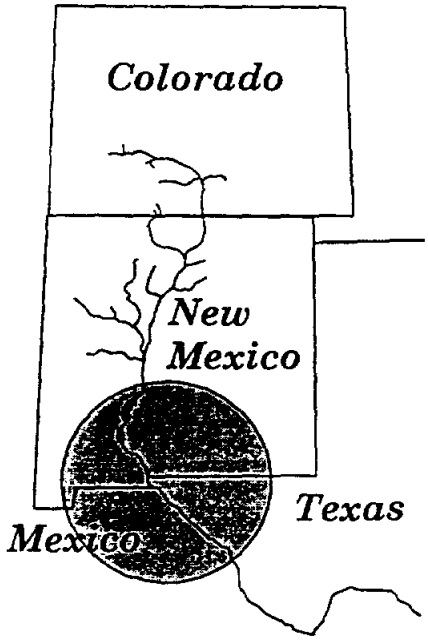
Conjunctive Water Resource Management Technical Data Report — Volume II Technical Appendices



Prepared for the New Mexico/Texas Water Commission

June 1994

BOYLE Engineering-Science, Inc.

APPENDIX A

TECHNICAL MEMORANDUM

Criteria for Study - Phases II and III

NEW MEXICO/TEXAS JOINT SETTLEMENT COMMISSION

FEASIBILITY OF CONVEYANCE, TREATMENT AND DISTRIBUTION OF RIO GRANDE PROJECT WATER FOR THE LAS CRUCES AND EL PASO AREAS

TECHNICAL MEMORANDUM

CRITERIA FOR STUDY - PHASES II & III

April 7, 1994

Boyle Engineering Corporation

Engineering-Science, Inc.

FEASIBILITY OF CONVEYANCE, TREATMENT AND DISTRIBUTION OF RIO GRANDE PROJECT WATER FOR THE LAS CRUCES AND EL PASO AREAS

CRITERIA FOR STUDY - PHASES II & III

INTRODUCTION

This memorandum sets forth and describes the analytical parameters and criteria which will govern Phases II & III of the study of the Feasibility of Conveyance, Treatment and Distribution of Rio Grande Project Water for the Las Cruces and El Paso Areas (the Joint Conveyance Facility Study).

As used in this memorandum, "study criteria" includes regulatory and environmental policies and constraints, both presently recognized and as assumed for purposes of the study; the characteristics and adequacy of the data to be used in the study; the technical design criteria; the analytical methods to be used; and the level of effort at which the evaluations can be performed within the authorized study budget. The cost data and economic parameters to be used in evaluating the proposed alternative plans will be submitted to the Joint Commission for review and approval in a separate technical memorandum under Task 3 of the study.

When approved by the Joint Commission, this memorandum will become the guidelines for performing Phases II & III of the Joint Conveyance Facility Study in conformance with the Contract Scope of Work.

STUDY OBJECTIVES

The objectives of Phases II & III of the Joint Conveyance Facility Study are to identify and analyze, on a conceptual basis, the feasibility of more efficiently utilizing the surface waters of the Rio Grande Project (RGP) for purposes of a water supply for agricultural and municipal/industrial uses.

These objectives will be accomplished by comparing the three alternative conveyance concepts described in the following section and developing a concept for two regional water treatment plants and treated water transmission lines to serve expanding future municipal needs of Las Cruces, the Mesilla Valley and the El Paso area.

The primary goals of Phases II & III of the study are to better utilize the available Rio Grande Project water that can be delivered to the existing RGP beneficiaries as well as to proposed municipal demands within the project service area, and in doing so to supply the water at the needed quality while making best use of return flows and considering impacts on the Rio Grande.

ALTERNATIVES TO BE ANALYZED

Alternative 1

Alternative 1 will consist of an open conveyance channel with a capacity designed to transport all flows destined for the El Paso County Water Improvement District No. 1 (EPCWID) , Mexico, and the City of El Paso. The conveyance channel would be a concrete lined, trapezoidal canal designed for gravity flow. It would be isolated from the Rio Grande flows , from return flows from agricultural lands, from municipal wastewater discharges, and from stormwater runoff inflows within the reach of the canal. The conveyance channel would be provided with appropriate structures to maintain isolation and control, such as gates, weirs, wasteways, siphons, flumes, bridges, and maintenance roads.

Alternative 1 would begin at the Percha Diversion Dam. The conveyance channel would parallel the Rio Grande immediately outside of the established floodway, preferably within the right-of-way of the International Boundary and Water Commission (IBWC), where possible. The downstream terminus would be at or near the American Dam at El Paso. From the American Dam, Alternative 1 would utilize the existing American Canal and the proposed American Canal Extension to Riverside Diversion Dam.

Alternative 2

Alternative 2 would provide an open conveyance channel for the utilization of existing canals and their right-of-ways, where possible, to convey the total diverted allotment flows by gravity from its origin at Percha Diversion Dam to the historic turn-outs located within the Rio Grande Project. The downstream terminus would be at or near the American Dam at El Paso. The Alternative 2 conveyance plan would be the same as Alternative 1 from the American Dam to Riverside Diversion Dam. It would potentially supply Las Cruces, Elephant Butte Irrigation District, other Mesilla Valley Users and the Texas/Mexico users served by Alternative 1.

The existing canals would be widened and improved by concrete lining, and extended where required, to connect with existing canals and laterals to create a continuous channel from Percha Diversion Dam to the American Dam. Inflow of agricultural return flows, storm runoff inflow, and municipal wastewater discharges would be prevented. All flows in the Alternative 2 conveyance channel would be uncontaminated with inflows from sources below Percha Diversion Dam.

The agricultural return flows, storm runoff, and municipal wastewater discharges would be captured in the river as has been the case historically, and would be reusable by diversion at Leasburg Diversion Dam, Mesilla Diversion Dam, and Riverside Diversion Dam for blending with the relatively higher quality canal releases. By methods of proportional blending, a more uniform and higher quality of water would be available to the agricultural users, and Caballo Reservoir quality water would be available directly from the canal for municipal and industrial users.

Alternative 3

Alternative 3 will consist of a pipeline to convey water from the outlet works at Caballo Dam to the EPWU's water treatment plants at El Paso. The pipeline will be sized to convey the City's RGP water to which it is entitled under its contracts with the EPCWID and which may be obtained from others in the future. The quantity of water to be conveyed will be in accordance with demand projections promulgated in the *Water Resource Management Plan* and the *Water Facilities Master Plan* as prepared for the EPWU/PSB by Boyle Engineering Corporation, including water identified to be available by contract with EPCWID, and other RGP water which may be contracted in the future. Such water will be high quality Caballo Reservoir quality water with year around availability.

It is assumed that the pipeline alignment will be parallel to and adjacent to the Rio Grande, immediately outside of the floodway, and possibly constructed as part of the levee system where they exist. The pipeline will utilize the static head of Caballo Reservoir and the natural topography linked with proper friction factors of the pipe to

provide a hydraulic gradient adequate to maintain gravity flow through the pipeline without pumping. The conceptual design of the pipeline will include appropriate pressure control features, turn-outs as required, valving, and water-hammer control facilities.

DATA ON WHICH STUDY WILL BE BASED

Phases II and III of the Joint Conveyance Study will be performed using readily available data which will be obtained from the entities and sources indicated below. Where practicable, lacking data and data-gaps will be estimated by simple correlation or comparative techniques. Field measurements and development of new or extended data will not be performed for this study. The predicted accuracy of the study conclusions and results indicated in the section below on "Analytical Methods to be Used" is based on the extent and quality of the data expected to be available.

The following data required for completing the Joint Conveyance Study is already on hand in Boyle/E-S files. (The sources from which it was obtained are noted):

1. Location of the Rio Grande Channel, canals, laterals, and major drains (TIGA files, scale 1: 100,000; also on topographic quad sheets from USGS.)
2. Capacities of EBID canals and laterals (AutoCad 12 files from EBID).
3. Location of roads, streets, railroads, and highways and county, city, and state boundaries (TIGA files from US Census Bureau)
4. Utility, lines for the El Paso Electric Company, The Gas Company of New Mexico, The El Paso Natural Gas, The all American Pipeline Company, The Rio Grande Natural Gas Association and the City of Las Cruces (hard copies from the corresponding agencies). The maps are equivalent to or better accuracy than the 1:24,000 USGS topo maps.
5. Township, range section, lines and topographic data (USGS 1:24,000 Topographic Quad Sheets)
6. Planned distribution system of La Mesa to Las Cruces. From Engineering Science draft report entitled "Surface Water Supply Alternatives for the City of Las Cruces and Southern New Mexico Users" dated February 1992. Provides locations and sizes of proposed main transmission lines and storage reservoirs at a reconnaissance of conceptual level of planning.
7. Historic Rio Grande stream flows (USBR, USGS, and IBWC in Excel and on paper).
8. RGP water allocations (Phase I Boyle/E-S report).
9. City of Las Cruces area wells, EBID boundaries near Las Cruces (AutoCad formats as exported from GEO/SQL and AutoCad 12).
10. Water quality data for salinity (TDS) (NMSU Report, data from 1905).
11. Results and Assumptions of the Hamilton & Maddock Model and Report, and Results and Assumptions of the Wright Water Engineers Report.
12. Rio Grande and canal seepage data (from IBWC and EBID)

Additional data needed and expected sources are listed below:

13. Water Distribution systems for the population centers (to be provided by Dona Ana County and municipal Joint Commission members).

14. Capacities for EPCWID system (to be provided by district).

15. Major pipelines for cities (to be provided by Dona Ana County and municipal Joint Commission members).

16. Agricultural lands, cropping patterns, and irrigation demands (from EBID and EPCWID cropping and water allocation reports).

17. Agricultural land classifications and soil types (to be provided by USBR)

18. Historic precipitation data (from NOAA, NMSU, and UTEP).

19. Well locations and data (USGS may have digital ARC/INFO files, will order if available; from NMSU Wellhead Protection Program Report by Phil King, CE Dept.; otherwise from NM State Engineer's office).

20. Seepage data (Al Blair, EBID; EPCWID; USGS reports, George Abernathy)

21. Physical characteristics of Elephant Butte and Caballo Reservoirs and Percha, Leesburg, Mesilla, American and Riverside Diversion Dams (from the USBR).

22. Existing canal, lateral, water distribution system, and drain locations and physical characteristics and supplemented information on transportation facilities and jurisdictional boundaries (from USBR, EBID GIS Information, NMSU GIS Information and EPCWID).

23. Geohydrologic characteristics of the Rio Grande Alluvial Aquifer, Mesilla Bolson, and Hueco Bolson (from USGS).

24. Historic temperature and evaporation data (from NOAA published climatological records).

25. Historic annual RGP allocations and monthly releases from Elephant Butte and Caballo Reservoirs, deliveries to the main river headings, and diversions by EBID, EPCWID, Mexico and the City of the El Paso (from USBR).

26. Additional water quality data (from IBWC, USBR, EPWU, 1973 New Mexico Water Resources Research Institute Report, and USGS NAQUA data).

27. Population for southern New Mexico municipalities (from Las Cruces and Dona Ana County).

It is believed the data listed above (which is assumed to be readily available) will be sufficient to perform the various analyses and evaluations at a reconnaissance level of accuracy which will result in sufficient reliability for comparison among alternatives.

The additional data needed will be compiled from previous study reports and existing databases. The Consultants will utilize available existing reports and data compiled by the members of the JSC local and state agencies, universities, and federal agencies. The Consultants recognize that the data collected will not be developed to the same level of accuracy; therefore, the Consultants will be responsible for the selection of the appropriate data to be used to complete Phases II and III of the Joint Conveyance Study.

DATA BASE SELECTION

The primary function of a database is to facilitate the organization and retrieval of data. A variety of database software packages are commercially available. Selection of a specific database package for use in this study will be made based on the following criteria:

1. Ability to handle the types of data to be included.
2. Ability to handle the size of data sets required.
3. Flexibility for future expansion.
4. Compatibility with computer equipment used by the entities.
5. Compatibility with database software used by the entities. If most of the entities are already using the same database software, that will obviously weigh heavily in the decision process.
6. Software costs.

To assist in this effort, the Management Advisory Committee (MAC) shall provide the following information in an informal memorandum to the Consultants:

1. Type of computer equipment used.
2. Database software used. If more than one package, indicate uses for each package.
3. Description of data in database(s).
4. Format descriptions.

The above information must be delivered to the Consultants on or before February 25, 1994. The Consultants will compile the information provided, develop the other specified evaluation criteria, and summarize the evaluations in a short, informal memorandum recommending the specific database package to be used for performing Phases II and III of the Joint Conveyance Study. This memorandum will be delivered to the MAC members at the March 4, 1994 Joint Commission meeting. Any data furnished by the entities and supplied to the Consultants will remain the property of the entities and will not be shared without outside groups.

ANALYTICAL METHODS TO BE USED

The methods to be used for the various analytical procedures and evaluations to be performed in Phases II and III of the Joint Conveyance Study are described below. It is believed that use of these analytical procedures and the data assumed to be available as discussed in a previous section will produce sufficiently reliable results for making reconnaissance level comparative evaluations with a high degree of confidence.

1. Mapping and Alignments

A base map of the study area showing the alternative conveyance plans and the regional water treatment plants will be prepared. Data for the base map as listed above will be collected in a digital format where available from the indicated sources. Sources that may have digital data needed for the base map include the USGS, USBR, IBWC, U.S. COE, SCS, EBID, EPCWID, EPWU/PSB, NMSU, and the NMWRRI. These entities, the City of Las Cruces, Dona Ana County, and Sierra County will be contacted to establish the availability and collect the digital data. Where digital data is not available for the base mapping, it may be necessary to digitize

necessary information from the USGS 7.5-minute topographic maps. Elevation and grade determinations for ground surfaces will be interpolated from USGS quad sheets, latest reprint, and from the USBR RGP mapping and project plans as available, and from plans, mapping and diagrams which may be maintained by the two irrigation districts. In instances where more than one data source is found for any particular datum, the source which was apparently developed by the most rigorous methodology, at the most recent time, in accordance with the sole determination of the Consultants, will be used.

