**CHM** HILL

# Nonpoint Source Evaluation

TQ:

CCBWQA Technical Review Committee

FROM:

Jim Wulliman/CH2M HILL

DATE:

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This draft memorandum documents a nonpoint source evaluation conducted for the Cherry Creek Basin Water Quality Authority (CCBWQA). The evaluation consisted of the following four work elements:

- **Identify Pollutant Reducing Facilities**
- Quantify Phosphorus Removal Capability
- Review Construction Site Erosion Control
- Recommend Future Phosphorus Reducing Activities

The overall objectives of the project were to identify what measures have been taken to date to control nonpoint sources in the watershed and to evaluate the overall effectiveness of the measures. A follow-up objective was to provide recommendations for future nonpoint source control activities.

#### Identify Pollutant Reducing Facilities

Work element: Identify constructed Pollutant Reducing Facilities (PRFs) presently in the Basin.

For the purposes of this work, a constructed PRF was defined as a facility, such as the following, that was constructed with the expressed goal of reducing phosphorus or other pollutants:

- A facility that provides for extended detention of captured runoff (drain time of 12 hours or more of upstream water quality capture volume [WQCV], with WQCV defined per Volume 3 of the Urban Drainage and Flood Control District's Criteria Manual).
- A facility that provides a permanent pool with a surface area greater than 0.1 acre.
- A facility that provides a constructed wetland with a surface area greater than 0.1 acre.

Pollutant reducing facilities were categorized in two tiers. Tier 1 facilities consist of PRFs constructed adjacent to Cherry Creek Reservoir where monitoring data have been collected, plus other facilities identified herein as determined by the Authority's Technical Review Committee (TRC). Tier 1 facilities were funded in part or in whole by the Authority. Tier 2 facilities consist of constructed PRFs located upstream in the basin, where monitoring data have not been collected. Tier 2 facilities have been constructed generally by developers or entities other than the Authority.

Four Tier 1 PRFs were identified, as follows:

- · Shop Creek Water Quality Improvements
- Quincy Outfall Water Quality Improvements
- Cottonwood Creek (Perimeter Road) Water Quality Improvements
- East Shade Shelter Water Quality Improvements

Tier 2 facilities were identified based on interviews with staff from each land use jurisdiction in the watershed. Staff from Arapahoe County, Douglas County, the Town of Parker, and the Cities of Aurora, Castle Rock, and Greenwood Village each identified the Tier 2 facilities that they were aware of. A total of thirty-five Tier 2 PRFs were identified. The identified PRFs were located in the Cherry Creek, Cottonwood Creek, and direct flow drainage areas. The Tier 2 PRFs exist within five of the six land use jurisdictions.

Other PRFs may exist in the watershed that the interviewed staff were not aware of. If additional PRFs are identified in the future, or if other PRFs are constructed, it is recommended that they be added to this inventory. Facilities in the watershed such as ponds and natural wetland areas, even though not constructed as pollutant reducing facilities, may actually provide water quality benefits; these could also be added to the inventory in the future.

Figure 1 provides a map showing the location of each of the Tier 1 and Tier 2 PRFs and their upstream drainage areas. Table 1 provides summary information for all of the PRFs.

Each of the Tier 1 and Tier 2 PRFs were examined in the field and photographed. Information pertaining to the water quality features of each PRF was obtained and compiled. Appendix A provides photographs of each of the PRFs inventoried. Appendix B provides an initial database of design information for each PRF. The format of the database follows the recommendations of an EPA-sponsored advisory panel seeking to establish standard protocols for collecting data for water quality facilities. The database forms in Appendix B have been filled out with any design information available during this study.

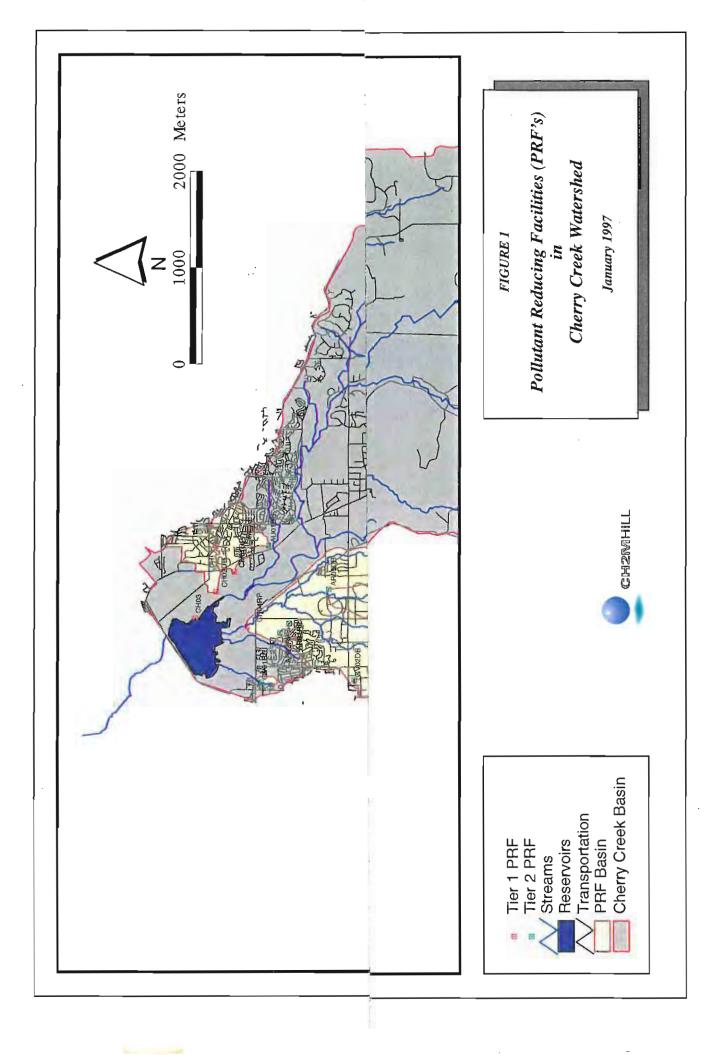
## **Quantify Phosphorus Removal Capability**

Work Element: Prepare estimates of long-term average phosphorus removals for each PRF using actual data or empirical evaluation.

For the Tier 1 and Tier 2 PRFs, estimates were prepared of total suspended solids (TSS) and total phosphorus (TP) removals for each PRF. These estimates are intended to represent average annual removals over a number of years, recognizing that removals in any given year will vary and could be higher or lower than the average estimates, depending on hydrologic factors and watershed conditions. The estimates were prepared based on available data, and were supplemented with an empirical evaluation where data were limited. These estimates are intended to provide an initial quantification of removals associated with the PRFs, are generally on the conservative (low) side, and are to be reassessed over time as more data are obtained.

#### Evaluation of Existing Monitoring Data

Flow, TSS and TP load data collected for Shop Creek, the Quincy Outfall, and Cottonwood Creek were evaluated. The raw data were examined and analyzed as the basis of preparing removal estimates for the PRFs, as opposed to using summaries of data or performance



**TABLE 1**Tier 1 and Tier 2 PRF Information

ID Number	Description Jurisdiction		Water Quality Capture Volume Ac-ft	Drainage Area Acres	
TIER 1 PRFs					
CH01RP	Shop Creek Water Quality Improvements	Cherry Creek State Park	9.1	520	
CH02DB	Quincy Outfall Water Quality Improvements	Cherry Creek State Park	8.8	530	
CH03	East Shade Shelter Shoreline Stabilization Project	Cherry Creek State Park	N/A	N/A	
CH04RP	Cottonwood Creek Water Quality Improvements	Cherry Creek State Park	22	7500	
TIER 2 PRFs					
AR01RP	Cherry Creek VIsta III Filing 16-A East Wetland Basin	Arapahoe County	1.4	28	
AR02RP	Cherry Creek Vista III Filing 16-A West Wetland Basin	Arapahoe County	6.8	21	
AR03RP	Rampart Business Center Filing No. 6 Basin	Arapahoe County	1.2	140	
AR04RP	Inverness Filing 17 located in Inverness Business Park	Arapahoe County	1.7	33	
AR05DB	Lonetree Basin L3, Arapahoe County	Arapahoe County	17	980	
AU01DB	Shalom Park Subdivision Detention Basin, Aurora	City of Aurora	2.2	110	
DO01DB	Cottonwood Subdivision Filing No. 11 Detention Basin	Douglas County	1.8	260	
DO02DB	The Pinery/High Prairie Farms Filing No. 3, Detention Basin A	Douglas County	0.5	43	
DO03DB	The Pinery/High Prairie Farms Filing 3, Detention Basin B	Douglas County	0.5	45	
DO04DB	The Pinery Filing No. 22, Detention Basin A1	Douglas County	0.1	19	
DO05DB	The Pinery Filing No. 22, Detention Basin A2	Douglas County	0.3	39	
DO06DB	The Pinery Filing No. 22, Detention Basin B1	Douglas County	0.1	16	
DO07DB	The Pinery Filing No. 22, Detention Basin B2	Douglas County	-	16	
DO08DB	The Pinery Filing No. 22, Detention Basin No. C1	Douglas County	0.3	37	
GV01RP	Dayton Farms Detention Basin	Greenwood VIIIage	1.7	77	
GV02DB	Greenwood Village Municipal Maintenance Base	Greenwood Village	0.1	7.2	
PA01DB	Parker United Methodist Church (North)	Town of Parker	0.1	3.8	
PA02DB	Parker United Methodist Church (2nd Basin from North)	Town of Parker	0.4	3.8	
PA03DB	Parker United Methodist Church (3rd Basin from North)	Town of Parker	0.4	3.8	
PA04DB	Parker Vista Subdivision ( Stonehedge and Main Street)	Town of Parker	8.0	42	
PA05DB	Parker Vista(North Detention Basin)	Town of Parker	0.4	16	
PA06DB	Canterbury Crossing Detention Facility	Town of Parker	10	16	
PA07DB	Willow Ridge Fiting 1	Town of Parker	0.5	22	
PA08DB	Willow Ridge Filing 2	Town of Parker	1.3 .	34	
PA09DB	Willow Park West	Town of Parker	2.6	18	
PA10DB	Willow Park East	Town of Parker	9.4	21	
PA11DB	Parker Marketplace Phase 2 Detention Facility	Town of Parker	0.2	5.3	
PA12DB	Bradbury Ranch	Town of Parker	1.9	380	
PA13DB	Baldwin Pond	Town of Parker	0.4	280	
PA14DB	Joint Use Facility Detention Basin 1	Town of Parker	0.1	2.4	
PA15DB	Joint Use Facility Detention Basin 2	Town of Parker	0.4	4.8	
PA16DB	Clarke Farms Detention Basin	Town of Parker	11	290	

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results provided in the Authority's annual reports or monitoring summaries. Data collected included continuous flow measurements and periodic water quality samples for base flow conditions and discrete storm events. Inflow and outflow measurements and water quality samples were evaluated for the Shop Creek and Quincy Outfall PRFs. Only inflow measurements and samples were examined for the Cottonwood Creek PRF, since it was just constructed in December of 1996. The monitoring period evaluated consisted of the following:

- Shop Creek 1990, 1991, 1992, 1995, 1996
- Quincy Outfall 1996
- Cottonwood Creek 1994, 1995, 1996

Data for 1990, 1991, and 1992 were collected by Advanced Sciences, Inc. (ASI), while data for 1994, 1995, and 1996 were collected by Chadwick Ecological Consultants (CEC). Data was not collected in 1993. Much of the monitoring information and results for Shop Creek for the years 1990 through 1992 came directly from a document entitled *Internal UDFCD Report on the Joint Shop Creek Pond-Wetland System Performance* completed in December, 1996. Shop Creek data for 1994 were not evaluated by UDFCD because of limited data points and questionable data, and were not used herein for the same reasons.

The following approach was used to estimate TSS and TP loads and removal efficiencies for Shop Creek, Quincy Outfall, and Cottonwood Creek (a complete set of calculations is included in Appendix C):

Determine Annual Storm Flow and Base Flow Volumes - Measured runoff volumes
were subdivided into base flow volumes and storm flow volumes for each of the three
drainages. The separation of data into base flow or storm flow events was based on the
magnitude of flow as indicated by the data, and by documentation provided with the
raw data.

Flow data were only collected during the spring/summer months (April/May to September/November) and not during the winter months. In order to determine annual volumes, the storm and base flow volumes for the unmeasured winter months had to be estimated. The storm volumes for the unmeasured winter months, for the purposes of this study, were estimated by a ratio of the total measured annual storm flow volume and the cumulative percentage of average annual precipitation (Denver) for the measured period. An example of this is as follow:

- -measured annual storm flow volume = 165 acre-feet (af)
- -percentage of average annual precipitation for the measured period = 70%
- -total annual storm flow volume = 165/0.7 = 236 af

The base flow volumes for the winter months were estimated to be 67% of the average monthly measured base flow volumes. The 67% ratio is an assumed value selected to approximate the reduction in base flow that usually occurs in winter months due to decreases in precipitation and irrigation.

To get a better idea of base flow and storm flow contributions during the winter months, it may be desirable to provide for some level of flow monitoring during these

- months, perhaps just for one or two seasons, to establish relative contributions during this period.
- 2. Determine Average TP and TSS Concentrations The water quality sample data consisted of concentrations of TP and TSS in milligrams/liter (mg/l). Typically 15 to 20 water quality samples were collected annually during base flow conditions on each of the three drainages. Approximately 10 water quality samples were collected during storm events annually on each drainage. Average TP and TSS concentrations were determined separately for base flows and storm flows, since storm flow concentrations were generally larger than base flow concentrations.
- 3. <u>Determine Average Annual TP and TSS Loads</u> Average annual TP and TSS inflow and outflow loads were determined for the drainages by multiplying the average concentrations by the average annual flow volumes. This was done separately for base flows and storm flows.
- 4. Determine PRF Removal Efficiencies PRF removal efficiencies were also accounted for separately for base flows and storm flows. TSS and TP loads removed were determined by subtracting the outflow loads from the inflow loads. PRF removal efficiencies were then determined by dividing the removed loads by the total inflow loads. Shop Creek removal efficiencies were taken from the UDFCD report. Since Cottonwood Creek outflow data was not available and only one year of results was available for the Quincy Outfall, the removal efficiencies for these PRFs were estimated using an empirical evaluation, described in the following section. The empirical evaluation was calibrated to yield comparable results for the Shop Creek and Quincy Outfall PRFs as the actual monitoring data.

#### **Empirical Evaluation Where Data Were Limited**

Where phosphorus removal data were limited, an empirical evaluation was undertaken to estimate the average annual TSS and TP removal. The empirical evaluation was based on a number of underlying assumptions that are discussed below. The evaluation is not intended to be a prediction of actual day-to-day performance of the PRFs, which will vary according to hydrologic and inflow loading factors, but was undertaken to provide an order-of-magnitude estimate of the expected average performance of the PRFs over the long term.

The following approach was used to undertake the empirical evaluation:

- Each PRF was modeled using UDFCD's CUHP and UDSWM2 programs to estimate inflow hydrographs, pond routing and peak outflows. The 2-year event was selected to represent long-term average annual hydrologic conditions, consisting of a range of storms both smaller and larger than the 2-year event. The 2-year event is larger than the majority of the monitored events, so its use provides results that are generally conservative. On the other hand, using the 2-year event provides for representation of large storms that may only occur once every few years, and can generate substantial TSS and TP loading. Inflow hydrographs were derived from existing UDFCD models for Shop Creek, Quincy Outfall, and Cottonwood Creek.
- 2. Estimates of sediment (TSS) loading from watershed areas upstream of the PRFs were developed based on an average annual sediment yield of 0.1 tons per acre of upstream

watershed. This sediment yield is an assumed value that is of the same order-of-magnitude as information published by the US Geological Survey (USGS, 1987) and total suspended solids (TSS) data obtained for Shop Creek and Cottonwood Creek. Higher estimates of sediment yield for the Cherry Creek watershed have been identified (BRW, 1985), but most of this yield was attributed to the 1965 flood. As the Authority pursues quantifying actual TSS loading in areas upstream in the watershed, it is recommended that the PRF removal estimates summarized herein be updated based on the actual TSS loadings.

3. Observation of sediments deposited in Cherry Creek Reservoir confirms that the particle size range of eroded sediments appears to be relatively fine (generally consisting of silts and clays). A representative distribution of particle sizes of the sediment yield analysis was estimated based on generalized data published by EPA as part of the Nationwide Urban Runoff Program (NURP) (EPA, 1986). The "typical" particle size distribution defined in the NURP study was modified by eliminating the course size ranges and redistributing the silt and clay size ranges to total 100 percent to the sample. The resulting distribution, shown in Table 2, was assumed to be generally representative of the water-borne sediments eroding from the project area.

TABLE 2
Assumed Sediment Characteristics

Sediment Size Class Description		Size Range Geometric (mm) Mean (mm		Fall Velocity (fps)	Size Distribution (%)	
1	Coarse Silt	0.0625-0.0313	0.0442	0.0053	37	
2	Medium Silt	0.0313-0.0156	0.0221	0.00122	35	
3	Fine Silt	0.0156-0.00781	0.0111	0.00032	15	
4	Very Fine Silt	0.00781-0.00391	0.00552	0.000083	8	
5	Clay	0.00391-0.00195	0.00276	0.0000295	5	

4. The TSS removal efficiency of each of the PRFs was modeled. The model used to estimate sediment removal was recommended by the EPA as a suitable method of analysis for dynamic sedimentation (EPA, 1986). Sediment removal is expressed by the following equation:

$$R = 1 - \left[1 + \frac{1}{n} \cdot \frac{v_s}{Q/A}\right]^{-n}$$

where:

R = fraction of initial solids removed (R \* 100 = % Removal)

v<sub>.</sub> = settling velocity of particles

Q/A = rate of applied flow divided by surface area of basin (an

"overflow velocity," often designed the overflow rate)

n = a parameter which provides a measure of the degree of

turbulence or short-circuiting, which tends to reduce removal

efficiency n = 1 (very poor); n = 3 (good); n > 5 (very good)

The equation was applied to discrete time increments of the detention pond outflow hydrographs and weighted average removal efficiencies were calculated based on the runoff volume passing during each time increment.

- 5. The resulting removal efficiencies were tracked separately for each of the five sediment size classes. Net sediment removal efficiency was then calculated for each PRF.
- 6. Monitoring data for the Shop Creek water quality project showed that its removal efficiency for TP during storm events was on average 70-percent of its removal efficiency for storm flow TSS. Storm flow TP removal efficiency was calculated for each PRF by multiplying TSS removal efficiency by 70-percent. Estimates of expected base flow removal efficiencies were made for the Quincy Outfall and Cottonwood Creek facilities based on the four years of monitoring data for Shop Creek and the one year for Quincy.

For the East Shade Shelter Water Quality Improvements, three soil samples were obtained to ascertain a relationship between shoreline sediments and TP. This relationship showed that every cubic yard of soil along this section of shoreline contained approximately two pounds of TP. Estimates of shoreline sediment inflow to the lake were prepared for conditions before and after the project and TP removed was calculated based on the difference between the estimated TP loading before and after the project.

#### Results

Based on the approach described above, estimates of TSS and TP removal efficiencies for the four Tier 1 and ten of the Tier 2 PRFs are indicated in Table 3. In general, the removal efficiencies shown in Table 3 are on the average to high side, compared to the range of efficiencies observed regionally and nationally for similar facilities.

The average annual number of tons of TSS and pounds of TP estimated to be removed by each PRF are also shown in Table 3. In any given year, actual removals may vary from the average estimates by 50-percent or more. The 25 Tier 2 PRFs that are not shown in Table 3 each were estimated to remove one to two pounds or less TP on an annual basis, due to their small size, small drainage basins, or, in some cases, lack of maintenance.

A number of figures were prepared to compare some of the inflow and removal data for the Shop Creek, Quincy Outfall, and Cottonwood PRFs. Figures 2 and 3 indicate that TSS and TP inflow concentrations are on average larger for storm flows than for base flows.

Figures 4, 5, and 6 show that base flows make up half or more of the annual runoff volume, but storm flows account for the majority of the TSS and TP loading. These three figures also indicate that, on a per acre basis, runoff, TSS and TP loading are higher in the Shop Creek watershed than in the Quincy Outfall and Cottonwood Creek watersheds.

Figures 7 and 8 compare the monitored removal efficiencies for the Shop Creek PRF and estimated removal efficiencies for the Quincy Outfall and Cottonwood Creek PRFs. Figures 9 and 10 indicate estimated TSS and TP loads into and out of the three PRFs.

TABLE 3
Summary of Removal Efficiency for Tier 1 and Tier 2 PRFs

PRF	Estimated TSS Removal Efficiency	TSS In (tons/yr)	TSS Removed (tons/yr)	TSS Out (tons/yr)	Estimated TP Removal Efficiency	TP In (lb/yr)	TP Removed (lb/yr)	TP Out (lb/yr)
Tier 1					_	_		
Shop Creek	82%	51	42	9	54%	336	180	156
Quincy Outfall	84%	21	18	3	66%	158	104	54
Cottonwood Creek	61%	481	293	188	40%	1098	438	661
East Shade	80%_	15	12	3	80%	23	18	5
Total: Tier 1 PRFs		568	365	203		1615	740	876
Tier 2								
Cottonwood Subdivision Filing 11	84%	26	22	4	59%	26	15	11
Clarke Farms Detention Facility	90%	29	26	э	63%	29	19	11
Baldwin Detention Facility	42%	28	12	16	29%	28	8	20
Bradbury Ranch Facility	80%	38	30	8	56%	38	21	17
Dayton Farms	85%	8	7	1	60%	8	5	3
Shalom Park	90%	10	9	1	63%	10	6	4
Lonetree Pond L3	72%	98	70	27	50%	98	49	48
Meridian Pond 2	85%	42	36	6	60%	42	25	17
Meridian Pond 3	90%	8	7	1	63%	. 8	5	3
Rampart Filing 6	54%	14	8	7	38%	14	5	9
Total: Tier 2 PRFs	-	301	227	74	_	301	159	142
Total: Tier 1 and Tier 2 PRFs		869	592	277		1916	899	1018

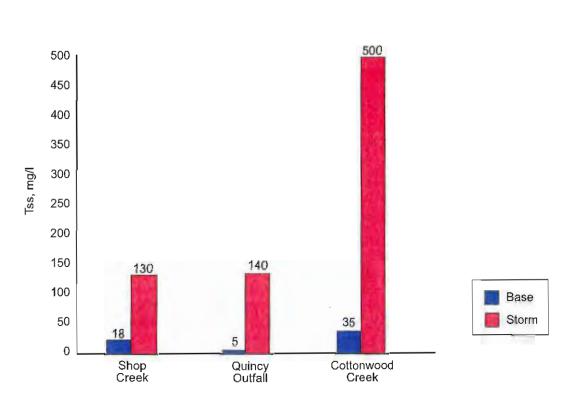


Figure 2
Average Base Flow and Storm Flow TSS Concentration

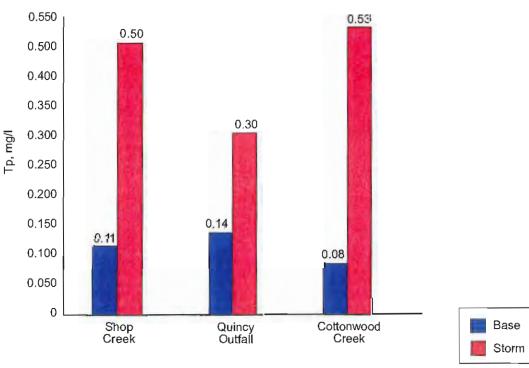


Figure 3

Average Base Flow and Storm Flow TP Concentration

Based on data from 1990, 1991, 1992, 1995, and 1996 for Shop Creek, 1996 for Quincy Outfall, and 1994, 1995, and 1996 for Cottonwood Creek.

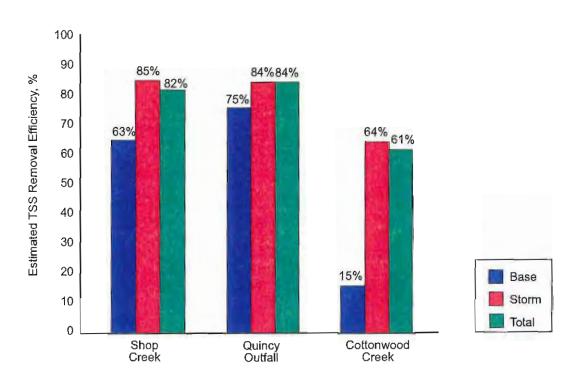


Figure 7
Estimated TSS Removal Efficiency

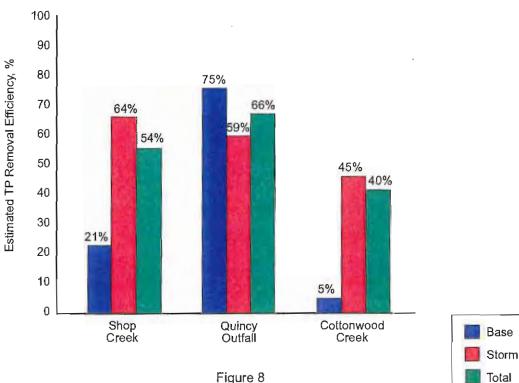


Figure 8
Estimated TP Removal Efficiency

Based on data from 1990, 1991, 1992, 1995, and 1996 for Shop Creek. Based on emplrical estimate for Quincy Outfall and Cottonwood Creek.

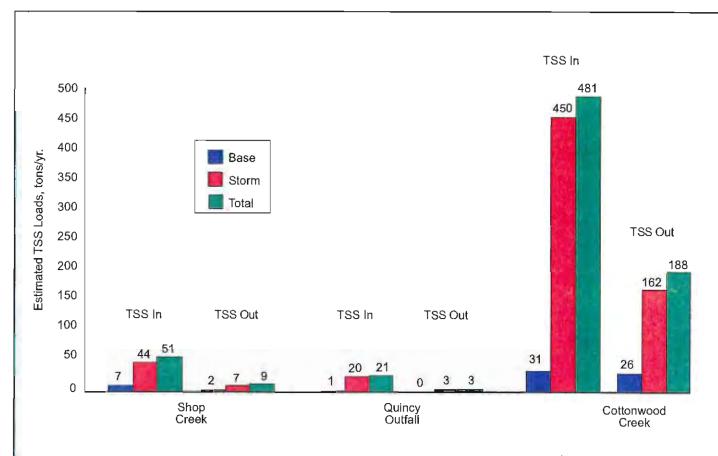


Figure 9 Estimated TSS Inflow and Outflow Loads

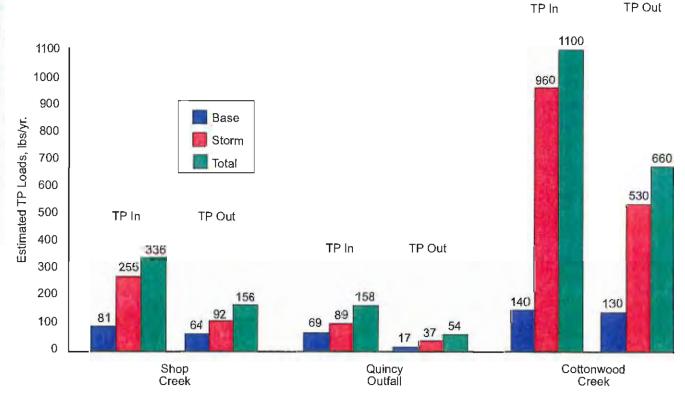


Figure 10
Estimated TP Inflow and Outflow Loads

Based on data from 1990, 1991, 1992, 1995, and 1996 for Shop Creek. Based on empirical estimate for Quincy Outfall and Cottonwood Creek.

#### Construction Site Erosion Control Review

Work Element: Review existing construction site BMPs to determine if the design, implementation, and maintenance of mitigation measures are meeting their original intent.

Discussions were held with staff from each of the six land use jurisdictions regarding programs to control erosion during construction. Ten current construction projects in the six jurisdictions were observed in the field to assess the effectiveness of erosion control measures. These sites are shown in Figure 11.

Active programs to review erosion control plans and inspect erosion control measures in the field are in place in five of the six land use jurisdictions. The sixth jurisdiction, the City of Aurora, is planning to set up a program so that it might be in place in January, 1998.

Three of the jurisdictions, the Town of Parker, Douglas County, and Greenwood Village, have similar erosion control criteria, originally developed by HydroDynamics. These criteria are based on estimating sediment yield for pre-construction and during-construction conditions and incorporating erosion control measures to reduce sediment yield during construction to a specific performance standard.

Arapahoe County has erosion control criteria that is similar to the standards identified in Volume 3 of UDFCD's Urban Storm Drainage Criteria Manual. Castle Rock uses both the Douglas County Manual and the UDFCD's Volume 3 Manual.

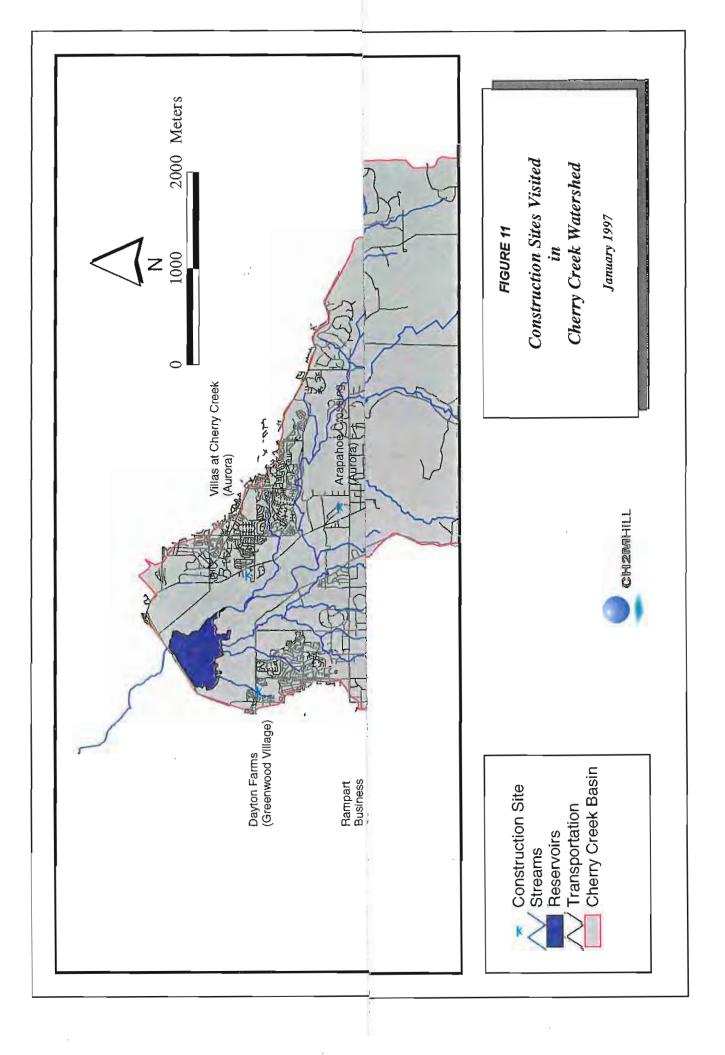
The erosion control criteria used by the land use jurisdictions identify the following types of measures:

- Sediment traps and sediment basins
- Silt fence and straw bale dikes
- · Vehicle tracking control
- Inlet protection
- Surface roughening, mulching, and cover crops
- Phasing work to limit area of disturbance
- Filter strips

Based on discussions with erosion control staff, as well as observations of the ten construction sites, the single most effective erosion control measure seems to be the use of sediment traps and sediment basins. These need to be located at the downstream points of a disturbed site, be properly sized and overexcavated to allow for sediment storage, and promptly cleaned out when sediment fills the storage area. Sediment basins need to be installed prior to other land disturbing activities and be configured so that all of the disturbed site drains to one or more traps or basins.

Other erosion control measures seen as effective by erosion control staff include vehicle tracking controls, phasing work to reduce areas of disturbance, and promptly mulching and establishing cover crops after finish grading.

Erosion control measures viewed as less effective in practice include the use of straw bale dikes and silt fence, inlet protection, and filter strips. Straw bale dikes and silt fences are often installed improperly so that they do not provide an effective barrier to sediment. Also, straw bale dikes and silt fences too often are relied upon as a substitute for sediment traps and sediment basins. Drainage areas upstream of these "barriers" are often allowed



to become too big, so that runoff and sediment can overtop or "blow out" the straw bale dike or silt fence. Silt fence is most likely to be effective if it is properly installed with a firmly backfilled trench and if it is used selectively in small drainage areas.

Inlet protection measures have been problematic, according to staff. Inlet protection, when it functions, often leads to tracking and maintenance problems when sediment accumulates in street areas. One inspector said that he has observed crews remove inlet protection at the end of a job and flush the sediment down the inlet to clean up the street. As mentioned above, a sediment trap or basin located downstream of a storm sewer system is usually an effective control measure, combined with flushing of sediments, at the end of construction, that may have accumulated in inlets and storm sewer pipes.

It is recommended that the Authority continue to coordinate with the land use jurisdictions regarding their construction erosion control programs. In general, a greater overall reliance on the proper installation and maintenance of sediment traps and basins will help to reduce sediment and phosphorus loading from construction sites.

#### **Recommend Future Phosphorus Reducing Activities**

Work Element: Recommend future cost effective phosphorus reducing projects or activities in the Basin.

This section provides an initial list of recommendations for future phosphorus reducing activities and projects for the Authority's consideration. The list is preliminary in nature; its purpose is to provide a starting point for subsequent discussions. The list will be revised and prioritized based on input received from members of the TRC and the Authority as a whole.

#### Working with Land Use Agencies

- 1. Regional Water Quality Planning. We recommend that the Authority undertake water quality master planning to identify optimum locations and configurations of water quality facilities in the watershed. It will be beneficial to evaluate onsite versus various regional alternatives for implementing water quality facilities in the watershed. Of special importance is evaluating effective methods for stabilizing streams in the watershed. We recommend that the water quality planning take place in cooperation with land use agencies and the Urban Drainage and Flood Control District (UDFCD) and that opportunities to incorporate water quality features into quantity facilities, such as 100-year detention ponds, be explored. A recent example of this kind of cooperative quantity/quality planning is the Lower Cottonwood Creek Water Quality Plan (November, 1996). An upcoming planning example is the Cherry Creek Corridor Plan in Arapahoe County (starting February, 1997).
- 2. Construction Erosion Control Program. We recommend that the Authority continue to work with the land use agencies to establish uniform criteria for erosion control during the construction phase. Improvements to existing programs can be made, especially in identifying the most effective BMPs and in the areas of maintenance and enforcement. We recommend that the Authority coordinate with the land use jurisdictions to establish a higher level of consistency and overall effectiveness in their construction erosion control criteria and programs.

- 3. Water Quality Criteria for New Development. We recommend that the Authority work with the land use agencies to consider the establishment of uniform development criteria for stormwater quality enhancement after the construction phase is completed. These criteria may call for the implementation of permanent structural or nonstructural best management practices (BMPs). We recommend that the Authority work with land use agencies to incorporate permanent water quality BMPs into their plan review, inspection and enforcement program for new development.
- 4. Maintenance of Water Quality Facilities. We recommend that the Authority establish a program for maintaining permanent water quality facilities. If water quality facilities are not maintained, they will cease to be effective. We recommend that the Authority work with the land use agencies and UDFCD to implement a program of periodic inspections and maintenance of water quality facilities. Work could also include constructing improvements, such as access benches, to reduce costs associated with removing sediment and performing other maintenance operations.
- 5. Water Quality Criteria for Individual Site Disposal Systems (ISDSs). We recommend that the Authority work with Tri-County Health Department and others to modify current criteria for septic tank systems and other ISDSs. Modifications may be necessary to address water quality concerns related to leachate passing relatively untreated through sandy soils and ultimately entering Cherry Creek and the reservoir.
- 6. <u>Agricultural Practices.</u> We recommend that the Authority work with federal and state agencies, and with private farmers and ranchers, to examine, and perhaps modify, agricultural practices that may impact stream and reservoir quality.

#### Capital Improvement Projects

- Lower Cottonwood Creek Improvements. We recommend that the Authority continue to work toward the implementation of the Lower Cottonwood Creek Improvements over a period of approximately five years.
- 2. For 1997, two projects are recommended. The first is participating with Arapahoe County and UDFCD in the design and construction of the water quality portion of the detention pond upstream of Peoria Street (\$95,000). This commitment was approved by the Board on January 16, 1997. The second project is an initial phase of bioengineered stream stabilization on Cottonwood Creek downstream of Peoria Street, to be implemented by the Authority using a design-build approach (\$55,000).
- 3. Park Projects. We recommend that the Authority continue to address water quality concerns within Cherry Creek State Park, through shoreline erosion control, a water quality trail/berm system, work on some of the direct flow drainages, native plant establishment, and consideration of water quality enhancements in the Cherry Creek wetlands upstream of the reservoir.
- 4. Based on field reconnaissance and discussions with Park staff, the next priority area for shoreline stabilization is adjacent to the east boat ramp. Runoff from the parking lot in this area is creating an erosion/water quality problem that can be addressed through grading and vegetative enhancements. A project in this area is recommended for Spring, 1997 (\$80,000).

- Other projects recommended for 1997 include native plant establishment to reduce soil loss in the Park (\$7,500), the design and construction of a first phase of a water quality trail/berm (\$30,000), and an evaluation of water quality needs on tributaries flowing directly into the reservoir (\$5,000).
- 5. Cherry Creek Corridor Plan Project. The Cherry Creek Corridor Plan, to be started in February, 1997, will lead to the adoption of a master plan of stormwater quality and quantity improvements. We recommend that the Authority consider participating in the implementation of water quality components of the plan.
- 6. Water Quality Retrofit Projects. We recommend that the Authority consider retrofitting water quality features into selected regional detention facilities upstream of the reservoir. One candidate facility is the Inverness pond on Cottonwood Creek located upstream of Easter Avenue. This large detention pond (approximately 200 acre-feet in total volume) was designed to provide for more than 20 acre-feet of water quality volume, once a water quality outlet is constructed. This water quality volume could be put to use with a relatively simple modification of the Easter Avenue box culvert.
- 7. Other Projects. Opportunities to incorporate water quality features into stormwater quantity projects constructed by others may arise. We recommend that the Authority consider such opportunities on a case-by-case basis.

