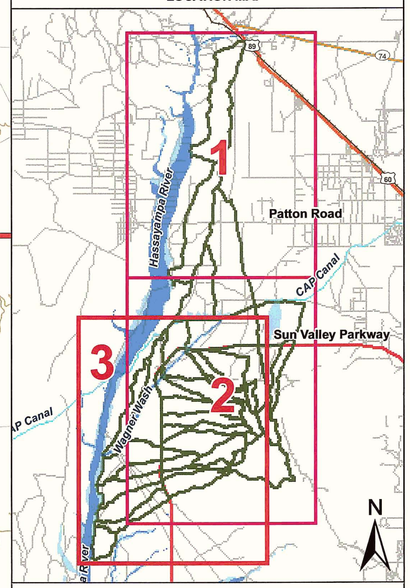


PLATE 5

LEGEND

- Subbasin Boundaries
- Lca Paths
- Lag & Routing Paths
- Subbasin Centroids
- Tc Elevation Points
- 50-ft Index Contours
- Alluvial Fan Apices
- HEC-1 Model Operation Points

LOCATION MAP



FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

AREA 4 HYDROLOGY
FLOW & LAG PATH MAP

SHEET 3 OF 3

FCD 2004C049
SUN VALLEY
AREA DRAINAGE MASTER PLAN
AUGUST 2006

Feet
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1 inch equals 2,000 feet

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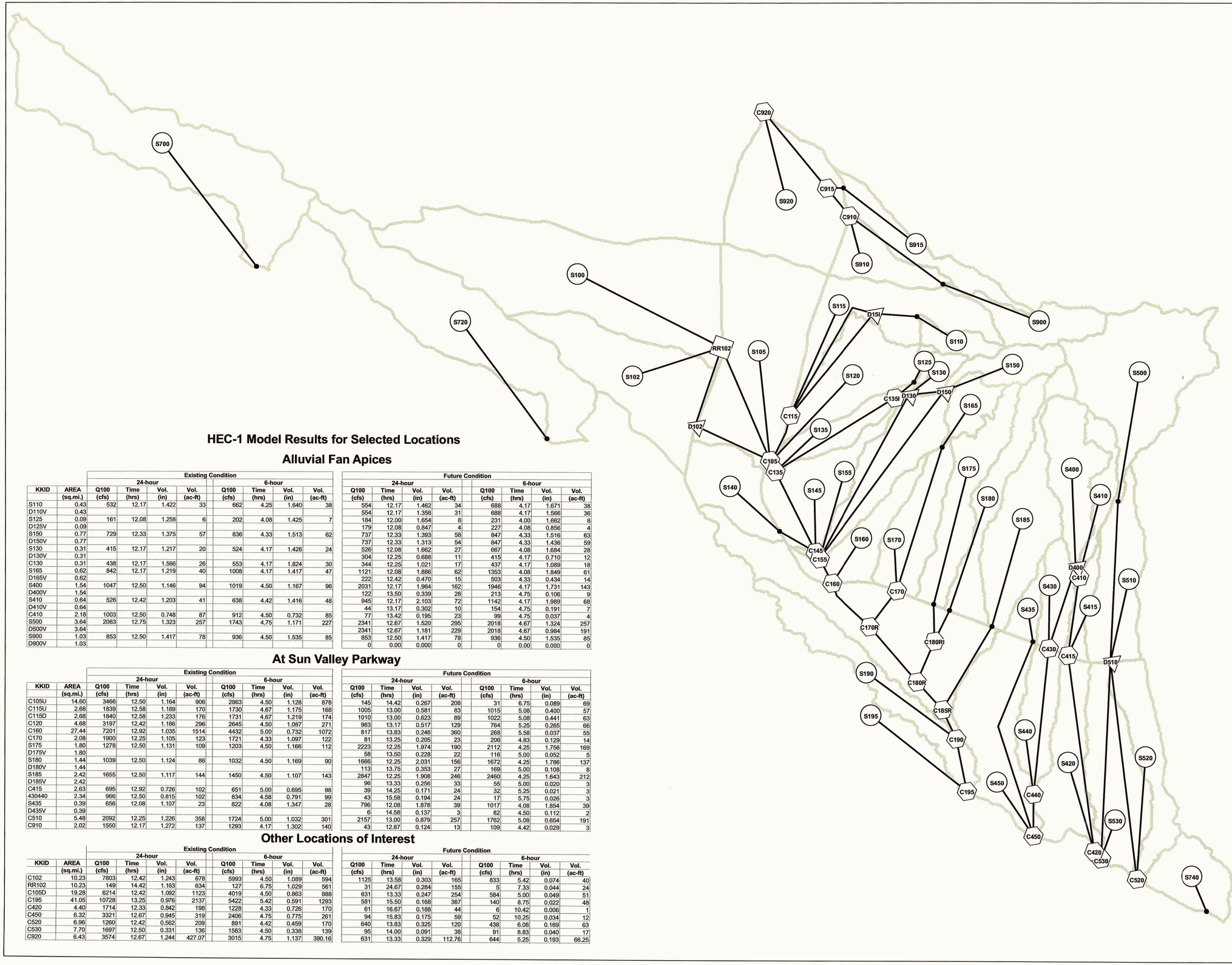