It is believed the majority of the data needed for the mapping can be derived in digital format from currently available USGS 1:100,000 scale maps and the US Census Bureau TIGA files. There are some areas where greater detail will be required. These areas include the narrows, the possible locations of the treatment plant(s), and the municipal population centers. In these areas 1:24,000 digital line graph (DLG) data where available will be purchased from the USGS unless this data is available from JSC entities. A data log will be maintained documenting the sources of the data, the digitization procedures, and the accuracy of the original data. The Consultants are experienced in converting data from DWG, DXF, and DGN data files into the ARC/INFO format. The ARC/INFO environment will be used to link or tie data from the map to the study database. The GIS functionality of ARC/INFO will also be used to measure the lengths, areas, and other geographic data.

The base mapping will be developed in ARC/INFO GIS and will be plotted in color at a scale of 1"=4,000 feet on multiple maps with match lines. The alternative conveyance and treatment facility plans will be superimposed on the base maps. As the alternatives are developed, the locations of appurtenances and control structures will be identified. The map will be linked to the ARC/INFO resident database which will be utilized for the economic analysis of the alternatives. Since the base mapping will be developed in a GIS environment, the basic attributes of the area will be readily accessible in tabular format, with the calculation time and expense being reduced for analyses of the multiple alternatives.

2. Historic Diversions and Losses

The relationships between project releases from Caballo Reservoir, deliveries to the main river headings (diversion dams), diversions from the Rio Grande, and return flows to the Rio Grande will be derived from the USBR records of historic operations. Internal distribution of project diversions within the RGP operating units will be derived from EBID and EPCWID historic operating records.

Specific data on losses along many of the canal reaches are not available. The recent study by Al Blair on the West Side Canal will be used. In the absence of available data, seepage ratios will be estimated for use in the water budget analyses from comparisons with the wasteway and drain inflow data compiled under the cooperative IBWC and USBR Gain and Loss Study of the Rio Grande between Picacho Bridge near Las Cruces and Courchesne Bridge at El Paso.

3. System Hydraulics

a. Closed Conduit Flow

The Hazen and Williams formula will be utilized to analyze closed conduit flow. A friction coefficient of C=100 will be used, assuming a tuberculated concrete interior surface with thirty years service, thought to be a worse case scenario. Conceptual considerations will assume that best practices will be applied in the future designs such as hydraulically improved and vented intakes, adequate vacuum and air reliefs, and precise profiles.

b. Open Channel Flow

The experience and observation of operating conditions and terrain in the RGP area leads to the assumption that most, if not all, channels and streambeds will require subcritical flow analyses (Froude number <1). In

existing channels, including streambeds, slope data will be obtained from mapping as outlined above. Depth, width and configuration of existing channels will be determined from existing plans, maps and interviews with operational personnel. Hydraulic analyses of existing and proposed open channels will be performed using the HEC-2 computer model..

For this study, Manning's *n* values will be assumed to be as follows:

type of channel	*n value*
concrete lined channels	0.013
earth lined well maintained canals	0.022
the Rio Grande stream bed	0.030

Weirs, orifices, gates and other hydraulic structures will analyzed in accordance with procedures given in the USBR "Design of Small Canal Structures" or by standard engineering practices.

4. **Future Water Demands**

This section of the Criteria Memorandum is intended to allow review by the MAC and approval by the Joint Commission of the assumptions on which future water demand projections are based. The purpose of demand projections is to determine how demand within the 2035 horizon compares to the projected surface water supply and to estimate necessary size of treatment and treated water transmission facilities to meet M & I demands. Future water demands to be supplied by RGP surface water and Mesilla Bolson and Hueco Bolson ground water consist of irrigation and municipal and industrial (M&I) water requirements in the study area at the planning horizons of years 2015 and 2035.

a. Irrigation Demands. Future irrigation demands will be based on supplying 3.0 af per year per acre net after conveyance losses to the farm headgates of RGP lands remaining in production. The RGP lands assumed to remain under irrigation by 2015 and 2035 will be estimated as the acreage of RGP lands in the EBID and EPCWID irrigated in 1993 according to the USBR annual RGP operating summary modified for assumed decreases in irrigation and increased consumption related to residential and industrial uses as outlined below:

(1) EBID	-	It will be assumed that the necessary surface water to supply all projected treated water demands will be available through decreased losses and, if necessary, decreased irrigated agriculture.
(2) EPCWID	-	It will be assumed that 450 acres/year will be converted from agricultural to municipal use starting in 1994.

We recognize that rates of conversion from agricultural to M & I use are difficult to estimate and that considerable additional water will be available from the loss reductions resulting from a lined conveyance even without additional agricultural to M & I land use conversions. The values assumed are for the purpose of having some estimate to be used in the study and are not intended to constrain future options.

b. M&I Demands. Future M&I demands will be based on the projected 2015 and 2035 populations of the southern New Mexico and El Paso service areas and corresponding per capita consumption rates as follows:

(1) El Paso Area - The EPWU service area is projected to grow at a compound rate of 2.1 percent per year, with the current consumption rate of 180 gpcd dropping to 160 gpcd by 2000.

2015 demand - 930,000 population @ 160 gpcd
2035 demand - 1,280,800 population @ 160 gpcd

Other - Assume additional 60,000 af annually of RGP surface water will be exchanged for 53.6 mgd of treated water by the year 2015.

(2) Southern New Mexico - The combined service area population of the included cities and communities in 1993 projected to 2015 and 2035 at a compound growth rate of 2.5 percent per year. Las Cruces is assumed to drop to a consumption rate of 160 gpcd by 2000. The other communities are assumed to consume at the rates shown below as same as surface water becomes available.

		2015	2035
Las Cruces	=	160 gpcd	160 gpcd
Mesilla	=	100 gpcd	100 gpcd
La Mesa	=	100 gpcd	100 gpcd
Berino	=	100 gpcd	100 gpcd
Anthony	=	100 gpcd	100 gpcd
LaUnion	=	100 gpcd	100 gpcd

(3) Peaking - The ratio of peak-day to average-day M & I Demand will be assumed at 2.0.

5. **Water Budgets**

Water budgets of the Rio Grande system from just downstream of Caballo Dam to Riverside Dam will be developed in spreadsheet format. Division of the total system into segments is necessary to quantify the impacts of alternatives at specific, key locations. Based on the locations of gages and key structures, the system will be divided into the following segments:

a. Below Caballo Dam to upstream of Leasburg Dam

b. Leasburg Dam to upstream of Mesilla Dam

c. Mesilla Dam to upstream of the American Dam

(1) - EBID lower Mesilla Valley

(2) - EPCWID Upper Valley

d. American Dam to Riverside Dam

The specific measures which will be derived from the water budget analysis to assess impacts arising from the alternatives are as follows:

- changes in flow volumes in the river at the downstream end of each river segment
- changes in return flow volumes in each river segment

- changes in project diversions in each river segment
- changes in water quality in the river and the canal at the downstream end of each segment
- changes in alluvial aquifer water levels in each segment.

Changes will be calculated as the difference between the simulated baseline case for each specific water supply scenario and the simulated alternative case for that scenario. For each of the three water supply scenarios, four cases will be simulated; Baseline, Alternative 1, Alternative 2, and Alternative 3.

The continuity equation or mass balance equation is a simple accounting tool used to describe the processes occurring within a system. The mass balance equation is:

Change in Mass = Mass Inflow - Mass Outflow

Since compression of water is normally assumed to be negligible, the continuity equation can be modified for a water budget or water balance to:

Change in Volume = Volume of Inflow - Volume of Outflow

To gain a more detailed understanding of the hydrologic system in the Rio Grande Project System, water balances will be prepared for the Alluvial Aquifer, the Lower Aquifer consisting of the Mesilla Bolson and/or the Hueco Bolson, the Land, including agricultural, municipal, and industrial influences, and the Rio Grande. These water balances are designed to account for all possible sources of water entering the hydrologic system of interest. In the absence of specific data, wastewater discharges to the Rio Grande from Southern New Mexico municipal wastewater treatment plants, including Las Cruces, will be assumed to be 50 percent of the municipal water supply distributed. This ratio will be assumed at 65% for El Paso. Tables 1 through 4 in Attachment A list the water fluxes which will be utilized in each water balance. Some elements will be negligible in some or all of the reaches, but are included in the balance for the sake of completeness.

Since water quality is also an important issue, a mass balance will also be performed on the Rio Grande. The mass of the total dissolved solids (TDS) entering and leaving the river will be analyzed to determine if the river water quality is improving or degrading. Table 5 in Attachment A lists the elements for the mass balance of the Rio Grande. The concentration of TDS in the Rio Grande is calculated by dividing the mass of TDS in the river by the volume of water in the river.

The procedures and types of data to be used to calculate each water flux for each water balance are presented in Table 6, and the procedures and data types describing the TDS mass balance are listed in Table 7 in Attachment A.

6. Treatment and Distribution Systems

Regional municipal water treatment plants near Anthony, New Mexico/Texas and north of Las Cruces, New Mexico, along with the transmission facilities necessary to supply potable water to the municipalities and industries in the region will be evaluated. Analyses of the regional water treatment systems will be based on the following criteria:

a. In consultation with the MAC, the service area boundaries for the treatment plants will be determined. The service area will be limited to lands currently receiving RGP surface water irrigation supplies and/or lands that can be supplied with surface water by the EPWU.

b. The regional water treatment plant and transmission system will be sized for the M&I demands given above in subsection 4 above and for ultimate buildout.

c. The M&I water demand at ultimate buildout will be limited to the surface water supply available to the area. In determining the ultimate buildout demand in New Mexico, it will be assumed that for every acre taken out of irrigation, about 4 af of surface water can be made available for treatment and transmission to supply that acre with M&I water. This is a conservative estimate of average available water when historic agricultural application rates and delivery losses are considered.

d. Within the treatment plant service area, existing transmission facilities will be identified and utilized where practical in the transmission system to be planned.

e. Treatment plant processes will be evaluated based upon existing water quality data and treatability studies for existing water treatment plants in the area giving recognition to the projected improved raw water quality made possible by the proposed raw water delivery systems.

f. The treatment plant service area will be divided into subareas and delivery requirements for each subarea will be estimated.

g. Treated water storage reservoirs will be approximately located at the ends of the transmission lines and at elevations sufficient to provide adequate pressure, and will be sized to meet the demands of the subareas served. Distribution facilities beyond the treated water reservoirs will not be considered in the alternative evaluations.

h. Main transmission lines and pump stations will be sized to provide peak or maximum day demands to storage reservoirs.

i. Hydraulic computations will be based on formulas discussed in subsection 3 above.

7. Capital and O&M Costs

A Cost Basis Memorandum will be prepared under Task 3 of the study describing the unit costs and economic parameters to be used in making the comparative cost estimates of the alternatives. This Cost Basis Memorandum will be reviewed and finalized in consultation with the Management Advisory Committee (MAC) as the basis for performing the cost estimating. In general, the Cost Basis Memorandum will cover the following subjects:

a. Capital Costs

The capital cost of construction will be developed for each of the conveyance alternatives for comparison and evaluation purposes. The construction features of each of the alternatives will be developed only to the conceptual level, lacking many of the details and refinements which will be incorporated in the final design of the selected alternative. Because of this incompleteness, a large contingency of 20 percent will be applied to account for the cost of construction items not identified.

Other contingent costs will be included as a percentage of the basic construction costs:

Engineering and administration.....15%

Unknown field conditions.....5%

Contractor's profit and overhead...12%

The basic construction capital costs will be estimated by conventional methods such as unit quantity prices, unit capacity prices, and constructed costs of similar facilities. Standard cost data published by F. W. Dodge, Means, *Engineering News Record*, TXDOT, NMSHTD, USBR, and the COE will be used as applicable with appropriate indices applied for local and regional differences. In general,

USBR construction costs and Construction Cost Indices will be used for the joint conveyance system alternatives and *Engineering News Record* unit prices and cost indices will be used for the water treatment and transmission facilities.

Quantity estimates will be performed only to the accuracy achievable without topographic mapping, without preliminary level design, and without exact alignments. The purpose of the cost estimates will be for comparison between alternatives and for budgetary planning only. All capital estimates will be adjusted to their approximate United States dollar value in the year 2000. Inflation of 3 percent will be assumed to adjust current costs. The construction cost of the American Canal Extension which will be considered a component of the Joint Conveyance System Alternatives 1 and 2 will not be included in the capital costs of the alternatives.

b. Operation and Maintenance Costs

Operational and maintenance (O&M) costs will be estimated by comparing published data as promulgated by the USBR and the U. S. COE to historic cost records retained by EBID and EPCWID and adjusting the USBR/COE data as necessary. These data will be sensitized by adjusting for current local labor, material, and energy rates. Recurrent costs associated with risk management and administration will not be included. Costs associated with the RGP power and storage units (Elephant Butte and Caballo Reservoirs) will not be included in the O&M costs for the alternative joint conveyance systems.

c. Benefits

Cost / benefit analysis for purposes of this study will be based on the cost per unit of deliverable water to each of the entities as derived from the capital and O & M costs and deliverable quantities. These analyses will be limited to the extent necessary to provide a comparison of the efficacy of each of the alternatives, and are not intended to provide economic justification to undertake construction of the recommended project. They will be based on the water quality and quantity results attributable to each alternative as identified in the study. These items comprise only one element of the many benefits which may directly or indirectly influence the total economic impact on the various entities affected.

OPERATIONAL AND DESIGN CRITERIA

Specific RGP and conveyance systems operating criteria and facilities design criteria which will be followed in the configuration and analyses of the Joint Conveyance System and regional water treatment plans are as follows:

1. RGP Surface Water Availability

a. For purposes of the study, RGP surface water will be allocated to the EBID and EPCWID, including the municipal water systems supplied thereunder, and to Mexico in accordance with the proposed revised allocation procedure set forth in Table 5 of the Phase I Report.

b. For the water budget analyses, the system alternatives will be operated for the three designated water availability scenarios expressed in terms of total annual releases from Caballo Reservoir as follows:

(1) Normal Year - 790,000 af

(2) Average Year - mean of the range of the middle 1/3rd of the ordered range of historic annual releases.