#### Monitoring, Investigations, and Studies

- 1. Update of Point and Nonpoint Load Estimates and Allowable Loading to Reservoir. The Authority is currently updating the estimates of point and nonpoint loads and allowable loading to the reservoir that were identified in the 1985 and 1989 versions of the Master Plan. Updated estimates, correlated to existing data, will be useful in determining an appropriate allocation of point and nonpoint sources. Updated estimates are also necessary for accounting for effluent trading credits and for developing appropriate watershed management strategies. The modeling of loads currently underway for the Master Plan Update is to be based on existing data. If, at the conclusion of the initial update, "gaps" in the available data become evident, we recommend that follow-up monitoring or investigations be conducted.
- 2. Contributions from Remote Land Application Sites and Septic Systems. The Authority will soon be undertaking studies to quantify load contributions from remote land application sites and septic systems. The studies will evaluate the movement or assimilation of nutrients from the point they are input to the soil matrix and will estimate the quantity of load that eventually enters Cherry Creek Reservoir from sites at various locations in the watershed. We recommend that results from these studies be used to gain insight into the movement or assimilation of other loads that infiltrate into the soils of the watershed, such as loads contributed by rainfall and stormwater runoff.
- 3. Watershed Rainfall/Runoff/Water Quality Monitoring. We recommend that the Authority expand its current monitoring program to include rainfall/runoff/water quality data on selected tributaries in the watershed. The rainfall/runoff data will help to quantify the infiltration of rainfall and runoff throughout the watershed and within selected stream reaches. Quantifying rates of infiltration is important because

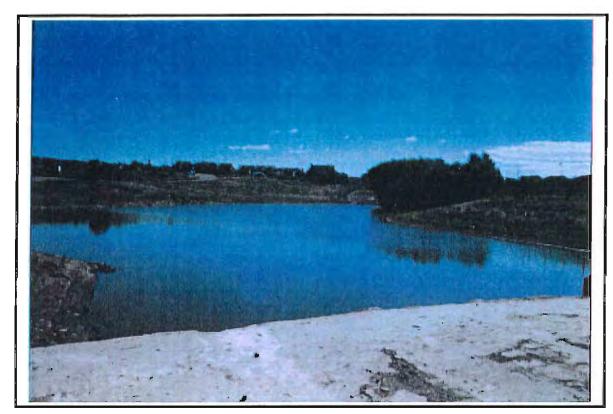
infiltration appears to be a key factor in the assimilation of pollutant loads in the Cherry Creek watershed. Water quality data in selected locations in the watershed will help to verify the loading estimates made in Task 1, above, will help to quantify unit loading rates associated with specific land uses, and will provide a measure of the effectiveness of watershed BMPs.

- 4. <u>Stream Stability Evaluation.</u> We recommend that the Authority undertake an evaluation of long term stream stability for mainstem Cherry Creek and its major tributaries. It is important to understand the creeks' relative stability and predict their natural geomorphic response to estimated future inputs of flow and sediment. The results of this evaluation will help to shape management strategies for mitigating future stream erosion and preserving any water quality benefits associated with the current stream form.
- BMP Monitoring. We recommend that the Authority monitor, on an ongoing basis, selected BMP practices and facilities. This monitoring will provide important data on which BMPs are most effective for reducing loads of concern.
- 6. Effluent Trading Accounting Model. We recommend that the Authority continue to develop and refine an accounting model for tracking effluent trades and credits. The load estimating work discussed in Task 1, above, will provide a foundation for this accounting model. However, incorporating the results from Tasks 2 and 3, above, as well as other data collected in the future, will enhance the accuracy and utility of the accounting model.

## References

- BRW. 1985. Feasibility Study for the Cherry Creek Basin Drainageway. Prepared for the Cherry Creek Basin Technical Advisory Committee and Parker Jordan Metropolitan District. BRW, Inc. and WRC Engineering, Inc. July 1985.
- EPA. 1986. Methodology for Analysis of Detention Basins for Control of Urban Runoff Quality. U.S. Environmental Protection Agency. EPA 440/5-87-001. September 1986.
- USGS. 1987. Hydrology of Area 59, Northern Great Plains and Rocky Mountain Coal Provinces, Colorado and Wyoming. Open File Report 85-153. U.S. Geological Survey. Lakewood, Colorado. January 1987.

# Appendix A Photographs of PRFs

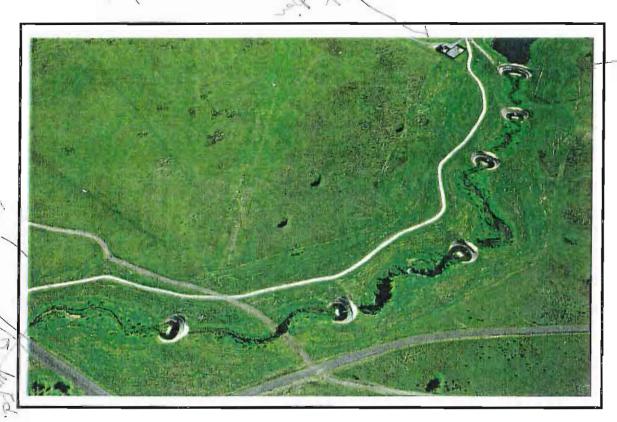


OVERALL VIEW



**OUTLET VIEW** 

Shop Creek Water Quality Improvements CH01RP



OVERALL VIEW



**OUTLET VIEW** 

Shop Creek Water Quality Improvements CH01RP



OVERALL VIEW

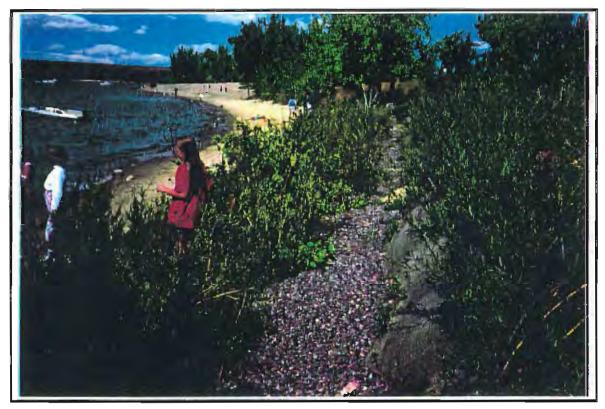


**OUTLET VIEW** 

Quincy Outfall Water Quality Improvements CH02DB



OVERALL VIEW



**OUTLET VIEW** 

East Shade Shelter Shoreline Stabilization Project CH03

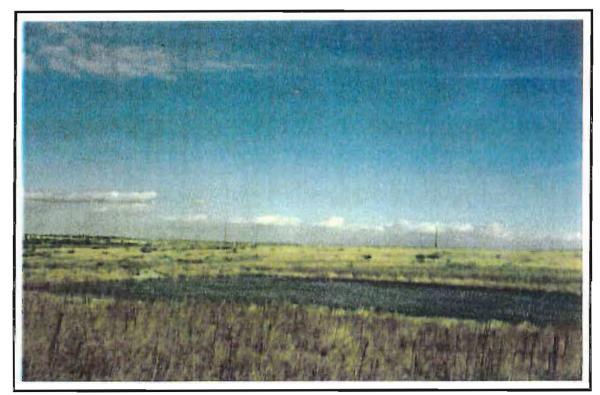


OVERALL VIEW

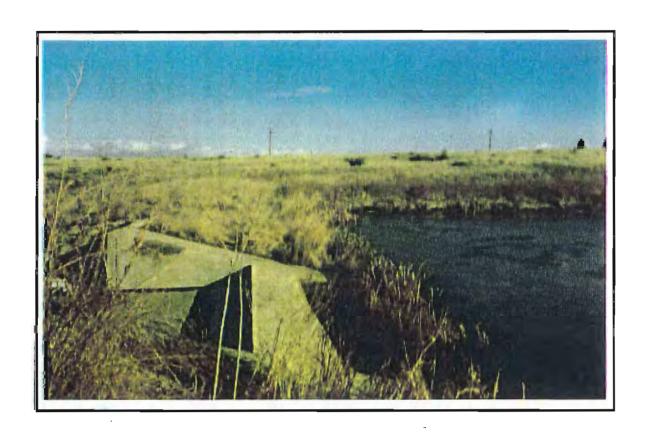


**OUTLET VIEW** 

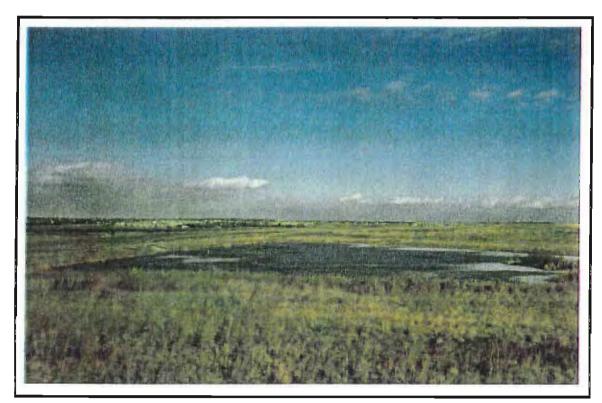
Cottonwood Creek Water Quality Improvements CH04RP



OVERALL VIEW



Cherry Creek Vista III Filing 16-A East Wetland AR01RP



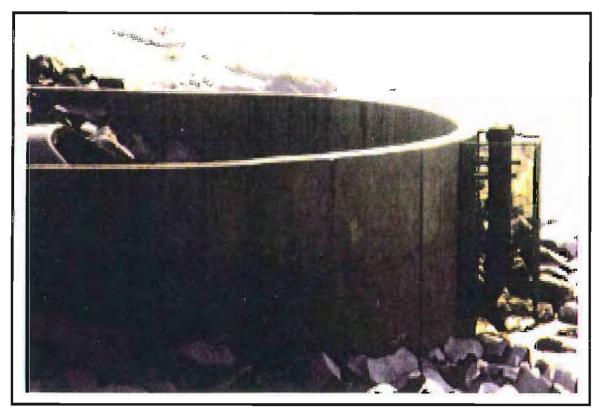
OVERALL VIEW



**OUTLET VIEW** 



OVERALL VIEW

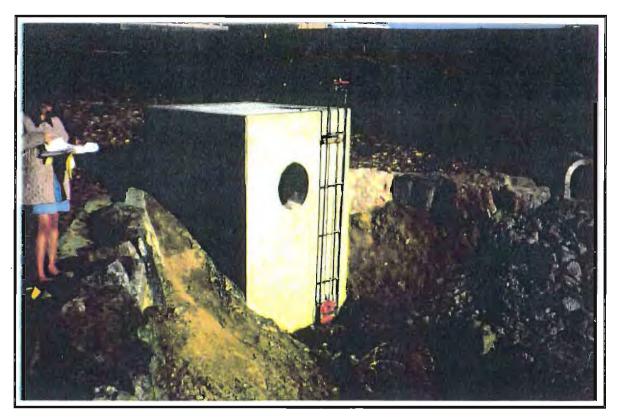


**OUTLET VIEW** 

Rampart Business Center Filing 6 AR03RP



OVERALL VIEW



**OUTLET VIEW** 

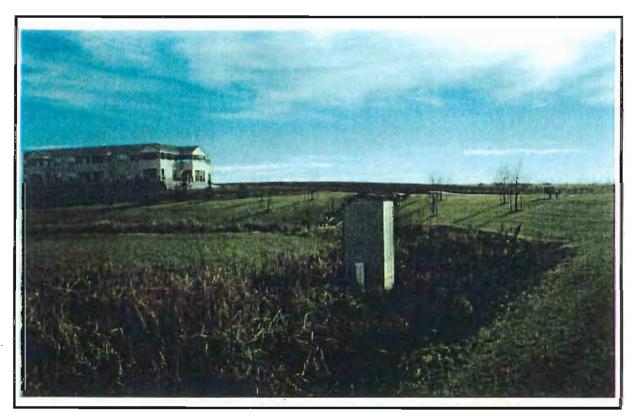
Inverness Filing 17 AR04RP

## Lonetree Basin L3, Arapahoe County (AR05DB)

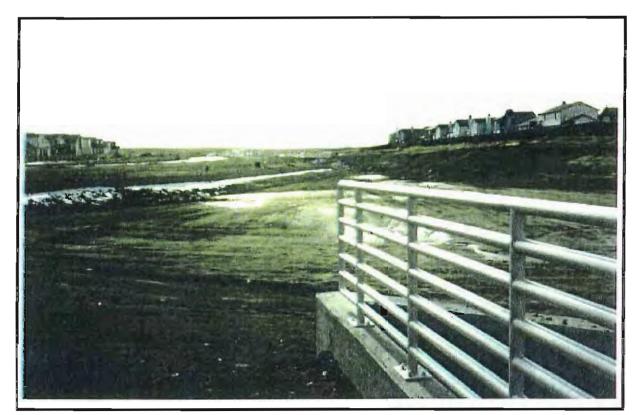
Not yet constructed.



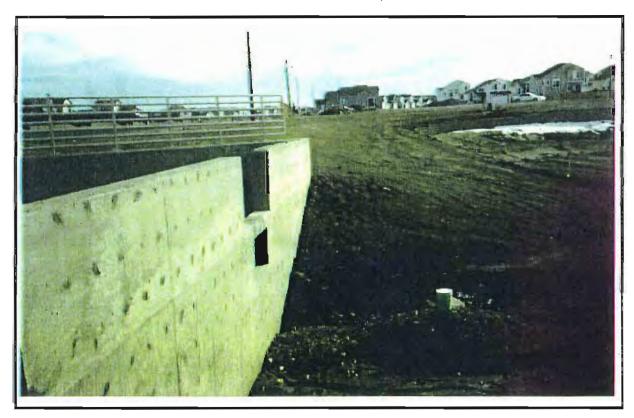
OVERALL VIEW



**OUTLET VIEW** 

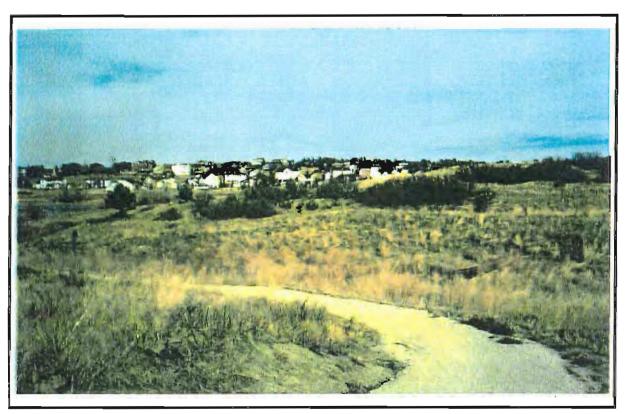


**OVERALL VIEW** 

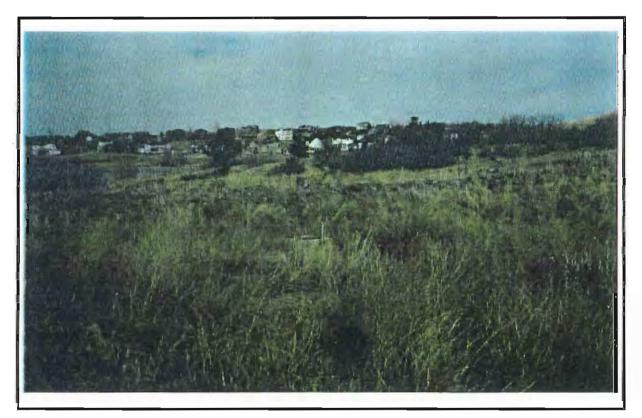


**OUTLET VIEW** 

Cottonwood Subdivision Filing No. 11 Detention Basin DO01DB

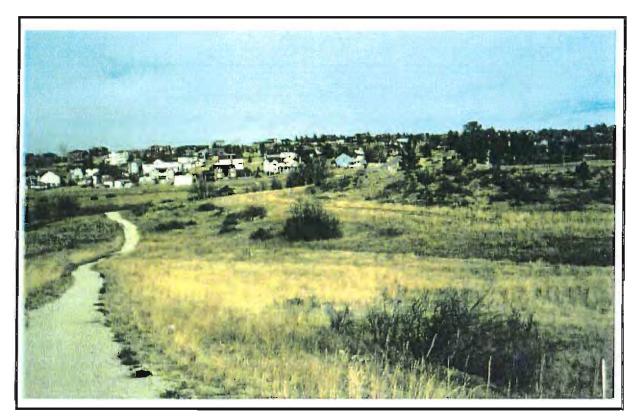


OVERALL VIEW



**OUTLET VIEW** 

Pinery/High Prairie Farms Filing No. 3, Pond A DO02DB

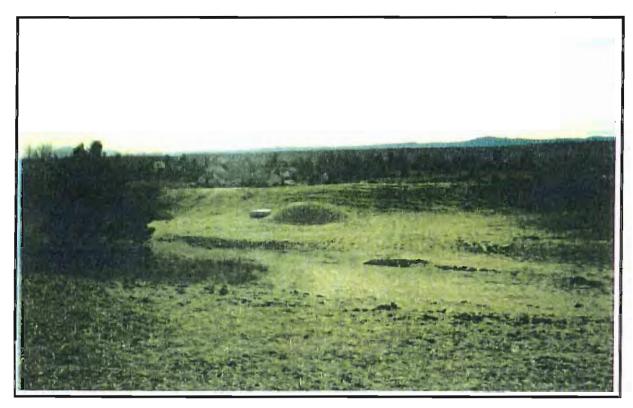


OVERALL VIEW



**OUTLET VIEW** 

Pinery/High Farms Filing No. 3, Pond B DO03DB



OVERALL VIEW

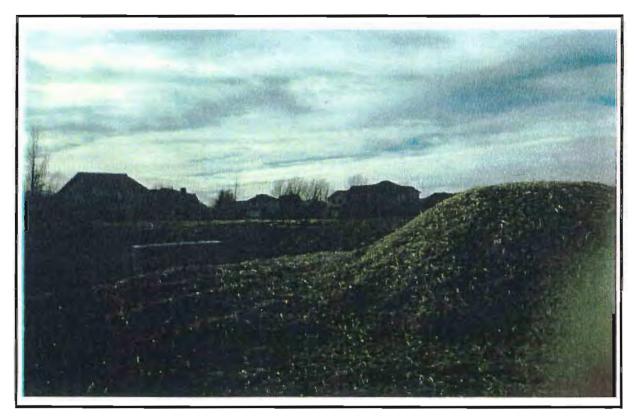


**OUTLET VIEW** 

Pinery Filing 22, Pond A1 DO04DB

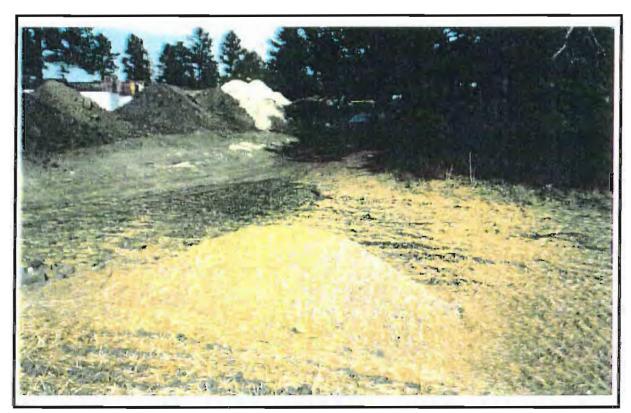


OVERALL VIEW

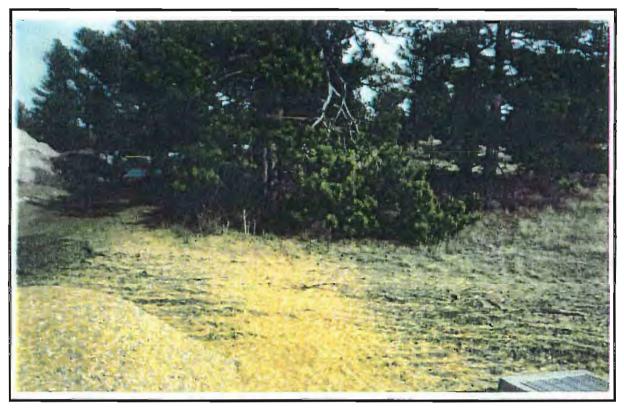


**OUTLET VIEW** 

Pinery Filing No. 22, Pond A2 DO05DB



OVERALL VIEW



**OUTLET VIEW** 

Pinery Filing No. 22, Pond B1 and Pond B2 DO06DB and DO07DB

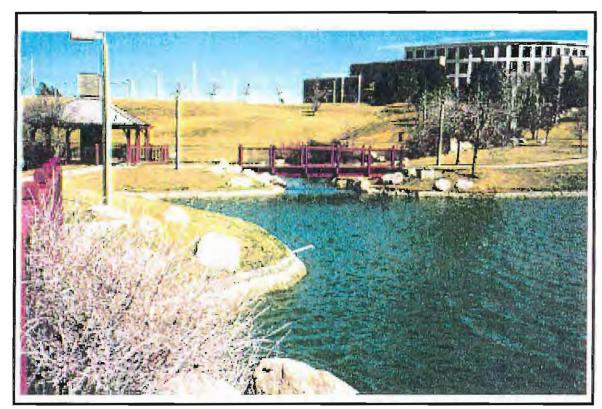


OVERALL VIEW

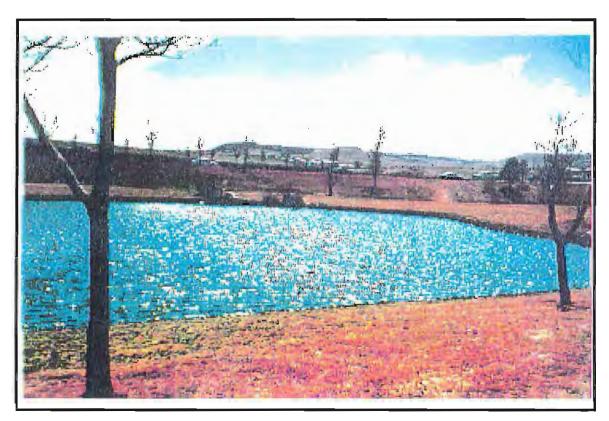


**OUTLET VIEW** 

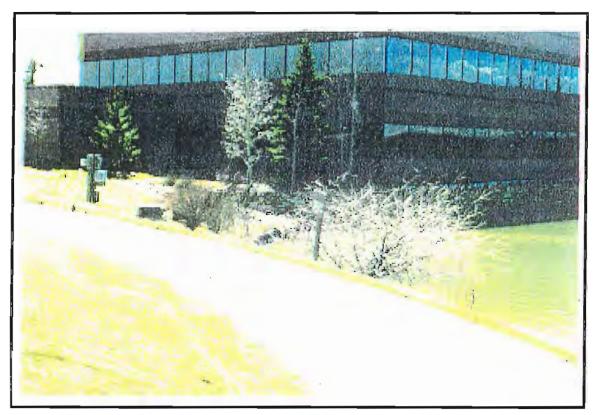
The Pinery Filing No. 22, Pond C1 DO08DB



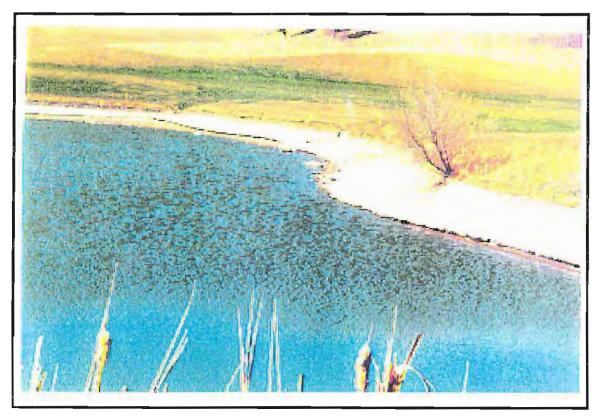
OVERALL VIEW



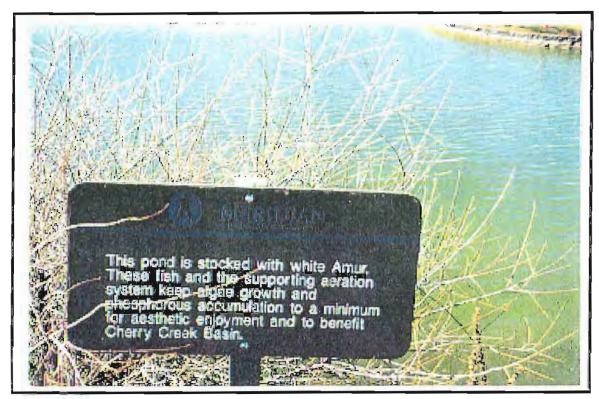
OUTLET VIEW (IN BACKGROUND)



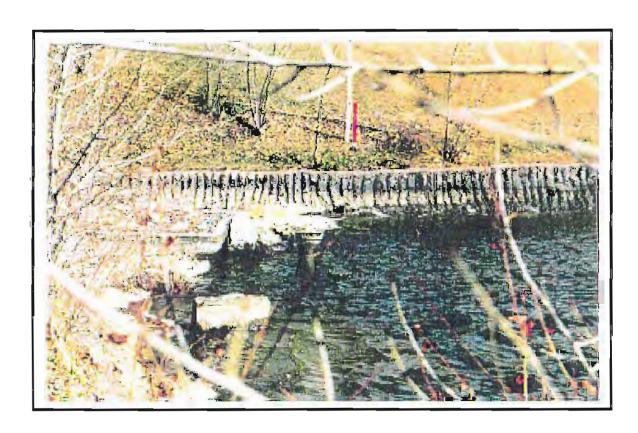
**UPSTREAM POND** 



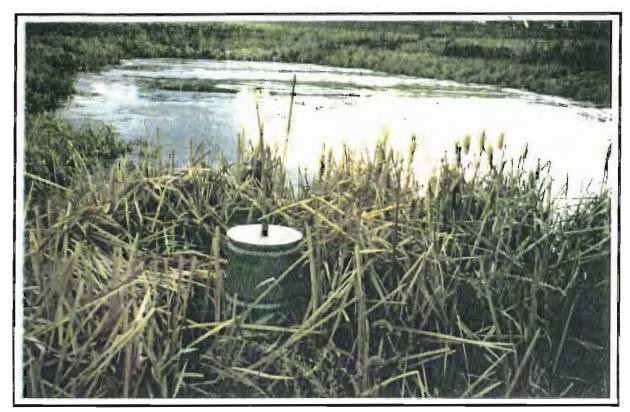
DOWNSTREAM POND



TYPICAL SIGNAGE AT MERIDIAN PONDS



**OUTLET VIEW** 



OVERALL VIEW

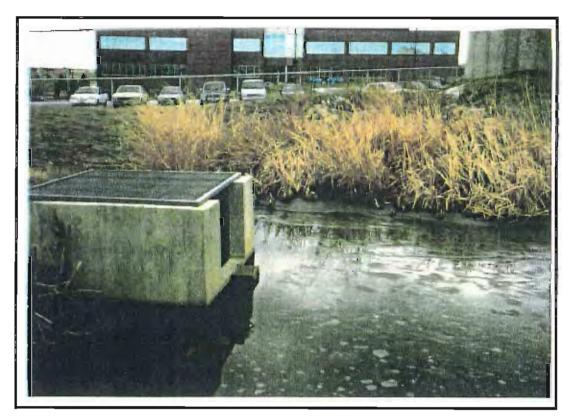


**OUTLET VIEW** 

Dayton Farms Detention Basin GV01RP



**OVERALL VIEW** 



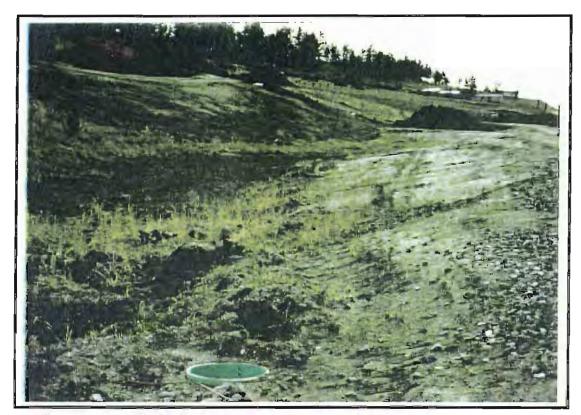
**OUTLET VIEW** 



OVERALL VIEW



**OUTLET VIEW** 



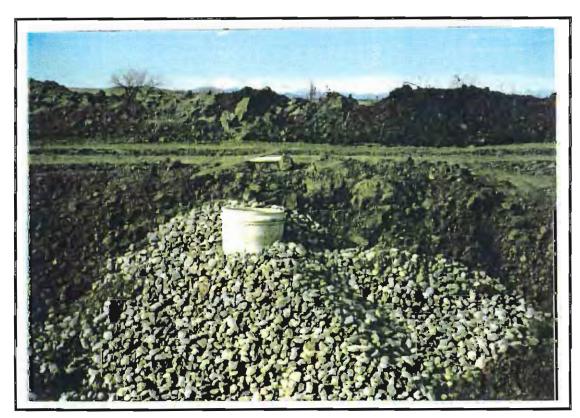
**OVERALL VIEW** 



**OUTLET VIEW** 



OVERALL VIEW



**OUTLET VIEW** 



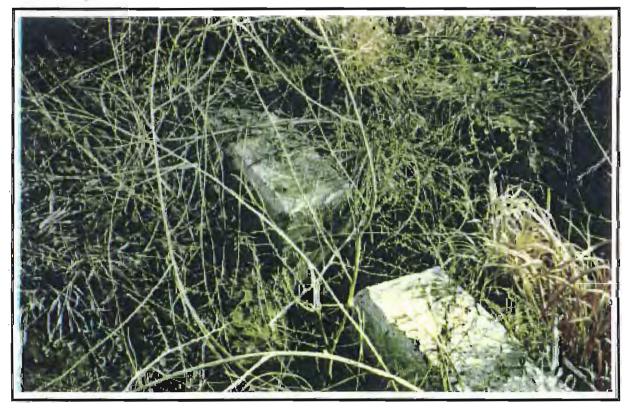
OVERALL VIEW



**OUTLET VIEW** 



OVERALL VIEW



**OUTLET VIEW** 

Parker Vista (North Detention Pond) PA05DB



OVERALL VIEW



**OUTLET VIEW** 



OVERALL VIEW

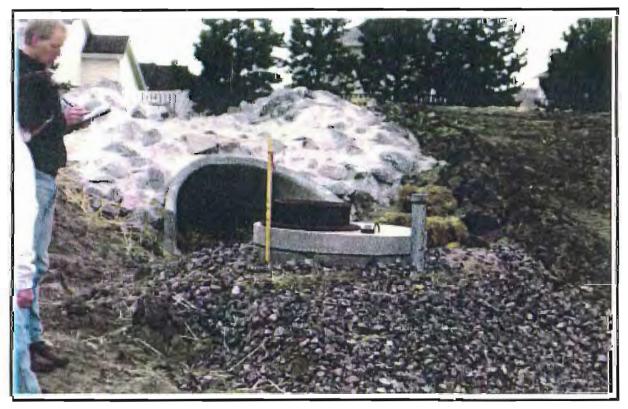


**OUTLET VIEW** 

Willow Ridge Filing 1 PA07DB

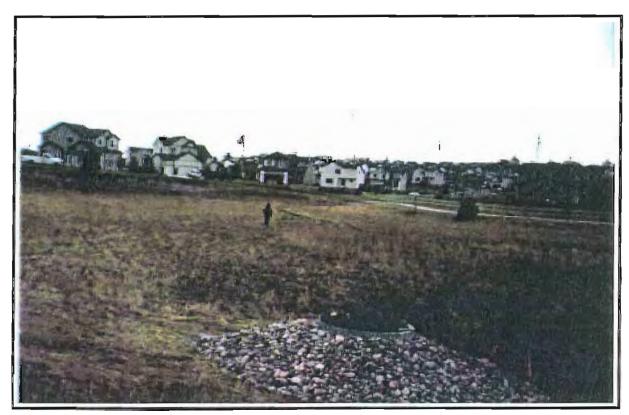


OVERALL VIEW



**OUTLET VIEW** 

Willow Ridge Filing 2 PA08DB



OVERALL VIEW



**OUTLET VIEW** 



**OVERALL VIEW** 

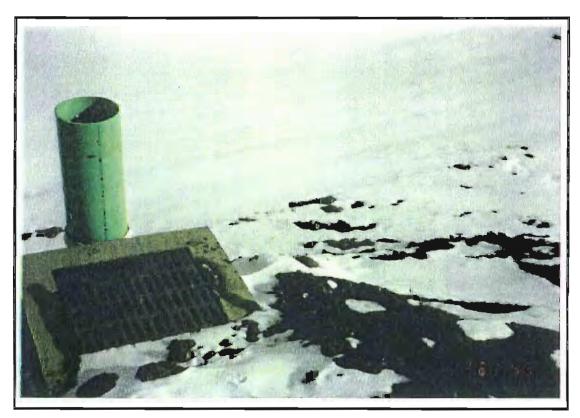


**OUTLET VIEW** 

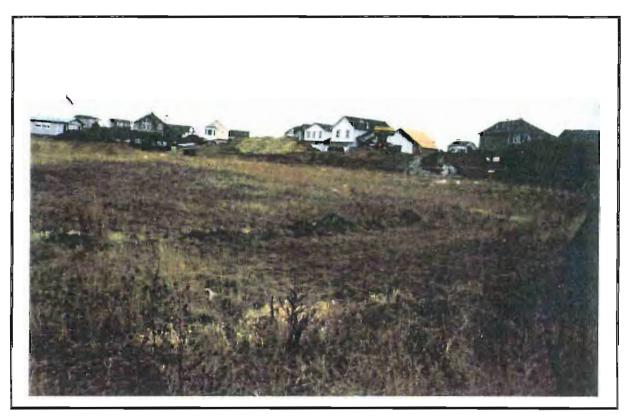
Willow Park East PA10DB



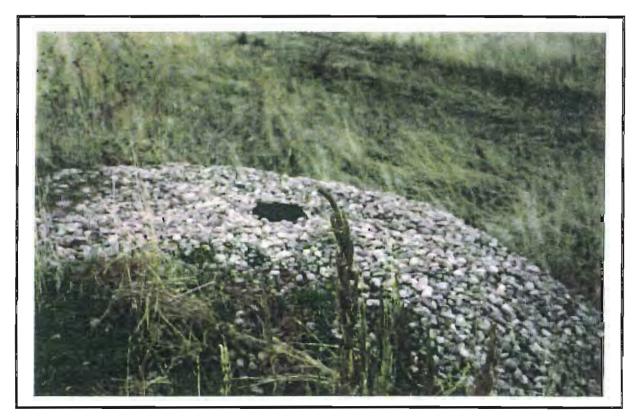
OVERALL VIEW



**OUTLET VIEW** 

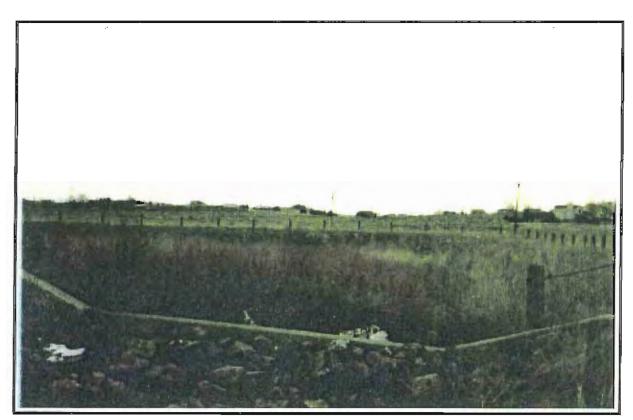


OVERALL VIEW



**OUTLET VIEW** 

Bradbury Ranch PA12DB



OVERALL VIEW



**OUTLET VIEW** 



OVERALL VIEW



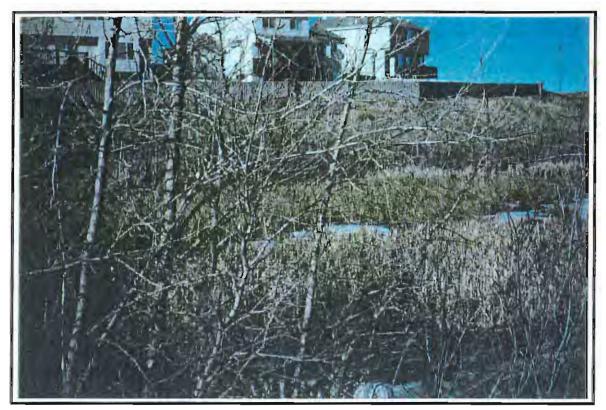
**OUTLET VIEW** 



**OVERALL VIEW** 



**OUTLET VIEW** 



OVERALL VIEW



**OUTLET VIEW** 

# Appendix B Initial PRF Data Base

19-May-97

Name of PRF:

CH01RP

Type of BMP:

Water Quality Detention

Pond

Description: Shop Creek System

BMP Design: Designed as a Water Quality Facility.

Date BMP put into service:

9/1/89 Number of Inflow Points:

2

Watershed Area:

520 Acres % of Total Watershed that is Impervious:

39.00%

Types and designs of Outlets:

WQ Outlet:12"x6" Orifice

Permanent Pool Features

Volume of Permanent Pool: 4.6 Ac-ft Permanent Pool Surface Area:

1.3 Acres

Permanent Pool Length:

570 Feet Littoral Zone Surface Area:

0.2 Ac

Water Quality Features

Water Quality Surcharge Detention Volume:

9.1 Ac-ft

Water Quality Detention Surface Area:

2.1 Ac

Water Quality Detention Basin's Length:

570 Ft^2

**Brim-full Emptying Time:** 

36 Hrs

Half Brim-full Emptying Time:

0 Hrs

Forebay Volume:

0.4 Ac-ft Forebay Surface Area:

0.1 Acres

Flood Control Features

Flood Control Volume above the Water quality Detention Volume:

Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

0 cFs 100-Yr Peak Discharge:

Media Filter Surface:

0

cFs

Media Filter Features

Media Filter Surface Area:

Ft^2

Number of Layers:

0

Types of Filter Media:

Depth of Each Layer:

Comments: Water Quality Discharge= 3.06 cfs (Discharge= WQ Volume/Drain Time). Water

quality detention facility is followed by a series of wetland areas (5.0 Ac surface

area).

19-May-97

Name of PRF:

CH02DB

Type of BMP:

Water Quality Pond

Description:

Quincy Outfall Project

BMP Design: Designed as a Water Quality Facility.