HEC-1 Model Results for Selected Locations

Alluvial Fan Apices

KKID	AREA (sq.mi.)	Existing Condition 24-hour Q100 (cfs)	Existing Condition 24-hour Time (hrs)	Existing Condition 24-hour Vol. (in)	Existing Condition 24-hour Vol. (ac-ft)	Existing Condition 6-hour Q100 (cfs)	Existing Condition 6-hour Time (hrs)	Existing Condition 6-hour Vol. (in)	Existing Condition 6-hour Vol. (ac-ft)	Future Condition 24-hour Q100 (cfs)	Future Condition 24-hour Time (hrs)	Future Condition 24-hour Vol. (in)	Future Condition 24-hour Vol. (ac-ft)	Future Condition 6-hour Q100 (cfs)	Future Condition 6-hour Time (hrs)	Future Condition 6-hour Vol. (in)	Future Condition 6-hour Vol. (ac-ft)
S110	0.43	532	12.17	1.422	33	662	4.25	1.640	38	554	12.17	1.462	34	688	4.17	1.671	38
D110V	0.43									554	12.17	1.358	31	688	4.17	1.566	36
S125	0.09	161	12.08	1.258	6	202	4.08	1.425	7	184	12.00	1.654	8	231	4.00	1.662	8
D125V	0.09									179	12.08	0.847	4	227	4.08	0.856	4
S150	0.77	729	12.33	1.375	57	836	4.33	1.513	62	737	12.33	1.393	58	847	4.33	1.516	63
D150V	0.77									737	12.33	1.313	54	847	4.33	1.436	59
S130	0.31	415	12.17	1.217	20	524	4.17	1.426	24	526	12.08	1.662	27	667	4.08	1.684	28
D130V	0.31									304	12.25	0.688	11	415	4.17	0.710	12
C130	0.31	438	12.17	1.566	26	553	4.17	1.824	30	344	12.25	1.021	17	437	4.17	1.089	18
S165	0.62	842	12.17	1.219	40	1008	4.17	1.417	47	1121	12.08	1.886	62	1353	4.08	1.849	61
D165V	0.62									222	12.42	0.470	15	503	4.33	0.434	14
S400	1.54	1047	12.50	1.146	94	1019	4.50	1.167	96	2031	12.17	1.964	162	1946	4.17	1.731	143
D400V	1.54									122	13.50	0.339	28	213	4.75	0.106	9
S410	0.64	526	12.42	1.203	41	638	4.42	1.416	48	945	12.17	2.103	72	1142	4.17	1.989	68
D410V	0.64									44	13.17	0.302	10	154	4.75	0.191	7
C410	2.18	1003	12.50	0.748	87	912	4.50	0.732	85	77	13.42	0.195	23	99	4.75	0.037	4
S500	3.64	2063	12.75	1.323	257	1743	4.75	1.171	227	2341	12.67	1.520	295	2018	4.67	1.324	257
D500V	3.64									2341	12.67	1.181	229	2018	4.67	0.984	191
S900	1.03	853	12.50	1.417	78	936	4.50	1.535	85	853	12.50	1.417	78	936	4.50	1.535	85
D900V	1.03									0	0.00	0.000	0	0	0.00	0.000	0

At Sun Valley Parkway

KKID	AREA (sq.mi.)	Existing Condition 24-hour Q100 (cfs)	Existing Condition 24-hour Time (hrs)	Existing Condition 24-hour Vol. (in)	Existing Condition 24-hour Vol. (ac-ft)	Existing Condition 6-hour Q100 (cfs)	Existing Condition 6-hour Time (hrs)	Existing Condition 6-hour Vol. (in)	Existing Condition 6-hour Vol. (ac-ft)	Future Condition 24-hour Q100 (cfs)	Future Condition 24-hour Time (hrs)	Future Condition 24-hour Vol. (in)	Future Condition 24-hour Vol. (ac-ft)	Future Condition 6-hour Q100 (cfs)	Future Condition 6-hour Time (hrs)	Future Condition 6-hour Vol. (in)	Future Condition 6-hour Vol. (ac-ft)
C105U	14.60	3466	12.50	1.164	906	2863	4.50	1.128	878	145	14.42	0.267	208	31	6.75	0.089	69
C115U	2.68	1839	12.58	1.189	170	1730	4.67	1.175	168	1005	13.00	0.581	83	1015	5.08	0.400	57
C115D	2.68	1840	12.58	1.233	176	1731	4.67	1.219	174	1010	13.00	0.623	89	1022	5.08	0.441	63
C120	4.68	3197	12.42	1.186	296	2645	4.50	1.087	271	963	13.17	0.517	129	764	5.25	0.265	66
C160	27.44	7201	12.92	1.035	1514	4432	5.00	0.732	1072	817	13.83	0.246	360	268	5.58	0.037	55
C170	2.08	1900	12.25	1.105	123	1721	4.33	1.097	122	81	13.25	0.205	23	206	4.83	0.129	14
S175	1.80	1278	12.50	1.131	109	1203	4.50	1.166	112	2223	12.25	1.974	190	2112	4.25	1.756	169
D175V	1.80									58	13.50	0.228	22	116	5.00	0.052	5
S180	1.44	1039	12.50	1.124	86	1032	4.50	1.169	90	1666	12.25	2.031	156	1672	4.25	1.786	137
D180V	1.44									113	13.75	0.353	27	169	5.00	0.108	8
S185	2.42	1655	12.50	1.117	144	1450	4.50	1.107	143	2847	12.25	1.908	246	2460	4.25	1.643	212
D185V	2.42									96	13.33	0.256	33	55	5.00	0.020	3
C415	2.63	695	12.92	0.726	102	651	5.00	0.695	98	39	14.25	0.171	24	32	5.25	0.021	3
430440	2.34	966	12.50	0.815	102	834	4.58	0.791	99	43	15.58	0.194	24	17	5.75	0.026	3
S435	0.39	656	12.08	1.107	23	822	4.08	1.347	28	796	12.08	1.878	39	1017	4.08	1.854	39
D435V	0.39									6	14.58	0.137	3	82	4.50	0.112	2
C510	5.48	2092	12.25	1.226	358	1724	5.00	1.032	301	2157	13.00	0.879	257	1762	5.08	0.654	191
C910	2.02	1550	12.17	1.272	137	1293	4.17	1.302	140	43	12.67	0.124	13	109	4.42	0.029	3