(3) Dry Year - mean of the range of the lower 1/3rd of the ordered range of historic annual releases.

c. Annual allocations of RGP surface water not used by the EBID and EPCWID can be carried over from year to year in Elephant Butte Reservoir.

2. Conveyance System Operations

a. Seasonal distribution of irrigation deliveries to EBID, EPCWID, and Mexico will be assumed to proportional to the seasonal average of the historic deliveries to the three entities for the years 1970 through 1993. The consultants recognize that portions delivered to each user vary considerably on a monthly basis. Peak flow rates required by each of the users will be estimated.

b. RGP municipal water supplies can be regulated in Elephant Butte Reservoir and delivered on a year-around basis.

c. Increases in usable RGP irrigation water supplies (viz. deliveries to farm headgates within the EBID and EPCWID) by reduction of conveyance losses and improvement of distribution, operation, and delivery efficiencies within the Districts, other than in the components of the Joint Conveyance System, will benefit the District in which they occur; i.e the annual allocation ratios will not be changed.

3. **Regional Water Treatment System Operations**

a. Las Cruces will start using RGP surface water by 2010 to meet its expanding M&I water demands. Las Cruces will also reduce its M&I water consumption by implementation of municipal water conservation measures by 1998. Starting in 2010, RGP surface water will be used by Las Cruces to the maximum extent available with the objective of reducing demands on the Mesilla Bolson.

b. The other southern New Mexico municipalities and Ciudad Juarez will start using RGP surface water by the year 2000. Cd. Juarez will develop its M&I use to its maximum allocation of up to 60,000 af annually (53.6 mgd) by the year 2005.

4. **Facilities Design Standards**

a. Conveyance system canals and transmission pipelines will be designed in accordance with conventional USBR criteria for the respective facilities.

b. Water treatment plants will be configured to provide treatment processes needed to meet the existing and anticipated SDWA primary and secondary standards. The plants will be arranged and designed in accordance with current AWWA standards.

c. Treated water transmission pipelines and treated water storage reservoirs will be designed in accordance with current AWWA standards.

ENVIRONMENTAL AND LEGAL CONSIDERATIONS

Environmental and legal constraints affecting the proposed joint conveyance and water treatment plans will be developed in consultation with the Joint Commission Legal & Environmental Sub-Committee under subtask 5.2 of the Scope of Work. This consultation will be accomplished in the following steps:

	Due Date
a. Memorandum on environmental and legal constraints received by Consultants from Legal & Environmental Sub-Committee	February 18

b.	Meeting with Legal and Environmental Sub-Committee, Las Cruces and EPWU representatives, and others as selected by the MAC to discuss Consultants results to date and the environmental and legal constraints and mitigation requirements to be considered	May 26
c.	Results of discussions with TNRCC and NMED presented by Legal and Environmental Sub-Committee to Consultants along with recommendations by Legal & Environmental Sub-Committee on required actions to mitigate environmental impacts of joint conveyance and regional water treatment plant.	June 9
d.	Deadline for inputs/comment relative to environmental/legal issues for inclusion in the draft report.	June 17

Other than the environmental and legal constraints identified above to be considered in Phases II and III of the Joint Conveyance Study, no environmental nor legal investigations, assessments, or impact statements will be performed at this time.

ADDITIONAL ITEMS WHICH WILL BE DISCUSSED IN THE CONSIDERATION OF ALTERNATIVES

The range of return flow quantity and quality regimes predicted by the results of the water budget analysis will be used along with water quality data for one or more drains and guidance on environmental and regulatory constraints, to evaluate the following:

1. Utility of blending of drain flows and conveyance channel supplies at two or more promising locations, including mechanisms for management of tailwater and return flows and approximate cost.

2. Practicality of treatment including conventional surface water treatment and desalination at two or more locations, relative costs of such treatment and uses of the product water which might be feasible. This will include a conceptual discussion of the process train elements which would be used and approximate costs.

3. Expected impact on treatability, including impact on TDS and other parameters, of the implementing each one of the three conveyance alternatives.

Optional variations or additions which could be included with the conveyance alternatives will be described including:

1. Water banking of treated water with injection wells, including two or more possible locations.

2. Water banking of untreated surface water by spreading in infiltration basins including two or more possible locations.

3. Short term storage in regulating reservoirs.

4. Discussion of potential drought contingency operating procedures.

Items 1 and 2 above will be changed to a reference to and description of the supplemental water banking study if it is authorized.

RELATED ASPECTS WHICH WILL NOT BE EVALUATED AT THIS TIME

Several aspects related to Phases II and III of the Joint Conveyance Study will not be analyzed and evaluated at this time. These aspects include:

- Water Banking
- GIS Development
- Project Modeling

1. **Water Banking**

Water Banking as related to the Joint Conveyance Study means introduction of RGP surface water into the ground water aquifer(s) and subsequent pumping of the banked water for use by RGP beneficiaries. Water Banking is also variously referred to as "Aquifer Storage and Retrieval" or "Artificial Ground Water Recharge". Water Banking would be accomplished by either treating the surface water to drinking water standards and injecting the treated water into the ground water aquifer by wells or by spreading the untreated surface water in infiltration basins to artificially recharge the ground water aquifer. Water Banking could enhance the proposed Joint Conveyance and Regional Water Treatment System by storing surplus RGP surface water for later use in water-short drought periods or seasonal peak use periods or to offset localized water level (cone of depression) and/or water quality declines in the groundwater due to overdraft pumping. It is assumed that any water banking concepts will be limited to situations where the water banked in underground aquifers will be credited to the entity banking the water and may be recovered (pumped) by that entity without restriction or reduction.

If the proposal being considered by the USBR for funding a Ground Water Banking analysis as a supplement to the Joint Conveyance Study is adopted, this aspect will be incorporated in Phases II and III of the Joint Conveyance Study at this time.

2. **GIS Development**

The ARC/INFO GIS will be used to expedite the analysis and alignments for three alternative conveyance systems, the alternative locations of a regional water treatment plant, and the location of transmission lines and storage reservoirs. The GIS interface with its database will be used to analyze the costs of materials and construction of each alternative. As more accurate data becomes available, it will be further developed for the future evaluation, planning, and design of the RGP water system.

However, the development of a comprehensive GIS for the RGP regional area is beyond the budget and time available for Phases II and III of the Joint Conveyance Study. The GIS methodology is being used as a tool for this study to help complete the assigned tasks as quickly as possible, and to keep the cost within budget. Any further development as data becomes available will be done for the same purpose.

3. **Project Modeling**

The water budget modeling to be performed for this study as described above implements a uniform, defensible methodology for analyzing the existing system and proposed changes to the system. As it will be applied, the water budget analyses will be subject to certain limitations:

a. reservoir operations will not be included.

b. timesteps less than one month will not be analyzed.

c. multi-year sequences will not be analyzed.

d. components in the water budget will represent the composite for the segment, not a discrete representation such as an individual well or field.

e. the aquifers will be represented in a "bathtub" fashion, calculating change of storage as the difference between inflow and outflow and translating this into a change in water level by dividing by area and porosity or specific yield.

Analysis of the system in greater detail would require additional modeling tools and significantly greater effort. While not part of the work to be undertaken in this study, additional modeling efforts which might be considered in the future are mentioned below.

To investigate reservoir and system operations in greater detail, a water supply systems operations model linked to the water budget model would be necessary. To be most useful, the system model should operate on a daily timestep using multi-year flow sequences. An existing general purpose system simulation model could be applied, precluding the need to undertake code development efforts.

In the linked model, the water budget would represent the land and ground water processes, while the system model would represent the reservoir and river processes. The two models would be linked to allow predictive simulations incorporating the interactions between the river/reservoir system and the land/ground water system.

A further enhancement to the modeling capabilities would be the linkage of a detailed ground water model to the surface water-water budget model. A model such as the USGS MODFLOW model could be added to provide additional detail of the ground water system. This model could build upon the ground water modeling work of Hamilton and Maddock. A linked surface water operations-water budget-ground water model would represent state-of-the-art capabilities and provide a tool to predict in significant detail the impacts of operational modifications.

STUDY MILESTONES

Substantial completion of Phases II and III of the Joint Conveyance Study within the contract schedule is essential to comply with terms of the study financing. The critical target date for substantial completion of the study will be submission of the draft Study Phases II and III Final Report to the Joint Commission by June 28, 1994. In order to meet this critical date, intermediate actions by both the Consultants and the Commission must be met and approvals by the Commission must be received in a timely manner. These Milestones which must be achieved in order to complete the study as scheduled are as follows:

DISCLAIMER

This study Criteria Memorandum presents the basic citations of data which are known by the Consultant to be existing and available for purposes of analyses for the studies proposed in Phases II and III. It is understood by the Consultant and the Joint Settlement Commission that these data are neither complete nor accurate enough to form the basis for project design; however, they are thought to be adequate for this study to form evaluations at the reconnaissance level.

The parties to this Criteria Memorandum hereto understand and agree that the assumptions made and the results which will ultimately be delivered based upon those assumptions are only projections which have been used for the purpose of completing this engineering study and do not ~~necessary~~ necessarily reflect existing or future policies of the institutions they represent.

CONFIRMED AND APPROVED: This 7 day of April, 1994,

Edmund G. Archuleta
El Paso Water Utilities/Public Service Board

Edd Fifer
El Paso County Water Improvement District No. 1

Tom Bahr
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City of Las Cruces, NM

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APPENDIX B

COST BASIS MEMORANDUM

COST BASIS MEMORANDUM

prepared for

MANAGEMENT ADVISORY COMMITTEE
Final - March 18, 1994

The cost basis memorandum establishes major unit cost parameters and the procedure to be used in making the comparative cost estimates of the alternatives. The cost comparisons developed in the consideration of alternatives will present an opinion of probable capital cost and operation and maintenance costs for each alternative and will compute a benefits ratio.

OPINION OF PROBABLE COST

Level of Accuracy

This opinion will be produced during the preparation of alternatives in the Phase II/III planning process and prior to initiation of the next phase of planning work. It is used to compare project capital and operation and maintenance costs of the various alternatives under consideration and to establish an estimate of the budget for the entire project. The opinion will be based on the estimated extent of construction determined by the alternatives developed in the *Feasibility of Conveyance, Treatment and Distribution of Rio Grande Project Water for the Las Cruces and El Paso Areas*. The opinion will be developed using historical bid information, Bureau of Reclamation Unit prices for specific types of construction adjusted to Southern New Mexico/West Texas conditions, published literature values such as the Means and Richardson cost estimating guides, and current manufacturers' equipment price quotations. This opinion will be expected to have an accuracy of +30 to -15%.

Method for Preparing the Opinion of Probable Cost

The primary source for unit prices of estimated construction elements will be from recently bid projects. Bid prices will be adjusted to January, 1994 construction basis using the Bureau of Reclamation construction cost index. Additionally the unit prices will be adjusted to reflect construction in southern New Mexico/West Texas using regional cost indices.

Where unit prices are not available from recent project bids, unit prices will be developed from Means or Richardson cost estimating guides and adjusted to the local vicinity and January, 1994 basis. Other sources such as historical bid information, manufacturers price quotes or published literature values will be adjusted to the local vicinity and January 1994 basis.

Table 1 contains the primary unit prices to be used in the development of the capital cost of individual alternatives. Since the project is not expected to be constructed prior to the year 2000, the construction cost for January 1994 will be inflated at a compounded rate of 3 percent per year. A contingency of 20% will be applied to account for the cost of construction items not specifically identified. Project cost will be computed by including as a percentage of the basic construction other costs as follows:

Contractor's profit and overhead	12%
Engineering and Administration	15%
Unknown field conditions	5%

Land costs will be added to the project cost to determine the Total Project Cost. Figure 1 shows the method of calculation. No charge for cost of money has been included.

Operation and Maintenance costs will be developed from either the cost of of similiar projects or from costs developed by EBID and EPCWID#1. All operation and maintenance costs will be adjusted to January 2000 basis. Table 2 summarizes the proposed unit costs to be used to develop operation and maintenance costs.

Method for Comparing the Alternatives

All alternatives will be compared on the basis of present worth. The capital cost will be added to the present worth of the operation and maintenance cost computed for a 40 year period with an interest rate of 6%.