Date BMP Put Into Service:

1/1/96

**Number of Inflow Points:** 

1

Watershed Area:

530 Acres % of Total Watershed that is Impervious:

48.00%

Types and designs of Outlets:

WQ Outlet: 6" x 10" Orifice

Water Quality Features

Water Quality Detention Volume:

8.8 Ac-ft

Water Quality Detention Surface Area:

4.4 Acres

Water Quality Detention Basin's Length:

900 Feet

**Detention Basin's Bottom Area:** 

1.4 Acres

Brim full Emptying Time:

40 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

0 Acres

**Bottom Stage Surface Area:** 

Acres

Forebay Volume:

0.2 Ac-ft

Forebay Surface Area:

0.1 Acres

Vegetation Within Basin:

Flood Control Features

Flood Control Volume:

Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

0 cFs

Media Filter Features

Media Filter Surface Area:

Ft^2

Media Filter Surface:

Number of Layers:

0

Depth of Each Layer:

Types of Filter Media:

Comments: WQ Discharge= 3.33 cfs (Approximated based Volume/Drain Time). Additional 3.0 Acre-Ft provided for sediment storage.

19-May-97

Name of PRF:

CH04RP

Type of BMP:

Water Quality Detention

Pond

Description: Cottonwood Creek Water Quality Improvements

BMP Design: Designed as a water quality facility.

Date BMP put into service:

**Number of Inflow Points:** 

1

Watershed Area: 7532.3 Acres

% of Total Watershed that is Impervious:

0.00%

Types and designs of Outlets:

WQ Outlet: Multiple Orifices and Weir (10"x6" orifice, 24"x6" orifice, 5' weir).

Permanent Pool Features

Volume of Permanent Pool: 1.6 Ac-ft Permanent Pool Surface Area:

0.8 Acres

Permanent Pool Length: 1200 Feet Littoral Zone Surface Area:

0.8 Ac

Water Quality Features

Water Quality Surcharge Detention Volume:

22 Ac-ft

Water Quality Detention Surface Area:

11 Ac

Water Quality Detention Basin's Length:

1200 Ft^2

**Brim-full Emptying Time:** 

48 Hrs

Half Brim-full Emptying Time:

0 Hrs

Forebay Volume:

0 Ac-ft Forebay Surface Area:

0 Acres

Flood Control Features

Flood Control Volume above the Water quality Detention Volume:

0 Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

0 cFs 100-Yr Peak Discharge:

0

cFs

Media Filter Features

Media Filter Surface Area:

0 Ft^2

Media Filter Surface:

**Number of Layers:** 

0

Types of Filter Media:

Depth of Each Layer:

Comments: Additional 13 Acre-Ft provided for sediment storage. Water Quality Discharge=

5.55 cfs (Discharge = WQ Vol/Drain Time)

19-May-97

Name of PRF:

AR01RP

Type of BMP:

Retention Pond

Description: Cherry Creek Vista III Filing 16-A East Wetland

Date BMP put into service:

BMP Design: Designed to detain the 100-Yr storm event.

1

Watershed Area:

28.46 Acres

% of Total Watershed that is Impervious:

**Number of Inflow Points:** 

Types and designs of Outlets:

2-Yr and 100-Yr Outlet: 15.85' Long Spillway

Permanent Pool Features

Volume of Permanent Pool: 1.4 Ac-ft Permanent Pool Surface Area:

0.85 Acres

Permanent Pool Length:

224 Feet Littoral Zone Surface Area:

0 Ac

Water Quality Features

Water Quality Surcharge Detention Volume:

0 Ac-ft

Water Quality Detention Surface Area:

0 Ac

Water Quality Detention Basin's Length:

0 Ft^2

**Brim-full Emptying Time:** 

0 Hrs Half Brim-full Emptying Time: 0 Hrs

Forebay Volume:

0 Ac-ft Forebay Surface Area:

0 Acres

Flood Control Features

Flood Control Volume above the Water quality Detention Volume:

2.7 Ac-ft

Flood Return Periods:

100-Yr

10-Yr Peak Discharge:

cFs 100-Yr Peak Discharge:

Media Filter Surface:

cFs

Media Filter Features

Media Filter Surface Area:

0 Ft^2

Number of Layers:

0

Types of Filter Media:

Depth of Each Layer:

Comments: 2-Yr Discharge=29.27 cfs (Approximated from drainage plans.) Basin bottom consists of wetlands. Volume of permanent pool and flood control were estimated from drainage plans. Note: Flood control volume is volume above the "Permanent

Pool Volume".

19-May-97

Name of PRF:

AR02RP

Type of BMP:

Retention Pond

**Description:** Cherry Creek Vista III Filing 16-A West Wetland

BMP Design: Designed to detain 100-Yr Storm event.

Watershed Area:

20.63 Acres

% of Total Watershed that is Impervious:

**Number of Inflow Points:** 

1

Types and designs of Outlets:

Date BMP put into service:

2-Yr and 100-Yr Outlet: 19.75' Long Spillway

Permanent Pool Features

Volume of Permanent Pool: 6.8 Ac-ft Permanent Pool Surface Area:

1.91 Acres

Permanent Pool Length:

256 Feet Littoral Zone Surface Area:

0 Ac

Water Quality Features

Water Quality Surcharge Detention Volume:

0 Ac-ft

Water Quality Detention Surface Area:

0 Ac

Water Quality Detention Basin's Length:

0 Ft^2

**Brim-full Emptying Time:** 

0 Hrs Half Brim-full Emptying Time: 0 Hrs

Forebay Volume:

0 Ac-ft Forebay Surface Area:

0 Acres

Flood Control Features

Flood Control Volume above the Water quality Detention Volume:

4.75 Ac-ft

Flood Return Periods:

100-Yr

10-Yr Peak Discharge:

cFs 100-Yr Peak Discharge:

cFs

Media Filter Features

Media Filter Surface Area:

0 Ft^2

Media Filter Surface:

Number of Layers:

0

Types of Filter Media:

Depth of Each Layer:

Comments: 2-Yr Discharge= 33.19 cfs (Approximated from drainage plans.) Basin bottom consists of wetlands. Volume of permanent pool and flood control were estimated from drainage plans. Note: Flood control volume is the volume above the permanent pool volume.

19-May-97

Name of PRF:

AR03RP

Type of BMP:

Retention Pond

**Description:** Rampart Business Center Filing No. 6 Pond No. 1

and Pond No. 2 (Lot1, Block 1)

BMP Design: Designed as a water quality and 100-Yr detention basin. Date BMP put into service:

**Number of Inflow Points:** 

0

Watershed Area: 143.65 Acres

% of Total Watershed that is Impervious:

Types and designs of Outlets:

WO Outlet: Riser; 10-Yr Outlet: ;100-Yr Outlet:

Permanent Pool Features

Volume of Permanent Pool: 0.2 Ac-ft Permanent Pool Surface Area:

0.1 Acres

Permanent Pool Length:

70 Feet

Littoral Zone Surface Area:

0 Ac

Water Quality Features

Water Quality Surcharge Detention Volume:

1.22 Ac-ft

Water Quality Detention Surface Area:

0.57 Ac

Water Quality Detention Basin's Length:

0 Ft^2

**Brim-full Emptying Time:** 

12 Hrs Half Brim-full Emptying Time: 0 Hrs

Forebay Volume:

0 Ac-ft Forebay Surface Area:

0 Acres

Flood Control Features

Flood Control Volume above the Water quality Detention Volume:

0 Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

100-Yr Peak Discharge: cFs

cFs

Media Filter Features

Media Filter Surface Area:

0 Ft^2 Media Filter Surface:

Number of Layers:

0

Types of Filter Media:

Depth of Each Layer:

Comments: Water Quality Discharge=1.23 cfs (Approximated from a 12 hour drain time.)

19-May-97

AR04RP 100-Yr Retention Pond Name of PRF: Type of BMP: **Description:** Inverness Filing 17 located in Inverness Business Park(northeast corner of Dry Creek & Clinton) BMP Design: Designed to detain 10- and 100-Yr storm event. Date BMP put into service: **Number of Inflow Points:** 3 Watershed Area: 33.45 Acres % of Total Watershed that is Impervious: Types and designs of Outlets: 10-Yr Outlet- Orifice; 100-Yr Outlet: Weir Permanent Pool Features Volume of Permanent Pool: 1.7 Ac-ft Permanent Pool Surface Area: 23597 Acres Permanent Pool Length: Littoral Zone Surface Area: 0 Ac Water Quality Features Water Quality Surcharge Detention Volume: 0 Ac-ft Water Quality Detention Surface Area: 0 Ac Water Quality Detention Basin's Length: 0 Ft^2 **Brim-full Emptying Time:** 0 Hrs Half Brim-full Emptying Time: 0 Hrs Forebay Volume: 0 Ac-ft Forebay Surface Area: Acres Flood Control Features Flood Control Volume above the Water quality Detention Volume: 5 Ac-ft 10-Yr and 100-Yr Flood Return Periods:

#### Media Filter Features

10-Yr Peak Discharge:

Media Filter Surface Area:

0 Ft^2 Media Filter Surface:

cFs 100-Yr Peak Discharge:

cFs

Number of Layers:

0

Types of Filter Media:

Depth of Each Layer:

Comments: Permanent pool volume and surface area estimated from drainage plans.

19-May-97

Name of PRF:

AR05DB

Type of BMP:

Water Quality and

100-Yr Detention Basin

Description:

Lonetree Pond L3

BMP Design: Designed as a Water Quality and 100-Yr detention facility.

Date BMP Put Into Service:

**Number of Inflow Points:** 

Watershed Area:

975 Acres % of Total Watershed that is Impervious:

Types and designs of Outlets:

WQ Outlet: 24" Elbow (No perforations); 100-Yr Outlet: Overflow Weir

Water Ouality Features

Water Quality Detention Volume:

17.1 Ac-ft

Water Quality Detention Surface Area:

6.3 Acres

Water Quality Detention Basin's Length:

0 Feet

**Detention Basin's Bottom Area:** 

0 Acres

Brim full Emptying Time:

12 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

0 Acres

**Bottom Stage Surface Area:** 

0 Acres

Forebay Volume:

0 Ac-ft

Forebay Surface Area:

0 Acres

Vegetation Within Basin:

Flood Control Features

Flood Control Volume:

30.3 Ac-ft

Flood Return Periods: 100-Yr

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

1535 cFs

Media Filter Features

Media Filter Surface Area:

Ft^2

Media Filter Surface:

**Number of Layers:** 

0

Depth of Each Layer:

Types of Filter Media:

Comments: WQ Discharge= 34 cfs. The total flood control volume of 30.3 acre-ft includes the water quality volume of 17.1 acre-ft.

19-May-97

Name of PRF:

AU01DB

Type of BMP:

Water Quality and 100-Yr Detention

Basin

Description:

Shalom Park Subdivision Detention Basin

BMP Design: Designed as a Water Quality and 100-Yr detention basin.

12/1/91 **Number of Inflow Points:**  2

Watershed Area:

105.6 Acres % of Total Watershed that is Impervious:

49.00%

Types and designs of Outlets:

**Date BMP Put Into Service:** 

WQ Outlet: 10" Pipe w/1" holes; 100-Yr Outlet: 4'0" Wide x 3'0" Deep Weir Box

Water Quality Features

Water Quality Detention Volume:

2.2 Ac-ft

Water Quality Detention Surface Area:

1.05 Acres

Water Quality Detention Basin's Length:

165 Feet

**Detention Basin's Bottom Area:** 

0.01 Acres

**Brim full Emptying Time:** 

0 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

Acres

**Bottom Stage Surface Area:** 

0 Acres

Forebay Volume:

0 Ac-ft

Forebay Surface Area:

0 Acres

**Vegetation Within Basin:** 

Flood Control Features

Flood Control Volume:

10.5 Ac-ft

Flood Return Periods: 2-Yr and 100-Yr

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

101 cFs

Media Filter Features

Media Filter Surface Area:

Ft^2

Media Filter Surface:

Number of Layers:

0

Depth of Each Layer:

Types of Filter Media:

Comments: WQ Discharge= 1.3 cfs, When the City of Aurora deems necessary, the water

quality filtration basin will be built.

19-May-97

Name of PRF:

DO01DB

Type of BMP:

Water Quality and 100-Yr Detention

Basin

Description:

Cottonwood Subdivision Filing No. 11 Detention Pond

**BMP Design:** Designed to detain 100-Yr Storm event.

Date BMP Put Into Service:

**Number of Inflow Points:** 

3

Watershed Area:

259.75 Acres % of Total Watershed that is Impervious:

Types and designs of Outlets:

WQ Outlet: 4" Perf PVC Underdrain Collection System; 10-Yr Storm Outlet- 2'x3.8'

Orifice; 100-Yr Storm Outlet-6.40' long weir.

Water Quality Features

Water Quality Detention Volume:

1.81 Ac-ft

Water Quality Detention Surface Area:

1.88 Acres

Water Quality Detention Basin's Length:

0 Feet

Detention Basin's Bottom Area:

0 Acres

**Brim full Emptying Time:** 

12 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

Acres

**Bottom Stage Surface Area:** 

0 Acres

Forebay Volume:

Ac-ft

Forebay Surface Area:

Acres

Vegetation Within Basin:

Flood Control Features

Flood Control Volume:

16 Ac-ft

Flood Return Periods: 10-Yr and 100-Yr

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

cFs

Media Filter Features

Media Filter Surface Area:

Ft^2

Media Filter Surface:

**Number of Layers:** 

Depth of Each Layer:

Types of Filter Media:

Comments: WQ Discharge = 0.55 cfs. (Approximated based on WQ Vol/Drain Time.) The

Water Quality Capture Volume designed only to treat 145 acres of single family

homes.

19-May-97

Name of PRF:

DO02DB

Type of BMP:

Water Quality and

100-Yr Detention

Basin

**Description:** 

The Pinery/High Prairie Farms Filing No. 3, Detention Pond A

**BMP Design:** Designed to detain 100-Yr Storm event.

Date BMP Put Into Service:

**Number of Inflow Points:** 

Ī

Watershed Area:

42.94 Acres % of Total Watershed that is Impervious:

Types and designs of Outlets:

WQ Outlet: Riser Pipe w/3/8" holes; 10-Yr Storm Outlet-15" RCP; 100-Yr Storm Outlet- 19'

long weir

Water Quality Features

0.48 Ac-ft

Water Quality Detention Surface Area:

Water Quality Detention Volume:

0.24 Acres

Water Quality Detention Basin's Length:

110 Feet

**Detention Basin's Bottom Area:** 

0.022 Acres

**Brim full Emptying Time:** 

0 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

Acres

**Bottom Stage Surface Area:** 

0 Acres

Forebay Volume:

Ac-ft

Forebay Surface Area:

Acres

**Vegetation Within Basin:** 

Flood Control Features

Flood Control Volume:

0.7 Ac-ft

Flood Return Periods: 10-Yr and 100-Yr

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

cFs

Media Filter Features

Media Filter Surface Area:

1514 Ft^2

2

Media Filter Surface:

Horizontal

**Number of Layers:** 

Depth of Each Layer:

Layer 1: 12"; Layer 2: 36"

Types of Filter Media: Layer 1: Sand; Layer 2: Gravel

Comments: WQ Discharge= 0.30 cfs. Detention basin discharges to media filter just

downstream of outlet.

19-May-97

Name of PRF:

DO03DB

Type of BMP:

Water Quality and

100-Yr Detention

Basin

Description:

The Pinery/High Prairie Farms Filing 3, Detention Pond B

**BMP Design:** Designed to detain 100-Yr Storm event.

**Date BMP Put Into Service:** 

**Number of Inflow Points:** 

Watershed Area:

44.78 Acres % of Total Watershed that is Impervious:

Types and designs of Outlets:

WQ Outlet: 4" Perf Pipe w/3/8" holes; 10-Yr Outlet: 6"x3'4" Orifice; 100-Yr Outlet: 18'

long weir

Water Quality Features

Water Quality Detention Volume:

0.49 Ac-ft

Water Quality Detention Surface Area:

0.33 Acres

Water Quality Detention Basin's Length:

130 Feet

**Detention Basin's Bottom Area:** 

0 Acres

**Brim full Emptying Time:** 

0 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

Acres

**Bottom Stage Surface Area:** 

0 Acres

Forebay Volume:

Ac-ft

Forebay Surface Area:

0 Acres

Vegetation Within Basin:

Flood Control Features

Flood Control Volume:

0.8 Ac-ft

Flood Return Periods: 10-Yr and 100-Yr

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

cFs

Media Filter Features

Media Filter Surface Area:

1650 Ft^2

2

Media Filter Surface:

Horizontal

Number of Layers:

Depth of Each Layer:

Types of Filter Media: Layer 1: Sand; Layer 2: Gravel

Layer 1: 12"; Layer 2: 36"

Comments: WQ Discharge= 0.33 cfs. Detention basin discharges to media filter just

downstream.

19-May-97

DO04DB Name of PRF:

Type of BMP:

**Number of Inflow Points:** 

Water Quality and 100-Yr Detention

Basin

**Description:** 

The Pinery Filing No. 22, Detention Pond A1

BMP Design: Designed to detain 100-Yr Storm event.

Watershed Area:

18.88 Acres % of Total Watershed that is Impervious:

Types and designs of Outlets:

Date BMP Put Into Service:

WQ Outlet: Riser Pipe; 10-Yr Outlet: 6" pipe; 100-Yr Outlet: 8' long weir

Water Quality Features

Water Quality Detention Volume:

0.06 Ac-ft

Water Quality Detention Surface Area:

0.11 Acres

Water Quality Detention Basin's Length:

95 Feet

**Detention Basin's Bottom Area:** 

0.024 Acres

Brim full Emptying Time:

0 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

0 Acres

**Bottom Stage Surface Area:** 

0 Acres

Forebay Volume:

0 Ac-ft

Forebay Surface Area:

0 Acres

**Vegetation Within Basin:** 

Flood Control Features

Flood Control Volume:

0.27 Ac-ft

Flood Return Periods: 10-Yr and 100-Yr

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

cFs

Media Filter Features

Media Filter Surface Area:

230 Ft^2

Media Filter Surface:

Horizontal

Number of Layers:

Depth of Each Layer:

Types of Filter Media:

Comments: WQ Discharge= 0.05 cfs.

19-May-97

Name of PRF:

DO05DB

Type of BMP:

Water Quality and 100-Yr Detention

Basin

Description:

The Pinery Filing No. 22, Detention Pond A2

**BMP Design:** Designed to detain 100-Yr Storm event.

2

Watershed Area:

39.02 Acres % of Total Watershed that is Impervious:

**Number of Inflow Points:** 

Types and designs of Outlets:

Date BMP Put Into Service:

WQ Outlet: Riser Perf Pipe; 10-Yr Outlet: 16"x16" Orifice; 100-Yr Outlet: 68" long weir.

Water Ouality Features

Water Quality Detention Volume:

0.29 Ac-ft

Water Quality Detention Surface Area:

0.45 Acres

Water Quality Detention Basin's Length:

0 Feet

Detention Basin's Bottom Area:

0.065 Acres

Brim full Emptying Time:

0 Hrs

Half Brim-full Emptying Time:

Hrs

**Bottom Stage Volume:** 

0 Acres

**Bottom Stage Surface Area:** 

0 Acres

Forebay Volume:

0 Ac-ft

Forebay Surface Area:

0 Acres

**Vegetation Within Basin:** 

Flood Control Features

Flood Control Volume:

1.68 Ac-ft

Flood Return Periods: 10-Yr and 100-Yr

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

cFs

Media Filter Features

Media Filter Surface Area:

1266 Ft^2

Media Filter Surface:

Horizontal

Number of Layers:

Depth of Each Layer:

Types of Filter Media:

**Comments:** WQ Discharge = 0.25 cfs.

#### **Detention Basin** 19-May-97 DO06DB Water Quality Name of PRF: Type of BMP: Detention Basin **Description:** The Pinery Filing No. 22, Detention Pond B1 BMP Design: Designed as a Water Quality facility. Date BMP Put Into Service: 0 **Number of Inflow Points:** Watershed Area: 16.02 Acres % of Total Watershed that is Impervious: Types and designs of Outlets: WQ Outlet: Riser Perf PVC w/3/8" holes Water Quality Features Water Quality Detention Volume: 0.1 Ac-ft Water Quality Detention Surface Area: 0.12 Acres Water Quality Detention Basin's Length: 0 Feet **Detention Basin's Bottom Area:** 0.007 Acres Brim full Emptying Time: 0 Hrs Half Brim-full Emptying Time: 0 Hrs **Bottom Stage Volume:** 0 Acres **Bottom Stage Surface Area:** Acres Forebay Volume: 0 Ac-ft Forebay Surface Area: Acres **Vegetation Within Basin:** Flood Control Features Flood Control Volume: 0 Ac-ft Flood Return Periods: 0 10-Yr Peak Discharge: cFs 100-Yr Peak Discharge: cFs Media Filter Features

Media Filter Surface:

Media Filter Surface Area:

Ft^2

Number of Layers:

Depth of Each Layer:

Types of Filter Media:

Comments: WQ Discharge= 0.06 cfs. Pond B1 and Pond B2 form a system of detention basin

with Pond B1 upstream of Pond B2. Pond B1 serves as a water quality capture

pond while Pond B2 serves as a flood control pond.

19-May-97

Name of PRF:

DO07DB

Type of BMP:

100-Yr Detention

Basin

Description:

The Pinery Filing No. 22, Detention Pond B2

BMP Design: Designed only to detain 100-Yr Storm event. Date BMP Put Into Service:

**Number of Inflow Points:** 

1

Watershed Area:

16.02 Acres % of Total Watershed that is Impervious:

Types and designs of Outlets:

10-Yr Outlet: 8.5"x8.5" Orifice; 100-Yr Outlet: 68" long weir.

Water Quality Features

Water Quality Detention Volume:

0 Ac-ft

Water Quality Detention Surface Area:

0 Acres

Water Quality Detention Basin's Length:

Feet

**Detention Basin's Bottom Area:** 

0.04 Acres

**Brim full Emptying Time:** 

0 Hrs

Half Brim-full Emptying Time:

Hrs

**Bottom Stage Volume:** 

Acres

**Bottom Stage Surface Area:** 

Acres

Forebay Volume:

0 Ac-ft

Forebay Surface Area:

0 Acres

Vegetation Within Basin:

Flood Control Features

Flood Control Volume:

0.36 Ac-ft

Flood Return Periods: 10-Yr and 100-Yr

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

cFs

Media Filter Features

Media Filter Surface Area:

300 Ft^2

Media Filter Surface:

Horizontal

Number of Lavers:

Depth of Each Layer:

Types of Filter Media:

Comments: Pond B1 is located just upstream of Pond B2. Pond B1 discharges to media filter

located at the inlet of Pond B2.

19-May-97

Name of PRF:

DO08DB

Type of BMP:

Water Quality and 100-Yr Detention

Basin

Description:

The Pinery Filing No. 22, Detention Pond No. C1

BMP Design: Designed to detain 100-Yr Storm event.

**Date BMP Put Into Service:** 

**Number of Inflow Points:** 

Watershed Area:

36.74 Acres % of Total Watershed that is Impervious:

Types and designs of Outlets:

WQ Outlet: 4" Perf Riser w/1/2" holes;10-Yr Outlet: 24"x6"; 100-Yr Outlet: 46" long weir.

Water Ouality Features

Water Quality Detention Volume:

0.26 Ac-ft

Water Quality Detention Surface Area:

0.27 Acres

Water Quality Detention Basin's Length:

110 Feet

**Detention Basin's Bottom Area:** 

0,22 Acres

**Brim full Emptying Time:** 

0 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

0 Acres

**Bottom Stage Surface Area:** 

0 Acres

Forebay Volume:

0 Ac-ft

Forebay Surface Area:

0 Acres

Vegetation Within Basin:

Flood Control Features

Flood Control Volume:

0.96 Ac-ft

Flood Return Periods: 10-Yr and 100-Yr

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

cFs

Media Filter Features

Media Filter Surface Area:

650 Ft^2

Media Filter Surface:

Horizontal

Number of Layers:

Depth of Each Layer:

Types of Filter Media:

Comments: WQ Discharge= 0.152 cfs. Detention basin discharges to media filter just

downstream.

Depth of Each Layer:

19-May-97

DO09RP Name of PRF: Type of BMP: Description: Meridian Pond 1 BMP Design: Date BMP put into service: **Number of Inflow Points:** 0 Watershed Area: 17 % of Total Watershed that is Impervious: 0.00% Acres Types and designs of Outlets: Permanent Pool Features **Volume of Permanent Pool:** 7 Ac-ft Permanent Pool Surface Area: 1.8 Acres Permanent Pool Length: 500 Feet Littoral Zone Surface Area: 0 Ac Water Quality Features Water Quality Surcharge Detention Volume: 0 Ac-ft Water Quality Detention Surface Area: 0 Ac Water Quality Detention Basin's Length: 0 Ft^2 **Brim-full Emptying Time:** Half Brim-full Emptying Time: 0 Hrs 0 Hrs Forebay Volume: 0 Ac-ft Forebay Surface Area: 0 Acres Flood Control Features Flood Control Volume above the Water quality Detention Volume: 0 Ac-ft Flood Return Periods: 10-Yr Peak Discharge: 0 cFs 100-Yr Peak Discharge: 0 cFs Media Filter Features Media Filter Surface Area: 0 Ft^2 Media Filter Surface: Number of Layers: 0 Types of Filter Media:

**Comments:** Permanent pool is stocked with white Amur (algae eating) fish and provided with aeration system.

19-May-97

DO10RP Name of PRF: Type of BMP: Description: Meridian Pond 2 BMP Design: Date BMP put into service: Number of Inflow Points: 0 Watershed Area: 420 % of Total Watershed that is Impervious: 0.00% Acres Types and designs of Outlets: Permanent Pool Features Volume of Permanent Pool: 13 Ac-ft Permanent Pool Surface Area: 3.4 Acres Permanent Pool Length: 600 Feet Littoral Zone Surface Area: 0 Ac Water Quality Features Water Quality Surcharge Detention Volume: Ac-ft Water Quality Detention Surface Area: 0 Ac Water Quality Detention Basin's Length: 0 Ft^2 **Brim-full Emptying Time:** Half Brim-full Emptying Time: 0 Hrs 0 Hrs Forebay Volume: 0 Ac-ft Forebay Surface Area: 0 Acres Flood Control Features Flood Control Volume above the Water quality Detention Volume: 0 Ac-ft Flood Return Periods: 10-Yr Peak Discharge: 0 cFs 100-Yr Peak Discharge: 0 cFs Media Filter Features Media Filter Surface Area: 0 Ft^2 Media Filter Surface: Number of Layers: 0 Types of Filter Media: Depth of Each Layer:

**Comments:** Permanent pool is stocked with white Amur (algae eating) fish and provided with aeration system.

Depth of Each Layer:

19-May-97

DO11RP Name of PRF: Type of BMP: Description: Meridian Pond 3 BMP Design: Date BMP put into service: **Number of Inflow Points:** 0 Watershed Area: Acres % of Total Watershed that is Impervious: 0.00% Types and designs of Outlets: Permanent Pool Features Volume of Permanent Pool: 10 Ac-ft Permanent Pool Surface Area: 2.8 Acres **Permanent Pool Length:** 300 Feet Littoral Zone Surface Area: 0 Ac Water Quality Features Water Quality Surcharge Detention Volume: 0 Ac-ft Water Quality Detention Surface Area: 0 Ac Water Quality Detention Basin's Length: 0 Ft^2 Brim-full Emptying Time: Half Brim-full Emptying Time: 0 Hrs 0 Hrs Forebay Volume: 0 Ac-ft Forebay Surface Area: 0 Acres Flood Control Features Flood Control Volume above the Water quality Detention Volume: 0 Ac-ft Flood Return Periods: 10-Yr Peak Discharge: 0 cFs 100-Yr Peak Discharge: 0 cFs Media Filter Features Media Filter Surface Area: 0 Ft^2 Media Filter Surface: **Number of Layers:** 0 Types of Filter Media:

Comments: Permanent pool is stocked with white Amur (algae eating) fish and provided with aeration system.

19-May-97

Name of PRF:

GV01RP

Type of BMP:

Water Quality and 100-Yr

Retention Basin

Description: Dayton Farms Retention Basin

BMP Design: Designed as a water quality and 100-Yr Retention Basin

**Number of Inflow Points:** 

1

Watershed Area:

77 Acres

% of Total Watershed that is Impervious:

33.00%

Types and designs of Outlets:

Date BMP put into service:

WQ Outlet: 12" CMP Riser with 3/4" holes; 10-Yr Outlet: 2'11" wide x 1'9.5" high Notched Weir;

100-Yr Outlet: 10' wide Weir Box

Permanent Pool Features

Volume of Permanent Pool:

0 Ac-ft Permanent Pool Surface Area:

0.31 Acres

Permanent Pool Length:

0 Feet Littoral Zone Surface Area:

0 Ac

Water Quality Features

Water Quality Surcharge Detention Volume:

1.73 Ac-ft

Water Quality Detention Surface Area:

0.53 Ac

Water Quality Detention Basin's Length:

220 Ft^2

**Brim-full Emptying Time:** 

12 Hrs

Half Brim-full Emptying Time:

0 Hrs

Forebay Volume:

0 Ac-ft Forebay Surface Area:

0 Acres

Flood Control Features

Flood Control Volume above the Water quality Detention Volume:

1.75 Ac-ft

Flood Return Periods:

10-Yr and 100-Yr

10-Yr Peak Discharge:

18.5 cFs 100-Yr Peak Discharge:

77

cFs

Media Filter Features

Media Filter Surface Area:

0 Ft^2

Media Filter Surface:

Number of Layers:

0

Types of Filter Media:

Depth of Each Layer:

**Comments:** WO Discharge= 1.68 cfs.(Based on Vol/Drain Time).

19-May-97

Name of PRF:

GV02DB

Type of BMP:

Water Quality and

100-Yr Detention

Basin

**Description:** 

Greenwood Village Municipal Maintenance Base

**BMP Design:** Designed as a water quality and 100-Yr detention facility.

**Date BMP Put Into Service:** 

**Number of Inflow Points:** 

3

Watershed Area:

7.17 Acres % of Total Watershed that is Impervious:

0.00%

Types and designs of Outlets:

WQ Outlet: Perforated Riser Pipe; 10-Yr Outlet: 2-3" Orifice Plate at different elevations;

100-Yr Outlet: 3' wide x 2'6" high Notched Weir

Water Quality Features

Water Quality Detention Volume:

0.048 Ac-ft

Water Quality Detention Surface Area:

0.075 Acres

Water Quality Detention Basin's Length:

0 Feet

**Detention Basin's Bottom Area:** 

0.022 Acres

**Brim full Emptying Time:** 

40 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

Acres

**Bottom Stage Surface Area:** 

0 Acres

Forebay Volume:

0 Ac-ft

Forebay Surface Area:

0 Acres

Vegetation Within Basin:

Flood Control Features

Flood Control Volume:

0.6 Ac-ft

Flood Return Periods: 10-Yr and 100-Yr

10-Yr Peak Discharge:

0.31 cFs 100-Yr Peak Discharge:

1.21 cFs

Media Filter Features

Media Filter Surface Area:

Ft^2 100

Media Filter Surface:

Number of Layers:

0

Depth of Each Layer:

Types of Filter Media:

Comments: WQ Discharge=0.015 cfs (Approximated from a drain time of 40 hrs.) The WQ volume and surface area approximated from drainage plans. The media filter bed is

located within the detention basin near the outlet structure.

19-May-97

Name of PRF:

PA01DB

Type of BMP:

Water Quality Pond Only

Description:

Parker United Methodist Church (North)

**BMP Design:** Designed only with Water Quality Features Date BMP Put Into Service:

**Number of Inflow Points:** 

0

Watershed Area:

3.82 Acres % of Total Watershed that is Impervious:

0.00%

Types and designs of Outlets:

WQ Outlet: 12" PVC Perforated Pipe

Water Quality Features

Water Quality Detention Volume:

0.09 Ac-ft

Water Quality Detention Surface Area:

0.1 Acres

Water Quality Detention Basin's Length:

0 Feet

**Detention Basin's Bottom Area:** 

0.08 Acres

**Brim full Emptying Time:** 

40 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

0 Acres

**Bottom Stage Surface Area:** 

0 Acres

Forebay Volume:

0 Ac-ft

Forebay Surface Area:

0 Acres

Vegetation Within Basin:

Flood Control Features

Flood Control Volume:

0 Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

0 cFs 100-Yr Peak Discharge:

0 cFs

Media Filter Features

Media Filter Surface Area:

0 Ft^2

Media Filter Surface:

Number of Layers:

0

Depth of Each Layer:

Types of Filter Media:

Comments: WQ Discharge= 0.03 cfs (Assuming 40 hrs Drain Time); All parameters

19-May-97

Name of PRF:

PA02DB

Type of BMP:

Water Quality

Pond Only

Description:

Parker United Methodist Church (2nd Pond from North)

BMP Design: Designed only with Water Quality Features.

Date BMP Put Into Service:

**Number of Inflow Points:** 

0

Watershed Area:

3.82 Acres % of Total Watershed that is Impervious:

0.00%

Types and designs of Outlets:

WQ Outlet: 12" PVC Perforated Pipe

Water Ouality Features

Water Quality Detention Volume:

0.4 Ac-ft

Water Quality Detention Surface Area:

0.28 Acres

Water Quality Detention Basin's Length:

0 Feet

**Detention Basin's Bottom Area:** 

0.18 Acres

**Brim full Emptying Time:** 

40 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

Acres

**Bottom Stage Surface Area:** 

Acres

Forebay Volume:

0 Ac-ft

Forebay Surface Area:

0 Acres

**Vegetation Within Basin:** 

Flood Control Features

Flood Control Volume:

0 Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

0 cFs

Media Filter Features

Media Filter Surface Area:

0 Ft^2

Media Filter Surface:

Number of Layers:

0

Depth of Each Layer:

Types of Filter Media:

Comments: WQ Disharge= 0.12 cfs (Assuming 40 hrs Drain Time); All parameters

19-May-97

Name of PRF:

PA03DB

Type of BMP:

Water Quality

Pond Only

**Description:** 

Parker United Methodist Church (3rd Pond from North)

BMP Design: Designed only with Water Quality Features.

Date BMP Put Into Service:

**Number of Inflow Points:** 

0

Watershed Area:

3.82 Acres % of Total Watershed that is Impervious:

0.00%

Types and designs of Outlets:

WQ Outlet: 12" PVC Perforated Pipe

Water Quality Features

Water Quality Detention Volume:

0.37 Ac-ft

Water Quality Detention Surface Area:

0.24 Acres

Water Quality Detention Basin's Length:

0 Feet

Detention Basin's Bottom Area:

0.14 Acres

Brim full Emptying Time:

40 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

0 Acres

**Bottom Stage Surface Area:** 

Acres

Forebay Volume:

0 Ac-ft

Forebay Surface Area:

0 Acres

**Vegetation Within Basin:** 

Flood Control Features

Flood Control Volume:

0 Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

0 cFs

Media Filter Features

Media Filter Surface Area:

0 Ft^2

Media Filter Surface:

**Number of Layers:** 

0

Depth of Each Layer:

Types of Filter Media:

Comments: WQ Discharge= 0.11 cfs( Assuming 40 Hrs Drain Time); All parameters

19-May-97

Name of PRF:

PA04DB

Type of BMP:

Water Quality and 100-Yr Detention

Pond

Description:

Parker Vista Subdivision (Stonehedge and Main Street)

BMP Design: Designed as a Water Quality and Flood Control Pond. **Date BMP Put Into Service:** 

**Number of Inflow Points:** 

0

Watershed Area:

41.99 Acres % of Total Watershed that is Impervious:

0.00%

Types and designs of Outlets: WQ Outlet: Perforated Riser Pipe

Water Quality Features

Water Quality Detention Volume:

0.77 Ac-ft

Water Quality Detention Surface Area:

0.36 Acres

Water Quality Detention Basin's Length:

0 Feet

**Detention Basin's Bottom Area:** 

0.26 Acres

**Brim full Emptying Time:** 

40 Hrs

Half Brim-full Emptying Time:

0 Hrs Acres

**Bottom Stage Volume:** 

Forebay Volume:

0 Acres 0 Ac-ft

**Bottom Stage Surface Area:** Forebay Surface Area:

0 Acres

Vegetation Within Basin:

Flood Control Features

Flood Control Volume:

0 Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

0 cFs

Media Filter Features

Media Filter Surface Area:

Ft^2 0

Media Filter Surface:

**Number of Layers:** 

0

Depth of Each Layer:

Types of Filter Media:

Comments: WQ Discharge=0.23 cfs (Based on 40 Hrs Drain Time); All parameters

#### **Detention Basin** 19-May-97 PA05DB Water Quality and Name of PRF: Type of BMP: Detention Basin Description: Parker Vista(North Detention Basin) BMP Design: Designed as a Water Quality and Flood Control Facility 0 **Date BMP Put Into Service: Number of Inflow Points:** Watershed Area: 16 Acres % of Total Watershed that is Impervious: 0.00% Types and designs of Outlets: WQ Outlet: Underdrain Collection System Water Ouality Features 0.4 Ac-ft Water Quality Detention Volume: Water Quality Detention Surface Area: 0 Acres Water Quality Detention Basin's Length: 0 Feet 0 Acres **Detention Basin's Bottom Area: Brim full Emptying Time:** 0 Hrs Half Brim-full Emptying Time: 0 Hrs **Bottom Stage Volume:** 0 Acres **Bottom Stage Surface Area:** Acres 0 Ac-ft Forebay Volume: Forebay Surface Area: Acres Vegetation Within Basin: Flood Control Features Flood Control Volume: 0 Ac-ft Flood Return Periods: cFs 10-Yr Peak Discharge: 0 100-Yr Peak Discharge: 0 cFs Media Filter Features Media Filter Surface Area: 0 Ft^2 Media Filter Surface: Number of Layers: 0 Depth of Each Layer: Types of Filter Media:

**Comments:** Currently, the existing underdrain collection system is silted up. A new water quality facility will be installed later in 1997.

19-May-97

Name of PRF:

PA07DB

Type of BMP:

Water Quality and Flood Control Pond

Description:

Willow Ridge Filing 1

Date BMP Put Into Service:

**Number of Inflow Points:** 

0

Watershed Area:

BMP Design: Designed as a Water Quality and Flood Control pond.