Other Locations of Interest

KKID	AREA (sq.mi.)	Existing Condition 24-hour Q100 (cfs)	Existing Condition 24-hour Time (hrs)	Existing Condition 24-hour Vol. (in)	Existing Condition 24-hour Vol. (ac-ft)	Existing Condition 6-hour Q100 (cfs)	Existing Condition 6-hour Time (hrs)	Existing Condition 6-hour Vol. (in)	Existing Condition 6-hour Vol. (ac-ft)	Future Condition 24-hour Q100 (cfs)	Future Condition 24-hour Time (hrs)	Future Condition 24-hour Vol. (in)	Future Condition 24-hour Vol. (ac-ft)	Future Condition 6-hour Q100 (cfs)	Future Condition 6-hour Time (hrs)	Future Condition 6-hour Vol. (in)	Future Condition 6-hour Vol. (ac-ft)
C102	10.23	7803	12.42	1.243	678	5993	4.50	1.089	594	1125	13.58	0.303	165	833	5.42	0.074	40
RR102	10.23	149	14.42	1.163	634	127	6.75	1.029	561	31	24.67	0.284	155	5	7.33	0.044	24
C105D	19.28	6214	12.42	1.092	1123	4019	4.50	0.863	888	631	13.33	0.247	254	584	5.00	0.049	51
C195	41.05	10728	13.25	0.976	2137	5422	5.42	0.591	1293	581	15.50	0.168	367	140	8.75	0.022	48
C420	4.40	1714	12.33	0.842	198	1228	4.33	0.726	170	61	16.67	0.188	44	6	10.42	0.006	1
C450	6.32	3321	12.67	0.945	319	2406	4.75	0.775	261	94	15.83	0.175	59	52	10.25	0.034	12
C520	6.96	1260	12.42	0.562	209	891	4.42	0.459	170	640	13.83	0.325	120	438	6.08	0.169	63
C530	7.70	1697	12.50	0.331	136	1563	4.50	0.338	139	95	14.00	0.091	38	91	8.83	0.040	17
C920	6.43	3574	12.67	1.244	427.07	3015	4.75	1.137	390.16	631	13.33	0.329	112.76	644	5.25	0.193	66.25

PLATE 6

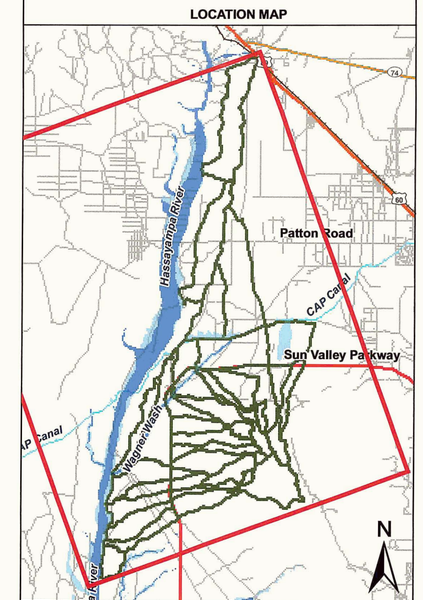
LEGEND

HEC-1 Model Operations

Type

- Subbasin
- Subbasin Outlet
- Combination
- Reservoir Routing
- Diversion

LOCATION MAP



FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

AREA 4 HYDROLOGY

HEC-1 SCHEMATIC MAP

SHEET 1 OF 1

FCD 2004C049
SUN VALLEY
AREA DRAINAGE MASTER PLAN
AUGUST 2006

Feet
0 3,600 7,200
1 inch equals 3,600 feet

JE FULLER
HYDROLOGY & GEOMORPHOLOGY, INC.