Figure 1
Calculation of Total Project Cost

	Estimated Units	Unit Price	Estimated Cost
Construction Element A	1	$6	$6
Construction Element B	2	$2	$4
Construction Element C	3	$4	$12
Construction Element D	4	$5	$20
Construction Element E	5	$4	$20
Construction Element F	6	$4	$24
Construction Element G	7	$2	$14
Subtotal Construction Elements			$100
Adjusted Subtotal to Year 2000		119%	$119
Construction Contingency		20%	$24
Subtotal Construction Cost			$143
Contractors Profit and Overhead		11%	$16
Engineering and Administration		14%	$20
Subtotal Project Cost			$179
Land Cost			$20
Total Estimated Project Cost			$199

Table 1
Capital Costs

Element	Unit	Unit Price
Canal, earthen with maintenance road and fencing	foot	$50.00
excavation, earth	cubic yard	$1.25
excavation, rock	cubic yard	$10.50
Canal, concrete lined with maintenance road and fencing	per foot	$280.00
lining	cubic yard	$130.00
Major Headgates	each	$150,000.00
River Crossings	each	$750,000.00
Flume Crossings	per foot	$525.00
Bridge Crossings	each	$100,000.00
Concrete Pipe	$/in dia/ft	$3.25
Rights-of-way (non orchard)	acre	$10,000.00
(orchard)	acre	$20,000.00
Water Treatment Plants	$/gal capacity	$1.15

Table 2
Annual Operation and Maintenance Costs

Element	Unit	Unit Price/Annum
Canal, earthen	$/mile	$5,000.00
Canal, concrete	$/mile	$4,000.00
Pipe lines	$/mile	$2,400.00
Water Treatment Plants	$/MG produced	$500.00

APPENDIX C

CANAL AND PIPELINE LAYOUT CHARACTERISTICS AND DESIGN FLOW BASIS

CANAL AND PIPELINE LAYOUT CHARACTERISTICS

Canal Characteristics
Alternative 1

	Reach No./ Description	Length feet	Length miles	Slope	Channel (ft) Bottom	Channel (ft) Height	Acres Total	Acres Orchards
1	Percha Dam to Hatch	73,000	13.83	0.00092	0.0	11.0	162.56	
	Hatch to Selden Canyon	60,500	11.46	0.00084	12.0	11.0	151.39	
	Selden Canyon to Leasburg Dam	80,000	15.15	0.00088	12.0	11.0	200.18	
	Leasburg Dam to Mesilla Dam	126,500	23.96	0.00100	12.0	11.0	316.54	65.06
	Mesilla Dam to Anthony	110,700	20.97	0.00072	12.0	11.0	277.00	17.52
	Anthony to Canutillo	48,500	9.19	0.00071	12.0	11.0	121.36	
	Canutillo to Closed Conduit	38,700	7.33	0.00600	12.0	11.0	96.84	
2	Closed Conduit	9,500	1.80		2-10x10 Barrel or 2-138" Pipes		12.54	
	TOTAL	547,400	103.67				1338.41	82.58

6/29/94

Canal Characteristics
Alternative 2

Sta.	Reach No./ Description	Length feet	Length miles	Slope	Channel (ft) Bottom	Channel (ft) Height	Acres Total	Acres Orchard
540,800	from Percha Dam							
	1c Arrey Canal to Garfield Siphon	25,100	4.75	0.00067	20.0	14.5	24.12	0.00
515,700	1b Garfield Canal To Hatch Siphon	49,300	9.33	0.00138	20.0	14.5	47.37	0.00
466,400								
	1c Hatch Canal to Rincon Siphon	44,000	8.33	0.00061	20.0	14.5	42.27	11.37
422,400								
	2 Angostura Lateral New Selden Cyn(80,000) to Leasburg Dam	106,000	20.08	0.00073	18.0	14.5	96.99	22.42
316,400								
	3 Leasburg Canal To Crapps Lateral	68,800	13.03	0.00106	16.0	14.5	59.80	15.78
247,600								
	4 Crapps Lateral Mesilla Lateral New (33,300) to Mesilla Dam	48,000	9.09	0.00095	14.0	14.0	69.01	23.13
199,600								
	5 West Side Canal to La Union Main	72,800	13.79	0.00100	12.0	13.0	38.44	67.77
126,800								
	6 La Union Main to La Union East	22,600	4.28	0.00064	12.0	12.5	23.25	1.92
104,200								
	7b La Union East to La Union Combined	29,400	5.56	0.00086	10.0	12.0	26.32	0.00
74,800								
	7a La Union Combined to Rio Grande	26,600	5.04	0.00038	10.0	12.0	39.08	0.00
48,200								
	8 New to Closed Conduit	38,700	7.33	0.00060	10.0	11.5	98.17	0.00
9,500								
	9 Closed Conduit (New) to American Dam	9,500	1.80		2-10x10 Barrels or 2-138" Pipes		12.54	0.00
0								
	TOTAL	540,800	102.42				577.36	142.38

Canal Characteristics
Alternative 2 A, Blending Option

Sta.	Reach No./ Description	Length feet	Length miles	Slope	Main Channel (ft) Bottom	Main Channel (ft) Height	Acres Total	Acres Orchard
			Single Canal					
540,800	from Percha Dam							
	1c Arrey Canal to Garfield Siphon	25,100	4.75	0.00067	16.0	14.5	23.43	0.00
515,700	1b Garfield Canal To Hatch Siphon	49,300	9.33	0.00138	16.0	14.5	46.03	0.00
466,400	1c Hatch Canal to Rincon Siphon	44,000	8.33	0.00061	16.0	14.5	41.08	11.05
422,400	2 Angostura Lateral New Selden Cyn(80,000) to Leasburg Dam	106,000	20.08	0.00073	15.0	14.5	94.90	21.94
316,400			Fresh Water Canal					
	3 Leasburg Dam to 4 Mesilla Dam	126,500	23.96	0.001	14.0	13.0	316.54	65.06
			Blended Water Canal					
	3 Leasburg Canal To Crapps Lateral	68,800	13.03	0.00106	8.0	9.5	41.10	10.85
247,600	4 Crapps Lateral Mesilla Lateral New (33,300) to Mesilla Dam	48,000	9.09	0.00095	6.0	6.5	37.38	12.53
199,600			Fresh Water Canal					
	5 Mesilla Dam to Anthony	110,700	20.97	0.00072	10.0	11.0	271.92	17.19
	6 Anthony to Canutillo	48,500	9.19	0.00071	10.0	11.0	119.13	
	7 Canutillo to 8 Closed Conduit	38,700	7.33	0.00600	10.0	11.0	95.06	
			Blended Water Canal					
	5 West Side Canal to La Union Main	72,800	13.79	0.00100	8.0	10.0	30.63	53.99
126,800	6 La Union Main to La Union East	22,600	4.28	0.00064	7.0	8.0	16.15	1.33
104,200	7b La Union East to La Union Combined	29,400	5.56	0.00086	6.0	6.5	16.51	0.00
74,800	7a La Union Combined to Rio Grande	26,600	5.04	0.00038	6.0	6.5	24.51	0.00
48,200	8 New to Closed Conduit	38,700	7.33	0.00060	4.0	5.0	52.42	0.00
9,500			Fresh Water Canal					
	9 Closed Conduit (New) to American Dam	9,500	1.80		2-10x10 Barrels or 2-138" Pipes		12.54	0.00
0	TOTAL	865,200	163.9				1239.34	193.94

6/29/94

Pipeline Characteristics
Alternative 3
Road Alignment

Reach	Road	Length		Pipe Diameter		Acres	
		feet	miles	inch	in-dia-ft	Total	Orchard
Caballo Dam to Hatch River Crossing	US 85	92,000	17.42	120	11,040,000	63.36	0.00
Hatch River Crossing to Selden Canyon	US 85	35,000	6.63	120	4,200,000	24.10	0.00
Selden Canyon to Rio Grande at Leasburg		81,000	15.34	120	9,720,000	55.79	0.00
Leasburg to Rio Grande	US 85	73,000	13.83	120	8,760,000	50.28	2.57
Rio Grande to Crossing below Mesilla Dam		50,000	9.47	120	6,000,000	34.44	1.76
Mesilla Dam to La Union Combined at River	SR 28	138,000	26.14	120	16,560,000	95.04	4.86
Canutillo to RUWTP		48,200	9.13	90	4,338,000	24.90	0.00
RUWTP to JRWTP		79,200	15.00	72	5,702,400	32.73	0.00
TOTAL		596,400	113.0		66,320,400	380.63	9.19

6/29/94

DESIGN FLOW BASIS

Design Flow Basis

For a preliminary design of conveyance sections, it was necessary to determine, among other parameters, the flows for which the different reaches of the conveyances would be designed. Maximum daily flow demands were determined for years 2005, 2015, and 2035 at various critical points along the conveyance routes. The assumptions as to future operations of the irrigation and M&I water supply systems, and demand calculations are presented in the following paragraphs.

EBID Flows

It is assumed that the area irrigated by EBID will not be changed between the present and 2035, and that the same flows that laterals were designed for will continue to be required. Seepage losses that presently occur in the main canals will not occur in the new lined canals; however, seepage losses in the system of laterals will continue. Under these considerations, individual canal design flows from the EBID schematic flow chart, in conjunction with required flows downstream, will be used to determine the total design flows in the new main canals that will replace the present diversion canals.

It is recognized that EBID will still attain considerable savings of irrigation water with the new system, but these will come mainly from replacing the present unlined canals and the channels of the Rio Grande as their main conveyance channel with a new system of lined canals.

EPCWID#1 Flows

The area irrigated by EPCWID#1 will decrease due to changes in land use. Part of the present agricultural lands will be changed to urban areas. As a result, water now used to irrigate those lands will be converted to M & I use. Water flows required to irrigate the remaining lands will decrease, not only because of the decrease in irrigated area, but also because of the improved conveyance efficiency provided by lined canals as compared to that of the channel of the Rio Grande. It is expected that operational spills will decrease due to improved control and shorter travel times, and transportation losses will be limited to those that will occur in the system of lateral canals. For the purpose of the present calculations, it is assumed that operational spills will be 15 percent and transportation losses 25 percent of farm deliveries.

From a study of monthly farm deliveries made by EPCWID#1 in the period 1982-1989, it was determined that the monthly flow peaking factor is 2.1 with

respect to the annual average, and that it occurs in the months of March and July. For the same period, a study of daily flows diverted into American Canal during the month of March yielded a daily flow peaking factor of 1.5 with respect to the monthly flow. For the present calculations, it is assumed that these peaking factors will apply to future irrigation demands on EPCWID#1.

2035 M & I Water Supply Operation

Surface water supply for use by EPWU will occur at a rate equal to average demand minus a constant ground water supply rate provided from the natural recharge of the area aquifers. During periods when demand is lower than the surface water supply, water "banking" will be practiced by storing the excess water in the aquifers. During periods when demand is equal to or greater than treatment capacity, EPWU water treatment plants will be operated at full capacity. Demands above this capacity will be covered by pumping water in storage from water banking and natural recharge.

This analysis of supply and demand does not consider substitution of reclaimed wastewater effluent for potable demands, which would tend to reduce the supply necessary from surface water treatment plants. It also does not compensate for the fact that some "down time" will be necessary in operation of surface water treatment plants, which would tend to increase the necessary capacity.

Total RUWTP + JRWTP capacity = 40.0 + 80.0 = 120.0 mgd

Anthony WTP capacity for El Paso = 78.0 mgd

Total WTP capacity for El Paso = 120.0 + 78.0 = 198.0 mgd

2035 EPWU Demand

Population = 1,280,000

Per Capita Demand = 160 gpcd

Total Annual Demand = (1,280,000)(160)(365)/[7.48)(43,560)]

= 229, 421 Ac - ft

Average Demand = $(1,280,000)(160)/10^6$ = 204.9 mgd

Ground water supply from natural recharge:

Annual recharge volume = 12,860 Ac - ft

At a uniform rate of withdrawal throughout the year,

Available ground water supply flow = (12,860)(0.000893) = 11.5 mgd

Minimum required ground water flow = 204.9 - 198.0

= 6.9 mgd < Available flow, ok

2035 EPCWID#1 Demand

From Table 2-9, Appendix B, El Paso Water Resource Management Plan, Phase I Completion Report:

Annual irrigation water demand = 55,500 Ac - ft (Farm deliveries)

Providing for 15% operational spills + 25% transportation losses:

Total annual irrigation demand = (1.40)(55,500) = 77,700 Ac - ft

Peaking factor for maximum month = 2.1

Peak monthly demand = (2.1)(77,700/12) = 13,598 Ac - ft

Peaking factor for maximum daily demand = 1.5

Daily peak demand = (1.5)(13,598)(12/365) = 671 Ac - ft

Daily peak flow = 338.3 cfs

2035 Las Cruces and Southern New Mexico Demand

Las Cruces water treatment plant peak demand = 58.0 mgd

= 89.7 cfs

Southern New Mexico peak demand from Anthony plant = 25.4 mgd

= 39.3 cfs

2035 Mexico Demand

Mexico's annual allotment = 60,000 Ac - ft

At a uniform rate of supply, Mexico's flow = 53.6 mgd

= 82.9 cfs

It is assumed that Mexico's allotment will be supplied at this uniform rate from the Anthony plant.

2035 Anthony Plant Capacity

Q = 78 mgd = 120.7 cfs for EPWU

Q = 53.6 mgd = 82.9 cfs for Mexico

Q = 25.4 = 39.3 cfs for Southern New Mexico

Total at Anthony plant = 120.7 + 82.9 + 39.3 = 242.9 cfs

2035 Flows Below American Dam

Total RUWTP + JRWTP capacity = 120.0 mgd
= 185.7 cfs

Since RUWTP and JRWTP will be operated at full capacity,

Q = 185.7 cfs for EPWU

Q = 338.3 cfs for EPCWID#1

Total below American Dam = 185.7 + 338.3 = 524.0 cfs

2015 M & I Water Supply Operation

Under normal operation, at all times when demand is equal to or greater than the installed water treatment plant capacity, EPWU will operate their water treatment plants at full capacity. Demand above the capacity of the treatment plants will be supplied from ground water as required.

Total RUWTP + JRWTP capacity = 40.0 + 80.0 = 120.0 mgd

Anthony WTP capacity for El Paso = 45.0 mgd

Total WTP capacity for El Paso = 120.0 + 45.0 = 165.0 mgd

2015 EPWU Demand

From Table 2-1, Water Facilities Master Plan Report,

Population served = 930,000

Per Capita Demand = 160 gpcd

Total Annual Demand = (930,000)(160)(365)/[(7.48)(43,560)]
= 166,689 Ac - ft

Average Demand = (930,000)(160)/10^6 = 148.8 mgd

From Table 3-2, Water Facilities Master Plan Report,

Summer peak-day demand = 297.7 mgd

Net well capacity = 144.3 mgd

Peak required supply from wells = 297.7 - 165.0 = 132.7 mgd
< Net well capacity, ok

EPWU surface water flow below American Dam = 120.0 mgd
= 185.7 cfs

2015 EPCWID#1 Demand

From Table 2-9, Appendix B, El Paso Water Resources Management Plan, Phase I Completion Report,

Annual irrigation water demand = 93,600 Ac - ft (Farm deliveries)

Providing for 15% operational spills + 25% transportation losses:

Total annual irrigation demand = (1.40)(93,600) = 131,040 Ac - ft.

Peaking factor for maximum month = 2.1

Peak monthly demand = (2.1)(131,040/12) = 22,932 Ac - ft

Peaking factor for maximum daily demand = 1.5

Daily peak demand = (1.5)(22,932)(12/365) = 1,135 Ac -ft

Daily peak flow = 570.2 cfs

2015 Las Cruces and Southern New Mexico Demand:

Las Cruces water treatment plant peak demand = 25.1 mgd
= 38.8 cfs

Southern New Mexico maximum demand from = 6.1 mgd
= 9.4 cfs

2015 Mexico Demand

Mexico's annual allotment = 60,000 Ac - ft

At a uniform rate of supply, Mexico's flow = 53.6 mgd
= 82.9 cfs

It is assumed that Mexico's allotment will be supplied at this uniform rate from the Anthony plant.