22.07 Acres % of Total Watershed that is Impervious:

0.00%

Types and designs of Outlets:

WO Outlet: Perforated Riser Pipe

Water Quality Features

Water Quality Detention Volume:

0.49 Ac-ft

Water Quality Detention Surface Area:

0.29 Acres

Water Quality Detention Basin's Length:

0 Feet

Detention Basin's Bottom Area:

0.2 Acres

**Brim full Emptying Time:** 

40 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

Acres

**Bottom Stage Surface Area:** 

Acres

Forebay Volume:

Ac-ft

Forebay Surface Area:

0 Acres

**Vegetation Within Basin:** 

Flood Control Features

Flood Control Volume:

0 Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

0 cFs 100-Yr Peak Discharge:

0 cFs

Media Filter Features

Media Filter Surface Area:

0 Ft^2

Media Filter Surface:

**Number of Layers:** 

0

Depth of Each Layer:

Types of Filter Media:

WO Discharge= 0.15 cfs (Based on 40 Hrs Drain Time); All parameters

19-May-97

Name of PRF:

PA08DB

Type of BMP:

Water Quality and Flood Control Pond

Description:

Willow Ridge Filing 2

BMP Design: Designed as a Water Quality and Flood Control Pond

Date BMP Put Into Service:

**Number of Inflow Points:** 

0

Watershed Area:

34.16 Acres % of Total Watershed that is Impervious:

0.00%

Types and designs of Outlets:

WQ Outlet:Perforated Riser Pipe

Water Quality Features

Water Quality Detention Volume:

1.31 Ac-ft

Water Quality Detention Surface Area:

0.55 Acres

Water Quality Detention Basin's Length:

0 Feet

**Detention Basin's Bottom Area:** 

0.32 Acres

Brim full Emptying Time:

40 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

Acres

**Bottom Stage Surface Area:** 

Acres

Forehay Volume:

0 Ac-ft

Forebay Surface Area:

0 Acres

**Vegetation Within Basin:** 

Flood Control Features

Flood Control Volume:

0 Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

0 cFs

Media Filter Features

Media Filter Surface Area:

Ft^2

Media Filter Surface:

Number of Layers:

0

Depth of Each Layer:

Types of Filter Media:

Comments: WQ Discharge=0.40 cfs (Based on 40 Hrs Drain Time); All parameters

19-May-97

Name of PRF:

PA09DB

Type of BMP:

Water Quality and Flood Control Pond

Description:

Willow Park West

**BMP Design:** Designed as Water Quality and Flood Control Pond **Date BMP Put Into Service:** 

**Number of Inflow Points:** 

0

Watershed Area:

17.71 Acres % of Total Watershed that is Impervious:

0.00%

Types and designs of Outlets:

WQ Outlet: Perforated Riser Pipe with Gravel Pack

Water Quality Features

Water Quality Detention Volume:

2.55 Ac-ft

Water Quality Detention Surface Area:

1.8 Acres

Water Quality Detention Basin's Length:

0 Feet

Detention Basin's Bottom Area:

1.6 Acres

**Brim full Emptying Time:** 

40 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

0 Acres

**Bottom Stage Surface Area:** 

Acres

Forebay Volume:

0 Ac-ft

Forebay Surface Area:

0 Acres

Vegetation Within Basin:

Flood Control Features

Flood Control Volume:

0 Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

0 cFs 100-Yr Peak Discharge:

0 cFs

Media Filter Features

Media Filter Surface Area:

0 Ft^2

Media Filter Surface:

**Number of Layers:** 

0

Depth of Each Layer:

Types of Filter Media:

WO Discharge= 0.77 cfs (Based on 40 Hrs Drain Time); All parameters

19-May-97

Name of PRF:

PA10DB

Type of BMP:

Water Quality and Flood Control

Description:

Willow Park East

BMP Design: Designed as Water Quality and Flood Control Pond

0

Date BMP Put Into Service:

Watershed Area:

21.35 Acres % of Total Watershed that is Impervious:

**Number of Inflow Points:** 

0.00%

Types and designs of Outlets:

WQ Outlet: Perforated Riser Pipe with Gravel Pack

Water Quality Features

Water Quality Detention Volume:

9.44 Ac-ft

Water Quality Detention Surface Area:

3.36 Acres

Water Quality Detention Basin's Length:

0 Feet

Detention Basin's Bottom Area:

2.94 Acres

**Brim full Emptying Time:** 

40 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

0 Acres

**Bottom Stage Surface Area:** 

0 Acres

Forebay Volume:

0 Ac-ft

Forebay Surface Area:

0 Acres

Vegetation Within Basin:

Flood Control Features

Flood Control Volume:

0 Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

0 cFs

100-Yr Peak Discharge:

0 cFs

Media Filter Features

Media Filter Surface Area:

0 Ft^2

Media Filter Surface:

**Number of Lavers:** 

0

Depth of Each Layer:

Types of Filter Media:

Comments: WQ Discharge=2.86 cfs (Based on 40 Hrs Drain Time); All parameters

19-May-97

Name of PRF:

PA11DB

Type of BMP:

Water Quality and Flood Control

Description:

Parker Marketplace Phase 2 Detention Facility

BMP Design: Designed as Water Quality and Flood Control Pond **Date BMP Put Into Service:** 

**Number of Inflow Points:** 

0

Watershed Area:

5.26 Acres % of Total Watershed that is Impervious:

0.00%

Types and designs of Outlets:

WO Outlet: Perforated Riser Pipe

Water Quality Features

Water Quality Detention Volume:

0.21 Ac-ft

Water Quality Detention Surface Area:

0.12 Acres

Water Quality Detention Basin's Length:

0 Feet

**Detention Basin's Bottom Area:** 

0.073 Acres

**Brim full Emptying Time:** 

40 Hrs

**Half Brim-full Emptying Time:** 

0 Hrs

**Bottom Stage Volume:** 

Acres

**Bottom Stage Surface Area:** 

Acres

Forebay Volume:

Ac-ft

Forebay Surface Area:

0 Acres

**Vegetation Within Basin:** 

Flood Control Features

Flood Control Volume:

0 Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

0 cFs

Media Filter Features

Media Filter Surface Area:

Ft^2

Media Filter Surface:

Number of Layers:

0

Depth of Each Layer:

Types of Filter Media:

Comments: WQ Discharge= 0.07 cfs (Based on 40 Hrs Drain Time); All parameters

19-May-97

Name of PRF:

PA12DB

Type of BMP:

Water Quality and Detention Facility

Description:

Bradbury Ranch

BMP Design: Designed as a water quality and detention facility.

**Number of Inflow Points:** 

0

Watershed Area:

374.9 Acres % of Total Watershed that is Impervious:

0.00%

Types and designs of Outlets:

**Date BMP Put Into Service:** 

WO Outlet: Perforated PVC Pipe with Gravel Pack

Water Quality Features

Water Quality Detention Volume:

1.9 Ac-ft

Water Quality Detention Surface Area:

1.7 Acres

Water Quality Detention Basin's Length:

0 Feet

**Detention Basin's Bottom Area:** 

0 Acres

**Brim full Emptying Time:** 

40 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

Acres

**Bottom Stage Surface Area:** 

Acres

Forebay Volume:

Ac-ft

Forebay Surface Area:

0 Acres

Vegetation Within Basin:

Flood Control Features

Flood Control Volume:

0 Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

0 cFs

Media Filter Features

Media Filter Surface Area:

0 Ft^2

Media Filter Surface:

Number of Layers:

0

Depth of Each Layer:

Types of Filter Media:

Comments: WQ Discharge=1.15 cfs (Approximated based on 40 hrs drain time.) Water Quality volume and surface area approximated from USGS Quadrangle map.

19-May-97

Name of PRF:

PA13DB

Type of BMP:

Water Quality

Facility

**Description:** 

Baldwin Pond

**BMP Design:** Designed as a water quality facility. **Date BMP Put Into Service:** 

**Number of Inflow Points:** 

0

Watershed Area:

278.2 Acres % of Total Watershed that is Impervious:

0.00%

Types and designs of Outlets:

WO Outlet: Underdrain Collection System

Water Ouality Features

Water Quality Detention Volume:

0.42 Ac-ft

Water Quality Detention Surface Area:

0.43 Acres

Water Quality Detention Basin's Length:

0 Feet

Detention Basin's Bottom Area:

0 Acres

**Brim full Emptying Time:** 

8 Hrs

Half Britn-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

0 Acres

**Bottom Stage Surface Area:** 

Acres

Forebay Volume:

0 Ac-ft

Forebay Surface Area:

0 Acres

Vegetation Within Basin:

Flood Control Features

Flood Control Volume:

0 Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

0 cFs

Media Filter Features

Media Filter Surface Area:

0 Ft^2

Media Filter Surface:

Number of Layers:

0

Depth of Each Layer:

Types of Filter Media:

Comments:

WQ Discharge=0.635 cfs(Approximated from a 8 hour drain time.) The Water Quality Capture Volume was designed to treat the single family homes

subdivision(15.58 acres). Since pond is on main stem, total contributing area is

used to measure WQ benefits.

19-May-97

Name of PRF:

PA14DB

Type of BMP:

Water Quality and Detention Facility

Description:

Joint Use Facility Detention Pond 1

BMP Design: Designed as a water quality and detention facility. Date BMP Put Into Service:

**Number of Inflow Points:** 

0

Watershed Area:

2.4 Acres % of Total Watershed that is Impervious:

0.00%

Types and designs of Outlets:

WQ Outlet: Underdrain Collection System

Water Quality Features

Water Quality Detention Volume:

0.11 Ac-ft

Water Quality Detention Surface Area:

0.093 Acres

Water Quality Detention Basin's Length:

0 Feet

Detention Basin's Bottom Area:

0.07 Acres

Brim full Emptying Time:

40 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

0 Acres

**Bottom Stage Surface Area:** 

0 Acres

Forebay Volume:

0 Ac-ft

Forebay Surface Area:

0 Acres

Vegetation Within Basin:

Flood Control Features

Flood Control Volume:

0 Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

0 cFs

Media Filter Features

Media Filter Surface Area:

Ft^2

Media Filter Surface:

Number of Layers:

0

Depth of Each Layer:

Types of Filter Media:

**Comments:** WQ Discharge=0.034 cfs (Approximated from a 40 hour drain time.)

19-May-97

Name of PRF:

PA15DB

Type of BMP:

Water Quality and Detention Facility

Description:

Joint Use Facility Detention Pond 2

Date BMP Put Into Service:

**Number of Inflow Points:** 

0

Watershed Area:

**BMP Design:** Designed as a water quality and detention facility

4.8 Acres % of Total Watershed that is Impervious:

0.00%

Types and designs of Outlets:

WQ Outlet: Underdrain Collection System

Water Ouality Features

Water Quality Detention Volume:

0.435 Ac-ft

Water Quality Detention Surface Area:

0.118 Acres

Water Quality Detention Basin's Length:

0 Feet

**Detention Basin's Bottom Area:** 

0.06 Acres

**Brim full Emptying Time:** 

40 Hrs

Half Brim-full Emptying Time:

Hrs

**Bottom Stage Volume:** 

Acres

**Bottom Stage Surface Area:** 

Acres

Forebay Volume:

Ac-ft

Forebay Surface Area:

Acres

Vegetation Within Basin:

Flood Control Features

Flood Control Volume:

0 Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

0 cFs 100-Yr Peak Discharge:

0 cFs

Media Filter Features

Media Filter Surface Area:

0 Ft^2

Media Filter Surface:

**Number of Layers:** 

0

Depth of Each Layer:

Types of Filter Media:

**Comments:** WQ Discharge= 0.132 cfs (Approximated from a 40 hour drain time.)

19-May-97

Name of PRF:

PA16DB

Type of BMP:

Water Quality and Detention Facility

**Description:** 

Clarke Farms Detention Pond

BMP Design: Designed as a water quality and detention facility.

**Number of Inflow Points:** 

0

Watershed Area:

294 Acres % of Total Watershed that is Impervious:

0.00%

Types and designs of Outlets:

**Date BMP Put Into Service:** 

WQ Feature: Volume provided below principal outlet structure for retention and

sedimentation of runoff.

Water Quality Features

Water Quality Detention Volume:

10.64 Ac-ft

Water Quality Detention Surface Area:

2.41 Acres

Water Quality Detention Basin's Length:

0 Feet

**Detention Basin's Bottom Area:** 

1.85 Acres

**Brim full Emptying Time:** 

40 Hrs

Half Brim-full Emptying Time:

0 Hrs

**Bottom Stage Volume:** 

0 Acres

**Bottom Stage Surface Area:** 

0 Acres

Forehay Volume:

0 Ac-ft

Forebay Surface Area:

0 Acres

Vegetation Within Basin:

Flood Control Features

Flood Control Volume:

0 Ac-ft

Flood Return Periods:

10-Yr Peak Discharge:

cFs

100-Yr Peak Discharge:

0 cFs

Media Filter Features

Media Filter Surface Area:

Ft^2

Media Filter Surface:

**Number of Layers:** 

0

**Depth of Each Layer:** 

Types of Filter Media:

**Comments:** WQ Discharge= 3.22 cfs (Approximated from a 40 hour drain time.)

oject:	Cherry Cre	ek Basin Water	Quality Authority											<u> </u>
		ource Evaluatio	n							· .				
;	Shop Cree	K .							· 	t	İ	<del> </del>		1
te;	4/10/97									Ì	<u> </u>			
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<del> </del>	Examinatio	n of Raw Data f	or Shop Creek Sit	в 1 (1994-19 <del>96</del> )				,						
		]	,		4									
	i				7-	:_1	Runoff	Daily				~	<del> </del>	
	Slorm	Sample	To: Suspende		To:		Peak Discharge	Runoff Volume		ł	ļ			
<del>- i</del>	Event	Type	(mg/l)	(ib)	(mg/l)	(lb)	(cfs)	(cf)		Comment	on Flow Data	, 9		
		-31											Part of Property and Property a	
1	6/22/94	storm	140	1302	1.034	9.62	43.50	149,013		l		storm peak		
3	7/12/94 7/19/94	storm	15 999	3373 1016	0.097 1.161	21,81 1,18	300.20 1.81	3,602,400 16,294	G	age appear	s to be stuci	at 300,2 cfs		
4	8/9/94	Storm	146	100	0,422	0.29	0.19	10,967	0.16	is peak ac	cording to 10	-minute data		1
5	9/5/94		342	224	0.372	0.24	0.17	10,505	0.15	ofs peak ac	cording to 10	-minute date		
			··											
+	-													
1	04/04/95		28	18	0.062	0.04	0.18	10,368				base	No. 2127 Lt	
	04/10/95	storm	306	3119	0,434	4.42	14.29	163,296				storm peak		
	04/18/95		176	1433	0,265	2.16	11.03	130,464				eak @ 22:40		
	04/18/95 04/23/95	storm storm	153 389	1248 3147	0.530 1.831	4,32 14,81	11.03 19,08	130,464 129,600				ig from storm ig from storm	L	
	05/02/95	5.0111	8	175	0.034	0.74	92.87	350,784	d	ouble peak	storm @ 19:	50 and 22:20		
	05/02/95	1	4	88	0,042	0.92	92.87	350,784			doubl	e peak storm		
		storm	93	2037	0.836 0.18	18,31 2,50	92.87 83,73	350,784 222,912				storm peak		
	05/16/95 05/15/95	storm	17 674	237 763	1.22	1.38	1,33	18,144				storm peak		
	05/30/95	,	19	30	0,069	0.11	3.77	25,056			storm į	peak @20:10		
12	05/30/95		106	166	0.122	0.19	3,77	25,056			storm į	oeak @20:10		
	06/13/95	ud	08	142	0.191	0.34 0.36	1.04 1.04	28,512 28,512	<del>-</del>		sma	ll storm peak		
	06/13/95 06/27/95		103 48	183 62	0.200 0.235	0.30	0,36	21,600				base		
	06/28/95	storm	324	8144	0,747	18.78	190.73	402,824			si	x peak storm		
	07/11/95		26	34	0,065	0,08	0.37	20,738				base		
	07/13/95	storm	175	642 2	1.000 0.072	3.67 0.04	12.63 0.28	58,752 8,649			doubl	e peak storm base		
	07/25/95 08/08/95		98	69	0.072	0.10	0.28	11,232	J			base		
	08/21/95		17	36	0.206	0,43	18,64	33,696				storm peak		
	08/17/95	storm	182	108	0.582	0.35	0,28	9,504				storm peak	, and the second	
	09/06/95		3	1	0.090 0.510	0.04		7,770 7,770				stimated flow		
	09/18/95	storm storm	61 40	30 19	0,220	0.25 0.11		7,770				stimated flow stimated flow		
	09/28/95	storm	203	98	0.105	0,05		7,770				stimated flow		
	10/03/95		4		0.030	p						o flow data		
	10/03/95	stom	59		0,250		******					o flow data		
29 30	10/17/95 10/21/95	storm	25 124		0.070 1.040							o flow data		
31	10/31/95	310111,	3		0,040							o flow data		
	04/02/96		9		0.025							o flow data		
	04/16/96	-	3		0.108							o flow data		
	04/30/96		6		0.014	_						o flow data		
	05/09/96	storm	13		0.124 0.125						-	o flow data		
	05/14/98 ]	essume storm	150	4319	0.125 0,460	13,24	29.11	461,173	ston	n started or	ı 1 24th and e	nded on 26th		
	D5/28/98	MANAGEMENT AND	1	4	0.056	0.23	10,45	86,006						
8	06/11/96		84	215	0.108	0.28	0.71	41,001				L	ļ	ļ
		essume atomi	501 221	15585 723	0.712 0,608	22.15 1.98	78.28 7.10	498,282 52,423	stom	started at	11am and e	nded at 6 pm		
	06/20/96 06/25/96		26	/23 64	0,085	0.21	0.46	39,577				+		
12	07/09/96		4	103	0.082	2.10	83.00	410,552						
13		storm	4	103	0.193	4.95		410,552			ļ			
14 15			3 5	11 19	0.081	0.28	0.98 1,06	56,260 59,992	L			1	ļ	
		storm		19	0.829	5,98	11.27	115,104		t		1		
17	08/20/96		5	12	0.061	0.15	0.46	39,577		1				
18		acauma atom	438	2021	0.815	3,76		73,894	5	torm on 23r	d did not sta	rt until 10 pm		<u> </u>
19 20	09/03/96 09/06/96	storm	18 128	44 654	0,060 0,452	0.15 2.31	0,48 13,17	39,577 81,798					-	
21		assume storm	521	3716	0.432	0.79		114,257		storm occi	irred the pre	vious evening		
22	09/17/96	unes processor de SPS (100 SPS	3	29	0.355	3,38	25.98	152,581						
23			7	21	0.063	0.19		47,333		<u> </u>	1			
24			16 5	51 15	0,085	0.27		50,802 48,427		-	1		-	<del> </del>
25	10/29/96		5		0.023	0.07	0.00	40,427		1		1		1
	Note:	Storm events s	amples were colle	cted in the momi	ng. According	to Chadwick t	he actual ston	n event usua	lly occurred	the			-	
			sample collection											
			ljusted to the prev e flow data indicat										.	<del> </del>
			that the 9/6/96 s					ale biesior	- uay, 3/3/3/	- meretor	·			1
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		ithe high TSS a	nd TP values alor								•	-		1
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		may have beer		m events. It is a	ssumed for this	analysis that	these particul	ir grab samp	es represer	10				

	Naw Stone	n Flow Data for	Shop Creek Site 1	(1995)		•					1	i		
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			į To	ital	To	tal	Peak	Runoff			L	İ		
	Storm	Sample	Suspend	ed Solids	Phosp	horus	Discharge	Volume		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
	Event	Туре	(mg/l)	, (lp)	(mg/l)	(lb)	(cfs)	(cf)		\				
				)						ļ	ļ <u></u>	ļ		
1		storm						163,296		i .		<u> </u>		
2		+			0.530			130,464						<b></b>
3		storm			1,831	14.81	19.08	129,600				ļ		-
4		storm	93		0,836		92.87	350,784				İ		
5		storm	674	763	1.220	1.38	1.33 190,73	18,144 402,624				ļ		
6		storm		8,144 642	0.747	18.78 3.67	12.63	58,752			<del> </del>			-
7		storm	182	108	0.582	0,35	0.28	9,504		<u>i</u> Í	1			
B 9	08/17/95 09/18/95	storm storm	61	30	0.502	0.35	0.20	7,770				ļ		<del>!                                    </del>
10		storm	40	19	0,220	0.23	-	7,770				<del> </del>		<del> </del>
11.		storm	203	98	0.105	0.05		7,770						
12	ļ	storm	59		0.250									
13		storm	124		1.040						*			
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		Totals	2783	19,354	9.305	66,44	342,24	1,286,478				Į.		
	Averages (	Flow Weighted)			0.827		42.78	116,953						
		(Mathematical)	214	1759	0.718	6.04	42.78	116,953	'					
		rages (UDFCD)			0.679		1			:				
		_ · _ · /												
	Note:	Disregarded 19	94 data because	of questionable f	ow data results	i								
0.000,000	Raw Base	Flow Data for S	hop Creek Site 1 (	1995)										
							Runoff	Daily						
			Tot		To		Peak	Runoff						
	Storm	Sample	Suspende		Phosp		Discharge	Volume						
	Event	Туре	(mg/l)	(lb)	(mg/l)	(lb)	(cfs)	(대)						
1			28	18	0.062	0.04	0.18	10,368	-		_			
2			176	1,433	0,285	2.16	11.03	130,464						
3	05/02/95		8	175	0,034	0.74	92.87	350,784						
4			4	88	0,042	0.92	92.87	350,784						
- 5			17	237	0.180	2,50	83.73	222,912						
6			19	30	0.069	0.11	3.77	25,056. 25,058						
7			106	166 142	0.122 0.191	0.19 0.34	3.77 1.04	28,512						
8	06/13/95	ud	80 103	183	0.191	0.34	1.04	28,512						
	06/13/95		46	62	0.235	0.32	0,36	21,600						
10 11	06/27/95 07/11/95		26	34	0.235	0.32	0.37	20,738						
12	07/11/95		4	2	0.072	0.04	0.28	8,649			~~~			
13	08/08/95		98	69	0.144	0.10	0,29	11,232						
14	08/21/95		17	36	0,206	0,43	18.64	33,696						
15	09/06/95		3	1	0.090	0.04		7,770						
16	10/03/95		4		0.030									
17	10/17/95		28	-+	0,070									
18		~	3		0.040									1
- '-	, , , , , , , , , , , , , , , , , , , ,													
		Totals	768	2,676	2.117	8.38	310.24	1,276,131						
	Averages (	Flow Weighted)	33.6	·	0.105		ļ	85,075	i					
		(Mathematical)	42.7	178	0.118	0.56	22.18	85,075						1
	Ave	rages (UDFCD)	33.9		0.111									
	Note:	Disregarded 19	94 data because	of questionable fl	ow data results									
	Raw Storm	Flow Data for 8	Shop Creek Site 1	(1996)										
							Runoff	Daily						
			To		To		Peak	Runoff						1
	Storm	Sample	Suspend		Phosp		Discharge	Volume						
	Event	Туре	(mg/l)	(lb)	(mg/l)	(lb)	(cfs)	(cf)						
	05/55/27	ļ			0.46						-			-
1		storm		4 210	0.124	49.04	29,11	461,173	,		-	1		
2		assume storm		4,319 15,585		13.24 22.15		498,282						
3	The second section of the second section secti							410,552						
4				103	0,193			115,104			1	+	-	
5				2,021	0.815			73,894		1			t	1
6 7					0.452			81,798				1		
8		assume storm		3,716				114,257						
d	Udi (ZiSG	assume Storm	521	3,710	0.111	0.75	10.00	117,201		· · · · · · · · · · · · · · · · · · ·				
		Totals	1,755	26,396	3.696	53.16	243,53	1,755,060			ļ	+		
	Averance	Flow Weighted			0,485		2.40.00	250,723			1			-
		(Mathematical			0.462		34.79	250,723					1	
	V. Antidadas	, , e, e i i i i i i i i i i i i i i i i	201		V10%	.,55					<del> </del>			
	Notes	No TSS date of	vailable for 8/7/96	storm event	<del></del>	1							-	
	140(8)	Con Con Card &	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								ļ			
		1	-		<del>i</del>				_			-	<b>t</b>	1

		1	*			i .			1			1	
						Runoff	Daily			i	1		
	I	To	otal	To	tal	Peak	Runoff		İ			İ	+
Storm	Sample	Suspend	led Solids	Phosp		Discharge	Volume					1	+
Event	Type	(mg/l)	(lb)	(mg/l)	(lb)	(cfs)	(cf)					1	+
w 1	1,75-	(	<u></u>		(/	1 1	χ,			i			
04/02/98		9		0.025						<del>-</del>			+
04/16/96		3		0,106				·		~			+-
									l .		1		
													+
		·	4		0.23	10.45						1	+
		84								+		1	+
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10/29/96		5	15	0.023	0.07	0.60	48,427		ļ		ļ		
			1,310		9.58	132.82							1
										_			
Averages	(Mathematical)	25	101	0.118	0.74	10.22	84,931						
												1	
				i									T
verage EN	IC, Base Flow,	Storm Runoff for	1990, 1991, 1992	and 1995 at 5	hop Creek S	te Site 1							T
				}									
verage ba	se flow rate dat	a was obtained fro	om Rich Ommert/	JDFCD on 1-2	4-97 over the	telephone.			_				
- Annabar Paragraphic Annabar - A													
		***************************************	THE PARTY OF THE P		Total								
1				Average		Storm					1		<b>†</b>
1		Base Flow	Storm Flow	Base Flow	# of	Runoff					1		1
ļ						Volume				_	<del>                                     </del>		<del></del>
	Year						Ì			1			+
				(,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					1		+
	1000	Anz 3 - Oct 1	Apr 18 - Oct 2	0.685	32	7101				+	<del> </del>		+-
										+	+		+-
										+	1	<del> </del>	+-
							-			+	<del>                                     </del>		+
	1995	Whit-Writte	Apr 9 - Oct 22	0.073	40	0305				<del>  -</del>	+	-	+
													₩
C C C C C C C C C C C C C C C C C C C	04/30/96 05/14/96 05/14/96 05/24/96 06/11/96 06/25/96 06/25/96 07/23/96 07/23/96 09/06/96 09/	04/30/96 05/14/96 05/14/96 05/14/96 05/26/96 05/26/96 05/26/96 05/25/96 05/25/96 05/25/96 05/25/96 05/25/96 05/25/96 05/25/96 05/25/96 05/25/96 05/25/96 05/25/96 05/25/96 05/25/96 05/25/96 05/25/96 05/25/96 05/25/96 05/25/96 Totals verages (Flow Weighted) Averages (Mathematical) verage EMC, Base Flow, verage base flow rate dat  Year	04/30/96 6 6 05/14/96 8 8 05/26/96 19 106/25/96 20 106/25/96 221 06/25/96 221 06/25/96 221 06/25/96 36 07/23/96 36 08/06/96 55	04/30/96	04/30/96         6         —         0.014           05/14/96         8         —         0.125           05/28/96         1         4         0.056           06/11/96         84         215         0.108           06/25/96         221         723         0.606           06/25/96         28         64         0.085           07/23/96         4         103         0.082           07/23/96         3         11         0.081           08/06/96         5         19         0.077           08/06/96         5         19         0.077           08/20/98         5         12         0.081           08/20/98         5         19         0.077           08/20/98         5         12         0.081           19/20/99         3         29         0.355           10/01/96         7         21         0.083           10/01/96         7         21         0.085           10/29/96         6         15         0.023           Verages (Flow Weighted)         19         0.139           Averages (Mathematical)         25         101         0.118	04/30/96         6         —         0.014         —           05/14/96         8         —         0.125         —           05/28/96         1         4         0.056         0.23           05/25/96         84         215         0.108         0.28           05/25/96         221         723         0.606         1.98           05/25/96         26         64         0.085         0.21           07/23/96         4         103         0.082         2.10           07/23/96         3         11         0.081         0.28           08/06/96         5         19         0.077         0.29           08/06/96         5         19         0.077         0.29           08/06/96         5         12         0.061         0.15           09/20/96         5         12         0.063         0.15           09/20/96         7         21         0.063         0.15           19/17/96         3         29         0.355         3.38           10/01/96         7         21         0.063         0.27           10/28/96         16         15         0.023         0	04/30/96	04/30/96	04/30/96   6	04/30/96 6	04/30/96	0.4/30/96   6     0.014         0.55/14/96   8     0.125         0.55/14/96   8     0.125         0.55/14/96   8   4   215   0.106   0.28   0.71   41,001   0.56/20/96   221   723   0.608   1.98   7.10   52,423   0.602/96   228   64   0.085   0.21   0.48   39,677   0.67/20/96   4   103   0.082   2.10   83,00   410,552   0.7/23/96   3   11   0.081   0.28   0.98   56,260   0.7/23/96   5   19   0.077   0.29   0.06   59,992   0.86/20/96   5   19   0.077   0.29   0.06   59,992   0.86/20/96   5   12   0.061   0.15   0.46   39,577   0.907/19/96   3   2.9   0.355   3.88   25,98   152,581   0.001/96   7   21   0.063   0.19   0.66   47,333   0.07/20/96   16   51   0.095   0.27   0.90   50,802   0.07/20/96   5   15   0.095   0.27   0.90   50,802   0.07/20/96   5   15   0.095   0.27   0.90   50,802   0.07/20/96   5   15   0.095   0.27   0.90   50,802   0.07/20/96   5   15   0.095   0.27   0.90   50,802   0.07/20/96   5   15   0.023   0.07   0.66   47,333   0.07/20/96   5   15   0.023   0.07   0.66   47,333   0.07/20/96   5   15   0.023   0.07   0.60   44,427   0.095   0.139   0.66   47,333   0.07/20/96   5   15   0.023   0.07   0.60   44,427   0.095   0.095   0.095   0.002   0.095   0.0	04/30/96   6     0.014

		Flows	for Shop Creek S	ite 1 (Measured)	<u>!</u>									
										:	:			-
				St	orm Runoff Vol	umes (cf)				Days		Storm	Davs	<u>-</u>
	Mor	nth .	1990	1991	1992	1995	1996	Total	Ave Annual		1990	1991	1992	1
									<u> </u>					
	<u>a</u>			_			-	. 0		31				<u> </u>
	Fe					_=		1 0	1	28 31				-
<del></del>	Ma		1,402,000	581,100	0	1,120,500	<u> </u>	3,103,600	•	30	2		0	i
	AF		823,000	788,000	313,400			5,794,548		31		7	9	_
-+	Ma Ju		156,000	720,100				3,953,127		30		12	9	_
- -	Ju		2,131,000	1,319,900		464,600		6,391,208		31	10		13	_
	Au	$\overline{}$	1,646,000	1,624,000				5,638,688		31	3	5	10	
-	Se		1,033,000	632,300	0	528,200	<del></del>			30	3	1	Õ	
	1 00		STATE OF THE STATE	314,100		185,500	227,206	726,806	i	31	1	4	_	
	No	$\overline{}$					143,488	143,468		30		_		i
	De							0		31		_	-	
_ !														
	Total Yearly Flows	(cf) =	7,191,000	5,977,500	4,357,400	6,364,300		30,091,768			22	44	41	
	Total Yearly Flows		165	137	100	148		691						
Ave T	Total Phosphorus (		0.533	0,358	0.448	0.879			0.502					_
ì	Total Phosphorus		239	133	122	270		764	153					
	Suspended Solids (		195	102	104	206	251		126					<u> </u>
	I Suspended Solid		87,541	38,063	28,291	81,847	97,066	235,742						
lotal S	Suspended Solids (	ons) =	44	19	14	41	49	118	24					-
		h1-4	Included Oct. 2,	ICO 4 steem in tak	d for month of	Cost bossus	o thorn wore o	alu 2 daye a	data in Oct					
_		Note:	Included Nov. 1,	1905 storm in tot	al for month of	Oct hacaus	s frame were on	u 1 days of d	ata in Nov					
			Storm flow volume	se for 1997L1992	and 1995 were	teken direct	v from the "Inte	mal LIDECE	Report on th	e Joint Sho	p Creek			
_			Pond-Wetland Sys							ic goint one	p Greek			
			measured gage of											
	· <del></del>		portion of the mor				1							
	<del> -</del>		polacii oi ale ille	127 110111 1112   20 (					1		_			
_	- 1									*** ** ***				
	<del>-  </del>		/		i				)					
T-	otal Monthly Base	Floure f	or Shop Creak Sil	4 (4.4	į									
			OI SHOW CHEEK SIL	e 7 (Measured)	į				1					
		i ioma i	or Shop Creek Sit											
		i ioma i		Base	Flow Runoff V					Days		Base Flo		
	Mon		1990		Flow Runoff V 1992	olumes (cf) 1995	1996	Total	Ave Annual	Days in Month	1990	Base Flo	w Days 1992	
-	Mon	th		Base			1996		Ave Annual	in Month				1
	Mon	th	1990	Base			1996	0	Ave Annual	in Month 31	1990			1
920	Mor Ja Fel	th		Base			1996	0	Ave Annual	in Month 31 28				1:
	Mor Jai Fel Ma	th n	1990	Base 1991	1992	1995		0 0	~	in Month 31 28 31		1991	1992	
The state of the s	Mor Jai Fei Ma	th o	1990	Base 1991 —————————————————————————————————	1992  925,344	1995 —- —— 1,101,514	=	0 0 0 4,442,429		in Month 31 28 31 30	  28	1991 ——————————————————————————————————	1992	
The state of the s	Mor Jai Fel Ma Ap	th o	1990  1,608,768 1,668,224	806,803 841,882	1992  925,344 678,586	1995  1,101,514 1,159,488	1,145,103	0 0 0 4,442,429 5,491,282		31 28 31 30 31		1991   23 24	1992  30 22	
The state of the s	Mor Jar Fel Ma App Ma	th  i  r  r  y	1990  1,608,768 1,668,224 1,668,224	806,803 841,882 631,411	925,344 678,586 647,741	1995 		0 0 0 4,442,429 5,491,282 5,054,738		31 28 31 30 31 30	28 29 29	1991 ——————————————————————————————————	1992  30 22 21	1:
	Mor Jai Fel Ma Ap Ma Jui	th	1990  1,608,768 1,668,224 1,668,224 1,206,578	806,803 841,882 831,411 806,803	925,344 678,586 647,741 555,206	1995 	1,145,103 949,674 1,177,860	0 0 0 4,442,429 5,491,282 5,054,738 5,311,754		31 28 31 30 31 30 31	28 29 29 21	1991  23 24 18 23	1992 ———————————————————————————————————	
	Mor Jai Fei Ma Ap Ma Jui Ju	th  i  i  y  i	1990 	806,803 841,882 631,411 806,803 912,038	925,344 678,588 647,741 555,206 647,741	1995 	1,145,103 949,674 1,177,880 1,143,703	0 0 0 4,442,429 5,491,282 5,054,738 5,311,754 5,819,585		31 28 31 30 31 30	28 29 29 21 28	1991  23 24 18 23 26	1992  30 22 21	1:
	Mor Jai Fei Ma Ap Ma Jui Jui Au	th  i  r  r  y  i  g	1990  1,608,768 1,668,224 1,668,224 1,206,578	806,803 841,882 631,411 806,803 912,038	925,344 678,586 647,741 555,206	1,101,514 1,159,488 1,159,488 1,595,309 1,507,334 1,449,380	1,145,403 949,874 1,177,880 1,143,703 963,512	0 0 4,442,429 5,491,282 5,054,738 5,311,754 5,819,585 5,906,802		31 28 31 30 31 30 31 30	28 29 29 21 28 27	1991 ——————————————————————————————————	1992  30 22 21 18 21	
	Mor Jai Fei Ma Ap Ma Ju Ju Au Se	th  or  r  y  th	1990 	806,803 841,882 631,411 806,803 912,038	925,344 678,588 647,741 555,206 647,741	1995 	1,145,403 949,874 1,177,880 1,143,703 963,512	0 0 0 4,442,429 5,491,282 5,054,738 5,311,754 5,819,585		31 28 31 30 31 30 31 30 31 31	28 29 29 21 28	1991  23 24 18 23 26	1992 ———————————————————————————————————	1:
	Mor Jav Fel Ma Ap Ma Jul Ju Au Se Occ	th  continued to the co	1990 	806,803 841,882 631,411 806,803 912,038	925,344 678,588 647,741 555,206 647,741	1,101,514 1,159,488 1,159,488 1,595,309 1,507,334 1,449,380	949,874 1,177,880 1,143,703 963,512 1,427,381 1,369,259	0 0 4,442,429 5,491,282 5,054,738 5,311,754 5,819,585 5,906,802 4,055,735		in Month  31 28 31 30 31 30 31 30 31 31 31 30	28 29 29 21 28 27	1991 ——————————————————————————————————	1992 ———————————————————————————————————	1!
	Mor Jai Fei Ma Ap Ma Ju Ju Au Se	th  continued to the co	1990 	806,803 841,882 631,411 806,803 912,038	925,344 678,588 647,741 555,206 647,741	1,101,514 1,159,488 1,159,488 1,595,309 1,507,334 1,449,380	949,874 1,177,880 1,143,703 963,512 1,427,381	0 0 4,442,429 5,491,282 5,054,738 5,311,754 5,819,585 5,906,802 4,055,735 1,369,259		in Month  31  28  31  30  31  30  31  31  30  31  30  31  30  31	28 29 29 21 28 27	1991 ——————————————————————————————————	1992 ———————————————————————————————————	1
	Mor Jav Fel Ma Ap Ma Jul Ju Au Se Occ	th	1990 	806,803 841,882 631,411 806,803 912,038	925,344 678,588 647,741 555,206 647,741	1,101,514 1,159,488 1,159,488 1,595,309 1,507,334 1,449,380	949,874 1,177,880 1,143,703 963,512 1,427,381 1,369,259	0 0 0 4,442,429 5,491,282 5,054,738 5,311,754 5,819,585 5,906,802 4,055,735 1,369,259 1,560,872		in Month  31  28  31  30  31  30  31  31  30  31  30  31  30  31	28 29 29 21 28 27	1991 ——————————————————————————————————	1992 ———————————————————————————————————	1!
	Mor  Jai Fel Ma Ap Ma Jui Jui Se Occ No	th  th  r  y  th  th  control  th  th  th  th  th  th  th  th  th  t	1,990 1,608,768 1,668,224 1,668,224 1,208,576 1,008,768 1,551,312	806,803 804,802 631,411 906,803 912,038 1,017,274 947,117	1992 	1,101,514 1,159,488 1,159,488 1,505,309 1,507,334 1,449,380 1,681,258	949,874 1,177,880 1,143,703 963,512 1,427,381 1,369,259	0 0 0 4,442,429 5,491,282 5,054,738 5,311,754 5,819,585 5,906,802 4,055,735 1,369,259 1,560,872		in Month  31  28  31  30  31  30  31  31  30  31  30  31  30  31	28 29 29 21 21 28 27 30	1991 	1992 	1!
	Mor	ttn  1	1,608,768 1,608,224 1,208,578 1,009,768 1,551,312	8ase 1991 —————————————————————————————————	1992 	1,101,514 1,159,488 1,159,488 1,595,339 1,507,334 1,449,380 1,681,258	949, 674 1,177,880 1,143,703 983,512 1,427,381 1,369,259 9,737,544 224 0,118	0 0 0 4,442,429 5,491,282 5,054,738 5,311,754 5,819,585 5,908,802 4,055,735 1,560,872	7,802,491 179 0.112	in Month  31  28  31  30  31  30  31  31  30  31  30  31  30  31	28 29 29 21 21 28 27 30	1991 	1992 	1:
	Mor  Jai  Fel  Ma  Ap  Ma  Jui  Au  Se  Oc.  No  De  Total Yearly Flows  Total Yearly Flows	ttn  1  1  1  1  1  1  1  1  1  1  1  1  1	1,608,768 1,668,224 1,668,224 1,208,578 1,008,768 1,551,312 	8ase 1991 —————————————————————————————————	1992 	1,101,514 1,159,488 1,159,488 1,595,309 1,507,334 1,449,380 1,681,258 9,623,750 221 0,111	949,874 1,177,880 1,143,703 963,512 1,427,381 1,369,259 9,737,544 224 0,118 72	0 0 0 4,442,429 5,491,282 5,054,738 5,311,754 5,819,585 5,906,802 4,055,735 1,369,259 1,560,872	7,802,491 179 0.112 40	in Month  31  28  31  30  31  30  31  31  30  31  30  31  30  31	28 29 29 21 21 28 27 30	1991 	1992 	1:
Ave T	Mor  Jai Fel Ma Ap Ma Jui Jui Se Oc No Do Total Yearly Flows Total Phosphorus (	tth	1,608,768 1,608,224 1,008,768 1,008,768 1,551,312  9,307,872 214 0,096 56	8ase 1991 —————————————————————————————————	1992 	1995	949,874 1,177,880 1,143,703 963,512 1,427,381 1,369,259 1,560,672 9,737,544 224 0,118 72 25	0 0 0 4,442,429 5,491,282 5,054,738 5,311,754 5,819,585 5,906,802 4,055,735 1,389,259 1,560,872 39,012,456 896	7,802,491 179 0.112 40	in Month  31  28  31  30  31  30  31  31  30  31  30  31  30  31	28 29 29 21 21 28 27 30	1991 	1992 	1:
Ave T Total S Tota	Mor  Jai Fei Ma Ap Ma Ap Ma Jui Au Se Occ No De Total Yearly Flows Total Phosphorus ( Total Phosphorus ( Total Phosphorus ( Total Phosphorus ( Total Suspended Solids ( Il Suspe	tth  Triple (af) = mg/l) = s (b) = c (b) = c (cf	1990 1,608,768 1,668,224 1,668,224 1,208,578 1,608,768 1,551,312 	8ase 1991 	1992 	1995	9,737,544 0,118 0,118 0,118 0,118 0,118 0,118 0,118 0,118	0 0 4,442,429 5,491,282 5,054,738 5,311,754 5,819,585 5,906,802 4,055,735 1,369,255 1,560,872 39,012,456 898	7,802,491 179 0.112 40 18 5,919	in Month  31  28  31  30  31  30  31  31  30  31  30  31  30  31	28 29 29 21 21 28 27 30	1991 	1992 	1
Ave T Total S Tota	Mor  Jai  Fel  Ma Ap  Ma Jui Ju Au Se Oc No De  Total Yearly Flows Total Yearly Flows Total Phosphorus (Total Phosphorus Cota	tth  Triple (af) = mg/l) = s (b) = c (b) = c (cf	1,608,768 1,608,224 1,008,768 1,008,768 1,551,312  9,307,872 214 0,096 56	8ase 1991 —————————————————————————————————	1992 	1995	9,737,544 0,118 0,118 0,118 0,118 0,118 0,118 0,118 0,118	0 0 0 4,442,429 5,491,282 5,054,738 5,311,754 5,819,585 5,906,802 4,055,735 1,389,259 1,560,872 39,012,456 896	7,802,491 179 0.112 40 18 5,919	in Month  31  28  31  30  31  30  31  31  30  31  30  31  30  31	28 29 29 21 21 28 27 30	1991 	1992 	1
Ave T Total S Tota	Mor  Jai Fei Ma Ap Ma Ap Ma Jui Au Se Occ No De Total Yearly Flows Total Phosphorus ( Total Phosphorus ( Total Phosphorus ( Total Phosphorus ( Total Suspended Solids ( Il Suspe	tth  1	1,608,768 1,608,224 1,208,578 1,009,768 1,551,312 	8ase 1991 —————————————————————————————————	1992	1,101,514 1,159,488 1,159,488 1,595,339 1,507,334 1,449,380 1,681,258 9,623,750 221 0.111 67 33.9 20,387	949,874 1,177,880 1,143,703 963,512 1,427,381 1,369,259 1500,73 9,737,544 224 0,118 72 25 15,162	0 0 0 4,442,429 5,491,822 5,054,738 5,311,754 5,819,585 5,906,802 4,055,735 1,369,258 1,560,872 39,012,456 898 ——————————————————————————————————	7,802,491 179 0.112 40 18 5,919	in Month  31  28  31  30  31  30  31  30  31  31  30  31  31	28 29 29 21 28 27 30 30	1991 	1992 	1
Ave T Total S Tota	Mor  Jai Fei Ma Ap Ma Ap Ma Jui Au Se Occ No De Total Yearly Flows Total Phosphorus ( Total Phosphorus ( Total Phosphorus ( Total Phosphorus ( Total Suspended Solids ( Il Suspe	tth  y  y  t  t  t  f  f  f  f  f  f  f  f  f  f	1990 1,608,768 1,668,224 1,668,224 1,206,578 1,609,768 1,551,312 	Base 1991	1992  925,344 678,588 647,741 555,206 647,741 925,344  101 0.074 20 1.0 273 0 entrations (mg/l	1995	9,737,544 0,118	0 0 4,442,429 5,491,282 5,491,282 5,5054,738 5,311,754 5,819,585 5,906,802 4,055,735 1,369,259 1,560,872 39,012,456 896 ——————————————————————————————————	7,802,491 179 0.112 40 18 5,919 3	in Month  31 28 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31	28 29 29 21 28 27 30	1991 	1992 	1
Ave T Total S Tota	Mor  Jai Fei Ma Ap Ma Ap Ma Jui Au Se Occ No De Total Yearly Flows Total Phosphorus ( Total Phosphorus ( Total Phosphorus ( Total Phosphorus ( Total Suspended Solids ( Il Suspe	tth  r r r y y t t t t t t t t t t t t t t	1990	8ase 1891	1992	1995	949,874 1,177,880 1,143,703 983,512 1,427,381 1,369,259 9,737,544 224 0,118 72 255 15,182 8 directly from the low volumes for	0 0 0 0 4,442,429 5,491,282 5,054,738 5,311,754 5,819,585 5,908,802 4,055,735 1,369,258 1,560,872 39,012,456 896 201 29,593 15	7,802,491 179 0,112 40 18 5,919 3 DFCD Repor	in Month  31 28 31 30 31 30 31 30 31 30 31 30 31 on the Join ted based of	28 29 29 21 21 28 27 30	1991	1992 	1
Ave T Total S Tota	Mor  Jai Fei Ma Ap Ma Ap Ma Jui Au Se Occ No De Total Yearly Flows Total Phosphorus ( Total Phosphorus ( Total Phosphorus ( Total Phosphorus ( Total Suspended Solids ( Il Suspe	th  c c c c c c c c c c c c c c c c c c c	1990  1,608,768 1,668,224 1,668,224 1,208,576 1,008,768 1,551,312  9,307,872 214 0.096 56 9,0 5,230 3 For 1990-1995, T Pond-Wetland Sy average base flow	8ase 1991	1992	1,101,514 1,159,488 1,159,488 1,505,309 1,507,334 1,449,360 2,11 0,111 67 33,9 20,367 10 10 10 10 10 10 10 10 10 10 10 10 10	949,874 1,177,880 1,143,703 963,512 1,427,381 1,369,259 9,737,544 224 0,118 72 25 15,162 8 directly from the low yolumes for For May 1996	0 0 0 4,442,429 5,491,825 5,054,738 5,311,754 5,819,585 5,906,802 4,055,735 1,369,259 1,560,872 201 201 29,593 15 e "Internal U or 1990-1998", flow data v	7,802,491 179 0.112 40 18 5,919 3 DFCD Repor	in Month  31 28 31 30 31 30 31 30 31 30 31 30 31 on the Join ted based of	28 29 29 21 21 28 27 30	1991	1992 	1
Ave T Total S Tota	Mor  Jai Fei Ma Ap Ma Ap Ma Jui Au Se Occ No De Total Yearly Flows Total Phosphorus ( Total Phosphorus ( Total Phosphorus ( Total Phosphorus ( Total Suspended Solids ( Il Suspe	th  y  y  t  t  y  t  t  v  c  (cf) = (ef) =	1,608,768 1,608,768 1,668,224 1,008,768 1,651,312 	8ase 1991	1992  925,344 678,588 647,741 555,206 647,741 925,344 101 0.074 20 1.0, 273 0 entrations (mg/la* a* updated in *by UDFCD (see	1,101,514 1,159,488 1,159,488 1,595,309 1,507,334 1,449,380 1,681,258 9,623,750 221 0,111 67 33,9 20,367 10 ) were taken of 12/96. Base five section D), we data was on was of the section D.	949,874 1,177,880 1,143,703 963,512 1,427,381 1,369,259 1,500,72 9,737,544 224 0,118 72 25 15,162 8 directly from the low volumes for For May 1996 nly available from yavailable from the low volumes for for May 1996 nly available from the low volumes for for May 1996 nly available from the low volumes for for May 1996	0 0 0 4,442,429 5,491,282 5,054,738 5,311,754 5,819,585 5,906,802 4,055,735 1,369,259 1,560,872 39,012,456 898 ——————————————————————————————————	7,802,491 179 0.112 40 18 5,919 3 DFCD Repor	in Month  31 28 31 30 31 30 31 30 31 30 31 30 31 do not the Joint led based dable for the	28 29 29 21 21 28 27 30	1991	1992 	1
Ave T Total S Tota	Mor  Jai Fei Ma Ap Ma Ap Ma Jui Au Se Occ No De Total Yearly Flows Total Phosphorus ( Total Phosphorus ( Total Phosphorus ( Total Phosphorus ( Total Suspended Solids ( Il Suspe	tth    1	1990  1,608,768 1,668,224 1,668,224 1,208,576 1,008,768 1,551,312  9,307,872 214 0.096 56 9,0 5,230 3 For 1990-1995, T Pond-Wetland Sy average base flow	8ase 1891	1992  925,344 676,586 647,741 555,206 647,741 925,344  101 0.074 20 1.0 273 0 entrations (mg/l e" updated in 'by UDFCD (se r Dec 1998, floo	1995  1,101,514 1,159,488 1,159,488 1,555,309 1,507,334 1,449,360 1,681,258 9,623,750 221 0.111 67 33.9 20,387 10 ) were takan of 12/96. Base file section Dj. w data was out old Dec were e	949, 874 1,177,880 1,143,703 983,512 1,427,381 1,369,259 9,737,544 0,118 72 24 0,118 72 15,162 8 directly from the low volumes for For May 1996 nly available from strimated base	0 0 0 4,442,429 5,491,282 5,054,738 5,311,754 5,819,585 5,906,802 4,055,735 1,369,259 1,560,872 39,012,456 898 ——————————————————————————————————	7,802,491 179 0.112 40 18 5,919 3 DFCD Repor	in Month  31 28 31 30 31 30 31 30 31 30 31 30 31 do not the Joint led based dable for the	28 29 29 21 21 28 27 30	1991	1992 	1

			• т	otal Runoff Vol	umes (cf)		:		. :		-		+
. :	Month	1990	1991	1992	1995	1996	Total	Ave Annual	<del>' '</del>		-		
	Wighter				1	72.00		Tree Timinga	1				+-
	jan						0	ıl .			<del>:                                    </del>		_
	Feb	_					. 0	ı i				,	_
	Mar						0	<del></del>	1				+
	Apr	3,010,768	1,387,903	925,344	2,222,014		7,546,029						i
<u> </u>	May	2,489,224				2,631,951			· :				
	Jun	1,822,224				1,871,801	7,138,064						
	Jul	3,337,576				1,989,268			i I		1		
	Aug	3,254,768				1,607,591			:				+
	Sep	2,584,312				3,110,335			i		1		Í
	Oct		1,261,217		1,866,758	1,654,567							
	Nov		1,201,217			1,512,727	0,127,07		<del>-</del>				_
	Dec					7,0 (2,727	0				1		
								!	·				<del>-</del>
Total Ves	rly Flows (cf) =	16,498,872	11,940,828	8,737,362	15,988,050	14.378 240	53.185.112	10,633,022					+
	rly Flows (cr) =	379		201	367	330	1,221	244	+				+
Ave Total Phosp		0.286		0,261	0.337	0.279	1,221	0.366	+	—· · · —	<del>                                     </del>		+
	osphorus (lb) =	295	191	142		251	1,215		<del></del>		-		+-
Total Suspended		90		52	102	125	1,210	114	,,		<u> </u>		
Total Suspended		92,770		28,564		112,228	377,563				<del> </del> -		1-
Total Suspended		46	21	14		56	189	38					<del>-</del>
	SS Removal =	40	21	14	31	- 30	103	36			i		-
70 10	S Keliloval =	-	1										+
						·							-
		( Ob O (. O	14 - 4 15 -41 4 - 41										_
? otal Month	ly Storm Flows	for Shop Creek S	ite 1 (Estimated)										
									$\longrightarrow$				
											1 1		
		and the circumstances	- 01	D					2		LL . D -1-4-11		_
		4000		orm Runoff Vol		4005				erage Mont			
	Month	1990	1991	nm Runoff Vol 1992	umes (cf) 1995	1996	Total	Ave Annual	Denver Av (ft)	erage Mont (in)	thly Rainfall (% of total)		
	1.1.1.10.10.10.10.10.10		1991	1992	1995				(ft)	(in)	(% of total)		
	Jan	293,277	1991 228,850	1992	1995 238,314	152,047	1,085,180		(ft) 0,0360	(in) 0.43	(% of total)		
	Jan Feb	293,277 354,377	1991 228 880 270,481	1992 1777/742 214/735	1995 288,314 287,982	152,047 183,723	1,085,180 1,311,259		0.0360 0.0435	(in) 0.43 0.52	(% of total) 2.8% 3.4%		
	Jan Feb Mar	293,277 354,077 903,983	1991 223,850 270,461 880,920	1992 177,712 214,735 524,744	1995 238,314 287,962 703,687	152,047 183,723 448,980	1,085,180 1,311,259 3,204,294		0.0360 0.0435 0.1063	(in) 0.43 0.52 1.28	2.8% 3.4% 8.4%		
	Jan Feb Mar Apr	293.277 354.577 965.983 1,402,000	1991 223,830 270,461 880,920 581,100	1992 177.712 214.736 524.744 0	1995 238,314 287,962 703,687 1,120,500	152,047 183,723 448,980 580,038	1,085,180 1,311,259 3,204,294 3,663,638		0.0360 0.0435 0.1063 0.1326	(in) 0.43 0.52 1.28 1.59	2.8% 3.4% 8.4% 10.5%		
	Jan Feb Mar Apr May	293,277 354,577 965,983 1,402,000 823,000	1991 223,850 270,461 680,520 581,100 786,000	1992 177,712 214,735 524,744 0 313,400	1995 238,314 287,962 703,387 1,120,500 2,385,300	152,047 183,723 448,960 580,038 1,486,848	1,085,180 1,311,259 3,204,294 3,663,638 5,794,548		0.0360 0.0435 0.1063 0.1326 0.2494	(in) 0.43 0.52 1.28 1.59 2.99	(% of total) 2.8% 3.4% 8.4% 10.5% 19.7%		
	Jan Feb Mar Apr May Jun	293,277 354,977 965,983 1,402,000 823,000 158,000	1991 223,850 270,461 880,520 581,100 786,000 720,100	1992 177/712 214/735 \$24/744 0 313,400 848,400	236,314 287,952 703,687 1,120,500 2,385,300 1,308,700	152,047 183,723 448,980 580,038 1,486,848 921,927	1,085,180 1,311,259 3,204,294 3,663,638 5,794,548 3,953,127		0.0360 0.0435 0.1063 0.1326 0.2494 0.1495	(in) 0.43 0.52 1.28 1.59 2.99 1.79	(% of total)  2.8% 3.4% 8.4% 10.5% 19.7% 11.8%		
	Jan Feb Mar Apr May Jun Jul	203,277 354,377 963,983 1,402,000 823,000 158,000 2,131,000	1991 223,880 270,481 880,920 581,100 786,000 720,100 1,319,900	1992 177,712 214,735 \$24,744 0 313,400 848,400 1,664,300	238,314 287,962 703,887 1,120,500 2,385,300 1,308,700 464,600	152,047 183,723 448,980 560,038 1,486,848 921,927 811,408	1,085,180 1,311,259 3,204,294 3,663,638 5,794,548 3,953,127 6,391,208		0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228	(in) 0.43 0.52 1.28 1.59 2.99 1.79	(% of total)  2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7%		
	Jan Feb Mar Apr May Jun Jul Aug	293 277 354:577 995 983 1,402,000 823,000 158,000 2,131,000 1,646,000	1991 228,880 270,481 880,920 581,100 786,000 720,100 1,319,900 1,624,000	1992 177,712 214,735 324,744 0 313,400 846,400 1,664,300 1,533,300	1995 236,514 287,952 703,587 1,120,500 2,385,300 1,308,700 464,600 371,500	152,047 183,723 448,950 950,038 1,486,848 921,927 811,408 463,888	1,085,180 1,311,259 3,204,294 3,663,638 5,794,548 3,953,127 6,391,208 5,638,688		(ft) 0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190	(in)  0.43  0.52  1.28  1.59  2.99  1.79  1.47	(% of total)  2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4%		
	Jan Feb Mar Apr May Jun Jul Aug Sep	293.277 354.377 955.983 1,402,000 823,000 155,000 2,131,000 1,646,000 1,033,000	1991 228,880 270,481 880,920 581,100 786,000 720,100 1,319,900 1,624,000 632,300	1992 17/712 214 736 824 744 0 313,400 846,400 1,664,300 1,533,300	1995 238,314 287,962 703,687 1,120,500 2,385,300 1,308,700 464,600 371,500 528,200	152,047 183,723 448,950 560,038 1,486,848 921,927 811,408 463,888 2,146,823	1,085,180 1,311,259 3,204,294 3,663,638 5,794,548 3,953,127 6,391,208 5,638,688 4,340,323		(ft) 0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094	(in) 0.43 0.52 1.28 1.59 1.79 1.47 1.43	(% of total) 2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6%	No.	
	Jan Feb Mar Apr May Jun Jul Aug Sep	283 277 3543277 645 883 1,402,000 823,000 158,000 2,131,000 1,646,000 1,033,000	1991 228,880 270,481 880,920 581,100 786,000 720,100 1,319,900 1,624,000 632,300 314,100	1992 177,712 214,733 524,744 0 313,400 846,400 1,664,300 1,533,300 0	1995 238,314 287,562 703,487 1,120,500 2,385,300 1,308,700 464,600 371,500 528,200 185,500	152,047, 163,723 448,920 530,036 1,486,848 921,927 811,408 463,888 2,146,823 227,206	1,085,180 1,311,259 3,204,294 3,663,638 5,794,548 3,953,127 6,391,208 5,638,688 4,340,323 1,756,441		(ft) 0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31	(% of total) 2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.8% 6.2%		
	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov	293,277 354,377 905,983 1,402,000 823,000 158,000 2,131,000 1,646,000 1,033,000 641,107 572,706	1991 223,850 270,881 880,920 581,100 720,100 1,319,900 1,624,000 632,300 314,100	1992 177712 214,735 \$24744 0 313,400 846,400 1,664,300 1,533,300 0 388,856 347,032	1995 238:314 287:962 703:087 1,120,500 2,385,300 464,600 371,500 528,200 185,500	152,047 18,723 44,920 580,038 1,486,848 921,927 811,408 463,888 2,146,823 227,206 143,488	1,085,180 1,311,259 3,204,294 3,663,638 5,794,548 3,953,127 6,391,208 5,638,688 4,340,323 1,756,441 1,965,669		(ft)  0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787	(in) 0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94	(% of total) 2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 6.8% 6.2% 5.6%		
	Jan Feb Mar Apr May Jun Jul Aug Sep	283 277 3543277 645 883 1,402,000 823,000 158,000 2,131,000 1,646,000 1,033,000	1991 228,880 270,481 880,920 581,100 786,000 720,100 1,319,900 1,624,000 632,300 314,100	1992 177,712 214,733 524,744 0 313,400 846,400 1,664,300 1,533,300 0	1995 238,314 287,562 703,487 1,120,500 2,385,300 1,308,700 464,600 371,500 528,200 185,500	152,047 18,723 44,920 580,038 1,486,848 921,927 811,408 463,888 2,146,823 227,206 143,488	1,085,180 1,311,259 3,204,294 3,663,638 5,794,548 3,953,127 6,391,208 5,638,688 4,340,323 1,756,441		(ft) 0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31	(% of total) 2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.8% 6.2%		
	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	293,277 354,377 655,983 1,402,000 823,000 155,000 2,131,000 1,645,000 1,033,000 641,137 57,2706 585,334	1991 228 850 279,451 840,522 581,100 720,100 1,319,900 622,300 314,100 437,043 254,043	1992 177/12 214/3-5 524/44 0 313,400 846,400 1,664,300 1,533,300 0 386,165 347,032 233,844	1995 238,314 287,962 703,687 1,120,500 1,308,700 464,800 571,500 528,200 185,500 495,374 315,116	152,047 18,723 44,960 580,038 1,486,848 921,927 811,408 463,888 2,146,823 227,206 143,488 189,772	1,085,180 1,311,259 3,204,294 3,663,638 5,794,548 3,953,127 6,391,208 5,638,688 4,340,323 1,756,441 1,965,669 1,425,805		(ft) 0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84	(% of total)  2.8% 3.4% 8.4% 10.5% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%		
	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	293,277 354,577 605,983 1,402,000 823,000 156,000 2,131,000 1,046,000 1,033,000 641,137 572,706 385,334	1991 223 859 270,481 880,920 581,100 786,000 720,100 1,319,900 1,024,000 632,300 314,100 457,060 2,044,088	1992 177712 214735 \$24744 0 313,400 849,400 1,684,300 1,533,300 384,43 347,032 233,844 8,243,816	1995 238;314 287,952 703,887 1,120,500 2,385,300 1,308,700 464,600 371,500 528,200 185,500 495,374 313,118	152,047 183,723 248,959 280,038 1,488,848 921,927 811,408 463,888 2,148,823 227,206 143,468 189,772	1,085,180 1,311,259 3,204,294 3,663,638 5,794,548 3,953,127 6,391,208 5,638,688 4,340,323 1,756,441 1,965,669 1,425,805	8,108,036	(ft)  0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787	(in) 0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94	(% of total)  2.8% 3.4% 8.4% 10.5% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%		
	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	293,277 354,377 655,983 1,402,000 823,000 155,000 2,131,000 1,645,000 1,033,000 641,137 57,2706 585,334	1991 228 850 279,451 840,522 581,100 720,100 1,319,900 622,300 314,100 437,043 254,043	1992 177,712 214,735 324,744 313,400 846,400 1,664,300 0,384,143 347,032 233,94 6,243,816	1995 288,314 277,962 703,687 1,120,500 2,385,300 1,308,700 464,600 528,200 185,500 465,374 313,118 8,372,755	152,047 183,723 448,950 580,038 1,486,848 921,927 811,408 463,888 2,146,823 227,006 143,488 189,772 7,746,107	1,085,180 1,311,259 3,204,294 3,663,638 5,794,548 3,953,127 6,391,208 5,638,688 4,340,323 1,756,441 1,965,669 1,425,805	8,108,036 186	(ft) 0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84	(% of total)  2.8% 3.4% 8.4% 10.5% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%		
	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	293,277 354,577 605,983 1,402,000 823,000 156,000 2,131,000 1,046,000 1,033,000 641,137 572,706 385,334	1991 223 859 270,481 880,920 581,100 786,000 720,100 1,319,900 1,024,000 632,300 314,100 457,060 2,044,088	1992 177712 214735 \$24744 0 313,400 849,400 1,684,300 1,533,300 384,43 347,032 233,844 8,243,816	1995 238;314 287,952 703,887 1,120,500 2,385,300 1,308,700 464,600 371,500 528,200 185,500 495,374 313,118	152,047 183,723 448,949 580,038 1,486,848 921,927 811,408 463,888 227,206 143,458 189,772 7,746,107 178 0,462	1,085,180 1,311,259 3,204,294 3,663,638 5,794,548 3,953,127 6,391,208 5,638,688 4,340,323 1,756,441 1,965,669 1,425,805	8,106,036 186 0.502	(ft) 0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84	(% of total)  2.8% 3.4% 8.4% 10.5% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%		
Total Year Ave Total Phosp	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	293.277 354.377 905.983 1,402,000 823,000 158,000 2,131,000 1,646,000 1,033,000 641,137 572,708 585,338	1991 223,850 277,461,860,920 581,100 786,000 720,100 1,1224,000 632,300 314,100 317,083	1992 177,712 214,735 324,744 313,400 846,400 1,664,300 0,384,143 347,032 233,94 6,243,816	1995 288,314 277,962 703,687 1,120,500 2,385,300 1,308,700 464,600 528,200 185,500 465,374 313,118 8,372,755	152,047 183,723 448,950 580,038 1,486,848 921,927 811,408 463,888 2,146,823 227,006 143,488 189,772 7,746,107	1,085,180 1,311,259 3,204,294 3,663,638 5,794,548 3,953,127 6,391,208 5,638,688 4,340,323 1,756,441 1,965,669 1,425,805	8,108,036 186 0.502 254	(ft) 0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84	(% of total)  2.8% 3.4% 8.4% 10.5% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%		
Total Year Ave Total Phosp Total Pho	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec rly Flows (cf) = rly Flows (af) = rly provs	293, 277 354, 377 625, 983 1,402,000 823,000 156,000 2,131,000 1,646,000 1,033,000 641,137 572,706 383,334 10,303,814 237 0.533	1991 223,850 279,461 860,920 581,100 720,100 1,319,900 632,300 314,100 437,665 294,088 7,883,888 181 0,358	1992 17/712 214/35 524/44 0 313,400 846,400 1,664,300 0 388,456 347/032 223,494 8,243,616 143 0,448	1995 238,314 237,963 703,687 1,120,500 2,385,300 1,308,700 464,600 371,500 528,200 185,500 455,374 313,118 8,372,755 192 0,679	152,047 183,723 448,949 580,038 1,486,848 921,927 811,408 463,888 227,206 143,458 189,772 7,746,107 178 0,462	1,085,180 1,311,259 3,204,294 3,663,638 5,794,548 3,953,127 6,391,208 5,638,688 4,340,323 1,756,441 1,965,669 1,425,805	8,106,036 186 0.502	(ft) 0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84	(% of total)  2.8% 3.4% 8.4% 10.5% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%		
Total Year Ave Total Phosp Total Pho	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  fly Flows (cf) = fly Flows (af) = shorus (lb) = Sophorus (lb) = Solids (mg/l)	283,277 354,577 605,983 1,402,000 823,000 155,000 2,131,000 1,045,000 1,033,000 641,137 57,706 S85,334 10,303,814 237 0,533	1991  223 850 270,451 640 521 581,100 786,000 720,100 1,319,900 1,323,000 314,100 457,040 234,048 7,883,888 181 0,356 175	1992 177/12 214/35 524/44 0 313,400 1,664,300 1,533,300 0 388,45 347,032 233,584 6,243,616 143 0,448 175	1995 238,314 287,962 703,687 1,120,500 1,308,700 464,800 371,500 528,200 185,500 185,500 185,500 195,374 315,118 8,372,755 192 0,679	152,047 183,723 448,959 580,038 1,486,848 921,927 811,408 463,888 2,146,823 227,206 143,468 189,772 7,746,107 178 0,462 223	1,085,180 1,311,259 3,204,294 3,663,638 5,794,548 3,953,127 6,391,208 5,638,688 4,340,323 1,756,441 1,965,669 1,425,805 40,630,180 930	8,106,036 186 0.502 254 178	(ft) 0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84	(% of total)  2.8% 3.4% 8.4% 10.5% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%		
Ave Total Phosp Total Phosp Total Suspended Total Suspended	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec fly Flows (cf) = thy Flows (af) = sphorus (mg/l) = sollds (mg/l) = ad Sollds (b) =	293,277 354,577 965,983 1,402,000 823,000 1,56,000 2,131,000 1,045,000 1,033,000 641,137 572,700 385,338 10,303,814 237 0.533 343	1991  223 857 270,451 880,920 581,100 786,000 720,100 1,319,900 1,624,000 632,300 314,100 437,050 204,088 181 0,356 175 102	1992 177712 214735 \$24744 0 313,400 846,400 1,664,300 1,533,300 0 38,463 347,032 233,844 8,243,616 143 0,448 175 104	1995 238;314 287,952 703,887 1,120,500 2,385,300 1,308,700 464,600 371,500 185,500 495,374 313,118 8,372,755 192 0,679 355 206	152,047 183,723 248,929 280,038 1,486,848 921,927 811,408 463,888 2,146,823 227,206 143,488 189,772 7,746,107 178 0,462 223 251	1,085,180 3,204,294 3,683,638 5,794,548 3,953,127 6,391,208 5,638,688 4,340,323 1,758,441 1,965,669 1,425,805 40,530,180	8,106,036 186 0.502 254 178	(ft) 0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84	(% of total)  2.8% 3.4% 8.4% 10.5% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%		
Ave Total Phosp Total Phosp Total Phosp Total Suspended	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec fly Flows (cf) = thy Flows (af) = sphorus (mg/l) = sollds (mg/l) = ad Sollds (b) =	293.277 354.377 905.983 1,402,000 823,000 158,000 2,131,000 1,033,000 641,137 572.703 515.334 10,303,814 237 0.533 343 195	1991 223,850 277,461 860,920 581,100 786,000 720,100 1,319,900 632,300 314,100 437,626 201,988 7,883,888 181 0,356 175 102 50,075	1992 17/112 214/3-5 524/44 313,400 846,400 1,684,300 0,388,456 347/032 233,894 8,243,816 143 0,448 175 104 40,537	1995 23B,343 237,963 703,687 1,120,500 2,385,300 1,308,700 464,600 528,200 185,500 465,374 313,118 8,372,755 192 0,679 355 206 107,677	152,047 183,723 448,920 580,038 1,486,848 921,927 811,408 463,888 2,146,823 227,206 143,488 163,772 7,746,107 178 0,462 223 251 121,241	1,085,180 1,311,259 3,204,294 3,683,633 5,794,548 3,953,127 6,391,208 5,638,688 4,340,323 1,756,441 1,965,669 1,425,805 40,530,180 930 1,271 444,965	8,108,038 186 0.502 254 176 88,993	(ft) 0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84	(% of total)  2.8% 3.4% 8.4% 10.5% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%		
Total Year Ave Total Phosp Total Phosp Total Suspended Total Suspended Total Suspended	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec rly Flows (cf) = rly Flows (af) = shorus (mg/l) = shorus (b) = solids (mg/l) = ad Solids (lons) =	293,277 354,577 605,983 1,402,000 823,000 156,000 2,131,000 1,046,000 1,033,000 641,137 572,706 385,334 10,303,814 237 0.533 343 195 125,435	1991  223 850 270,481 880,920 581,100 720,100 1,319,900 1,624,000 314,100 357,083 264,063 7,883,888 181 0,356 175 102 50,075	1992 177,742 214,735 \$24,744 0 313,400 849,400 1,664,300 1,533,300 0 388,405 347,032 233,848 6,243,616 143 0,448 175 104 40,537 20	1995 235;314 287,952 703,887 1,120,5000 2,385,300 1,308,700 464,800 371,500 185,500 185,500 185,500 185,374 313,118 8,372,755 192 0,679 355 206 107,677 54	152,047 183,723 248,959 380,138 1,488,848 921,927 811,408 463,888 2,148,823 227,206 143,468 369,772 7,746,107 178 0.462 223 251 121,241 61	1,085,180 3,204,294 3,683,633 5,794,548 3,953,127 6,391,208 5,638,688 4,340,323 1,758,441 1,965,669 1,425,805 40,630,180 930 ——————————————————————————————————	8,108,036 186 0.502 254 176 88,993 44	(ft) 0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84	(% of total)  2.8% 3.4% 8.4% 10.5% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%		
Total Year Ave Total Phosp Total Phosp Total Suspended Total Suspended Total Suspended	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  fly Flows (cf) = fly Flows (af) = shorus (mg/l) = sophorus (bg) Solids (mg/l) = solids (tons) = Note:	293.277 354.377 905.983 1,402,000 823,000 158,000 2,131,000 1,033,000 641,137 572.703 515.334 10,303,814 237 0.533 343 195	1991  228 850 277 481 860,920 581,100 786,000 720,100 1,319,900 314,100 337,883,888 181 0,358 175 102 50,075 25	1992 177,712 214,735 324,744 0 313,400 848,400 1,684,300 0,384,63 347,032 233,94 8,243,616 143 0,448 175 104 40,537 20 paded backgro	1995 235;314 287,952 703,887 1,120,5000 2,385,300 1,308,700 464,800 371,500 185,500 185,500 185,500 185,374 313,118 8,372,755 192 0,679 355 206 107,677 54	152,047 183,723 248,959 380,138 1,488,848 921,927 811,408 463,888 2,148,823 227,206 143,468 369,772 7,746,107 178 0.462 223 251 121,241 61	1,085,180 3,204,294 3,683,633 5,794,548 3,953,127 6,391,208 5,638,688 4,340,323 1,758,441 1,965,669 1,425,805 40,630,180 930 ——————————————————————————————————	8,108,036 186 0.502 254 176 88,993 44	(ft) 0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84	(% of total)  2.8% 3.4% 8.4% 10.5% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%		
Total Year Ave Total Phosp Total Phosp Total Phosp Total Suspended Total Suspended Total Suspended	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  fly Flows (cf) = fly Flows (af) = shorus (mg/l) = sophorus (bg) Solids (mg/l) = solids (tons) = Note:	293,277 354,377 965,963 1,402,000 823,000 156,000 2,131,000 1,046,000 1,033,000 641,137 572,706 385,338 10,303,814 237 0,533 343 195 125,435 63	1991  228 850 277 481 860,920 581,100 786,000 720,100 1,319,900 314,100 337,883,888 181 0,358 175 102 50,075 25	1992 177,712 214,735 324,744 0 313,400 848,400 1,684,300 0,384,63 347,032 233,94 8,243,616 143 0,448 175 104 40,537 20 paded backgro	1995 235;314 287,952 703,887 1,120,5000 2,385,300 1,308,700 464,800 371,500 185,500 185,500 185,500 185,374 313,118 8,372,755 192 0,679 355 206 107,677 54	152,047 183,723 248,959 380,138 1,488,848 921,927 811,408 463,888 2,148,823 227,206 143,468 369,772 7,746,107 178 0.462 223 251 121,241 61	1,085,180 3,204,294 3,683,633 5,794,548 3,953,127 6,391,208 5,638,688 4,340,323 1,758,441 1,965,669 1,425,805 40,630,180 930 ——————————————————————————————————	8,108,036 186 0.502 254 176 88,993 44	(ft) 0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84	(% of total)  2.8% 3.4% 8.4% 10.5% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%		