2015 Anthony Plant Capacity

Q = 45.0 mgd = 69.6 cfs for EPWU

Q = 53.6 mgd = 82.9 cfs for Mexico

Q = 6.1 mgd = 9.4 cfs for Southern New Mexico

Total at Anthony plant = 69.6 + 82.9 + 9.4 = 161.9 cfs

2015 Flows Below American Dam

Total RUWTP + JRWTP capacity = 120.0 mgd
= 185.7 cfs

Since RUWTP and JRWTP will be operated at full capacity,

Q = 185.7 cfs for EPWU

Q = 570.2 cfs for EPCWID#1

Total below American Dam = 185.7 + 570.2 = 755.9 cfs

2005 M & I Water Supply Operation

Under normal operation, at all times when demand is equal to or greater than the installed water treatment plant capacity, EPWU will operate their water treatment plants at full capacity. Demand above the capacity of the treatment plants will be supplied from ground water as required.

Total RUWTP + JRWTP capacity = 40.0 + 60.0 = 100.0 mgd

Anthony WTP capacity for El Paso = 15.0 mgd

Total WTP capacity for El Paso = 100.0 + 15.0 = 115.0 mgd

2005 EPWU Demand

From Table 2-1, Water Facilities Master Plan Report,

Population served = 759,000

Per Capita Demand = 160 gpcd,

Total Annual Demand = (759,000)(160)(365)/[(7.48)(43,560)]
= 136,040 Ac - ft

Average Demand = $(759,000)(160)/10^6$ = 121.4 mgd

From Table 3-2, Water Facilities Master Plan Report,

Summer peak-day demand = 242.5 mgd

Net well capacity = 166.5 mgd

Peak required supply from wells = 242.5 - 115.0 = 127.5 mgd

< Net well capacity, ok

EPWU surface water flow below American Dam = 100.0 mgd
= 154.7

2005 EPCWID#1 Demand

From Table 2-9, Appendix B, El Paso Water Resources Management Plan, Phase I Completion Report,

Annual irrigation water demand = 113,000 Ac - ft (Farm deliveries)

Providing for 15% operational spills + 25% transportation losses:

Total annual irrigation demand = (1.40)(113,000) = 158,200 Ac - ft

Peaking factor for maximum month = 2.1

Peak monthly demand = (2.1)(158,200/12) = 27,685 Ac - ft

Peaking factor for maximum daily demand = 1.5

Daily peak demand (1.5)(27,685)(12/365) = 1,365 Ac - ft

Daily peak flow = 688.3 cfs

2005 Las Cruces and Southern New Mexico Demand

Las Cruces water treatment plant peak demand = 19.5 mgd
= 30.2 cfs

Southern New Mexico maximum demand = 4.6 mgd
= 7.1 cfs

2005 Mexico Demand

Mexico's annual allotment = 60,000 Ac - ft

If this volume is converted to M & I use and treated at a uniform rate throughout the year, the required surface water supply will be:

$Q = (60,000)(43,560)(7.48)/[(365)(10^6)] = 53.6$ mgd
= 82.9 cfs

This flow will be treated at the Anthony plant.

If Mexico's allotment continues to be supplied as irrigation water below American Dam:

Maximum monthly demand as per 1906 Convention = 12,000 Ac - ft

For peaking factor of 1.5 for maximum daily flow:

$Q = (1.5)(12,000)(43,560)(7.48)/[(30)(10^6)] = 195.5$ mgd
= 302.5 cfs

2005 Anthony Plant Capacity

Q = 15.0 mgd = 23.2 cfs for EPWU

Q = 53.6 mgd = 82.9 cfs for Mexico, to be utilized if allocation is converted to M&I uses

Q = 4.6 mgd = 7.1 cfs for Southern New Mexico

Total at Anthony plant = 23.2 + 82.9 + 7.1 = 113.2 cfs

2005 Flows Below American Dam

Total RUWTP + JRWTP capacity = 100.0 mgd
= 154.7 cfs

Since RUWTP and JRWTP will be operated at a full capacity,

For Mexico's flow converted to M & I:

Q = 154.7 cfs for EPWU

Q = 688.3 cfs for EPCWID#1

Total below American Dam = 154.7 + 688.3 = 843.0 cfs

For Mexico's flow delivered as per 1906 Convention schedule at American Dam:

Q = 154.7 cfs for EPWU

Q = 688.3 cfs for EPCWID#1

Q = 302.5 cfs for Mexico

Total below American Dam = 154.7 + 688.3 +302.5 = 1,145.5 cfs

APPENDIX D

WATER BUDGET ANALYSIS
AND
AQUIFER MASS BALANCE
SPREADSHEETS

WATER BUDGET ANALYSIS SPREADSHEETS

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

BASELINE

COMPOSITE

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)					CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	TOTAL OUTFLOW (10)	IN STORAGE (1000ac-ft) (11)
JANUARY	0.3	0.2	0.0	-1.2	-0.8	0.0	0.0	0.5	0.0	0.5	-1.3
FEBRUARY	0.3	0.4	1.3	0.7	2.7	0.0	0.0	0.2	0.5	0.8	1.9
MARCH	0.3	1.8	5.5	4.0	11.6	0.0	0.1	0.0	3.0	3.2	8.4
APRIL	0.3	1.8	5.6	-3.2	4.4	0.0	0.1	1.0	2.6	3.7	0.8
MAY	0.3	1.8	5.5	-1.7	5.8	0.0	0.1	1.0	2.6	3.7	2.0
JUNE	0.3	2.1	5.7	-0.9	7.1	0.0	0.2	1.0	2.7	3.9	3.3
JULY	0.3	2.1	6.0	-1.3	7.1	0.0	0.1	0.9	3.2	4.3	2.8
AUGUST	0.3	2.4	5.4	-7.2	0.9	0.0	0.1	0.7	2.9	3.8	-2.8
SEPTEMBER	0.3	1.2	3.2	-5.3	-0.7	0.0	0.1	1.1	1.9	3.2	-3.8
OCTOBER	0.3	0.5	1.0	-4.9	-3.2	0.0	0.1	0.9	0.2	1.2	-4.4
NOVEMBER	0.3	0.1	0.1	-2.4	-1.9	0.0	0.0	0.7	0.1	0.8	-2.8
DECEMBER	0.3	0.2	0.0	-1.7	-1.3	0.0	0.0	0.5	0.0	0.6	-1.9
TOTAL	3.0	14.6	39.3	-25.2	31.7	0.3	1.1	8.4	19.8	29.6	2.1

Phreatophyte area (ac) = 200.0

Average consumptive use (ft/yr) = 5.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

BASELINE

DRY YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)					CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	TOTAL OUTFLOW (10)	IN STORAGE (1000 ac-ft) (11)
JANUARY	0.3	0.0	0.0	-0.9	-0.7	0.0	0.0	0.9	0.0	0.9	-1.6
FEBRUARY	0.3	0.0	0.1	1.3	1.6	0.0	0.0	0.7	0.1	0.8	0.8
MARCH	0.3	2.0	4.7	7.4	14.3	0.0	0.1	-0.1	5.2	5.2	9.1
APRIL	0.3	1.7	4.2	-4.0	2.2	0.0	0.1	0.9	3.8	4.8	-2.6
MAY	0.3	1.4	3.1	-0.2	4.5	0.0	0.1	0.8	3.7	4.7	-0.2
JUNE	0.3	1.5	3.4	1.4	6.5	0.0	0.2	0.2	3.3	3.7	2.9
JULY	0.3	2.3	5.3	0.8	8.7	0.0	0.1	0.2	5.1	5.4	3.3
AUGUST	0.3	2.6	5.6	-4.6	3.8	0.0	0.1	0.2	5.4	5.7	-1.9
SEPTEMBER	0.3	1.4	2.9	-8.7	-4.1	0.0	0.1	0.8	3.2	4.1	-8.3
OCTOBER	0.3	0.0	0.0	-1.1	-0.9	0.0	0.1	0.8	0.1	1.0	-1.8
NOVEMBER	0.3	0.0	0.0	-1.3	-1.0	0.0	0.0	0.7	0.1	0.9	-1.9
DECEMBER	0.3	0.1	0.0	-0.9	-0.6	0.0	0.0	0.6	0.0	0.6	-1.2
TOTAL	3.0	13.0	29.3	-11.0	34.4	0.3	1.1	6.7	29.7	37.8	-3.5

Phreatophyte area (ac)	=	200.0
Average consumptive use (ft/yr)	=	5.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

BASELINE

AVERAGE YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)					CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	TOTAL OUTFLOW (10)	IN STORAGE (1000 ac-ft) (11)
JANUARY	0.3	0.6	0.0	-1.1	-0.3	0.0	0.0	0.3	0.0	0.4	-0.6
FEBRUARY	0.3	0.6	1.5	1.3	3.6	0.0	0.0	0.1	1.0	1.1	2.5
MARCH	0.3	1.7	5.2	1.9	9.1	0.0	0.1	-0.2	2.4	2.4	6.7
APRIL	0.3	1.7	5.6	-6.0	1.6	0.0	0.1	0.7	2.4	3.3	-1.7
MAY	0.3	1.8	5.6	-2.8	4.9	0.0	0.1	0.9	2.4	3.4	1.5
JUNE	0.3	2.7	6.3	-3.7	5.5	0.0	0.2	1.1	3.3	4.6	0.8
JULY	0.3	2.2	6.0	-2.5	6.0	0.0	0.1	1.2	3.2	4.6	1.4
AUGUST	0.3	3.3	6.3	-7.4	2.5	0.0	0.1	0.9	2.4	3.5	-1.0
SEPTEMBER	0.3	1.0	2.6	-1.2	2.6	0.0	0.1	1.5	1.7	3.3	-0.6
OCTOBER	0.3	1.1	1.7	-6.9	-3.9	0.0	0.1	0.9	0.1	1.1	-4.9
NOVEMBER	0.3	0.3	0.4	-2.6	-1.6	0.0	0.0	0.7	0.1	0.9	-2.5
DECEMBER	0.3	0.5	0.0	-1.7	-0.9	0.0	0.0	0.6	0.0	0.7	-1.5
TOTAL	3.0	17.6	41.2	-32.6	29.2	0.3	1.1	8.7	19.0	29.1	0.1

Phreatophyte area (ac)	=	200.0
Average consumptive use (ft/yr)	=	5.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

BASELINE

NORMAL YEAR

REACH 1 - RINCON VALLEY

MONTH	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)					CHANGE IN STORAGE (1000ac-ft) (11)
	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	TOTAL OUTFLOW (10)	
JANUARY	0.3	0.0	0.0	-1.6	-1.4	0.0	0.0	0.2	0.0	0.3	-1.7
FEBRUARY	0.3	0.7	2.4	-0.5	2.8	0.0	0.0	-0.1	0.5	0.5	2.4
MARCH	0.3	1.8	6.5	2.7	11.2	0.0	0.1	0.4	1.5	2.0	9.3
APRIL	0.3	1.9	7.1	0.4	9.6	0.0	0.1	1.2	1.6	2.9	6.6
MAY	0.3	2.0	7.7	-2.1	7.9	0.0	0.1	1.3	1.7	3.1	4.8
JUNE	0.3	2.0	7.5	-0.4	9.4	0.0	0.2	1.5	1.6	3.3	6.0
JULY	0.3	1.9	6.6	-2.2	6.5	0.0	0.1	1.3	1.5	2.9	3.6
AUGUST	0.3	1.3	4.4	-9.6	-3.6	0.0	0.1	1.0	1.0	2.1	-5.7
SEPTEMBER	0.3	1.1	4.2	-6.1	-0.5	0.0	0.1	1.0	0.9	2.0	-2.5
OCTOBER	0.3	0.3	1.2	-6.5	-4.7	0.0	0.1	1.1	0.3	1.5	-6.3
NOVEMBER	0.3	0.0	0.0	-3.4	-3.2	0.0	0.0	0.6	0.1	0.8	-3.9
DECEMBER	0.3	0.0	0.0	-2.7	-2.4	0.0	0.0	0.3	0.0	0.4	-2.8
TOTAL	3.0	13.2	47.5	-32.0	31.6	0.3	1.1	9.8	10.7	21.9	9.8

Phreatophyte area (ac)	=	200.0
Average consumptive use (ft/yr)	=	5.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

BASELINE

COMPOSITE

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)										CHANGE
MONTH	GROSS PRECIP. (1)	DRAIN & CANAL INFLOW (2)	RIVER FLOW TO AGR. (3)	RIVER FLOW TO M&I (4)	NET GW INFLOW TO DRAIN (5)	AGR. GW PUMPING (6)	M&I GW PUMPING (7)	TOTAL INFLOW (8)	NET CANAL EVAP. (9)	DRAIN & CANAL OUTFLOW (10)	PLANT C.U. (11)	M&I C.U. (12)	LAT. & CANAL SEEPAGE (13)	DEEP PERC. (14)	M&I RETURN FLOW (15)	CANAL WASTE RETURN (16)	DRAIN FLOW TO RIVER (17)	TOTAL OUTFLOW (18)	IN STORAGE (1000 ac-ft) (19)
JANUARY	2.9	0.0	0.0	0.0	0.5	0.0	0.0	3.4	0.0	0.0	2.6	0.0	0.0	0.2	0.0	0.0	0.6	3.4	0.0
FEBRUARY	1.6	0.0	3.0	0.0	0.2	0.5	0.0	5.3	0.0	0.0	2.7	0.0	1.3	0.4	0.0	0.4	0.5	5.3	0.0
MARCH	0.6	0.0	11.7	0.0	0.0	2.9	0.1	15.5	0.0	0.0	5.6	0.1	5.5	1.8	0.1	1.4	1.0	15.5	0.0
APRIL	0.5	0.0	12.4	0.0	1.0	2.5	0.1	16.5	0.0	0.0	5.4	0.1	5.6	1.8	0.1	1.6	1.9	16.5	0.0
MAY	0.6	0.0	11.9	0.0	1.0	2.5	0.1	16.0	0.1	0.0	5.3	0.1	5.5	1.8	0.1	1.5	1.9	16.0	0.0
JUNE	2.5	0.0	12.7	0.0	1.0	2.6	0.1	18.9	0.1	0.0	7.3	0.1	5.7	2.1	0.1	1.7	2.0	18.9	0.0
JULY	6.8	0.0	13.0	0.0	0.9	3.1	0.1	24.0	0.1	0.0	11.9	0.1	6.0	2.1	0.1	1.6	2.1	24.0	0.0
AUGUST	13.8	0.0	11.8	0.0	0.7	2.8	0.1	29.1	0.0	0.0	17.6	0.1	5.4	2.4	0.1	1.4	2.1	29.1	0.0
SEPTEMBER	4.4	0.0	7.0	0.0	1.1	1.8	0.1	14.4	0.0	0.0	7.2	0.1	3.2	1.2	0.1	0.9	1.8	14.4	0.0
OCTOBER	5.5	0.0	2.2	0.0	0.9	0.1	0.1	8.8	0.0	0.0	5.7	0.1	1.0	0.5	0.1	0.3	1.2	8.8	0.0
NOVEMBER	1.0	0.0	0.3	0.0	0.7	0.0	0.1	2.1	0.0	0.0	1.0	0.1	0.1	0.1	0.1	0.0	0.7	2.1	0.0
DECEMBER	3.4	0.0	0.0	0.0	0.5	0.0	0.0	3.9	0.0	0.0	3.1	0.0	0.0	0.2	0.0	0.0	0.6	3.9	0.0
TOTAL	43.8	0.0	86.0	0.0	8.4	18.9	0.9	158.0	0.3	0.0	75.4	0.5	39.3	14.6	0.5	10.9	16.4	158.0	0.0