	- ORDER SAIDING	ing Desc Flows	for Shop Creek Si	- ( Lauriateu)						:		1	1	-
			Assumed % of	winter (unmeasur	red) base flows	ş				i				
i	İ			ummer (measured			(value calibra	ted to averag	ge Denver pro	cipitation)	į	į		
								I						
							L	İ				i .		
		Ī			Flow Runoff V					<u> </u>		į.		
		Month	1990	1991	1992	1995	1996	Total	Ave Annual			!		
				: ! !cvascarease market market market market market market market market market market market market market market	near time of the property of the contract of t	COLUMN DO ACTUAL DESCRIPTION	i   	]	1		:	1		
		Jan	1,039,979	570,778	489,098	921,130	815,519					<u> </u>		1
		Feb	1,039,379	570,778	489,096	021,130	815,618	3,835,900		İ	L · ·		<u> </u>	
		Mar	1,039,379	570,776	489,098	921,130	815,519	3,835,900						
		Арг	1,608,788	806,803	925,344	1,101,514				!	i			-
		May	1,666,224	841,882	678,586	1,159,488	1,145,103	5,491,282		į .				-
		Jun	1,666,224	831,411	647,741	1,159,488	949,874	5,054,738						
		Jul	1,206,578	806,803	555,206	1,565,309	1,177,860	5,311,754					ļ	
		Aug	1,608,768	912,038	547,741	1,507,334	1,143,703	5,819,585				1	1	
		Sep	1,551,312	1,017,274	925,344	1,449,360	963,512	5,906,802			1	i	1	-
		Oct	1,059,379	947,117	ABB CBB	1,681,258	1,427,361	5,584,210			~			
		Nov	1,039,379	570,776	489.096	921,130	1,369,259	4,389,640						
j		Dec	1,039,379	570,776	489,098	921,130	1,560,872	4,581,253						
		L												
		arly Flows (cf) =	15,544,148		7,314,536				11,780,982					
		arly Flows (af) ≂	357	202	168	327	298	1,352	270			ļ	1	
Ave		phorus (mg/l) =	0.096	0.156	0.074	0.111	0.118		0.111			1		
		osphorus (lb) =	93	86	34	99	96	407	81					1
		d Solids (mg/l) =		10.0	1.0		25		18				ļ	
		led Solids (lb) =		5,504	457	30,114	20,241	65,050	13,010					
Total	Suspended	Solids (tons) =	4	3	0	15	10	33	7					
		Note:	Base flow volume				stimated assur	ning 67% of	he average					
			monthly base flow	v for the measure	d months (sum	mer).								
			,		****									
	Total Monti	nly Storm and B	ase Flows for Sho	p Creek Site 1 (E	stimated)									
~ ~														l
			***	To	tal Runoff Volu	ımes (cf)								
		Month	1990	1991	1992	1095	1996	Total	Ave Annual					
		1,,,,,,,												
		Jan	1,332,658	794,608	686,808	1,159,444	967,586	4,921,080						
		Feb	1,393,758		703,831	1,209,093	999,242							
		Mar	1,905,362	1,231,695	1,013,840		1,264,479							
		Apr	3,D10,768	1,387,903	925,344		1,375,557							
$\overline{}$		May	2,489,224		991,986			11,285,830						1
$\overline{}$			1,822,224		1,494,141	2,468,188	1,871,801							
		Jun			2,219,506			11,702,982		~ <del></del>				1
		Jul	3,337,576		2,181,041			11,458,273				<del> </del>	<del> </del>	+
		Aug	3,254,768											+
		Sep	2,584,312		925,344			10,247,125				<del> </del>	1	_
		Oct	1,680,516		877,594								<u> </u>	-
i		Nov	1,612,085		836,128		1,512,727							
		Dec	1,424,713	864,883	722,590	1,234,248	1,760,644	6,007,058						-
				40.004.004	40 550 450	50 000 457	00 745 700	00 405 000	40.007.049					_
		arly Flows (cf) =	25,847,960		13,558,152				19,887,018				-	
		arly Flows (af) =		383	311	519	476	2,283	457					
Ave		phorus (mg/l) =	0.270		0.246		0.247	4 070	0.270					+
		nosphorus (lb) =		261	208		319	1,678					1	<u> </u>
		Solids (mg/l) =		53	48	98	109	F10 01-	102 002		-			-
***		led Solids (lb) =			40,994	- 00	141,482	510,015					-	-
Total	Suspended	Solids (tons) =	67	28	20	69	71	255	51					
											_	-		1
														1
														-
	Summary of	of Measured Infl	ow Loads (Shop (	reek Site 1)										1
			L	L			4000	1.4555				1		-
	Monitoring	period generally	y April through Se	ptember or Octob	er for the year:	s 1990, 1991,	1992, 1995, a	nd 1996.						
						ļ								-
														1
	Event	1	Percent of Total			Percent of			Percent of	[				
	Туре	(AF)	Runoff Volume	TSS (mg/l)	TSS (tons)	Total TSS	TP (mg/l)	TP (lbs)	Total TP				1	
											1	-		
	Base flow	896									ļ	ļ		
	Storm flow	691	44%	126	118	84%	0.502	943	78%					
						1							1	
	Total	1586			140			1215						-
								1						
		1	!								ļ			1
			Inflow Loads (St	op Creek Site 1)			1							
	Estimated	Average Annua	HILION LOAGS (OI		]									
	Estimated	Average Annua	HINON LOAGS (OF					1						
	Estimated	Average Annua		1				ĺ	Percent of					
			g-= 1,			Percent of								
	Event	Runoff Volume	Percent of Total		TSS (tons/vr)		TP (ma/l)	TP (lb/vr)	Tolal TP	ļ			1	
			g-= 1,	TSS (mg/l)	TSS (tons/yr)		TP (mg/l)	TP (lb/yr)	Tolal TP	ļ				+
	Event Type	Runoff Volume (af/yr)	Percent of Total Runoff Volume	TSS (mg/l)		Total TSS	T				1			
	Event Type Base flow	Runoff Volume (af/yr)	Percent of Total Runoff Volume	TSS (mg/l)	7	Total TSS	0.111	81	24%		- h	- College Control of Prince		
	Event Type	Runoff Volume (af/yr)	Percent of Total Runoff Volume	TSS (mg/l)	7	Total TSS	0.111	81	24%					
	Event Type Base flow Storm flow	Runoff Volume (af/yr)	Percent of Total Runoff Volume	TSS (mg/l)	7	13%	0.111	81 254	24% 1 76%				**************************************	
	Event Type Base flow	Runoff Volume (af/yr)	Percent of Total Runoff Volume	TSS (mg/l)	7	13%	0.111	81	24% 1 76%					
	Event Type Base flow Storm flow	Runoff Volume (af/yr)	Percent of Total Runoff Volume	TSS (mg/l)	7	13%	0.111	81 254	24% 1 76%			-		

													-4-
		390		Mixed urban i	and use	<b>+</b>					*		-4-
	Drainage Area =	the state of the s		Mixeu urban	and use							r	-+
Average	annual precip =	13, 10	111		*							·	-+
-+	<del></del>			; ;			·			<del></del> !	<del></del>	t	+
Event	Runoff Volume		ļ	i		!	1			-	1	1	1
Туре	(af/ac)	Percent Runoff	TSS (tons/ac)	TP (lb/ac)	<u> </u>			1	!	:	1	Ì	- 1
	(anac)	T dicert (tarion	100 (10)13/40)	The tipical	ţ	!		·	+	i	<del></del>	<del> </del>	+
Base flow	0.69	55%	0.02	0.21	1	L	,		.h	<del></del>	<del> </del>	<del></del>	+
Storm flow		38%	0.11	0.65			ł				t	<del></del>	+
- total now	1		0.11		ļ					<del></del>	+		+
Total	1.17	93%	0.13	0.88	·		p	ļ	,		†	<del> </del>	+
- i Otal									1	ļ	†		+
										<del> </del>	<del></del>	<del> </del>	+
.+	ļ									·	t	<del> </del>	+
Estimated	Removal Efficier	ncies of Shop Cre	ek Joint Pond-We	tland System							<del></del>	<del> </del>	-+-
-	Tronio di Zinaio.	TOTAL ST. ST. ST.								ļ	<del> </del>		+
										<del> </del>	<del> </del>		+-
+	·		1990-1992	1995	1996	Total	Average		!	!	·	<del> </del>	+
+	t	otal Phosphorus					1000000		t	<del> </del>	<del> </del>	·	+
+	Measured Tot	al Inflow Load (Ib)	628	336	251	1,215			1		<del> </del>		+
+		ai Load Removed		69.8%	59.7%		54%				†		+-
- t		oad Removed (lb)	276	235	150	661					1	t	+
+		, , , , , , , , , , , , , , , , , , ,											+
+	Measured Stor	m Inflow Load (lb)	494	270	179	943							+
+		n Load Removed	51.0%	82.1%	72.5%		64%				1		+
Mi		oad Removed (lb)	252	221	130	603					1	1	
+	1									l		†	+
	Measured Bas	e Inflow Load (lb)	134	67	72	273							+
		e Load Removed	18.2%	20.0%	28.0%		21%		† !		j	<del> </del>	+-
N		oad Removed (ib)	24	13	20	58					<del></del>		+-
-										·	<del> </del>	<del> </del>	+
+	1								<del></del>				+
†											1		+
+	Total S	Suspended Solids									1		+
+		al inflow Load (lb)	163,121	102,214	112,228	377,563				1	1	1	+
1	% Total	al Load Removed	68.0%	91.3%	94.2%		82%			}	1		T
N	leasured Total L	cad Removed (lb)	110,922	93,322	105,686	309,930							T
1													T
7		m Inflow Load (lb)	153,895	81,847	97,066	332,808			L				T
7	% Ston	n Load Removed	72.0%	92.6%	97.9%		85%			1			T
Me	easured Storm L	oad Removed (lb)	110,804	75,791	95,027	281,622							I
	1									-			I
		e inflow Load (lb)	9,226	20,367	15,162	44,755							1
		e Load Removed	1.3%	86.1%	70.3%		63%					-	1
M	easured Base Li	oad Removed (lb)	118	17,531	10,659	28,308							I
	1												1
													1
		For 1990-1992 an									-	-	1
		UDFCD Report or							990-1992 a	nd 1995, per	cent		1
		removal rates for						loads."			-	-	1
1	1	For 1998, percent	removal rates we	ere estimated f	rom raw data	collected by C	hadwick.					1	1
	1						<b></b>					-	1
1	1						ļ		-				1
-	1										-		1
Average A	nnual Loads Ren	noved by System						ļ					1
-	1										-	-	1
1	Estimated		}		Estimated		TP			1	1		}
Event	TSS Removal		TSS Removed	TSS Out	TP Removal		Removed	TP Out	1	1	1	}	1
Туре	Efficiency	TSS in (tons/yr)	(tons/yr)	(tons/yr)	Efficiency	TP in (lb/yr)	(lb/yr)	(ib/yr)		<u> </u>			1
	1										1	1	1
Base flow	63%	7	4	2		81	17						1
Base flow Storm flow		7 44	4 38	7	21% 64%	81 254		92					1

			-	i			<del> </del>		
ı									
	Inflow to Wa	ter Quality Pond (S	ite 1)		:				
ĺ							Runoff	Daily	
			Total		Tota	ı	Peak	Runoff	
- :	Storm	Sample	Suspended	Solids	Phospho	orus	Discharge	Volume	
	Event	Туре	(mg/i)	(lb)	(mg/l)	(lb)	(cfs)	(cf)	,
1		storm:	6	2	0.170 !	0.1	6.09	5,501	
2	05/25/96	assume storm	100	1848	0.295	5.5	10.42	295,988	
3	05/28/96	assume storm	3	11	0.107	0.4	4.92	58,396	
4	07/09/96	storm	208	1274	0.514	3.1	10.85	98,116	-
5	08/08/96	storm	298	203	0.770	0.5	0.66	10,897	
6	08/23/96	assume storm	208	750	0.286	1.0	4.14	57,730	
7	09/05/96	storm	162	309	0.338	0.6	7.12	30,518	
8	09/06/96	assume storm	86	246	0,162	0.5	4.47	45,900	
91	09/12/96	assume storm	140	961	0,075	0.5	7.49	110,002	
- 1		Totals	1211	5604	2.717	12.2	56.16	713,048	
1	Averages	(Mathematical)	135	623	0.302	1,4	6.24	79,228	
	Outflow from	Water Quality Pon	d (Site 2)						
i					<u> </u>		Runoff		
			Total		Total	I	Peak	Runoff	
	Storm	Sample	Suspended 5	Solids	Phospho	orus	Discharge	Volume	
	Event	Туре	(mg/l)	(lb)	(mg/l)	(lb)	(cfs)	(cf)	
1	05/10/96	storm	18	-	0.287				
2	05/25/96	assume storm	14	0	0.230	0.0	0.00	0	
3	05/28/96	assume storm	10	0	0.244	0.0	0.00	0	
4	06/15/96	assume storm	258	1104	0.568	2.4	2.60	68,568	
	06/21/96	assume storm	43	44	0.288	0.3	1.53	16,509	
6	07/09/96	storm	45	23	0.306	0.2	2.11	8,280	
7	08/23/96	assume storm	52	31	0.532	0.3	1,45	9,447	
8	09/12/96	assume storm	28	75	0,106	0.3	2.33		
		Totals	468	1278	2.561	3.5	10.02	102,804	
	Averages	(Mathematical)	59	183	0.320	0.5	1.43	17,134	
1					i i				

	Raw Base F	IOWS ORIY	<u> </u>				ļ			+
		_					-			
i										
i	Inflow to Wa	ter Quality Pond	(Site 1)							
							Runoff	Daily		
- !			Total		Tot		Peak	Runoff		
!	Storm	Sample	Suspended :		Phosp		Discharge	Volume		<u> </u>
	Event	Туре	(mg/l)	(lb)	(mg/l)	(lb)	(cfs)	(cf)		<u> </u>
1	04/02/96		4		0.006				1	_
21			3		0.043		<del></del>			+
3	04/30/96	-	5		0.043					+
4	05/14/96		13	2	0.009			2 222		+
		-				0,0	0.3	2,332		-
5	06/11/96		4	7	0.196	0.3	0.8	26,861	<u> </u>	
6	06/16/96		4	13	0.218	0.7	2.4	52,915		
71	06/20/96		3!	3	0.29	0.3	1.5	15,914		1
8	06/25/96		3	3	0.192	0.2	0.7	18,530		
9	07/09/96		7	43	0.225	1.4	10.9	98,116		<u> </u>
10	07/23/96		2	2	0.199	0.2	0.7	16,027		1
11	08/06/96		. 5	4	0.147	0.1	0.6	12,854		
12	08/20/96		7	8	0.151	0.2	0.7	19,064		
13	09/03/96		5	. 5	0.13	0.1	0.7	15,971		
14	09/17/96		4	25	0.11	0.7	8.9	98,307		
15	10/01/96		3	7	0.164	0.4	0.7	37,887		1
16	10/15/96		3	9	0.124	0.4	1.0	49,856		
17	10/29/96		4	10	0.037	0.1	0.6	39,802		
		Totels	79	141	2.363	5,1	30.46	504,436		+
	A		5	10	0.139	0.4				<del>-</del>
-	Averages	(Mathematical)	5	10	0.139		2.18	36,031		+-
	Outflow from	Water Quality P	ond (Site 2)							+-
					İ		Runoff	Daily		
			Total		Tot	ai	Peak	Runoff		1
	Storm	Sample	Suspended S	Solids	Phosph	norus	Discharge	Volume		
	Event	Туре	(mg/l)	(lb)	(mg/l)	(lb)	(cfs)	(cf)		
		T-4-1-			0.000	0.0	0.00			
	A	Totals	0	0	0.000	0.0	0.00	0		-
	Averages	(Mathematical)	0	0	0.000	0.0	0.00	0		
	Note:	Based on 1996 o	lata, it is assumed the	at there is no "b	ase" outlfow.					<del> </del>
					į					
1					1					

D.	Total Monthly Storm Flows (	Measured)		<u></u>		- 1			
Ş		!			1				
)		Runoff Volu	mes (cf)	i	į				
1		1996	1996						
	Month	(inflow)	(outflow)						
	<del></del>	(irinott)	(outilott)						
i	1	+							
	¡Jan								
!	Feb								
;	Mar								
- :	Apr	1							
	May	7 37 37 37 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	(a)			-			
		397,814	101,577						
	Jun								
	Jul	263,187	56,816						
	Aug	273,570	32,649						
	Sep	1,090,290	274,944						
	Oct	203,690	4,798						
	Nov	1.57.57.45	0	1		1			
	Dec			<u> </u>					
	Dec								
					1				
	Total Yearly Flows (cf) =		470,784						
	Total Yearly Flows (af) =		11						
Ave	e Total Phosphorus (mg/l) =		0.320						
	Total Phosphorus (lb) =		9						
Ave Total	Suspended Solids (mg/l) =		59		-				
	otal Suspended Solids (lb) =		1,719						
Tota	Suspended Solids (tons) =	14	1						
1						i			
	Note:	Only partial flow da	ata for months wi	th light shaded l	background.	Total runoff	volumes for		
		these months were							
	-	Taroso monaro wore	Commence of the	io poration or the	parta nove	Jata availas			
		+ +							
i								•	
E.	Total Monthly Base Flows (M	Measured)	1						
1			7						
		Runoff Volu	mes (cf)						
<del>- i</del>		1996	1996						
-	10				-				
	Month	(inflow)	(outflow)			<u> </u>			
							<b>,</b>		
	Jan								
	Feb								
	Mar								
	Apr								
		Control of the Contro						1	
	May	iste justi							
	Jun	610,334	0						
	Jul	435,893	0						
	Aug	431,981	0						
	Sep	630,328	0						
	Oct	1,389,576	0						
			0						
-	Nov	\$1.7.97 <u>1</u> 1.							
	Dec		di e						
	Total Yearly Flows (cf) =	5,357,128	0						
1	Total Yearly Flows (af) =		0						
Δ.,	e Total Phosphorus (mg/l) =		0.000	ì					
	Total Phosphorus (lb) =		0.000					1	-
A									-
	al Suspended Solids (mg/l) =		0						
	otal Suspended Solids (lb) =		0						
Tota	al Suspended Solids (tons) =	1	0						
				1					
	_								
	N-4-	: Only partial flow d	ata for months	ith light shaded	hackground	Total area	f volumes for		
	Note								-
		these months wer	e estimated by ir	terpolation of the	ne partial flow	data availat	ne.		
	1							1	1
							-	1	

F.	:Total Month	ly Storm and Res	se Flows (Measure	d)				1		!
	- TOTAL MICHT	iy Storm and Dat	JO . IOW S (WIDESUITO				Į.		<del> </del>	
	<del>- i</del>	<b> </b>	Runoff Vol	umes (cf)				 I		<del>                                     </del>
		1	1996	1996	<del></del>				1	
	+	Month	(inflow)	(outflow)		T	i	<u> </u>		
		WOULD	(	10dimon,		i		<del></del> -		
		Jan				<del></del>	7	<del>                                     </del>	<u> </u>	
	<del></del>	Feb					<del> </del>		<del> </del>	+
	1	Mar					-	<u>.                                    </u>	1	
	1	<del></del>					1			
	<del> </del>	Apr	4 400 040				-			-
	ļ	May	1,438,642				<u>;                                    </u>		1	
		Jun	1,008,148				: '		-(	
		Jul	699,080	56,816			<del> </del>		_	1
		Aug	705,551		<del></del>	<u> </u>				Ì
	Ĺ	Sep	1,720,618	274,944						
		Oct	1,593,266	4,798						
		Nov	1,567,147	0			İ			
>		Dec		0						
			ì							
	Total Ye	arly Flows (cf) =	8,732,452	470,784					<del>-</del>	
		arly Flows (af) =	200	11					-	1
Δ		sphorus (mg/l) =	0.202	0.320						T
		hosphorus (lb) =	110	9				··· <del>-</del> ·	-	
Ava Tot		Solids (mg/l) =	55	59			<del></del> -		+	
		ded Solids (lb) =	29,907	1,719			<del> </del>			
			29,907	1,719					+	1
101	wi Suspended	Solids (tons) =	15	1						<del>-</del>
			<del>                                     </del>						_	ļ
				-			!			
	1								1	
<del> </del>							}			
G.	Total Month	ly Storm Flows (E	Estimated)	1			l			_j
				1			}			1
			Runoff Volu	ımes (cf)						
			1996	1996	Denver Av	erage Monthly	Rainfall			
		Month					,			
		Month	(inflow)	(outflow)	(ft)	(in)	(% of total)			
			(inflow)	(outflow)	(ft)	(in)	(% of total)			
		Jan	(inflow)	(outflow)	(ft) 0.0360	(in) 0.43	(% of total) 2.8%			
		Jan Feb	(inflow)	(outflow)	0.0360 0.0435	(in) 0.43 0.52	(% of total) 2.8% 3.4%			
		Jan Feb Mar	(inflow) (inflow) (inflow) (inflow) (inflow) (inflow) (inflow) (inflow) (inflow) (inflow) (inflow) (inflow) (inflow) (inflow)	(outflow)	0.0360 0.0435 0.1063	(in) 0.43 0.52 1.28	(% of total)  2.8%  3.4%  8.4%			
		Jan Feb Mar Apr	(inflow)  (d.) (inflow)  (d.) (d.) (d.) (d.) (d.) (d.) (d.) (d.)	(outflow)	0.0360 0.0435 0.1063 0.1326	(in) 0.43 0.52 1.28 1.59	2.8% 3.4% 8.4% 10.5%			
		Jan Feb Mar Apr May	(inflow)  35,5 da 165,644 165,644 1976/9; 934,546	(outflow)	0.0360 0.0435 0.1063 0.1326 0.2494	(in) 0.43 0.52 1.28 1.59 2.99	2.8% 3.4% 8.4% 10.5% 19.7%			
		Jan Feb Mar Apr May Jun	(inflow)  135,3 (46, 163,3)  163,3(4, 169,065, 49),6(5, 4	(outflow)	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495	(in)  0.43 0.52 1.28 1.59 2.99 1.79	2.8% 3.4% 8.4% 10.5% 19.7% 11.8%			
		Jan Feb Mar Apr May Jun	(inflow)  135348 16334 16334 19905 49976 934,546 397,814 263,187	(outflow)  1,356 21,349 21,349 31,345 0 101,577 56,816	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228	(in)  0.43  0.52  1.28  1.59  2.99  1.79  1.47	2.8% 2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7%			
		Jan Feb Mar Apr May Jun	(inflow)  135348 165348 165348 189469 41),795 934,546 397,814 263,187 273,570	(outflow)  23,638  22,829  63,641  0  101,577  56,816  32,649	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190	(in)  0.43  0.52  1.28  1.59  2.99  1.79  1.47  1.43	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7%			
		Jan Feb Mar Apr May Jun	(inflow)  1353 (48 163,34 169,053 141),765 934,546 397,814 263,187 273,570 1,090,290	(outflow)  21,908 22,1638  22,43 65,641 0 101,577 56,816 32,649 274,944	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094	(in)  0.43  0.52  1.28  1.59  2.99  1.79  1.47	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7%			
		Jan Feb Mar Apr May Jun Jul Aug	(inflow)  135348 165348 165348 189469 41),795 934,546 397,814 263,187 273,570	(outflow)  23,638  22,829  63,641  0  101,577  56,816  32,649	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787	(in)  0.43  0.52  1.28  1.59  2.99  1.79  1.47  1.43	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6%			
		Jan Feb Mar Apr May Jun Jul Aug Sep	(inflow)  1353 (48 163,34 169,053 141),765 934,546 397,814 263,187 273,570 1,090,290	(outflow)  21,908 22,1638  22,43 65,641 0 101,577 56,816 32,649 274,944	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094	(in)  0.43  0.52  1.28  1.59  2.99  1.79  1.47  1.43  1.31	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6%			
		Jan Feb Mar Apr May Jun Jul Aug Sep Oct	(inflow)  1355 (48 1165,344 1165,344 1165,344 1165,344 1165,345 1165 1165 1165 1165 1165 1165 1165 11	(outflow)  1,908 21,619  0 101,577 56,816 32,649 274,944 4,798	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787	(in)  0.43  0.52  1.28  1.59  2.99  1.79  1.47  1.43  1.31	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 6.2%			
		Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov	(inflow)  1353 (48 163,314 165,314 165,314 165,314 165,314 165,3187 165,318	(outflow)  21,908 22,1638  22,43  68,641  0 101,577 56,816 32,649 274,944 4,798 0	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 6.2%			
	Total Ve	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	(inflow)  1353 (4) 163,344 163,344 163,344 163,345 163,345 163,165 163,165 17,090,290 17,090,290 17,090,290 17,090,290 17,090,290 17,090,290	(outflow)  21,638  22,638  0 101,577 56,816 32,649 274,944 4,798 0	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 8.6% 6.2% 5.6% 3.7%			
		Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	(inflow)  135 (48 165 314 165 314 165 314 165 314 165 314 165 317 165	(outflow)  21,638  22,638  0 101,577 56,816 32,649 274,944 4,798 0 0	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 8.6% 6.2% 5.6% 3.7%			
	Total Ye	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec artly Flows (cf) = artly Flows (af) =	(inflow)  135 (48 165 314 165 314 165 314 165 314 165 165 165 165 165 165 165 165 165 165	(outflow)  21,638  22,638  22,639  0 101,577  56,816 32,649 274,944 4,798 0 0 629,171	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 8.6% 6.2% 5.6% 3.7%			
A	Total Ye Ave Total Pho	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arily Flows (cf) = arily Flows (af) = sphorus (mg/l) =	(inflow)  (35 i.4) (55 j.6) (35 j.4) (36 j.6) (37 j.4) (38 j.6) (39 j.6) (39 j.6) (39 j.6) (39 j.6) (39 j.6) (39 j.6) (39 j.6) (39 j.6) (39 j.6) (39 j.6) (30 j.6) (4748,204 (109 j.6) (30 j.6)	(outflow)  (outflow)	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 8.6% 6.2% 5.6% 3.7%			
	Total Ye Ave Total Pho Total P	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec artly Flows (cf) = artly Flows (af) = sphorus (mg/t) = hosphorus (ib) =	(inflow)  (35 141 (15 304 (15 304 (15 304 (15 304 (15 307 (15	(outflow)  100 21:239 27:23 30:241 0 101,577 56,816 32,649 274,944 4,798 0 0 629,171 14 0.320	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 8.6% 6.2% 5.6% 3.7%			
Ave Tot	Total Yeave Total Pho Total Potal Potal Potal Suspende	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arty Flows (cf) = arty Flows (af) = sphorus (mg/l) = hosphorus (lb) = d Solids (mg/l) =	(inflow)  (35) 141 (153) 304 (39) 435 (43) 78 (43) 78 (43) 78 (43) 78 (43) 78 (43) 78 (43) 78 (43) 78 (43) 78 (43) 78 (43) 78 (43) 78 (43) 78 (43) 78 (43) 78 (43) 78 (43) 78 (43) 78 (43) 78 (44) 78 (45) 78 (45) 78 (46) 78 (47) 78	(outflow)  (outflow)	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 8.6% 6.2% 5.6% 3.7%			
Ave Tot	Total Yeave Total Pho Total Pho tal Suspender Total Suspender	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  arty Flows (cf) = arty Flows (af) = sphorus (mg/l) = hosphorus (lb) = d Solids (mg/l) = ded Solids (lb) =	(inflow)  (35 i 46 i 56 i 36 i 46 i 56 i 36 i 46 i 56 i 36 i 46 i 397,814 i 263,187 i 273,570 i 1,090,290 i 203,690 i 212,227 i 1,7 570 i 4,748,204 i 109 i 0,302 i 89 i 135 i 39,886	(outflow)  (outflow)	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 8.6% 6.2% 5.6% 3.7%			
Ave Tot	Total Yeave Total Pho Total Pho tal Suspender Total Suspender	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arty Flows (cf) = arty Flows (af) = sphorus (mg/l) = hosphorus (lb) = d Solids (mg/l) =	(inflow)  (35 i 46 i 56 i 36 i 46 i 56 i 36 i 46 i 56 i 36 i 46 i 397,814 i 263,187 i 273,570 i 1,090,290 i 203,690 i 212,227 i 1,7 570 i 4,748,204 i 109 i 0,302 i 89 i 135 i 39,886	(outflow)  (outflow)	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 8.6% 6.2% 5.6% 3.7%			
Ave Tot	Total Ye Ave Total Pho Total P  btal Suspende Total Suspen tal Suspende	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Period (cf) = Period (cf	(inflow)  135 infl 155 314 195 032 197 934,546 397,814 263,187 273,570 1,090,290 203,690 212,227 17,670 4,748,204 109 0,302 89 135 39,886 20	(outflow)  (outflow)	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 8.6% 6.2% 5.6% 3.7%			
Ave Tot	Total Ye Ave Total Pho Total P  stal Suspende Total Suspen  stal Suspende atted TP Rem	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Period (cf) = Period (cf	(inflow)  185 146 165 214 189 052 19) 053 19) 054 19) 055 1934,546 397,814 263,187 273,570 1,090,290 203,690 212,227 17,570 4,748,204 109 0,302 89 135 39,886 20	(outflow)  (outflow)	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 8.6% 6.2% 5.6% 3.7%			
Ave Tot	Total Ye Ave Total Pho Total P  stal Suspende Total Suspen  stal Suspende atted TP Rem	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Period (cf) = Period (cf	(inflow)  185 146 165 214 189 052 19) 053 19) 054 19) 055 1934,546 397,814 263,187 273,570 1,090,290 203,690 212,227 17,570 4,748,204 109 0,302 89 135 39,886 20	(outflow)  (outflow)	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 8.6% 6.2% 5.6% 3.7%			
Ave Tot	Total Ye Ave Total Pho Total P  stal Suspende Total Suspen  stal Suspende atted TP Rem	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Period (cf) = Period (cf	(inflow)  185 146 165 214 189 052 19) 053 19) 054 19) 055 1934,546 397,814 263,187 273,570 1,090,290 203,690 212,227 17,570 4,748,204 109 0,302 89 135 39,886 20	(outflow)  (outflow)	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 8.6% 6.2% 5.6% 3.7%			
Ave Tot	Total Ye Ave Total Pho Total P  stal Suspende Total Suspen  stal Suspende atted TP Rem	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Period (cf) = Period (cf	(inflow)  185 146 165 214 189 052 19) 053 19) 054 19) 055 1934,546 397,814 263,187 273,570 1,090,290 203,690 212,227 17,570 4,748,204 109 0,302 89 135 39,886 20	(outflow)  (outflow)	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 8.6% 6.2% 5.6% 3.7%			
Ave Tot	Total Ye Ave Total Pho Total P  stal Suspende Total Suspen  stal Suspende atted TP Rem	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Period (cf) = Period (cf	(inflow)  185 146 165 214 189 052 19) 053 19) 054 19) 055 1934,546 397,814 263,187 273,570 1,090,290 203,690 212,227 17,570 4,748,204 109 0,302 89 135 39,886 20	(outflow)  (outflow)	(ft)  0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 5.6% 3.7%		on using the	
Ave Tot	Total Ye Ave Total Pho Total P  stal Suspende Total Suspen  stal Suspende atted TP Rem	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Party Flows (cf) = Party Flows (af) = Party Flows (b) = Sep of the flows (b) = Sep of the flows (b) = Sep of the flows (b) = Sep of the flows (cf) = S	(inflow)  135 146 165 314 165 314 195 045 197	(outflow)  (outflow)	(ft)  0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473 1.2648	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 5.6% 3.7%		on using the	
Ave Tot	Total Ye Ave Total Pho Total P  stal Suspende Total Suspen  stal Suspende atted TP Rem	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Party Flows (cf) = Party Flows (af) = Party Flows (b) = Sep of the flows (b) = Sep of the flows (b) = Sep of the flows (b) = Sep of the flows (cf) = S	(inflow)  135 146 163 314 163 314 163 314 163 314 163 314 163 314 163 317 163	(outflow)  (outflow)	(ft)  0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473 1.2648	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 5.6% 3.7%		on using the	
Ave Tot	Total Ye Ave Total Pho Total P  stal Suspende Total Suspen  stal Suspende atted TP Rem	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Party Flows (cf) = Party Flows (af) = Party Flows (b) = Sep of the flows (b) = Sep of the flows (b) = Sep of the flows (b) = Sep of the flows (cf) = S	(inflow)  135 146 163 314 163 314 163 314 163 314 163 314 163 314 163 317 163	(outflow)  (outflow)	(ft)  0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473 1.2648	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 5.6% 3.7%		on using the	
Ave Tot	Total Ye Ave Total Pho Total P  stal Suspende Total Suspen  stal Suspende atted TP Rem	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Party Flows (cf) = Party Flows (af) = Party Flows (b) = Sep of the flows (b) = Sep of the flows (b) = Sep of the flows (b) = Sep of the flows (cf) = S	(inflow)  135 146 163 314 163 314 163 314 163 314 163 314 163 314 163 317 163	(outflow)  (outflow)	(ft)  0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703 0.0473 1.2648	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 5.6% 3.7%		on using the	

		-								
			of winter (unmeasu							
		! to	summer (measure	ed) base flows =	67%	(value catibrat	ed to average	ge Denver pred	ipitation)	
	'	<u> </u>	<u></u>							
	<u> </u>	<u>:</u>	5 m							
		-	Runoff Vol							
,	-	1 4 41-	1996	1996						<del> </del>
· ·	·	· Month	(inflow)	(outflow)					_	ļ
<u>'</u>							_			<del> </del>
		Jan								_
		Feb		_						<u> </u>
		Mar		_						
		Apr	AND STORY OF STREET AND AND ADDRESS.							1
		May Jun	504,096 610,334	0						
	-	Jul	435,893	0						-
		Aug	431,981	0			·· -			
		Sep	630,328	0						
		Oct	1,389,576	0			\ \{			
<u></u>		Vov	1,354,920	0	1					+
		L -	1,354,920	0						-
			Land Mark		-					
	Total Vo	arly Flows (c. =	7,920,896	0						+
		arly Flows (c.	182	0			····			
Δν		sphorus (mg/l) =	0.139	0.000						
		nosphorus (lb) =	69	0.000						
Ave Tota		Solids (mg/l) =		0	- ;					
		ded Solids (lb) =		0	<u> </u>					
		Solids (tons) =	2,250	0						
· Ola	ocaponuou	- Joines (10113) -								
Estimat	ed TP Remo	oval Efficiency =	100%							
			100%							1
		oval Emiciency = 1					1			
	d 135 Remo	oval Efficiency =	10076			i	í			
	a 155 Remic	oval Emciency =	100%							
	O 155 Remic	Note:	Base inflow volum	es for the unmeasu			stimated as	suming 67% of	f the average	
	O 155 Remo	Note:	Base inflow volum- monthly base inflo Data for May thru	w for the measured Dec_indicates a bas	i months (sur se outflow of	nmer).				
	d 155 Remo	Note:	Base inflow volum- monthly base inflo Data for May thru	w for the measured	i months (sur se outflow of	nmer).				
	d 133 Remo	Note:	Base inflow volum- monthly base inflo Data for May thru	w for the measured Dec_indicates a bas	i months (sur se outflow of	nmer).				
	d 155 Remo	Note:	Base inflow volum- monthly base inflo Data for May thru	w for the measured Dec_indicates a bas	i months (sur se outflow of	nmer).				
		Note:	Base inflow volum monthly base inflo Data for May thru outflow for Jan thr	w for the measured Dec indicates a bas u Apr was also 0.0	i months (sur se outflow of	nmer).				
		Note:	Base inflow volum- monthly base inflo Data for May thru	w for the measured Dec indicates a bas u Apr was also 0.0	i months (sur se outflow of	nmer).				
		Note:	Base inflow volum monthly base inflo Data for May thru outflow for Jan thru e Flows (Estimate	w for the measured Dec indicates a bas u Apr was also 0.0	i months (sur se outflow of	nmer).				
		Note:	Base inflow volummonthly base inflo Data for May thru outflow for Jan thru e Flows (Estimated	w for the measured Dec indicates a bas u Apr was also 0.0	i months (sur se outflow of	nmer).				
		Note: Note: y Storm and Bas	Base inflow volummonthly base inflo Data for May thru outflow for Jan thru e Flows (Estimate Runoff Volu 1996	w for the measured Dec indicates a bas u Apr was also 0.0	i months (sur se outflow of	nmer).				
		Note:	Base inflow volummonthly base inflo Data for May thru outflow for Jan thru e Flows (Estimated	w for the measured Dec indicates a bas u Apr was also 0.0	i months (sur se outflow of	nmer).				
		Note: Note: y Storm and Bas	Base inflow volum monthly base inflo Data for May thru outflow for Jan thru e Flows (Estimater Runoff Volu 1996 (inflow)	w for the measured Dec indicates a bas u Apr was also 0.0 d) d) umes (cf) 1996 (outflow)	i months (sur se outflow of	nmer).				
		Note: Note:  y Storm and Bas  Month	Base inflow volum monthly base inflor Data for May thru outflow for Jan thru e Flows (Estimated Runoff Volu- 1996 (inflow)	w for the measured Dec indicates a bas u Apr was also 0.0 d) d) umes (cf) 1996 (outflow)	i months (sur se outflow of	nmer).				
		Note: Note:  y Storm and Bas  Month  Jan Feb	Base inflow volumemonthly base inflow Data for May thru outflow for Jan thru outflow for Jan thru outflow (Estimated Runoff Volume 1996 (inflow)  647,902 676,058	w for the measured Dec indicates a base u Apr was also 0.0 d) umes (cf) 1996 (outflow)	i months (sur se outflow of	nmer).				
		Note: Note:  y Storm and Bas  Month  Jan Feb Mar	Base inflow volumemonthly base inflow Data for May thru outflow for Jan thru outflow for Jan thru outflow (Estimated Runoff Volume 1996 (inflow)  647,902 676,058 911,816	w for the measured Dec indicates a base u Apr was also 0.0 d) umes (cf) 1996 (outflow) 17,908 21,639 52,879	i months (sur se outflow of	nmer).				
		Note: Note:  Note:  y Storm and Bas  Month  Jan Feb Mar Apr	Base inflow volumemonthly base inflow Data for May thru outflow for Jan thru outflow for Jan thru outflow (Estimated Runoff Volume 1996 (inflow)  647,902 676,058 911,816 1,010,549	w for the measured Dec indicates a bas u Apr was also 0.0 d) d) umes (cf) 1996 (outflow) 17,908 21,639 52,879 65,961	i months (sur se outflow of	nmer).				
		Note: Note:  y Storm and Bas  Month  Jan Feb Mar Apr May	Base inflow volumemonthly base inflow Data for May thru outflow for Jan thru outflow for Jan thru outflow (Estimated Runoff Volume 1996 (Inflow)  647,902 676,058 911,816 1,010,549 1,438,642	w for the measured Dec indicates a bas u Apr was also 0.0 d) imes (cf) 1996 (outflow) 17,908 21,639 52,879 65,961	i months (sur se outflow of	nmer).				
		Note: Note:  Note:  y Storm and Bas  Month  Jan Feb Mar Apr May Jun	Base inflow volumemonthly base inflow Data for May thru outflow for Jan thru outflow for Jan thru outflow (Estimated Runoff Volume 1996 (inflow)  647,902 676,058 911,816 1,010,549 1,438,642 1,008,148	w for the measured Dec indicates a bas u Apr was also 0.0 d) umes (cf) 1996 (outflow) 17,908 21,639 52,879 65,961 0	i months (sur se outflow of	nmer).				
		Note: Note:  Note:  y Storm and Bas  Month  Jan Feb Mar Apr May Jun Jul	Base inflow volumemonthly base inflow Data for May thru outflow for Jan thru outflow for Jan thru outflow (Estimated Runoff Volumes (Inflow)  647,902 676,058 911,816 1,010,549 1,438,642 1,008,148 699,080	w for the measured Dec indicates a bas u Apr was also 0.0 d) umes (cf) 1996 (outflow) 17,908 21,639 52,879 65,961 0 101,577	i months (sur se outflow of	nmer).				
		Note: Note: Note:  y Storm and Bas  Month  Jan Feb Mar Apr May Jun Jul Aug	Base inflow volumemonthly base inflow Data for May thru outflow for Jan thru outflow for Jan thru outflow (Estimated Runoff Volumes 1996 (inflow)  647,902 676,058 911,816 1,010,549 1,438,642 1,008,148 699,080 705,551	w for the measured Dec indicates a bas u Apr was also 0.0 d) umes (cf) 1996 (outflow) 17,908 21,639 52,879 65,961 0 101,577 56,816 32,649	i months (sur se outflow of	nmer).				
		Note:  Note:  Note:  y Storm and Base  Month  Jan Feb Mar Apr May Jun Jul Aug Sep	Base inflow volummenthly base inflow Data for May thru outflow for Jan thru outflow for Jan thru outflow (Estimater Runoff Volumber 1996 (inflow)  647,902 676,058 911,816 1,010,549 1,438,642 1,008,148 699,080 705,551 1,720,618	w for the measured Dec indicates a bas u Apr was also 0.0 d) umes (cf) 1996 (outflow) 17,908 21,639 52,879 65,961 0 101,577 56,816 32,649 274,944	i months (sur se outflow of	nmer).				
		Note:  Note:  Note:  y Storm and Base  Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct	Base inflow volummenthly base inflow Data for May thru outflow for Jan thru outflow for Jan thru outflow (Estimated Runoff Volumber 1996 (inflow)  647,902 676,058 911,816 1,010,549 1,438,642 1,008,148 699,080 705,551 1,720,618 1,593,266	w for the measured Dec indicates a bas u Apr was also 0.0 d) umes (cf) 1996 (outflow) 17,908 21,639 52,879 65,961 0 101,577 56,816 32,649 274,944 4,798	i months (sur se outflow of	nmer).				
		Note: Note: Note:  y Storm and Base  Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov	Base inflow volummonthly base inflow Data for May thru outflow for Jan t	w for the measured Dec indicates a bas u Apr was also 0.0 di) umes (cf) 1996 (outflow) 17,908 21,639 52,879 65,961 0 101,577 56,816 32,649 274,944 4,798	i months (sur se outflow of	nmer).				
		Note:  Note:  Note:  y Storm and Base  Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct	Base inflow volummenthly base inflow Data for May thru outflow for Jan thru outflow for Jan thru outflow (Estimated Runoff Volumber 1996 (inflow)  647,902 676,058 911,816 1,010,549 1,438,642 1,008,148 699,080 705,551 1,720,618 1,593,266	w for the measured Dec indicates a bas u Apr was also 0.0 d) umes (cf) 1996 (outflow) 17,908 21,639 52,879 65,961 0 101,577 56,816 32,649 274,944 4,798	i months (sur se outflow of	nmer).				
	Total Monthl	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	Base inflow volummonthly base inflor Data for May thru outflow for Jan t	w for the measured Dec indicates a bas u Apr was also 0.0 di) umes (cf) 1996 (outflow) 17,908 21,639 52,879 65,961 0 101,577 56,816 32,649 274,944 4,798 0	i months (sur se outflow of	nmer).				
	Total Monthl	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec ariy Flows (cf) =	Base inflow volummonthly base inflow Data for May thru outflow for Jan t	w for the measured Dec indicates a bas u Apr was also 0.0 di) umes (cf) 1996 (outflow) 17,908 21,639 52,879 65,961 0 101,577 56,816 32,649 274,944 4,798 0	i months (sur se outflow of	nmer).				
	Total Monthl  Total Ye  Total Ye	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec ariy Flows (cf) = ariy Flows (af) =	Base inflow volumemonthly base inflow Data for May thru outflow for Jan	w for the measured Dec indicates a base u Apr was also 0.0 di) umes (cf) 1996 (outflow) 17,908 21,639 52,879 65,961 0 101,577 56,816 32,649 274,944 4,798 0 0	i months (sur se outflow of	nmer).				
	Total Monthi  Total Ye  Total Ye  Total Ye  Total Phose	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec ariy Flows (cf) = ariy Flows (af) = sphorus (mg/l) =	Base inflow volume monthly base inflow Data for May thru outflow for Jan thru outflow for Jan thru outflow for Jan thru outflow (Estimated Runoff Volume 1996 (inflow)  647,902 676,058 911,816 1,010,549 1,438,642 1,008,148 699,080 705,551 1,720,618 1,593,266 1,567,147 690,323 12,669,100 291 0.200	w for the measured Dec indicates a base u Apr was also 0.0 also u Apr was also 0.0 also u Apr was also 0.0 also u Apr was also 0.0 also u Apr was also 0.0 also u Apr was also 0.0 also u Apr was also 0.0 also u Apr was also 0.0 also u Apr was also 0.0 also u Apr was also u Apr	i months (sur se outflow of	nmer).				
Av	Total Monthl  Total Ye  Total Ye  Total Phos	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec ariy Flows (cf) = ariy Flows (af) = sphorus (mg/l) = hosphorus (lb) =	Base inflow volume monthly base inflow Data for May thru outflow for Jan thru outflow for Jan thru outflow for Jan thru outflow (Estimated Runoff Volume 1996 (inflow)  647,902 676,058 911,816 1,010,549 1,438,642 1,008,148 699,080 705,551 1,720,618 1,593,266 1,567,147 690,323 12,669,100 291 0.200 158	w for the measured Dec indicates a base u Apr was also 0.0 and a second process of the s	i months (sur se outflow of	nmer).				
Ave Tota	Total Monthi  Total Ye  Total Ye  Total Ye  Total Phos  Total Phose  Total Phose  Total Phose  Total Phose  Total Phose  Total Phose	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arly Flows (af) = sphorus (mg/l) = hosphorus (lb) = d Solids (mg/l) =	Base inflow volume monthly base inflow Data for May thru outflow for Jan	w for the measured Dec indicates a base u Apr was also 0.0 and a second process of the s	i months (sur se outflow of	nmer).				
Ave Tota	Total Monthi  Total Ye Total Ye Total Phos Total Phos Total Plos Suspendedotal Suspend	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arly Flows (af) = sphorus (mg/l) = thosphorus (lb) = thosphorus (lb) = thosphorus (lb) = thosphorus (lb) = thosphorus (lb) =	Base inflow volume monthly base inflow Data for May thru outflow for Jan	w for the measured Dec indicates a base u Apr was also 0.0 and a second process of the s	i months (sur se outflow of cfs	nmer). 0.0 cfs, theref				
Ave Tota	Total Monthi  Total Ye Total Ye Total Phos Total Phos Total Plos Suspendedotal Suspend	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arly Flows (af) = sphorus (mg/l) = hosphorus (lb) = d Solids (mg/l) =	Base inflow volume monthly base inflow Data for May thru outflow for Jan	w for the measured Dec indicates a base u Apr was also 0.0 and a second process of the s	i months (sur se outflow of	nmer). 0.0 cfs, theref				
Ave Total	Total Monthi  Total Ye Total Ye Total Ye Ye Total Ye Ye Total Pho Total Total Ye Is Suspended Total Suspended Total Suspended	Note:  Note:  Note:  y Storm and Bas  Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  arly Flows (cf) = arly Flows (af) = sphorus (mg/l) = hosphorus (lb) = d Solids (mg/l) = d Solids (tons) =	Base inflow volume monthly base inflow Data for May thru outflow for Jan	w for the measured Dec indicates a bas u Apr was also 0.0 (a) (b) (a) (b) (a) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	i months (sur se outflow of cfs	nmer). 0.0 cfs, theref				
Ave Total Total	Total Monthi  Total Ye Total Ye Total Ye Ye Total Ye Ye Total Pho Total Pho Suspended Suspended Suspended Suspended Total Suspended	Note:  Note:  Note:  y Storm and Bas  Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  arly Flows (cf) = arly Flows (af) = sphorus (mg/l) = hosphorus (lb) = d Solids (mg/l) = ded Solids (tons) = oval Efficiency =	Base inflow volume monthly base inflow Data for May thru outflow for Jan	w for the measured Dec indicates a bas u Apr was also 0.0 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	i months (sur se outflow of cfs	nmer). 0.0 cfs, theref				
Ave Total	Total Monthi  Total Ye Total Ye Total Ye Ye Total Ye Ye Total Pho Total Pho Suspended Suspended Suspended Suspended Total Suspended	Note:  Note:  Note:  y Storm and Bas  Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  arly Flows (cf) = arly Flows (af) = sphorus (mg/l) = thosphorus (lb) = d Solids (mg/l) = d Solids (tons) = d Solids (tons) = d Solids (tons) = d Solids (tons) =	Base inflow volume monthly base inflow Data for May thru outflow for Jan	w for the measured Dec indicates a bas u Apr was also 0.0 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	i months (sur se outflow of cfs	nmer). 0.0 cfs, theref				