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.02
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.46
Fraction of "river flow to agr." as canal waste return	=	0.12	Fraction of M&I flow as M&I return flow	=	0.50
Canal area (ac)	=	102			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

BASELINE

DRY YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)										CHANGE
MONTH	GROSS PRECIP. (1)	DRAIN & CANAL INFLOW (2)	RIVER FLOW TO AGR. (3)	RIVER FLOW TO M&I (4)	NET GW INFLOW TO DRAIN (5)	AGR. GW PUMPING (6)	M&I GW PUMPING (7)	TOTAL INFLOW (8)	NET CANAL EVAP. (9)	DRAIN & CANAL OUTFLOW (10)	PLANT C.U. (11)	M&I C.U. (12)	LAT. & CANAL SEEPAGE (13)	DEEP PERC. (14)	M&I RETURN FLOW (15)	CANAL WASTE RETURN (16)	DRAIN FLOW TO RIVER (17)	TOTAL OUTFLOW (18)	IN STORAGE (1000 ac-ft) (19)
JANUARY	0.3	0.0	0.0	0.0	0.9	0.0	0.0	1.2	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.9	1.2	0.0
FEBRUARY	0.3	0.0	0.1	0.0	0.7	0.1	0.0	1.2	0.0	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.7	1.2	0.0
MARCH	0.3	0.0	9.2	0.0	-0.1	5.1	0.1	14.7	0.0	0.0	6.0	0.1	4.7	2.0	0.1	0.9	1.0	14.7	0.0
APRIL	0.9	0.0	9.1	0.0	0.9	3.7	0.1	14.7	0.1	0.0	5.7	0.1	4.2	1.7	0.1	1.0	1.8	14.7	0.0
MAY	0.0	0.0	6.0	0.0	0.8	3.6	0.1	10.5	0.1	0.0	3.8	0.1	3.1	1.4	0.1	0.5	1.5	10.5	0.0
JUNE	3.0	0.0	7.3	0.0	0.2	3.2	0.1	13.8	0.1	0.0	6.8	0.1	3.4	1.5	0.1	0.8	1.1	13.8	0.0
JULY	4.2	0.0	11.3	0.0	0.2	5.0	0.1	20.7	0.1	0.0	10.2	0.1	5.3	2.3	0.1	1.2	1.5	20.7	0.0
AUGUST	11.1	0.0	11.8	0.0	0.2	5.3	0.1	28.4	0.0	0.0	17.1	0.1	5.6	2.6	0.1	1.3	1.8	28.4	0.0
SEPTEMBER	5.7	0.0	5.9	0.0	0.8	3.1	0.1	15.7	0.0	0.0	8.9	0.1	2.9	1.4	0.1	0.6	1.7	15.7	0.0
OCTOBER	6.6	0.0	0.0	0.0	0.8	0.0	0.1	7.5	0.0	0.0	6.3	0.1	0.0	0.0	0.1	0.0	1.0	7.5	0.0
NOVEMBER	1.0	0.0	0.0	0.0	0.7	0.0	0.1	1.8	0.0	0.0	0.9	0.1	0.0	0.0	0.1	0.0	0.8	1.8	0.0
DECEMBER	3.6	0.0	0.0	0.0	0.6	0.0	0.0	4.2	0.0	0.0	3.4	0.0	0.0	0.1	0.0	0.0	0.7	4.2	0.0
TOTAL	37.2	0.0	60.6	0.0	6.7	28.8	0.9	134.2	0.4	0.0	69.9	0.5	29.3	13.0	0.5	6.3	14.4	134.2	0.0

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.01
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.48
Fraction of "river flow to agr." as canal waste return	=	0.11	Fraction of M&I flow as M&I return flow	=	0.50
Canal area (ac)	=	102			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

BASELINE

AVERAGE YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)										CHANGE
MONTH	GROSS PRECIP. (1)	DRAIN & CANAL INFLOW (2)	RIVER FLOW TO AGR. (3)	RIVER FLOW TO M&I (4)	NET GW INFLOW TO DRAIN (5)	AGR. GW PUMPING (6)	M&I GW PUMPING (7)	TOTAL INFLOW (8)	NET CANAL EVAP. (9)	DRAIN & CANAL OUTFLOW (10)	PLANT C.U. (11)	M&I C.U. (12)	LAT. & CANAL SEEPAGE (13)	DEEP PERC. (14)	M&I RETURN FLOW (15)	CANAL WASTE RETURN (16)	DRAIN FLOW TO RIVER (17)	TOTAL OUTFLOW (18)	IN STORAGE (1000 ac-ft) (19)
JANUARY	4.2	0.0	0.0	0.0	0.3	0.0	0.0	4.5	0.0	0.0	3.5	0.0	0.0	0.6	0.0	0.0	0.5	4.5	0.0
FEBRUARY	0.9	0.0	3.4	0.0	0.1	1.0	0.0	5.3	0.0	0.0	2.4	0.0	1.5	0.6	0.0	0.5	0.4	5.3	0.0
MARCH	1.1	0.0	11.2	0.0	-0.2	2.3	0.1	14.5	0.0	0.0	5.5	0.1	5.2	1.7	0.1	1.2	0.7	14.5	0.0
APRIL	0.2	0.0	12.2	0.0	0.7	2.3	0.1	15.5	0.0	0.0	5.0	0.1	5.6	1.7	0.1	1.4	1.6	15.5	0.0
MAY	0.7	0.0	12.3	0.0	0.9	2.3	0.1	16.3	0.1	0.0	5.4	0.1	5.6	1.8	0.1	1.5	1.8	16.3	0.0
JUNE	4.1	0.0	13.7	0.0	1.1	3.2	0.1	22.2	0.1	0.0	9.1	0.1	6.3	2.7	0.1	1.7	2.3	22.2	0.0
JULY	5.5	0.0	12.9	0.0	1.2	3.1	0.1	22.8	0.1	0.0	10.7	0.1	6.0	2.2	0.1	1.4	2.4	22.8	0.0
AUGUST	14.5	0.0	13.5	0.0	0.9	2.3	0.1	31.4	0.0	0.0	17.7	0.1	6.3	3.3	0.1	1.4	2.4	31.4	0.0
SEPTEMBER	5.2	0.0	5.5	0.0	1.5	1.6	0.1	13.9	0.0	0.0	7.5	0.1	2.6	1.0	0.1	0.6	2.1	13.9	0.0
OCTOBER	7.2	0.0	3.8	0.0	0.9	0.0	0.1	12.0	0.0	0.0	7.2	0.1	1.7	1.1	0.1	0.6	1.3	12.0	0.0
NOVEMBER	1.4	0.0	1.0	0.0	0.7	0.0	0.1	3.2	0.0	0.0	1.4	0.1	0.4	0.3	0.1	0.1	0.8	3.2	0.0
DECEMBER	4.8	0.0	0.0	0.0	0.6	0.0	0.0	5.4	0.0	0.0	4.1	0.0	0.0	0.5	0.0	0.0	0.8	5.4	0.0
TOTAL	49.9	0.0	89.4	0.0	8.7	18.1	0.9	167.0	0.3	0.0	79.5	0.5	41.2	17.6	0.5	10.3	17.1	167.0	0.0

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.05
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.46
Fraction of "river flow to agr." as canal waste return	=	0.12	Fraction of M&I flow as M&I return flow	=	0.50
Canal area (ac)	=	102			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

BASELINE

NORMAL YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)										CHANGE IN STORAGE (1000 ac-ft) (19)
MONTH	GROSS PRECIP. (1)	DRAIN & CANAL INFLOW (2)	RIVER FLOW TO AGR. (3)	RIVER FLOW TO M&I (4)	NET GW INFLOW TO DRAIN (5)	AGR. GW PUMPING (6)	M&I GW PUMPING (7)	TOTAL INFLOW (8)	NET CANAL EVAP. (9)	DRAIN & CANAL OUTFLOW (10)	PLANT C.U. (11)	M&I C.U. (12)	LAT. & CANAL SEEPAGE (13)	DEEP PERC. (14)	M&I RETURN FLOW (15)	CANAL WASTE RETURN (16)	DRAIN FLOW TO RIVER (17)	TOTAL OUTFLOW (18)	
JANUARY	4.3	0.0	0.0	0.0	0.2	0.0	0.0	4.5	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.4	4.5	0.0
FEBRUARY	3.8	0.0	5.4	0.0	-0.1	0.5	0.0	9.6	0.0	0.0	5.3	0.0	2.4	0.7	0.0	0.8	0.4	9.6	0.0
MARCH	0.5	0.0	14.8	0.0	0.4	1.4	0.1	17.2	0.0	0.0	5.3	0.1	6.5	1.8	0.1	2.2	1.2	17.2	0.0
APRIL	0.5	0.0	16.0	0.0	1.2	1.5	0.1	19.3	0.0	0.0	5.6	0.1	7.1	1.9	0.1	2.4	2.2	19.3	0.0
MAY	1.0	0.0	17.5	0.0	1.3	1.6	0.1	21.4	0.1	0.0	6.6	0.1	7.7	2.0	0.1	2.6	2.3	21.4	0.0
JUNE	0.5	0.0	17.0	0.0	1.5	1.5	0.1	20.7	0.1	0.0	6.0	0.1	7.5	2.0	0.1	2.6	2.5	20.7	0.0
JULY	10.6	0.0	14.9	0.0	1.3	1.4	0.1	28.3	0.0	0.0	14.8	0.1	6.6	1.9	0.1	2.2	2.6	28.3	0.0
AUGUST	15.7	0.0	10.0	0.0	1.0	0.9	0.1	27.7	0.0	0.0	18.1	0.1	4.4	1.3	0.1	1.5	2.2	27.7	0.0
SEPTEMBER	2.3	0.0	9.5	0.0	1.0	0.8	0.1	13.7	0.0	0.0	5.2	0.1	4.2	1.1	0.1	1.4	1.6	13.7	0.0
OCTOBER	2.8	0.0	2.7	0.0	1.1	0.2	0.1	6.9	0.0	0.0	3.5	0.1	1.2	0.3	0.1	0.4	1.4	6.9	0.0
NOVEMBER	0.7	0.0	0.0	0.0	0.6	0.0	0.1	1.4	0.0	0.0	0.6	0.1	0.0	0.0	0.1	0.0	0.7	1.4	0.0
DECEMBER	1.7	0.0	0.0	0.0	0.3	0.0	0.0	2.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.4	2.0	0.0
TOTAL	44.3	0.0	107.9	0.0	9.8	9.8	0.9	172.6	0.3	0.0	76.9	0.5	47.5	13.2	0.5	16.2	17.7	172.6	0.0

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.01
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.44
Fraction of "river flow to agr." as canal waste return	=	0.15	Fraction of M&I flow as M&I return flow	=	0.50
Canal area (ac)	=	102			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

BASELINE

COMPOSITE

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)				
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	TOTAL OUTFLOW (12)
JANUARY	2.0	-0.1	0.0	0.0	0.6	0.3	2.8	4.0	0.0	0.0	-1.2	2.8
FEBRUARY	14.6	-0.2	0.4	0.0	0.5	0.2	15.6	11.9	0.0	3.0	0.7	15.6
MARCH	108.8	-0.4	1.4	0.1	1.0	0.1	110.9	95.2	0.0	11.7	4.0	110.9
APRIL	78.6	-0.5	1.6	0.1	1.9	0.1	81.7	72.5	0.0	12.4	-3.2	81.7
MAY	78.3	-0.6	1.5	0.1	1.9	0.1	81.2	71.0	0.0	11.9	-1.7	81.2
JUNE	101.1	-0.7	1.7	0.1	2.0	0.2	104.3	92.5	0.0	12.7	-0.9	104.3
JULY	114.4	-0.6	1.6	0.1	2.1	1.0	118.6	106.9	0.0	13.0	-1.3	118.6
AUGUST	89.4	-0.4	1.4	0.1	2.1	1.8	94.4	89.8	0.0	11.8	-7.2	94.4
SEPTEMBER	51.3	-0.4	0.9	0.1	1.8	0.7	54.3	52.6	0.0	7.0	-5.3	54.3
OCTOBER	5.1	-0.2	0.3	0.1	1.2	0.8	7.2	9.9	0.0	2.2	-4.9	7.2
NOVEMBER	0.1	-0.1	0.0	0.1	0.7	0.1	0.9	3.1	0.0	0.3	-2.4	0.9
DECEMBER	0.1	-0.1	0.0	0.0	0.6	0.4	1.0	2.8	0.0	0.0	-1.7	1.0
TOTAL	643.9	-4.5	10.9	0.5	16.4	5.8	673.0	612.2	0.0	86.0	-25.2	673.0

River length	=	1114	Area in alluvial valley (ac)	=	0.0
Loss rate	=	0.0	Annual runoff (ft)	=	0.02
			Tributary area (ac)	=	279040