		Measured Inflov								
_	Monitoring p	eriod generally N	May through Nover	nber or Decembe	r for 1996.					
			Percent of Total			Percent of			Percent of	
	Event Type	(AF)	Runoff Volume	TSS (mg/l)	TSS (tons)	Total TSS	TP (mg/l)	TP (lbs)	Total TP	
	Base flow	123	61%	5	1	5%	0.139	46	42%	
	Storm flow	77		135			0.302	64	58%	
	Tetal	200	!		15			110		
	Total	200		<u> </u>	13			110		
	Fetimated A	verage Annual In	nflow I cade	l l						
	ESUMATEU A	verage Amilian in	INOW LOADS		ı					
	Monitoring p	eriod generally M	ay through Novem	ber or Decembe	r for 1996.					
	<u> </u>	Runoff Volume	Percent of Total		i	Percent of			Percent of	
	Event Type	(af/yr)	Runoff Volume	TSS (mg/l)	TSS (tons/yr)	1	TP (mg/l)	TP (lbs/yr)	Total TP	
		465	0001			501	6 400		4601	
	Base flow Storm flow	182	63% 37%	135			0.139	69 89	43% 57%	
							,,,,,		-,,,	
	Total	291			21			158		
	-		_	:						
	-			I						
	Unit Inflow L	oading Rates							{	
	 	rainage Area =	560	ac	Mixed urban la	nd use	-		<u> </u>	
		annual precip =	15.18							
						_				
		Runoff Volume								
	Event Type	(af/ac)	Percent Runoff	TSS (tons/ac)	TP (lb/ac)					
	Dana 4	0.005	060/	0.0021	0.400					
	Base flow Storm flow	0.325 0.195	26% 15%	0.0021	0.123					
	0.0	2.100	10.2	0,000						
	Total	0.519	41%	0.0377	0.283					
				1						
	Average Ann	ual Loads Remo	oved by System							
		Estimated TSS				Estimated				
		Removal		TSS Removed	TSS Out	TP Removal	TP In	TP Removed	TP Out	
	Event Type	Efficiency	TSS In (tons/yr)	(tons/yr)	(tons/yr)	Efficiency	(lb/yr)	(lb/yr)	(lb/yr)	
	Base flow	75%		1	0	75%	69	52	17	
	Storm flow	84%	20	17			89	53	37	
	Total	0.40/	04	40		600/	450	404		
	Total	84%	21	18	. 3	66%	158	104	54	
	Notes:									
			noval Efficiencies: emoval Efficiency:	For long term av Theoretical 2-ye						

		urce Evaluation	5							
		Character I		-						
	ottonwood	Creek				<del>'</del>			<del>                                     </del>	
	'					<u>.</u>				
t <del>e</del> :	1/29/97					- 1	1			1
	1	i			:_	!				į
	:		f		T				!!!	
E	xamination	of Raw Data for (	Cottonwood Creek	Site 1 (1994-19	96)					
					1		- :			
					<u> </u>		Runoff			<del></del>
			T-4-1	<del>_</del>	<u> </u>	!			<u> </u>	<del></del>
			Total		Totat		Peak	Runoff		1
	Storm /	Sample ;	Suspended	Solids	Phosphor	us	Discharge	Volume	i	
	Event	Type	(mg/l)	(lb) ;	(mg/l)	(ib)	(cfs)	(cf)	Comme	nt on Flow Data
	1	-			!	1				
1   {	05/17/94	base	17		0.063			_		no flow data avail
	06/01/94	storm	698	6,250	0.478	4.3	4.02	143,424		small s
	06/14/94		21	184		0.5			<del></del>	
		base			0.059		1.7	140,456		base
	06/19/94	base	413	5,690	0.152	2.1	4.23	220,680		receding end of s
	06/21/94	storm	65	2,490	0,159	6.1	30.33	613,682	i	arge si
6: 0	06/22/94	storm	176	13,184	0.181	13.6	83.92	1,199,866		arge st
7 (	07/12/94	base	5	20	0.000	0.0	0.83	63,475	ŧ	base
	08/09/94	base	14	61	0.066	0.3	0.97	70,314		base
	09/05/94		44	1791	0.134	0.5	0.911	65,306	•	
		base							- !	base
	04/04/95	base	20	85	0.050	0.2	0.97	87,748	,	base
	04/10/95	storm	1020	545	1.062	0.6	1.03	8,556		rising start of a st
12: 0	04/18/95	base	29	407	0.079	1.1	5,06	224,543		rising start of a st
	04/18/95	storm	106	1,4861	0.097	1.4	5.06	224,543		arge st
	04/23/95	storm	372	4,664	0.356	4.5	5.45	200,812		small st
	05/02/95		15		0.040	7.5		200,012		
		base								no flow data avail
	05/02/95	storm	826		0,098					no flow data avail
17 0	05/16/95	base	12		0.028	;		_		no flow data avail
181 0	05/16/95	storm	761		0.651		i		l l	no flow data avail
19 0	05/30/95	robadie alomi	1040		0.100				NAME OF TAXABLE PARTY.	
·	06/13/95	base	15	136	0,105	1.0	3.18	145,683	And the Control of th	base
	06/27/95	base	12	162	0.060	8.0	2.70	215,739		base
22 0	07/11/95	base	13	149	0.062	0.7	2.53	183,034		base
23 0	07/13/95	storm	167	1,909	0.245	2.8	2.81	183,129		small si
24   0	07/25/95	base	11	154	0.069	1.0	3.18	224,209		base
	08/08/95	base	18	192	0.197	2.1	2.24	170,911		base
			36	405		1.5		180,058		
	08/22/95	base			0.134		2.38			base
	08/13/95	storm	86	1,001	0.170	2.0	2.46	186,400		small st
28   0	08/17/95	storm	580	6,135	0.802	8.5	2.18	169,432		arge st
29   0	09/06/95	base	16	187	0.070	8.0	2,45	187,707		base
30 0	09/18/95	storm	392	4,207	3.150	33.8	2.08	171,922		arge st
	09/20/95	storm	150	4,015	0.360	9.6	35.15	428,703		arge s
			148	2,237	0.040					
	09/29/95	storm		_		0.6	6.571	242,102		arge st
	10/03/95	base	18	249	0,090	1.2	2.69	221,901		base
34 1	10/03/95	storm	126	1,745	0.200	2.8	2.69	221,901		smail st
35 1	10/17/95	base	10	97	0.030	0.3	2.34	156,022		base
	10/21/95	storm	64	560	0.170	1,5	1.7	140,237		small s
	10/31/95	base	4	50	0.020	0.2	2.67	199,544		base
				30			2.07			
	04/02/96	base	12		0.042	·				no flow data avail
	04/16/96	base	9		0.052				1	no flow data avail
40 0	04/30/96	base	12	53	0.010	0.0	0.86	70,501		base
	05/09/96	storm	250	14,790	0.273	16.2	87.67	947,621		arge s
	05/14/96	base	37	131	0.087	0.3	0,77	56,649		base
	05/24/96		468	1,607	0.637	2.2		54,991		
		storm					0.92			arge s
	05/28/96	base	62	360	0.267	1.6	1.22	93,001		base
	06/11/96	base	18	51	0.072	0.2	0.61	45,521		base
46 (	06/14/96	storm	1160	3,439	1.240	3.7	0.62	47,493		arge s
47 (	06/20/96	storm	681	2,246	0,649	2.1	0.72	52,825		small s
	06/25/96	base	16	53	0.096	0,3	0.69	52,982		base
	07/09/96	base	18	88	0.105	0.5	11.52	78,653	i	small s
										- Siridit S
	07/08/96	storm	694	2,082	0.959	2.9	0.61	48,056	<u> </u>	
	07/23/96	base	206	432	0.140	0.3	0.48	33,614		base
	07/24/96	storm	861	2,091	0.480	1.2	0.54	38,905		arge s
53	08/06/96	base	131	19	0.052	0.1	0.32	23,734	i	base
	08/07/96	storm	490	1,461	0.593	1.8	1.84	47,747		very small s
	08/20/96	base	16	28	0.055	0.1	0.38	28,422		base
	09/03/96	base	33	52	0.080	0.1	0.35	25,186		base
	09/11/96	storm	1100	7,508	0,101	0.7	18.81	109,334		arge s
58	09/17/96	base	28	222	0.1301	1.0	8.51	126,756		rising limb of a large s
	10/01/96	base	13	56	0.052	0.2	0.85	69,319		base
	10/15/96	base	9	23	0.048	0.1	0.66	40,346		base
					0.094				1	
61	10/29/98	base	13	_40	0.094	0.3	0.73	48,807		base
N	lote:	The 5/30/95 grab	sample was a "ba:	se" sample acco	rding to the raw	data. Howe	ever,			
			TP values along v					grab sample		
			esentative of a "st						1	
<del>-</del> ;	- 11					-ampio, it i		- "- Trialiana		
-:					amnia					
			ab sample repres		ampie.					

		Flows Only			i		-				
		<del></del>		i	i	<del></del>	Runoff	Daily	i -		
_	-		Total	_	Tota	ai :	Peak	Runoff			
	Storm	Sample	Suspended	Solids	Phosph	norus (	Discharge	Volume			
	Event	Туре	(mg/l)	(lb)	(mg/l)	(lb)	(cfs)	(cf)			
				, ,							
1	06/01/94	storm	698	6,250	0.478	4.3	4.02	143,424			
2	06/21/94	storm	65	2,490	0.159	6.1	30.33	613,682			
3	06/22/94	storm	176	13,184	0.181	13.6	83,92	1,199,866		Ţ	
4	04/10/95	storm	1020	545	1.062	0.6	1.03	8,556			
5	04/18/95	storm	106	1,486	0.097	1.4	5.06	224,543	!		
6	04/23/95	storm	372	4,664	0.358	4.5	5.45	200,812	f		1
7	05/02/95	storm	826	_	0.098		-!				1
8	05/16/95	storm	761		0.651	_!		_			1
9	05/30/95		1040	_	0.100	!	-[				
10	07/13/95	storm	167	1,909	0.245	2.8	2.81	183,129			_i _
11	08/13/95	storm	86	1,001	0,170	2.0	2.46	186,400			
12	08/17/95	storm	580	6,135	0.802	8.5	2.18	169,432			
13	09/18/95	storm	392	4,207	3.150	33.8	2.08	171,922			
14	09/20/95	storm	150	4,015	0.360	9.6	35.15	428,703			
15	09/29/95	storm	148	2,237	- 441,119	4.414.	6,57	242,102			
16	10/03/95	storm	126	1,745	0.200	2.8	2.69	221,901			
17	10/21/95	storm	64	560	0.170	1.5	1.70	140,237			
18	05/09/96	storm	250	14,790	0.273	16.2	87.67	947,621			
19	05/24/96	storm	468	1,607	0.637	2.2	0.92	54,991			
20	06/14/96	storm	1160	3,439	1.240	3.7	0.62	47,493			
21	06/20/96	storm	681	2,246	0,649	2.1	0.72	52,825			
22	07/08/96	storm	694	2,082	0.959	2.9	0.61	48,056			
23	07/24/96	storm	861	2,091	0.480	1.2	0.54	38,905			
24	08/07/96	storm	490	1,461	0.593	1.8	1.84	47,747			$\perp$
25	09/11/96	storm	1100	7,508	0,101	0.7	18.81	109,334			$\perp$
		Totals	12481	85,651	3/31	141.5	297.2	5,481,881			$\perp$
	Averages	(Mathematical)	499	3,893			13.5	249,167			$\perp$
										 	$\perp$
	Note:	The TP concentrate									$\perp$
		the calculations for	average and total	TP concentration	ons and loads	(values w/sha	aded backgrou	nd).			
										1	

	Raw Base Fl	OH3 OIIIy			· ·				<del></del>	
_							Runoff	Daily :		+
-			Total		Tot		Peak	Runoff		
_			,	2-11-4-						
	Storm	Sample	Suspended :		Phospi		Discharge	Volume		1
	Event	Туре	(mg/l)	(lb)	(mg/l)	(₩)	(cfs)	(cf) :		
	<u> </u>						<u> </u>	<u> </u>		i
1	05/17/94	base	17		0,063		i	<del></del>		
2	06/14/94	base	21	184	0.059	0.5	1.7	140,4561		
3		base	413	5,690	0.152	2.1	4,23	220,680		
4		base	5	20]	0.000	0.0	0.83	63,475		
5		base	14	61	0.066	0,3	0.97	70,314		
6	09/05/94	base	44	179	0.134	0.5	0.91	65,306		
7	04/04/95	base	20	85	0.050	0.2	0.97	67,748		
8	04/18/95	base	29	407	0.079	1.1	5.08	224,543		
9	05/02/95	başe	15		0.040	<b></b> ;		<b>—</b> [		]
10	05/16/95	base	12		0.028	— i				
11	06/13/95	base	15	136	0.105	1.0	3,18	145,683		
12	06/27/95	base	12	162	0.060	8.0	2.7	215,739		
13	07/11/95	base	13	149	0.062	0.7	2.53	183,034		
14	07/25/95	base	11	154	0.069	1.0	3.18	224,209		
15	08/08/95	base	18	192	0.197	2.1	2.24	170,911		
16	08/22/95	base	36	405	0.134	1.5	2.38	180,0581		
17	09/06/95	base	16	187	0.070	0.8	2.45	187,707		
18	10/03/95	base	18	249	0,090	1,2	2,69	221,901		
19	10/17/95	base	10	97	0.030	0.3	2.34	156,022		
20	10/31/95	base	4	50	0.020	0.2	2,67	199,544		<u> </u>
21	04/02/96	base	12		0.042					
22	04/16/96	base	9	_	0.052	_				
23	04/30/96	base	12	53	0.010	0.0	0.86	70,501		<del>                                     </del>
24	05/14/98	base	37	131	0.087	0.3	0.77	56,649		<del> </del>
25	05/28/96	base	82	360	0.267	1.6	1,22	93,001		
26	06/11/96	base	18	51	0.072	0.2	0.61	45,521		<del>!                                    </del>
27	06/25/96	base	16	53	0.096	0.3	0.69	52.982		<del></del>
28	07/09/96	base	18	88	0.105	0.5	11.52	78.653		
29	07/23/96	base	206	432	0.140	0.3	0.48	33.614		
30	08/06/96	base	13	19	0.052	0.1	0.40	23,734		+
31	08/20/98	base	16	28	0.055	0.1	0.38	28,422		
32	09/03/96	base	33	52	0.033	0.1	0.35	25,186	<del>-</del>	
33	09/03/96	base	28	222	0.130	1.0	8.51	126,756		<del>                                     </del>
34	10/01/96	base	13	56	0.052	0.2	0.85	89,319		
35	10/01/96	base	9	23	0.032	0.1	0.66	40,346		
		base	13	40	0.048	0.1	0.73	48,807		+
36	10/29/96	ezed	13]	+0	0.094	0.31	0.73	40,007		
		Totals	1,258	10,015	2.890	19.6	88.98	3,530,801		
	Averages (	Mathematical)	35	323	0.080	0.6	2.23	113,897		

	Tablittaniki Otama Ci	(\$4000 upp. 4)									T
	Total Monthly Storm Flows	(Measured)	<del></del>						<u>'</u>		<del>i                                     </del>
		<del>                                       </del>	Cup off \/ohum	na (at)					<del> </del>	_	_
		1004	Runoff Volum		T-4-1				- <del> </del>		-
	Month	1994	1995	1996	Total	Ave. Annual			<del>                                     </del>	+	
	<u> </u>	1				'			<u> </u>		⊢—
	Jan				0				1		ļ
	Feb	<u> </u>			0				1		
	Маг				0				i		
	Apr	· —	53326	0.00	5,343,205	l					
	May	. —	—	7,933,972	7,933,972						
	Jun	5,660,792		1,614,208	16,835,311	!					$\Box$
	Jul	0	6,579,803	3,569,346	10,149,149	:					1
	Aug	303,517	2,212,608	149,247	2,665,372	į į					
	Sep	0	7,705,959	3,698,733	11,404,692				1		
	Oct	869,996	2,228,449	259,115	3,357,560	!					_
	Nov	STOSEMENT STORY	1,279,164	0)	1,279,164				<del> </del>	1	1
	Dec	Management C	1,2,10,104		0					1	<del>                                     </del>
	Dec	<del></del>	Activities and address and activities	CONTRACTOR SECTION SECTION						<del>}</del>	
	Total Vacabi Flavor (-5 -	0 004 305	34 000 400	17 224 624	58 Q69 425	19,656,142			+		
	Total Yearly Flows (cf) =		34,909,499	17,224,621	58,968,425						-
	Total Yearly Flows (af) =	<del></del>	801	395	1,354	451					<u> </u>
	Ave Total Phosphorus (mg/l) =		0,530	0,530		0,530					ļ .
	Total Phosphorus (lb) =		1,155	570:	1,951	650					
ve To	otal Suspended Solids (mg/l) =		499	<b>499</b> į	<u> </u>	499			1		
	Total Suspended Solids (lb) =	213,005	1,088,025	536,840	1,837,870	612,623					
To	otal Suspended Solids (tons) =	107	544	268	919	306					
						1			T		
	Note:	Only partial flow d	ata was available	for months wi	th light shade	d background.	Total runoff v	olumes for	ì		
		these months wen									
			i						1		
			+		i				<del> </del>		<del> </del>
	!		1	<u> </u>							
	T-4-144	14					····				
	Total Monthly Base Flows	Measured)							1		
	<u> </u>			(-0					-		
			Runoff Volum	_ , ,							
	Month	1994	1995	1996	Total	Ave. Annuai					
						į					
	Jan				0						
	Feb				0	i					
	Mar				0				<u> </u>		
	Арг				3,434,404						
	May										
			_	1,676,596	1,676,596						
	Jun	2.314.711		1,676,596	1,676,596 9,008,385						
		2,314,711	4,166,661	1,548,141	9,008,385						
	Jul	2,904,034	4,166,661	1,548,141 1,079,875	9,008,385 8,150,570						
	Jui Aug	2,904,034 2,167,522	4,166,661 4,253,312	1,548,141 1,079,875 867,472	9,008,385 8,150,570 7,268,306						
	Jul Aug Sep	2,904,034 2,167,522 2,154,102	4,166,661 4,253,312 4,014,604	1,548,141 1,079,875 867,472 1,151,322	9,008,385 8,150,570 7,288,306 7,320,028			4			
	Jul Aug Sep Oct	2,904,034 2,167,522 2,154,102 1,825,166	4,166,661 4,253,312 4,014,604 3,709,287	1,548,141 1,079,875 867,472 1,151,322 1,381,501	9,008,385 8,150,570 7,288,306 7,320,026 6,915,954			•			
	Jul Aug Sep Oct Nov	2,904,034 2,167,522 2,154,102	4,166,661 4,253,312 4,014,604 3,709,287 5,322,748	1,548,141 1,079,875 867,472 1,151,322 1,381,501 1,272,172	9,008,385 8,150,570 7,288,306 7,320,028 6,915,954 8,545,911			•			
	Jul Aug Sep Oct	2,904,034 2,167,522 2,154,102 1,825,166	4,166,661 4,253,312 4,014,604 3,709,287	1,548,141 1,079,875 867,472 1,151,322 1,381,501 1,272,172	9,008,385 8,150,570 7,288,306 7,320,026 6,915,954			•		<u> </u>	
	Jui Aug Sep Oct Nov Dec	2,904,034 2,167,522 2,154,102 1,825,166	4,166,661 4,253,312 4,014,604 3,709,287 5,322,748	1,548,141 1,079,875 867,472 1,151,322 1,381,501 1,272,172	9,008,385 8,150,570 7,288,308 7,320,028 6,915,954 8,545,911 8,900,599			•			
	Jui Aug Sep Oct Nov Dec Total Yearly Flows (ct) =	2,904,034 2,167,522 2,154,102 1,825,166	4,166,661 4,253,312 4,014,604 3,709,287 5,322,748 35,447,605	1,548,141 1,079,875 867,472 1,151,322 1,381,501 1,272,172	9,008,385 8,150,570 7,288,308 7,320,028 6,915,954 8,545,911 8,900,599						
	Jui Aug Sep Oct Nov Dec  Total Yearly Flows (cf) =	2,904,034 2,167,522 2,154,102 1,825,166 333 13,316,528 306	4,166,661 4,253,312 4,014,604 3,709,287 5,322,748 35,447,605 814	1,548,141 1,079,875 867,472 1,151,322 1,381,501 1,272,172 12,476,622 286	9,008,385 8,150,570 7,288,308 7,320,028 6,915,954 8,545,911 8,900,599	489					
	Jui Aug Sep Oct Nov Dec Total Yearly Flows (ct) =	2,904,034 2,167,522 2,154,102 1,825,166 333 13,316,526 308 0,080	4,168,661 4,253,312 4,014,604 3,709,287 5,322,748 35,447,605 814 0.080	1,548,141 1,079,875 887,472 1,151,322 1,381,501 1,272,172 12,476,622 286 0.080	9,008,385 8,150,570 7,288,308 7,320,028 6,915,954 8,545,911 8,900,599 61,240,753	469 0,080					
	Jui Aug Sep Oct Nov Dec  Total Yearly Flows (cf) =	2,904,034 2,167,522 2,154,102 1,825,166 313,316,526 306 0,080	4,166,661 4,253,312 4,014,604 3,709,287 5,322,748 35,447,605 814	1,548,141 1,079,875 867,472 1,151,322 1,381,501 1,272,172 12,476,622 286	9,008,385 8,150,570 7,288,308 7,320,028 6,915,954 8,545,911 8,900,599	489					
	Jul Aug Sep Oct Nov Dec Total Yearly Flows (cf) = Total Yearly Flows (af) = Ave Total Phosphorus (rng/l) =	2,904,034 2,167,522 2,154,102 1,825,166 313,316,528 13,316,528 0,080 67	4,166,661 4,253,312 4,014,604 3,709,287 5,322,748 35,447,605 814 0,080 178	1,548,141 1,079,875 887,472 1,151,322 1,381,501 1,272,172 12,476,622 286 0.080	9,008,385 8,150,570 7,288,308 7,320,028 6,915,954 8,545,911 8,900,599 61,240,753	469 0,080					
ve To	Jui Aug Sep Oct Nov Dec  Total Yearly Flows (cf) =  Total Yearly Flows (mg/) =  Total Phosphorus (lb) =  Total Phosphorus (lb) =  otal Suspended Solids (mg/l) =	2,904,034 2,167,522 2,154,102 1,825,166 313,316,526 306 0,080 67	4,166,661 4,253,312 4,014,604 3,709,287 5,322,748 35,447,605 814 0,080 178	1,548,141 1,079,875 867,472 1,151,322 1,381,501 1,272,172 12,476,622 286 0,080 63	9,008,385 8,150,570 7,288,308 7,320,028 6,915,954 8,545,911 8,900,599 61,240,753	469 0,080 102 35					
\ve To	Jul Aug Sep Oct Nov Dec Total Yearly Flows (cf) = Total Yearly Flows (af) = Ave Total Phosphorus (fb) = total Suspended Solids (mg/l) = Total Suspended Solids (lb) =	2,904,034 2,167,522 2,154,102 1,825,166 313,316,528 303 0,080 6 67 35 29,051	4,166,661 4,253,312 4,014,604 3,709,287 5,322,748 35,447,605 814 0.080 178 35 77,331	1,548,141 1,079,875 867,472 1,151,322 1,381,501 1,272,172 286 0,080 63 35 27,218	9,008,385 8,150,570 7,288,308 7,320,028 8,915,954 8,545,911 8,900,599 61,240,753 1,408 — 307 —	469 0,080 102 35 44,533					
\ve To	Jui Aug Sep Oct Nov Dec  Total Yearly Flows (cf) =  Total Yearly Flows (mg/) =  Total Phosphorus (lb) =  Total Phosphorus (lb) =  otal Suspended Solids (mg/l) =	2,904,034 2,167,522 2,154,102 1,825,166 313,316,528 303 0,080 6 67 35 29,051	4,166,661 4,253,312 4,014,604 3,709,287 5,322,748 35,447,605 814 0,080 178	1,548,141 1,079,875 867,472, 1,151,322 1,381,501 1,272,172 288 12,476,622 286 0,080 83 35	9,008,385 8,150,570 7,288,308 7,320,028 6,915,954 8,545,911 8,900,599 61,240,753 1,406	469 0,080 102 35					
\ve To	Jui Aug Sep Oct Nov Dec Total Yearly Flows (cf) = Total Yearly Flows (mg/l) = Total Phosphorus (mg/l) = Total Suspended Solids (mg/l) = Total Suspended Solids (tons) =	2,904,034 2,167,522 2,154,102 1,825,166 313,316,526 306 0,080 67 35 29,051	4,166,661 4,253,312 4,014,604 3,709,287 5,322,748 35,447,605 814 0,080 178 35 77,331	1,548,141 1,079,875 867,472 1,151,322 1,381,501 1,272,172 12,476,622 286 0,080 63 35 27,218	9,008,385 8,150,570 7,288,306 6,915,954 8,545,911 8,900,599 61,240,753 1,406 — 307 — 133,599	489 0.080 102 35 44,533 22	Total nunoff	olumes for			
\ve To	Jul Aug Sep Oct Nov Dec Total Yearly Flows (cf) = Total Yearly Flows (af) = Ave Total Phosphorus (fb) = total Suspended Solids (mg/l) = Total Suspended Solids (lb) =	2,904,034 2,167,522 2,154,102 1,825,166 313,316,526 0,080 6,0,080 67 35 29,051 15	4,166,661 4,253,312 4,014,604 3,709,287 5,322,748 35,447,605 814 0,080 178 35 77,331 39	1,548,141 1,079,875 867,472 1,151,322 1,381,501 1,272,172 12,476,622 286 0,080 63 35 27,218 14	9,008,385 8,150,570 7,288,306 7,320,028 6,915,954 8,545,911 8,900,599 61,240,753 1,406 — 307 — 133,599 67	469 0,080 102 35 44,533 22 d background		olumes for			
\ve To	Jui Aug Sep Oct Nov Dec Total Yearly Flows (cf) = Total Yearly Flows (mg/l) = Total Phosphorus (mg/l) = Total Suspended Solids (mg/l) = Total Suspended Solids (tons) =	2,904,034 2,167,522 2,154,102 1,825,166 313,316,526 306 0,080 67 35 29,051	4,166,661 4,253,312 4,014,604 3,709,287 5,322,748 35,447,605 814 0,080 178 35 77,331 39	1,548,141 1,079,875 867,472 1,151,322 1,381,501 1,272,172 12,476,622 286 0,080 63 35 27,218 14	9,008,385 8,150,570 7,288,306 7,320,028 6,915,954 8,545,911 8,900,599 61,240,753 1,406 — 307 — 133,599 67	469 0,080 102 35 44,533 22 d background		olumes for			
\ve To	Jui Aug Sep Oct Nov Dec Total Yearly Flows (cf) = Total Yearly Flows (mg/l) = Total Phosphorus (mg/l) = Total Suspended Solids (mg/l) = Total Suspended Solids (tons) =	2,904,034 2,167,522 2,154,102 1,825,166 313,316,526 0,080 6,0,080 67 35 29,051 15	4,166,661 4,253,312 4,014,604 3,709,287 5,322,748 35,447,605 814 0,080 178 35 77,331 39	1,548,141 1,079,875 867,472 1,151,322 1,381,501 1,272,172 12,476,622 286 0,080 63 35 27,218 14	9,008,385 8,150,570 7,288,306 7,320,028 6,915,954 8,545,911 8,900,599 61,240,753 1,406 — 307 — 133,599 67	469 0,080 102 35 44,533 22 d background		olumes for			

			ise Flows (Measuri	ed)	· <u> </u>				<u> </u>		-
	+			D					<u> </u>		
	1			Runoff Volum						İ	
	ı	Month	1994	1995	1996	Totai	Ave, Annual				
	:				!					į	
		Jan				0					
		Feb		_		0	l .			]	1
		Mar	_	_	<u> </u>	0	I (			1	]
	:	Apr		<b>6.565.194</b>	25132176	8,777,609	İ			4	
		May		_	9,610,568	9,610,568			1	1	
	i	Jun	7,975,503	TATTO NE	3,162,349	25,843,698	ı		i	!	
		Jul	2,904,034	10,746,464	4,649,221	18,299,719					
		Aug	2,471,039	6,465,920					<u> </u>	<u> </u>	
	i	Sep	2,154,102	11,720,563	4,850,055						
	<del>  -</del>	Oct	2,695,162	5,937,736					<del>†</del>	<del> </del>	
	1	Nov	<b>21 850301</b>	6,601,912	1,272,172	9,825,075				1	
	+	Dec		\$ 07 BS (16)		8,900,599			<del> </del>	<del></del>	
		500	1			0,000,000	2		<del> </del>	`	
	Total Va	arly Flows (cf) =	20,150,831	70,357,104	29 701 242	120,209,178	40,069,726		i -		
		arly Flows (af) =		1,615	682	2,760					
Λ		sphorus (mg/l) =	0.233	0	0,341	2,700	0.301		<del></del>	<del> </del>	
^		osphorus (lb) =	293	1,333	6321	2,258	753		-		
ua Tai		Solids (mg/l) =	192	265	304	4,408	263				
						1 971 470			1		
		led Solids (lb) =	242,056	1,165,356 583	564,0591	1,971,470					
ıot	a suspended	f Solids (tons) =	121	583	282	986	329				
		A1-4	Out			** !!- <b>!</b> ! - <b>!</b> - <b>!</b> -	4 3	T-4-1 #			
		Note:	Only partial flow d						olumes for		
	<u> </u>		these months were	estimated by in	terpolation of the	ne partial flow	data available				
					!	<u> </u>					
	1								ļ		
	<u> </u>		1		!						
	Total Month	ly Storm Flows (	Estimated)				i		i		
					i	:					
				Runoff Volum	nes (cf)		į	Denver Av	erage Monthly	/ Rainfail	
	!	Month	1994	1995	1996	Total :	Ave. Annual	(ft)	(in)	(% of total)	
		Month	1994	1995	1996	Total	Ave. Annual				
		Month Jan	1994	1995	1996	Total :	Ave. Annual				
			(578.600	S. 21514.671	574,686	2,468,253	Ave. Annual	(ft) 0.0360	(in) 0.43	(% of total)	
		Jan Feb	57/E (980 457/5)84	1 (1) (1) (1) 1 (2) (2) (2)	(572)(858 (864)(151	2,468,253 2,982,473	Ave. Annual	0.0360 0.0435	(in) 0.43 0.52	2.8% 3.4%	
		Jan Feb Mar		1614.671 1850.416 447.7186	574,686	2,468,253 2,982,473 7,288,203	Ave. Annual	0.0360 0.0435 0.1063	(in) 0.43 0.52 1.28	2.8% 3.4% 8.4%	
		Jan Feb Mar Apr	774.000 1972-004 112-123	3) 877. 853 496 77 306 5,343,205	3574,686   864,412   1864,820   0	2,468,253 2,982,473 7,288,203 6,738,047	Ave. Annual	0.0360 0.0435 0.1063 0.1326	(in) 0.43 0.52 1.28 1.59	2.8% 3.4% 8.4%	
		Jan Feb Mar Apr May	C76 (89h) 457/554 (10-100 39+191- 2/27-7481	5,343,205	. 617 (086 (867 / 1)7 (1688 6 - 2) 0 7,933,972	2,468,253 2,982,473 7,288,203 6,738,047 21,052,184	Ave. Annual	0.0360 0.0435 0.1063 0.1328 0.2494	(in) 0.43 0.52 1.28 1.59 2.99	2.8% 3.4% 8.4% 10.5% 19.7%	
		Jan Feb Mar Apr May Jun	457,584 457,584 1,112,188 1534,17,7 242,7,481 5,660,792	3,14,677 1,518,476 477,196 5,343,205 0,560,311	514,098   HE-21/2   1988,920   0   7,933,972   1,814,208	2,468,253 2,982,473 7,288,203 6,738,047 21,052,184 16,835,311	Ave. Annual	0.0360 0.0435 0.1063 0.1328 0.2494 0.1495	(in)  0.43  0.52  1.28  1.59  2.99  1.79	2.8% 3.4% 8.4% 10.5% 19.7%	
		Jan Feb Mar Apr May Jun Jul	576.660 457.584 11.1p.188 15.84.51.3 27.62.7485 5,660,792 0	1,819,877, 1,830,476 4,770,995 5,343,205 1,231 9,560,3111 8,579,803	5,74,686 96-12 16-12 0 7,933,972 1,814,208 3,569,346	2,468,253 2,982,473 7,288,203 6,738,047 21,052,184 16,835,311 10,149,149	Ave. Annual	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228	(in) 0.43 0.52 1.28 1.59 2.99 1.79	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7%	
		Jan Feb Mar Apr May Jun Jul Aug	378.600. 457.584. 457.584. 457.843. 2222.481 5,660,792 0 303,517	1,830,416 447,195 5,343,205 10,231 9,560,311 8,579,803 2,212,608	5(4,686 95-12 16-920 0 7,933,972 1,614,208 3,569,346 149,247	2,468,253 2,982,473 7,288,203 6,738,047 21,052,184 16,835,311 10,149,149 2,665,372	Ave. Annual	0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190	(in)  0.43  0.52  1.28  1.59  2.99  1.79  1.47	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7%	
		Jan Feb Mar Apr May Jun Jul Aug Sep	57,6,690 457,594 1,112,188 1,344,643 5,660,792 0 303,517	1830.416 4.7.095 5,343,205 9,560,311 8,579,803 2,212,608 7,705,959	574,086 6,864,412 1,644,920 0,07 1,913,972 1,614,208 3,569,348 149,247 3,698,733	2,468,253 2,982,473 7,288,203 6,738,047 21,052,184 16,835,311 10,149,149 2,665,372 11,404,692	Ave. Annual	(ft) 0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1228 0.1190	(in) 0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6%	
		Jan Feb Mar Apr May Jun Jul Aug Sep	378.600. 457.584. 457.584. 457.843. 2222.481 5,660,792 0 303,517	5,343,205 6,579,803 9,560,311 8,579,803 2,212,608 7,705,959 2,228,449	1,634,412 1,634,412 1,634,920 0 1,7,933,972 1,614,208 3,559,348 149,247 3,698,733 259,115	2,468,253 2,982,473 7,288,203 6,738,047 21,052,184 16,835,311 10,149,149 2,665,372 11,404,692 3,357,560	Ave. Annual	0.0380 0.0435 0.1063 0.1326 0.2494 0.1495 0.1120 0.1190 0.1094	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 6.2%	
		Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov	378,690 477,594 1,112,103 3,348,47 2,622,481 5,660,792 0 303,517 0 869,998	1,859,476 1,859,476 5,343,205 1,444,31 9,560,311 8,579,803 2,212,608 7,705,959 2,228,449 1,279,164	574 (886 614, 412 1886 523 0 7,933,972 1,814,208 3,599,348 149,247 3,698,733 259,115 0	2,468,253; 2,982,473; 7,288,203; 6,738,047; 21,052,184; 16,835,311; 10,149,149; 2,665,372; 11,404,692; 11,279,164;	Ave. Annual	0.0360 0.0435 0.1083 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84	(% of total) 2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.8% 6.2% 5.6%	
		Jan Feb Mar Apr May Jun Jul Aug Sep	57,6,690 457,594 1,112,188 1,344,643 5,660,792 0 303,517	5,343,205 6,579,803 9,560,311 8,579,803 2,212,608 7,705,959 2,228,449	1,634,412 1,634,412 1,634,920 0 1,7,933,972 1,614,208 3,559,348 149,247 3,698,733 259,115	2,468,253 2,982,473 7,288,203 6,738,047 21,052,184 16,835,311 10,149,149 2,665,372 11,404,692 3,357,560	Ave. Annual	0.0380 0.0435 0.1063 0.1326 0.2494 0.1495 0.1120 0.1190 0.1094	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94	(% of total) 2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 8.8% 6.2% 5.6%	
		Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	378,690 487,584 1132,184 332,842 222,785 5,680,792 0 303,517 0 869,996 0	1,830,476 1,830,476 5,343,205 10,48,721 9,560,311 6,579,803 2,212,608 7,705,595 2,228,449 1,279,164	7,933,972 1,614,208 3,509,348 149,247 3,698,733 259,115 0	2,468,253; 2,982,473; 7,288,203; 6,738,047; 21,052,184; 16,835,311; 10,149,149; 2,665,372; 11,404,692; 3,357,560; 1,279,164;		(ft)  0.0360 0.0435 0.1083 0.1328 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%	
		Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	378.600 457.584 1112 188 334.442 2622.481 5,660,792 0 303,517 0 869,996 0 442.547	1,830,476 4,73,205 5,343,205 16,38,721 9,560,311 6,579,803 2,212,608 7,705,959 2,228,449 1,279,164 0	3574,686 684,412 1833,972 1,614,208 3,569,348 149,247 3,698,733 259,115 0	2,468,253 2,982,473 7,288,203 6,738,047 21,052,184 16,835,311 10,149,149 2,665,372 11,404,692 3,357,560 1,279,164 497,557 86,717,966	28,905,989	0.0360 0.0435 0.1083 0.1326 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%	
	Total Yes	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arty Flows (cf) = arty Flows (af) =	376.600. 457.584. 1,112.188 1,327.843 2,227.863 5,660,792 0 303,517 0 869,996 0 497.557 13,304,647 305	1,314,677 1,830,476 4,73,195 5,343,205 10,273 9,560,311 6,579,803 2,212,608 7,705,959 2,228,449 1,279,164 0 53,222,679 1,222	20,190,640 20,190,640 20,190,640 20,190,640 20,190,640	2,468,253; 2,982,473; 7,288,203; 6,738,047; 21,052,184; 16,835,311; 10,149,149; 2,665,372; 11,404,692; 3,357,560; 1,279,164;	28,905,989 664	(ft)  0.0360 0.0435 0.1083 0.1328 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%	
A	Total Yea	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec any Flows (cf) = arty Flows (af) =	378,890 477,584 1,117,168 1,347,847 2,22,481 5,680,792 0 303,517 0 869,998 0 487,587 13,304,647 305	1,859,476 1,859,476 5,343,205 3,9,560,311 8,579,803 2,212,608 7,705,959 2,228,449 1,279,164 0 53,222,679 1,222 0,530	574 (886 514 412 1886 523 01 7,933,972 1,814,208 3,599,348 149,247 3,698,733 259,115 0 0 20,190,640 464 0,530	2,468,253; 2,982,473; 7,288,203; 6,738,047; 21,052,184; 16,835,311; 10,149,149; 2,665,372; 11,404,692; 3,357,560; 1,279,164; 497,557; 88,717,966; 1,991;	28,905,989 664 0.530	(ft)  0.0360 0.0435 0.1083 0.1328 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%	
	Total Yea	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arty Flows (af) = phorus (mg/l) = losphorus (lb) =	378.990 477.584 1,111.183 5.34.845 2,627.485 5,660,792 0 303,517 0 869,996 0 427.577 13,304,647 305 0.530 440	1,279,164 0,53,222,679 1,222 0,530 1,279,164 1,279,164 0	574 (886 614 412 188 523 0   7,933,972 1,814,208  3,599,348  149,247 3,698,733 259,115 0   0   0   0   0   0   0   0   0   0	2,468,253 2,982,473 7,288,203 6,738,047 21,052,184 16,835,311 10,149,149 2,665,372 11,404,692 3,357,560 1,279,164 497,557 86,717,966	28,905,989 664 0.530 956	(ft)  0.0360 0.0435 0.1083 0.1328 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%	
ve Tot	Total Yeave Total Photal Photal Photal Suspended	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arty Flows (cf) = arty Flows (mg/l) = pophorus (lb) = I Solids (mg/l) =	378.690 477.584 117.183 332.842 27.7483 5,660,792 0 303,517 0 869,996 0 428.557 13,304,647 305 0.530 440 499	1,279,164 53,222,679 1,222 0,580,311 1,279,164 1,279,164 1,279,164 1,279,164 1,279,164 1,279,164 1,279,164	20,190,640 20,190,640 20,190,640 20,190,640 20,190,640 668 499	2,468,253; 2,982,473; 7,288,203; 6,738,047; 21,052,184; 16,835,311; 10,149,149; 2,665,372; 11,404,692; 3,357,560; 1,279,164; 497,557; 86,717,966; 1,991; 2,869;	28,905,989 664 0.530 956 499	(ft)  0.0360 0.0435 0.1083 0.1328 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%	
ve Tot	Total Yeave Total Photal Photal Photal Suspended	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arty Flows (af) = phorus (mg/l) = losphorus (lb) =	378.990 477.584 1,111.183 5.34.845 2,627.485 5,660,792 0 303,517 0 869,996 0 427.577 13,304,647 305 0.530 440	1,279,164 0,53,222,679 1,222 0,530 1,279,164 1,279,164 0	574 (886 614 412 188 523 0   7,933,972 1,814,208  3,599,348  149,247 3,698,733 259,115 0   0   0   0   0   0   0   0   0   0	2,468,253; 2,982,473; 7,288,203; 6,738,047; 21,052,184; 16,835,311; 10,149,149; 2,665,372; 11,404,692; 3,357,560; 1,279,164; 497,557; 86,717,966; 1,991; 2,869;	28,905,989 664 0.530 956 499	(ft)  0.0360 0.0435 0.1083 0.1328 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%	
ve Tot	Total Yea  ve Total Phos  Total Phose  al Suspended  Total Suspended	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arty Flows (cf) = arty Flows (mg/l) = pophorus (lb) = I Solids (mg/l) =	378.690 477.584 117.183 332.842 27.7483 5,660,792 0 303,517 0 869,996 0 428.557 13,304,647 305 0.530 440 499	1,279,164 53,222,679 1,222 0,530 1,761 1,761 4,99	20,190,640 20,190,640 20,190,640 20,190,640 20,190,640 668 499	2,468,253; 2,982,473; 7,288,203; 6,738,047; 21,052,184; 16,835,311; 10,149,149; 2,665,372; 11,404,692; 3,357,560; 1,279,164; 497,557; 86,717,966; 1,991; 2,869;	28,905,989 664 0.530 956 499 900,914	(ft)  0.0360 0.0435 0.1083 0.1328 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%	
ve Tot	Total Yea  ve Total Phos  Total Phose  al Suspended  Total Suspended	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arty Flows (cf) = arty Flows (mg/l) = osphorus (lib) = ided Solids (ib) =	378,600 487,584, 1132188 1342,842 222,7481 5,680,792 0 303,517 0 869,996 0 497,557 13,304,647 305 0.530 440 499 414,666	1,830,476 1,830,476 5,343,205 16,48,721 9,560,3111 6,579,803 2,212,608 7,705,595 2,228,449 1,279,164 0 53,222,679 1,222 0,530 1,761 499 1,658,793	7,933,972 1,614,208 3,569,348 149,247 3,698,733 259,115 0 0 20,190,640 464 464 0.530 668 499	2,468,253; 2,982,473; 7,288,203; 6,738,047; 21,052,184; 16,835,311; 10,149,149; 2,665,372; 11,404,692; 3,357,560; 1,279,164; 497,557; 88,717,966; 1,991; ———————————————————————————————————	28,905,989 664 0.530 956 499 900,914	(ft)  0.0360 0.0435 0.1083 0.1328 0.2494 0.1495 0.1228 0.1190 0.1094 0.0787 0.0703	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%	
Ne Tot	Total Yes ve Total Phos Total Pl al Suspended Total Suspended Total Suspended Total Suspended	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arty Flows (cf) = arty Flows (mg/l) = osphorus (lib) = ided Solids (ib) =	378,600 487,584, 1132188 1342,842 222,7481 5,680,792 0 303,517 0 869,996 0 497,557 13,304,647 305 0.530 440 499 414,666	1,859,476 1,859,476 5,343,205 9,560,311 8,579,803 2,212,608 7,705,959 2,228,449 1,279,164 0 53,222,679 1,222 0,530 1,761 499 1,858,793 829	20,190,640 464 0,530 0,7,933,972 1,814,208 3,569,348 149,247 0,000 0,00	2,468,253; 2,982,473; 7,288,203; 6,738,047; 21,052,184; 16,835,311; 10,149,149; 2,665,372; 11,404,692; 3,357,560; 1,279,164; 497,557; 88,717,966; 1,991; ———————————————————————————————————	28,905,989 664 0.530 956 499 900,914 450	(ft)  0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1120 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%	
Ne Tot	Total Yes ve Total Phos Total Pl al Suspended Total Suspended Total Suspended Total Suspended	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arly Flows (af) = phorus (mg/l) = losphorus (ib) = I Solids (mg/l) = led Solids (tons) = Note:	378.800 477.584 1,117.188 1,348.847 2,2481 5,660,792 0 303,517 0 869,996 0 447.557 13,304,647 305 0,530 440 499 414,666 207	1,830,476 1,830,476 1,343,205 1,343,205 1,343,205 1,350,311 1,6,579,803 1,212,608 1,279,164 0 1,279,164 0 53,222,679 1,222 0,530 1,761 499 1,658,793 829	574 686 564 412 188 523 0 0 7,933,972 1,814,208 3,599,348 149,247 3,698,733 259,115 0 0 20,190,640 464 0,530 668 499 629,282 315 anded backgroin	2,468,253; 2,982,473; 7,288,203; 6,738,047; 21,052,184; 16,835,311; 10,149,149; 2,665,372; 11,404,692; 3,357,560; 1,279,164; 497,557; 88,717,966; 1,991; ———————————————————————————————————	28,905,989 664 0.530 956 499 900,914 450	(ft)  0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1120 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%	
Ne Tot	Total Yes ve Total Phos Total Pl al Suspended Total Suspended Total Suspended Total Suspended	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arly Flows (af) = phorus (mg/l) = losphorus (ib) = I Solids (mg/l) = led Solids (tons) = Note:	378.990 477.584 1111183 534.841 267.485 5,660,792 0 303,517 0 869,993 0 447.557 13,304,647 305 0.530 440 499 414,666 207	1,830,476 1,830,476 1,343,205 1,343,205 1,343,205 1,350,311 1,6,579,803 1,212,608 1,279,164 0 1,279,164 0 53,222,679 1,222 0,530 1,761 499 1,658,793 829	574 686 564 412 188 523 0 0 7,933,972 1,814,208 3,599,348 149,247 3,698,733 259,115 0 0 20,190,640 464 0,530 668 499 629,282 315 anded backgroin	2,468,253; 2,982,473; 7,288,203; 6,738,047; 21,052,184; 16,835,311; 10,149,149; 2,665,372; 11,404,692; 3,357,560; 1,279,164; 497,557; 88,717,966; 1,991; ———————————————————————————————————	28,905,989 664 0.530 956 499 900,914 450	(ft)  0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1120 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%	
ve Tot	Total Yes ve Total Phos Total Pl al Suspended Total Suspended Total Suspended Total Suspended	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arly Flows (af) = phorus (mg/l) = losphorus (ib) = I Solids (mg/l) = led Solids (tons) = Note:	378.990 477.584 1111183 534.841 267.485 5,660,792 0 303,517 0 869,993 0 447.557 13,304,647 305 0.530 440 499 414,666 207	1,830,476 1,830,476 1,343,205 1,343,205 1,343,205 1,350,311 1,6,579,803 1,212,608 1,279,164 0 1,279,164 0 53,222,679 1,222 0,530 1,761 499 1,658,793 829	574 686 564 412 188 523 0 0 7,933,972 1,814,208 3,599,348 149,247 3,698,733 259,115 0 0 20,190,640 464 0,530 668 499 629,282 315 anded backgroin	2,468,253; 2,982,473; 7,288,203; 6,738,047; 21,052,184; 16,835,311; 10,149,149; 2,665,372; 11,404,692; 3,357,560; 1,279,164; 497,557; 86,717,966; 1,991; 2,869; 2,702,741; 1,351; und were estir	28,905,989 664 0.530 956 499 900,914 450	(ft)  0.0360 0.0435 0.1063 0.1326 0.2494 0.1495 0.1120 0.1190 0.1094 0.0787 0.0703 0.0473	(in)  0.43 0.52 1.28 1.59 2.99 1.79 1.47 1.43 1.31 0.94 0.84 0.57	2.8% 3.4% 8.4% 10.5% 19.7% 11.8% 9.7% 9.4% 8.6% 6.2% 5.6% 3.7%	

	m											
	Total Month	nty Base Flows (	Estimated)									
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	-									-		
	· · · · ·	A	-4				+		1	_		
			of winter (unmeasu									
		to	summer (measure	d) base flows =	67%	(value calibra	ited to average	Denver precip	itation)			
	T	1						i			7	1
			1	_							<del></del>	
							!					
	1	<u> </u>		Runoff Volum	nes (cf)		;			i	į	
		Month	1994	1995	1996	Total	Ave. Annual					
												+-
		1 1	a Nanada i ing mga mga katang mga mga mga mga mga mga mga mga mga mg	athetical programme and the first of		C 004 504	!					_
	ļ	Jan	traff to			5,384,564			1			
	l i	Feb			1100	5,384,564	t					
		Mar			2.71.4.3	5,384,564	I					
		Apr	V - V - V - V - V - V - V - V - V - V -	1,251,989	2,182,415	4,921,416				1		
	+									_		→—
	į	May	A STATE OF THE STA		1,676,596	6,132,345						1
	1	Jun	2,314,711	5,145,533 +	1,548,141	9,008,385	ì					ì
		Jul	2,904,034	4,166,661	1,079,875	8,150,570	[					-
	<del> </del>									_		
		Aug	2,167,522	4,253,312	867,472	7,288,306						
		Sep	2,154,102	4,014,604_i	1,151,322	7,320,028						
		Oct	1,825,166	3,709,287	1,381,501	6,915,954				1		
	<del>                                     </del>	Nov	1,950,991	5,322,748		8,545,911				<del></del>		+
	+											
		Dec	Yalanzi Yanya	7,583,471	1,317,128	10,387,611						
	Total Yes	arty Flows (cf) =	22,238,598	47,322,553	15,263,068	84,824,219	28,274,740					1
		arty Flows (af) =			350							-
		-	511	1,086		1,947						
Av	re Total Phos	sphorus (mg/l) =	0.080	0.080	0.080		0.080					
	Total Pf	rosphorus (lb) =	111	237	76	425	142					
e Tota		Solids (mg/l) =	35	35	35		35			<del>-  </del>		+
										+		
		ied Solids (lb) =	48,514	103,236	33,297	185,048						
Tote	al Suspended	Solids (tons) =	24	52	17	93	31			i		
		Al-4	D								<del>-</del>	
	1	(4016;	Base flow volumes			vilitel) male es	sumated assur	uluð o tae o tal	e average			
			monthly base flow	for the measured	d months (sum	mer).						
			monthly base flow	for the measured	months (sum	mer).						
			monthly base flow	for the measured	d months (sum	mer).	_					
			monthly base flow	for the measured	d months (sur	mer).			W ** W			
					d months (sum	mer).						
	Total Month	ly Storm and Ba	monthly base flow		d months (sum	mer).			W 11 W W W W W W W W W W W W W W W W W			
	Total Month	ly Storm and Ba			d months (sum	mer).						
	Total Month	ly Storm and Ba		: 1 d)		mer).						
	Total Month		se Flows (Estimats	d) Runoff Volum	es (cf)							
	Total Month	ly Storm and Ba Month		: 1 d)		mer).	Ave. Annual					
	Total Month		se Flows (Estimats	d) Runoff Volum	es (cf)							
	Total Month	Month	se Flows (Estimate	d) Runoff Volum 1995	es (cf) 1996	Total						
	Total Month	Month	se Flows (Estimate 1994 1,865,702	Runoff Volum 1995 4,483,614	es (cf) 1996 1,503,501	Total 7,852,817						
	Total Month	Month Jan Feb	1994 1,865,702 1,944,596	Runoff Volum 1995 4,483,614 4,799,213	1,503,501 1,623,228	Total 7,852,817 8,367,037						
	Total Month	Month	se Flows (Estimate 1994 1,865,702	Runoff Volum 1995 4,483,614	es (cf) 1996 1,503,501	Total 7,852,817						
	Total Month	Month  Jan Feb Mar	1994 1,865,702 1,944,598 2,605,200	Runoff Volum 1995 4,483,614 4,799,213 7,441,832	es (cf) 1998 1,503,501 1,623,228 2,625,736	Total 7,852,817 8,367,037 12,672,768						
	Total Month	Month  Jan Feb Mar Apr	1994 1,865,702 1,944,596 2,605,200 2,881,854	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194	es (cf) 1998 1,503,501 1,623,228 2,625,736 2,182,415	Total 7,852,817 8,367,037 12,672,768 11,659,463						
	Total Month	Month  Jan Feb Mar Apr May	1994 1,865,702 1,944,596 2,605,200 2,881,854 4,110,493	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468	es (cf) 1996 1,503,501 1,623,228 2,625,736 2,182,415 9,610,588	Total 7,852,817 8,367,037 12,672,768 11,659,463 27,184,529						
	Total Month	Month  Jan Feb Mar Apr	1994 1,865,702 1,944,596 2,605,200 2,881,854	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194	es (cf) 1998 1,503,501 1,623,228 2,625,736 2,182,415	Total 7,852,817 8,367,037 12,672,768 11,659,463						
	Total Month	Month  Jan Feb Mar Apr May Jun	1994 1,865,702 1,944,596 2,605,200 2,881,854 4,110,493 7,975,503	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844	es (cf) 1996 1,503,501 1,623,228 2,625,736 2,182,415 9,610,568 3,162,349	Total 7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696						
	Total Month	Month  Jan Feb Mar Apr May Jun	1994 1,865,702 1,944,598 2,605,200 2,881,854 4,110,493 7,975,503 2,904,034	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,483,468 14,705,844 10,748,464	es (cf) 1996 1,503,501 1,623,228 2,625,736 2,182,415 9,610,568 3,162,349 4,649,221	7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719						
	Total Month	Month  Jan Feb Mar Apr May Jun Jul Aug	1994 1,865,702 1,944,598 2,605,200 2,881,854 4,110,493 7,975,503 2,904,034 2,471,039	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,746,464 6,465,920	1,503,501 1,623,228 2,625,736 2,182,415 9,610,588 3,162,349 4,649,221 1,016,719	Total  7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678						
	Total Month	Month  Jan Feb Mar Apr May Jun Jun Aug Sep	1994 1,865,702 1,944,596 2,605,200 2,881,854 4,110,493 7,975,003 2,904,034 2,471,039 2,154,102	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,848 6,465,920 11,720,563	1,503,501 1,933,228 2,625,736 2,182,415 9,610,568 3,162,349 4,649,221 1,018,719 4,850,055	Total  7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678 18,724,720						
	Total Month	Month  Jan Feb Mar Apr May Jun Jul Aug	1994 1,865,702 1,944,598 2,605,200 2,881,854 4,110,493 7,975,503 2,904,034 2,471,039	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,746,464 6,465,920	1,503,501 1,623,228 2,625,736 2,182,415 9,610,588 3,162,349 4,649,221 1,016,719	Total  7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678						
	Total Month	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct	1994 1,865,702 1,944,596 2,605,200 2,881,854 4,110,493 7,975,503 2,904,034 2,471,039 2,154,102 2,895,162	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,748,464 6,465,920 11,720,563 5,937,736	es (cf) 1998 1,503,501 1,623,228 2,625,736 2,192,415 9,610,588 3,162,349 4,649,221 1,018,719 4,850,055 1,640,616	Total  7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678 18,724,720 10,273,514						
	Total Month	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov	1994 1,865,702 1,944,596 2,805,200 2,881,854 4,110,493 7,975,503 2,904,034 2,471,039 2,154,102 2,695,162 1,950,991	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,748,484 6,465,920 11,720,563 5,937,736 6,601,912	es (cf) 1996 1,503,501 1,623,228 2,625,736 2,182,415 9,610,588 3,162,349 4,849,221 1,016,719 4,850,055 1,640,616 1,272,172	Total  7,852,817 8,387,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678 18,724,720 10,273,514 9,825,075						
	Total Month	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct	1994 1,865,702 1,944,596 2,605,200 2,881,854 4,110,493 7,975,503 2,904,034 2,471,039 2,154,102 2,895,162	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,748,464 6,465,920 11,720,563 5,937,736	es (cf) 1998 1,503,501 1,623,228 2,625,736 2,192,415 9,610,588 3,162,349 4,649,221 1,018,719 4,850,055 1,640,616	Total  7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678 18,724,720 10,273,514						
	Total Month	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov	1994 1,865,702 1,944,596 2,805,200 2,881,854 4,110,493 7,975,503 2,904,034 2,471,039 2,154,102 2,695,162 1,950,991	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,748,484 6,465,920 11,720,563 5,937,736 6,601,912	es (cf) 1996 1,503,501 1,623,228 2,625,736 2,182,415 9,610,588 3,162,349 4,849,221 1,016,719 4,850,055 1,640,616 1,272,172	Total  7,852,817 8,387,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678 18,724,720 10,273,514 9,825,075						
		Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	1994 1,865,702 1,944,598 2,605,200 2,881,854 4,110,493 7,975,503 2,904,034 2,471,039 2,154,102 2,695,162 1,950,991 1,984,569	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,746,464 6,465,920 11,720,563 5,937,736 6,601,912 7,583,471	1,503,501 1,623,228 2,625,736 2,182,415 9,610,568 3,162,349 4,649,221 1,016,719 4,850,055 1,640,616 1,272,172 1,317,128	Total  7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678 18,724,720 10,273,514 9,825,075 10,885,168	Ave. Annual					
	Total Ye	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) =	1994 1,865,702 1,944,596 2,605,200 2,881,854 4,110,493 7,975,03 2,904,034 2,471,039 2,154,102 2,695,162 1,950,991 1,984,569	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,748,484 6,465,920 11,720,563 5,937,736 6,601,912 7,583,471	es (cf) 1998 1,503,501 1,623,228 2,625,736 2,182,415 9,610,568 3,162,349 4,849,221 1,018,719 4,850,055 1,840,616 1,272,172 1,317,128	Total  7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,993,678 18,724,720 10,273,514 9,825,075 10,885,168	Ave. Annual					
	Total Yes Total Yes	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arfy Flows (af) =	1994  1,865,702 1,944,596 2,605,200 2,881,854 4,110,493 7,975,503 2,904,034 2,471,039 2,154,102 2,895,162 1,950,991 1,984,569 35,543,245 816	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,748,464 6,465,920 11,720,563 5,937,736 8,601,912 7,583,471 100,545,231 2,308	es (cf) 1998 1,503,501 1,623,228 2,625,736 2,182,415 9,610,568 3,162,349 4,649,221 1,016,719 4,850,055 1,640,616 1,272,172 1,317,128 35,453,708	Total  7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678 18,724,720 10,273,514 9,825,075 10,885,168 171,542,184 3,938	57,180,728 1,313					
Av	Total Yer Total Yer Total Phos	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arly Flows (af) = aphorus (mg/l) =	1994  1,865,702 1,944,596 2,605,200 2,881,854 4,110,493 7,975,503 2,904,034 2,471,039 2,154,102 2,695,162 1,950,991 1,984,569 35,543,245 816 0,249	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,748,484 6,465,920 11,720,563 5,937,736 6,601,912 7,583,471 100,545,231 2,308 0,318	es (cf) 1996 1,503,501 1,623,228 2,625,736 2,182,415 9,610,588 3,162,349 4,649,221 1,016,719 4,850,055 1,640,616 1,272,172 1,317,128 35,453,708 814 0,336	Total  7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678 18,724,720 10,273,514 9,825,075 10,885,168 171,542,184 3,938	57,180,728 1,313 0.308					
Aw	Total Yer Total Yer Total Phos	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arfy Flows (af) =	1994  1,865,702 1,944,596 2,605,200 2,881,854 4,110,493 7,975,503 2,904,034 2,471,039 2,154,102 2,895,162 1,950,991 1,984,569 35,543,245 816	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,748,464 6,465,920 11,720,563 5,937,736 8,601,912 7,583,471 100,545,231 2,308	es (cf) 1996 1,503,501 1,623,228 2,625,736 2,182,415 9,610,588 3,162,349 4,649,221 1,016,719 4,850,055 1,640,616 1,272,172 1,317,128 35,453,708 814 0,336	Total  7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678 18,724,720 10,273,514 9,825,075 10,885,168 171,542,184 3,938	57,180,728 1,313 0,308					
	Total Yes Total Yes Total Phos Total Ph	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arly Flows (mg/l) = nosphorus (fb) =	1994  1,865,702 1,944,596 2,605,200 2,881,854 4,110,493 7,975,503 2,904,034 2,471,039 2,154,102 2,695,162 1,950,991 1,984,569 35,543,245 816 0,249 552	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,746,464 6,465,920 11,720,563 5,937,736 6,601,912 7,583,471 100,545,231 2,308 0,318 1,998	es (cf) 1996 1,503,501 1,623,228 2,625,736 2,182,415 9,610,568 3,162,349 4,849,221 1,018,719 4,850,055 1,640,616 1,272,172 1,317,128 35,453,708 814 0,336 745	Total  7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678 18,724,720 10,273,514 9,825,075 10,885,168 171,542,184 3,938	57,180,728 1,313 0,308 1,098					
e Tota	Total Yes Total Phos Total Phos Total Phos Total Phose State Phose	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arly Flows (af) = sphorus (mg/l) = 1000 points (mg/l) = 1000 p	1994  1,865,702 1,944,598 2,605,200 2,881,854 4,110,493 7,975,503 2,904,034 2,471,039 2,154,102 2,895,162 1,950,991 1,984,569 35,543,245 816 0,249 552 209	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,748,484 6,465,920 11,720,563 5,937,736 6,601,912 7,583,471 100,545,231 2,308: 0,318 1,998 281	es (cf) 1998 1,503,501 1,623,228 2,625,736 2,182,415 9,610,568 3,162,349 4,849,221 1,018,719 4,850,055 1,640,616 1,272,172 1,317,128 35,453,708 814 0,336 745 299	Total  7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678 18,724,720 10,273,514 9,825,075 10,865,168 171,542,184 3,938 3,295	57,180,728 1,313 0,308 1,098 270					
e Tota To	Total Yer Total Yer Total Phose Total Phose Total Phose Total Phose Total Suspended	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arly Flows (af) = aphorus (mg/l) = 1 Solids (mg/l) = ded Solids (lib) =	1994  1,865,702 1,944,596 2,605,200 2,881,854 4,110,493 7,975,503 2,904,034 2,471,039 2,154,102 2,895,162 1,950,991 1,984,569  35,543,245 816 0,249 552 209 463,181	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,748,484 6,465,920 11,720,563 5,937,736 6,601,912 7,583,471 100,545,231 2,308 0,318 1,998 281	es (cf) 1998 1,503,501 1,623,228 2,625,736 2,182,415 9,610,568 3,162,349 4,849,221 1,018,719 4,850,055 1,640,616 1,272,172 1,317,128 35,453,708 814 0,336 745 299 682,579	Total  7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678 18,724,720 10,273,514 9,825,075 10,885,168 171,542,184 3,938 3,295 2,887,789	57,180,728 1,313 0,308 1,098 270 982,596					
e Tota	Total Yer Total Yer Total Phose Total Phose Total Phose Total Phose Total Suspended	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arly Flows (af) = sphorus (mg/l) = 1000 points (mg/l) = 1000 p	1994  1,865,702 1,944,598 2,605,200 2,881,854 4,110,493 7,975,503 2,904,034 2,471,039 2,154,102 2,895,162 1,950,991 1,984,569 35,543,245 816 0,249 552 209	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,748,484 6,465,920 11,720,563 5,937,736 6,601,912 7,583,471 100,545,231 2,308: 0,318 1,998 281	es (cf) 1998 1,503,501 1,623,228 2,625,736 2,182,415 9,610,568 3,162,349 4,849,221 1,018,719 4,850,055 1,640,616 1,272,172 1,317,128 35,453,708 814 0,336 745 299	Total  7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678 18,724,720 10,273,514 9,825,075 10,865,168 171,542,184 3,938 3,295	57,180,728 1,313 0,308 1,098 270 982,596					
e Tota To	Total Yer Total Yer Total Phose Total Phose Total Phose Total Phose Total Suspended	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arly Flows (af) = aphorus (mg/l) = 1 Solids (mg/l) = ded Solids (lib) =	1994  1,865,702 1,944,596 2,605,200 2,881,854 4,110,493 7,975,503 2,904,034 2,471,039 2,154,102 2,895,162 1,950,991 1,984,569  35,543,245 816 0,249 552 209 463,181	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,748,484 6,465,920 11,720,563 5,937,736 6,601,912 7,583,471 100,545,231 2,308 0,318 1,998 281	es (cf) 1998 1,503,501 1,623,228 2,625,736 2,182,415 9,610,568 3,162,349 4,849,221 1,018,719 4,850,055 1,640,616 1,272,172 1,317,128 35,453,708 814 0,336 745 299 682,579	Total  7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678 18,724,720 10,273,514 9,825,075 10,885,168 171,542,184 3,938 3,295 2,887,789	57,180,728 1,313 0,308 1,098 270 982,596					
e Tota	Total Yer Total Yer Total Phose Total Phose Total Phose Total Phose Total Suspended	Month  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec arly Flows (cf) = arly Flows (af) = aphorus (mg/l) = 1 Solids (mg/l) = ded Solids (lib) =	1994  1,865,702 1,944,596 2,605,200 2,881,854 4,110,493 7,975,503 2,904,034 2,471,039 2,154,102 2,895,162 1,950,991 1,984,569  35,543,245 816 0,249 552 209 463,181	Runoff Volum 1995 4,483,614 4,799,213 7,441,832 6,595,194 13,463,468 14,705,844 10,748,484 6,465,920 11,720,563 5,937,736 6,601,912 7,583,471 100,545,231 2,308 0,318 1,998 281	es (cf) 1998 1,503,501 1,623,228 2,625,736 2,182,415 9,610,568 3,162,349 4,849,221 1,018,719 4,850,055 1,640,616 1,272,172 1,317,128 35,453,708 814 0,336 745 299 682,579	Total  7,852,817 8,367,037 12,672,768 11,659,463 27,184,529 25,843,696 18,299,719 9,953,678 18,724,720 10,273,514 9,825,075 10,885,168 171,542,184 3,938 3,295 2,887,789	57,180,728 1,313 0,308 1,098 270 982,596					

<u> </u>											
<u>J.</u>	Summary o	f Measured Inflo	w Loads	!		•					
		!	<u></u>	!	:						
	Monitoring	period generally	April through Deci	ember for the yea	ars 1994, 1995	and 1996					
					!						
						1					
	Event	Runoff Volume	Percent of Total			Percent of			Percent of		
		(AF)	Runoff Volume	TSS (mg/l)	TSS (tons)	Total TSS	TP (mg/l)	TP (lbs)	Total TP		
	Туре	(AF)	Kulloli Volulile	133 (1194)	155 (10118)	1001133	TE (HIGH)	+ F (ID3)	TOTAL IL		
		:					:				
	Base flow	1406	51%	35		7%		307	14%		
	Storm flow	1354	49%	499	919	93%	0.530	1951	<b>86%</b> [		
					i			(	ĺ		
	Total	2760		1	986	i		2258	ì		Ì
		T			i						
	<u>i</u>				ļ						
		· !									
		<u> </u>				<del>                                     </del>				<u></u>	
K.	Estimated /	Average Annual I	ntiow Loads					l			
					<u> </u>			ļ l			
	Event	Runoff Volume	Percent of Total			Percent of		j	Percent of	j	Ì
	Type	(af/yr)	Runoff Volume	TSS (mg/l)	TSS (tons/yr):	Total TSS	TP (mg/l)	TP (lbs/yr)	Total TP		
	1	` ' '		` - /				1			
	Base flow	849	49%	35	31	6%	0.080	142	13%		
L	Storm flow	664	51%	499	450	94%	0.530	956	87%	+	_
	Wor more	004	31%	499	430	37470	0.030	936	0176		
	Total	1313			481			1098			
						Ì		!			
							1	· · · · · · · · · · · · · · · · · · ·			
1	Unit Loadin	n Rates									
<u>-</u> ,	O'III COLUII	gitaios									
					9 d'a dd 6.						
		Orainage Area =	8740		MIXEG GIDBUNG	indeveloped la	ila nae				
	Average	annual precip =	15.18	រា							
							i				
	Event	Runoff Volume						:			
	Туре	(af/ac)	Percent Runoff	TSS (tons/ac)	TP (lb/ac)		ĺ				
	.,,,	,,	· · · · · · · · · · · · · · · · · · ·	, ,	<u> </u>	}					_
	Base flow	0.074	6%	0.004	0.016	1					
		0.076	6%	0.052	0.109						
	Storm flow	0.076	070	0.032	0.109		-				
	Total	0.150	12%	0,055	0.126			İ		_	
. —											
									j j		
М.	Average Ar	nual Loads Rem	oved by System							i	
	. 140108970										
		F-W4-4 TOO				Estimated					
		Estimated TSS		T00 D	Tec				-no.		
	Event	Removal		TSS Removed	TSS Out	TP Removal	. '	TP Removed	TP Out		
	Туре	Efficiency	TSS In (tons/yr)	(tons/yr)	(tons/yr)	Efficiency	TP in (lb/yr)	(lb/yr)	(lb/yr)		
	Base flow	15%	31	5	26	5%	142	7	135		
	Storm flow	64%	450	288	162	45%	956	430	526		
	C.C.M. NOW	5-775	,50	<del></del>		,5/2		,,,,,			
	Total	D40/	481	293	188	40%	1098	438	661		
	Total	61%	481	293	100	40%	1098	430	001		
	Notes:										
	TSS/TF	Base Flow Ren									_
	TSS/TF								pn.		
	TSS/TF	S Storm Flow Re	noval Efficiencies: emoval Efficiency: emoval Efficiency:	Theoretical 2-ye	ear TSS remov	al efficiency ba	sed on dynan	nic sedimentati			