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

BASELINE

DRY YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)				
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	TOTAL OUTFLOW (12)
JANUARY	0.1	-0.1	0.0	0.0	0.9	0.1	0.9	1.8	0.0	0.0	-0.9	0.9
FEBRUARY	2.6	-0.2	0.0	0.0	0.7	0.0	3.1	1.8	0.0	0.1	1.3	3.1
MARCH	97.6	-0.4	0.9	0.1	1.0	0.1	99.1	82.5	0.0	9.2	7.4	99.1
APRIL	54.2	-0.6	1.0	0.1	1.8	0.2	56.7	51.6	0.0	9.1	-4.0	56.7
MAY	43.5	-0.7	0.5	0.1	1.5	0.0	44.8	39.1	0.0	6.0	-0.2	44.8
JUNE	69.3	-0.8	0.8	0.1	1.1	0.4	70.8	62.1	0.0	7.3	1.4	70.8
JULY	91.0	-0.7	1.2	0.1	1.5	0.7	93.8	81.7	0.0	11.3	0.8	93.8
AUGUST	85.2	-0.5	1.3	0.1	1.8	1.7	89.5	82.4	0.0	11.8	-4.6	89.5
SEPTEMBER	31.4	-0.4	0.6	0.1	1.7	0.7	34.0	36.8	0.0	5.9	-8.7	34.0
OCTOBER	0.1	-0.2	0.0	0.1	1.0	1.2	2.2	3.3	0.0	0.0	-1.1	2.2
NOVEMBER	0.0	-0.2	0.0	0.1	0.8	0.1	0.8	2.1	0.0	0.0	-1.3	0.8
DECEMBER	0.0	-0.1	0.0	0.0	0.7	0.5	1.1	2.0	0.0	0.0	-0.9	1.1
TOTAL	474.8	-4.9	6.3	0.5	14.4	5.8	496.8	447.3	0.0	60.6	-11.0	496.8

River area (ac)	=	1114	Area in alluvial valley (ac)	=	0.0
Loss rate	=	0.0	Annual runoff (ft)	=	0.02
			Tributary area (ac)	=	279040

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

BASELINE

AVERAGE YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)				
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	TOTAL OUTFLOW (12)
JANUARY	2.5	-0.1	0.0	0.0	0.5	0.3	3.3	4.4	0.0	0.0	-1.1	3.3
FEBRUARY	16.9	-0.2	0.5	0.0	0.4	0.1	17.7	13.0	0.0	3.4	1.3	17.7
MARCH	97.6	-0.4	1.2	0.1	0.7	0.1	99.3	86.2	0.0	11.2	1.9	99.3
APRIL	77.1	-0.5	1.4	0.1	1.6	0.0	79.7	73.5	0.0	12.2	-6.0	79.7
MAY	86.8	-0.6	1.5	0.1	1.8	0.0	89.5	80.1	0.0	12.3	-2.8	89.5
JUNE	103.2	-0.7	1.7	0.1	2.3	0.3	106.8	96.8	0.0	13.7	-3.7	106.8
JULY	125.5	-0.6	1.4	0.1	2.4	0.9	129.6	119.2	0.0	12.9	-2.5	129.6
AUGUST	89.0	-0.3	1.4	0.1	2.4	1.6	94.2	88.0	0.0	13.5	-7.4	94.2
SEPTEMBER	57.7	-0.4	0.6	0.1	2.1	1.0	61.1	56.8	0.0	5.5	-1.2	61.1
OCTOBER	1.3	-0.2	0.6	0.1	1.3	0.7	3.8	6.9	0.0	3.8	-6.9	3.8
NOVEMBER	0.1	-0.1	0.1	0.1	0.8	0.1	1.1	2.7	0.0	1.0	-2.6	1.1
DECEMBER	0.1	-0.1	0.0	0.0	0.8	0.5	1.3	2.9	0.0	0.0	-1.7	1.3
TOTAL	657.7	-4.1	10.3	0.5	17.1	5.8	687.3	630.5	0.0	89.4	-32.6	687.3

River area (ac)	=	1114	Area in alluvial valley (ac)	=	0.0
Loss rate	=	0.0	Annual runoff (ft)	=	0.02
			Tributary area (ac)	=	279040

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

BASELINE

NORMAL YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)				
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	TOTAL OUTFLOW (12)
JANUARY	3.3	-0.1	0.0	0.0	0.4	0.6	4.3	5.9	0.0	0.0	-1.6	4.3
FEBRUARY	24.4	-0.1	0.8	0.0	0.4	0.4	25.9	21.0	0.0	5.4	-0.5	25.9
MARCH	131.2	-0.4	2.2	0.1	1.2	0.1	134.4	116.8	0.0	14.8	2.7	134.4
APRIL	104.6	-0.5	2.4	0.1	2.2	0.0	108.7	92.3	0.0	16.0	0.4	108.7
MAY	104.8	-0.6	2.6	0.1	2.3	0.1	109.3	93.9	0.0	17.5	-2.1	109.3
JUNE	130.8	-0.8	2.6	0.1	2.5	0.1	135.2	118.6	0.0	17.0	-0.4	135.2
JULY	126.8	-0.5	2.2	0.1	2.6	1.3	132.4	119.7	0.0	14.9	-2.2	132.4
AUGUST	94.0	-0.3	1.5	0.1	2.2	2.1	99.5	99.1	0.0	10.0	-9.6	99.5
SEPTEMBER	64.8	-0.5	1.4	0.1	1.6	0.3	67.7	64.3	0.0	9.5	-6.1	67.7
OCTOBER	13.8	-0.3	0.4	0.1	1.4	0.4	15.8	19.6	0.0	2.7	-6.5	15.8
NOVEMBER	0.3	-0.1	0.0	0.1	0.7	0.1	0.9	4.3	0.0	0.0	-3.4	0.9
DECEMBER	0.2	-0.2	0.0	0.0	0.4	0.3	0.7	3.4	0.0	0.0	-2.7	0.7
TOTAL	799.1	-4.4	16.2	0.5	17.7	5.8	834.9	759.0	0.0	107.9	-32.0	834.9

River area (ac)	=	1114	Area in alluvial valley (ac)	=	0.0
Loss rate	=	0.0	Annual runoff (ft)	=	0.02
			Tributary area (ac)	=	279040

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

BASELINE

COMPOSITE

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS)							OUTFLOW (Tons of TDS)					CHANGE
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	TOTAL OUTFLOW (12)	IN MASS (Tons of TDS) (13)
JANUARY	1933.6	0.0	0.0	0.0	900.6	649.5	3483.8	4751.7	0.0	0.0	-1267.9	3483.8	0.0
FEBRUARY	11864.4	0.0	345.3	0.0	785.9	399.5	13395.1	10355.8	0.0	2356.1	683.3	13395.1	0.0
MARCH	73666.7	0.0	953.5	45.5	1527.7	167.8	76361.3	65591.7	0.0	7901.8	2867.7	76361.3	0.0
APRIL	54890.7	0.0	1121.6	41.5	2964.8	182.9	59201.5	52963.1	0.0	8710.7	-2472.2	59201.5	0.0
MAY	54748.7	0.0	1057.0	37.5	3033.6	120.5	58997.3	51803.7	0.0	8306.4	-1112.8	58997.3	0.0
JUNE	74956.9	0.0	1210.4	33.5	3127.4	451.9	79780.1	70976.6	0.0	9270.4	-467.0	79780.1	0.0
JULY	81406.7	0.0	1136.5	42.5	3517.0	1828.0	87930.7	79329.2	0.0	9357.9	-756.3	87930.7	0.0
AUGUST	76930.4	0.0	1194.9	51.5	2897.9	3457.5	84532.1	79935.6	0.0	10284.6	-5688.1	84532.1	0.0
SEPTEMBER	42910.9	0.0	731.7	60.5	2750.1	1303.3	47756.4	47329.2	0.0	6234.1	-5806.8	47756.4	0.0
OCTOBER	5052.9	0.0	352.9	48.5	1887.6	1477.7	8819.6	11778.8	0.0	2352.4	-5311.6	8819.6	0.0
NOVEMBER	126.9	0.0	46.2	50.5	1120.0	210.5	1554.1	3657.8	0.0	308.3	-2411.9	1554.1	0.0
DECEMBER	111.0	0.0	0.0	0.0	992.6	819.4	1923.0	3979.7	0.0	0.0	-2056.8	1923.0	0.0
TOTAL	478599.9	0.0	8150.0	411.5	25505.1	11068.6	523735.1	482452.9	0.0	65082.6	-23800.4	523735.1	0.0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

BASELINE

DRY YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS)							OUTFLOW (Tons of TDS)					CHANGE
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	TOTAL OUTFLOW (12)	IN MASS (Tons of TDS) (13)
JANUARY	128.0	0.0	0.0	0.0	1245.0	132.9	1505.9	2671.8	0.0	0.0	-1165.9	1505.9	0.0
FEBRUARY	2797.7	0.0	5.5	0.0	1014.4	81.7	3899.3	2422.0	0.0	109.0	1368.3	3899.3	0.0
MARCH	74475.9	0.0	674.8	45.5	1337.2	156.3	76689.7	63993.2	0.0	7048.1	5648.5	76689.7	0.0
APRIL	44958.3	0.0	860.4	41.5	2490.0	384.5	48734.8	44542.2	0.0	7525.3	-3332.8	48734.8	0.0
MAY	38250.7	0.0	441.2	37.5	2075.0	0.0	40804.3	35736.0	0.0	5250.7	-182.3	40804.3	0.0
JUNE	63956.2	0.0	724.5	33.5	1475.6	708.1	66897.8	58932.8	0.0	6709.6	1255.5	66897.8	0.0
JULY	84054.1	0.0	1126.2	42.5	2028.9	1281.6	88533.3	77415.6	0.0	10402.9	714.7	88533.3	0.0
AUGUST	110716.7	0.0	52.3	51.5	2443.9	3287.3	118151.7	108852.5	0.0	15296.7	-5997.5	118151.7	0.0
SEPTEMBER	45168.0	0.0	862.1	60.5	2351.7	1393.2	49835.5	53850.1	0.0	8544.0	-12558.6	49835.5	0.0
OCTOBER	86.7	0.0	0.0	48.5	1429.4	2370.7	3935.3	5419.9	0.0	0.0	-1484.6	3935.3	0.0
NOVEMBER	42.3	0.0	0.0	50.5	1060.6	268.9	1422.3	3068.6	0.0	0.0	-1646.4	1422.3	0.0
DECEMBER	0.0	0.0	0.0	0.0	968.3	1003.4	1971.8	3128.0	0.0	0.0	-1156.2	1971.8	0.0
TOTAL	464634.6	0.0	6346.9	411.5	19920.0	11068.6	502381.5	460032.6	0.0	60886.2	-18537.3	502381.5	0.0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

BASELINE

AVERAGE YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS)							OUTFLOW (Tons of TDS)					CHANGE
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	TOTAL OUTFLOW (12)	IN MASS (Tons of TDS) (13)
JANUARY	2584.0	0.0	0.0	0.0	864.9	648.1	4097.0	5205.8	0.0	0.0	-1108.8	4097.0	0.0
FEBRUARY	13493.3	0.0	390.7	0.0	668.6	276.8	14829.4	11063.1	0.0	2693.3	1073.0	14829.4	0.0
MARCH	67367.0	0.0	846.4	45.5	1243.7	227.1	69729.6	60687.2	0.0	7728.0	1314.4	69729.6	0.0
APRIL	55231.1	0.0	1021.3	41.5	2656.0	70.8	59020.7	54611.4	0.0	8719.4	-4310.2	59020.7	0.0
MAY	52658.7	0.0	895.8	37.5	3138.8	87.2	56818.0	51077.7	0.0	7441.8	-1701.5	56818.0	0.0
JUNE	66714.4	0.0	1067.0	33.5	3756.7	524.3	72095.9	65652.9	0.0	8837.8	-2394.7	72095.9	0.0
JULY	79880.4	0.0	864.8	42.5	4056.0	1725.0	86568.8	79920.1	0.0	8213.0	-1564.3	86568.8	0.0
AUGUST	60520.0	0.0	979.2	51.5	2790.2	3072.6	67413.5	63217.7	0.0	9202.7	-5006.8	67413.5	0.0
SEPTEMBER	40774.7	0.0	395.7	60.5	3178.7	1971.1	46380.7	43327.0	0.0	3910.2	-856.5	46380.7	0.0
OCTOBER	1469.3	0.0	655.4	48.5	2315.6	1336.8	5825.6	9472.0	0.0	4369.3	-8015.7	5825.6	0.0
NOVEMBER	95.7	0.0	138.7	50.5	1344.0	176.5	1805.4	3375.7	0.0	924.8	-2495.1	1805.4	0.0
DECEMBER	88.7	0.0	0.0	0.0	1408.0	952.3	2449.0	4650.3	0.0	0.0	-2201.3	2449.0	0.0
TOTAL	440877.3	0.0	7255.0	411.5	27421.0	11068.6	487033.4	452260.7	0.0	62040.3	-27267.6	487033.4	0.0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

BASELINE

NORMAL YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS)							OUTFLOW (Tons of TDS)					CHANGE
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	TOTAL OUTFLOW (12)	IN MASS (Tons of TDS) (13)
JANUARY	3088.9	0.0	0.0	0.0	592.0	1167.6	4848.5	6377.4	0.0	0.0	-1528.9	4848.5	0.0
FEBRUARY	19302.3	0.0	639.9	0.0	674.7	839.8	21456.7	17582.2	0.0	4266.0	-391.5	21456.7	0.0
MARCH	79157.3	0.0	1339.4	45.5	2002.1	120.1	82664.4	72094.7	0.0	8929.3	1640.4	82664.4	0.0
APRIL	64482.8	0.0	1483.1	41.5	3748.3	93.5	69849.2	59735.6	0.0	9887.2	226.4	69849.2	0.0
MAY	73336.7	0.0	1834.0	37.5	3887.0	274.4	79369.6	68597.5	0.0	12226.7	-1454.5	79369.6	0.0
JUNE	94200.0	0.0	1839.6	33.5	4150.0	123.3	100346.4	88344.1	0.0	12264.0	-261.7	100346.4	0.0
JULY	80285.6	0.0	1418.7	42.5	4466.0	2477.4	88690.1	80651.8	0.0	9457.8	-1419.4	88690.1	0.0
AUGUST	59554.4	0.0	953.2	51.5	3459.4	4012.6	68031.2	67736.7	0.0	6354.4	-6060.0	68031.2	0.0
SEPTEMBER	42790.0	0.0	937.2	60.5	2720.0	545.5	47053.2	44810.5	0.0	6248.0	-4005.4	47053.2	0.0
OCTOBER	13602.8	0.0	403.2	48.5	1917.9	725.5	16697.9	20444.6	0.0	2687.8	-6434.5	16697.9	0.0
NOVEMBER	242.7	0.0	0.0	50.5	955.6	186.1	1434.8	4529.2	0.0	0.0	-3094.4	1434.8	0.0
DECEMBER	244.2	0.0	0.0	0.0	601.3	502.6	1348.2	4160.9	0.0	0.0	-2812.7	1348.2	0.0
TOTAL	530287.7	0.0	10848.2	411.5	29174.3	11068.6	581790.3	535065.3	0.0	72321.2	-25596.3	581790.3	0.0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

BASELINE

COMPOSITE

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS/af)							OUTFLOW (Tons of TDS/af)				
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	TOTAL OUTFLOW (12)
JANUARY	1.1	0.0	1.1	1.0	1.6	1.9	---	1.3	1.1	1.1	1.1	---
FEBRUARY	0.9	0.0	0.9	1.0	1.7	1.9	---	1.0	0.9	0.9	0.9	---
MARCH	0.7	0.0	0.7	0.9	1.6	1.9	---	0.7	0.7	0.7	0.7	---
APRIL	0.7	0.0	0.7	0.8	1.6	1.9	---	0.8	0.7	0.7	0.7	---
MAY	0.7	0.0	0.7	0.8	1.6	1.9	---	0.8	0.7	0.7	0.7	---
JUNE	0.8	0.0	0.8	0.7	1.6	1.9	---	0.8	0.8	0.8	0.8	---
JULY	0.7	0.0	0.7	0.9	1.6	1.9	---	0.8	0.7	0.7	0.7	---
AUGUST	0.9	0.0	0.9	1.0	1.4	1.9	---	0.9	0.9	0.9	0.9	---
SEPTEMBER	0.9	0.0	0.9	1.2	1.5	1.9	---	1.0	0.9	0.9	0.9	---
OCTOBER	1.1	0.0	1.1	1.0	1.5	1.9	---	1.4	1.1	1.1	1.1	---
NOVEMBER	1.0	0.0	1.0	1.0	1.5	1.9	---	1.2	1.0	1.0	1.0	---
DECEMBER	1.2	0.0	1.2	1.1	1.5	1.9	---	1.5	1.2	1.2	1.2	---
AVERAGE	0.7	0.0	0.7	0.9	1.6	1.9	---	0.8	---	0.8	0.9	---

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

BASELINE

DRY YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS/af)							OUTFLOW (Tons of TDS/af)				
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	TOTAL OUTFLOW (12)
JANUARY	1.3	0.0	1.3	1.0	1.4	1.9	---	1.5	1.3	1.3	1.3	---
FEBRUARY	1.1	0.0	1.1	1.0	1.4	1.9	---	1.4	1.1	1.1	1.1	---
MARCH	0.8	0.0	0.8	0.9	1.4	1.9	---	0.8	0.8	0.8	0.8	---
APRIL	0.8	0.0	0.8	0.8	1.4	1.9	---	0.9	0.8	0.8	0.8	---
MAY	0.9	0.0	0.9	0.8	1.4	1.9	---	0.9	0.9	0.9	0.9	---
JUNE	0.9	0.0	0.9	0.7	1.4	1.9	---	1.0	0.9	0.9	0.9	---
JULY	0.9	0.0	0.9	0.9	1.4	1.9	---	0.9	0.9	0.9	0.9	---
AUGUST	1.3	0.0	1.3	1.0	1.4	1.9	---	1.3	1.3	1.3	1.3	---
SEPTEMBER	1.4	0.0	1.4	1.2	1.4	1.9	---	1.5	1.4	1.4	1.4	---
OCTOBER	1.3	0.0	1.3	1.0	1.4	1.9	---	1.8	1.3	1.3	1.3	---
NOVEMBER	1.3	0.0	1.3	1.0	1.4	1.9	---	1.5	1.3	1.3	1.3	---
DECEMBER	1.3	0.0	1.3	1.1	1.4	1.9	---	1.7	1.3	1.3	1.3	---
AVERAGE	1.0	0.0	1.0	0.9	1.4	1.9	---	1.0	---	1.0	1.7	---

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

BASELINE

AVERAGE YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS/af)							OUTFLOW (Tons of TDS/af)				
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	TOTAL OUTFLOW (12)
JANUARY	1.0	0.0	1.0	1.0	1.9	1.9	---	1.2	1.0	1.0	1.0	---
FEBRUARY	0.8	0.0	0.8	1.0	1.8	1.9	---	0.9	0.8	0.8	0.8	---
MARCH	0.7	0.0	0.7	0.9	1.8	1.9	---	0.7	0.7	0.7	0.7	---
APRIL	0.7	0.0	0.7	0.8	1.7	1.9	---	0.7	0.7	0.7	0.7	---
MAY	0.6	0.0	0.6	0.8	1.8	1.9	---	0.6	0.6	0.6	0.6	---
JUNE	0.6	0.0	0.6	0.7	1.6	1.9	---	0.7	0.6	0.6	0.6	---
JULY	0.6	0.0	0.6	0.9	1.7	1.9	---	0.7	0.6	0.6	0.6	---
AUGUST	0.7	0.0	0.7	1.0	1.1	1.9	---	0.7	0.7	0.7	0.7	---
SEPTEMBER	0.7	0.0	0.7	1.2	1.5	1.9	---	0.8	0.7	0.7	0.7	---
OCTOBER	1.2	0.0	1.2	1.0	1.7	1.9	---	1.4	1.2	1.2	1.2	---
NOVEMBER	1.0	0.0	1.0	1.0	1.7	1.9	---	1.2	1.0	1.0	1.0	---
DECEMBER	1.3	0.0	1.3	1.1	1.8	1.9	---	1.6	1.3	1.3	1.3	---
AVERAGE	0.7	0.0	0.7	0.9	1.6	1.9	---	0.7	---	0.7	0.8	---

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

BASELINE

NORMAL YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS/af)							OUTFLOW (Tons of TDS/af)				
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	TOTAL OUTFLOW (12)
JANUARY	0.9	0.0	0.9	1.0	1.5	1.9	---	1.1	0.9	0.9	0.9	---
FEBRUARY	0.8	0.0	0.8	1.0	1.8	1.9	---	0.8	0.8	0.8	0.8	---
MARCH	0.6	0.0	0.6	0.9	1.6	1.9	---	0.6	0.6	0.6	0.6	---
APRIL	0.6	0.0	0.6	0.8	1.7	1.9	---	0.6	0.6	0.6	0.6	---
MAY	0.7	0.0	0.7	0.8	1.7	1.9	---	0.7	0.7	0.7	0.7	---
JUNE	0.7	0.0	0.7	0.7	1.7	1.9	---	0.7	0.7	0.7	0.7	---
JULY	0.6	0.0	0.6	0.9	1.7	1.9	---	0.7	0.6	0.6	0.6	---
AUGUST	0.6	0.0	0.6	1.0	1.6	1.9	---	0.7	0.6	0.6	0.6	---
SEPTEMBER	0.7	0.0	0.7	1.2	1.7	1.9	---	0.7	0.7	0.7	0.7	---
OCTOBER	1.0	0.0	1.0	1.0	1.4	1.9	---	1.1	1.0	1.0	1.0	---
NOVEMBER	0.9	0.0	0.9	1.0	1.4	1.9	---	1.1	0.9	0.9	0.9	---
DECEMBER	1.0	0.0	1.0	1.1	1.5	1.9	---	1.2	1.0	1.0	1.0	---
AVERAGE	0.7	0.0	0.7	0.9	1.6	1.9	---	0.7	---	0.7	0.8	---

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

BASELINE

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)						CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	NET LEAKANCE TO MESILLA BOLSON (10)	TOTAL OUTFLOW (11)	IN STORAGE (1000 ac-ft) (12)
JANUARY	0.0	0.3	0.3	4.1	4.7	0.0	0.0	5.7	0.0	-1.0	4.7	0.0
FEBRUARY	0.0	0.7	2.3	6.2	9.2	0.0	0.0	4.6	0.0	4.6	9.2	0.0
MARCH	0.0	7.0	23.8	7.9	38.7	0.0	0.0	4.8	2.9	31.0	38.7	0.0
APRIL	0.0	6.9	19.9	2.6	29.5	0.0	0.0	7.5	5.4	16.6	29.5	0.0
MAY	0.0	8.2	19.7	2.2	30.1	0.0	0.0	7.1	8.7	14.3	30.1	0.0
JUNE	0.0	10.7	24.4	6.4	41.5	0.0	0.0	7.0	12.1	22.4	41.5	0.0
JULY	0.0	12.6	28.9	7.2	48.8	0.0	0.0	8.3	13.4	27.1	48.8	0.0
AUGUST	0.0	11.6	24.8	7.2	43.6	0.0	0.0	9.8	11.4	22.4	43.6	0.0
SEPTEMBER	0.0	7.6	17.1	3.0	27.7	0.0	0.0	10.1	8.0	9.5	27.7	0.0
OCTOBER	0.0	1.0	2.5	4.6	8.1	0.0	0.0	9.3	0.0	-1.2	8.1	0.0
NOVEMBER	0.0	0.1	0.2	3.7	4.0	0.0	0.0	5.9	0.0	-1.8	4.0	0.0
DECEMBER	0.0	0.4	0.0	4.2	4.7	0.0	0.0	4.9	0.0	-0.2	4.7	0.0
TOTAL	0.3	67.2	163.8	59.3	290.7	0.1	0.0	85.0	61.9	143.7	290.7	0.0

Phreatophyte area	=	0.0
Average consumptive use	=	0.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

BASELINE

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)						CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	NET LEAKANCE TO MESILLA BOLSON (10)	TOTAL OUTFLOW (11)	IN STORAGE (1000 ac-ft) (12)
JANUARY	0.0	0.0	0.0	3.9	3.9	0.0	0.0	6.5	0.0	-2.5	3.9	0.0
FEBRUARY	0.0	0.0	0.0	4.1	4.1	0.0	0.0	4.9	0.0	-0.8	4.1	0.0
MARCH	0.0	6.8	24.8	3.0	34.8	0.0	0.0	2.9	4.1	27.8	34.8	0.0
APRIL	0.0	7.1	19.6	-6.2	20.5	0.0	0.0	5.5	7.6	7.5	20.5	0.0
MAY	0.0	7.6	15.2	-6.0	16.9	0.0	0.0	4.3	12.2	0.3	16.9	0.0
JUNE	0.0	10.6	19.5	2.5	32.6	0.0	0.0	2.8	16.9	12.9	32.6	0.0
JULY	0.0	13.2	26.5	6.3	46.0	0.0	0.0	2.9	18.8	24.3	46.0	0.0
AUGUST	0.0	12.4	27.3	6.6	46.2	0.0	0.0	4.6	15.9	25.8	46.2	0.0
SEPTEMBER	0.0	7.5	14.2	1.8	23.5	0.0	0.0	5.8	11.2	6.5	23.5	0.0
OCTOBER	0.0	0.2	0.8	6.2	7.2	0.0	0.0	6.0	0.0	1.1	7.2	0.0
NOVEMBER	0.0	0.2	0.4	4.6	5.2	0.0	0.0	4.5	0.0	0.7	5.2	0.0
DECEMBER	0.0	0.1	0.1	5.4	5.6	0.0	0.0	4.4	0.0	1.3	5.6	0.0
TOTAL	0.3	65.6	148.4	32.1	246.4	0.1	0.0	55.1	86.7	104.6	246.4	0.0

Phreatophyte area	=	0.0
Average consumptive use	=	0.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

BASELINE

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)						CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	NET LEAKANCE TO MESILLA BOLSON (10)	TOTAL OUTFLOW (11)	IN STORAGE (1000 ac-ft) (12)
JANUARY	0.0	0.5	1.0	2.9	4.4	0.0	0.0	4.9	0.0	-0.5	4.4	0.0
FEBRUARY	0.0	0.8	2.5	6.4	9.7	0.0	0.0	4.1	0.0	5.6	9.7	0.0
MARCH	0.0	7.3	22.5	8.3	38.1	0.0	0.0	4.0	2.9	31.1	38.1	0.0
APRIL	0.0	7.0	18.5	7.1	32.7	0.0	0.0	6.6	5.4	20.7	32.7	0.0
MAY	0.0	8.9	19.4	8.9	37.2	0.0	0.0	6.6	8.8	21.8	37.2	0.0
JUNE	0.0	11.2	23.8	11.1	46.1	0.0	0.0	7.5	12.1	26.5	46.1	0.0
JULY	0.0	13.6	30.8	9.6	53.9	0.0	0.0	9.1	13.4	31.5	53.9	0.0
AUGUST	0.0	12.3	23.0	4.8	40.1	0.0	0.0	10.2	11.3	18.6	40.1	0.0
SEPTEMBER	0.0	8.3	18.3	1.7	28.3	0.0	0.0	10.2	8.0	10.1	28.3	0.0
OCTOBER	0.0	1.1	1.2	2.6	4.9	0.0	0.0	9.4	0.0	-4.5	4.9	0.0
NOVEMBER	0.0	0.2	0.2	3.8	4.2	0.0	0.0	7.2	0.0	-3.1	4.2	0.0
DECEMBER	0.0	0.7	0.0	4.3	5.0	0.0	0.0	5.8	0.0	-0.8	5.0	0.0
TOTAL	0.3	71.8	161.2	71.4	304.7	0.1	0.0	85.7	61.9	157.0	304.7	0.0

Phreatophyte area	=	0.0
Average consumptive use	=	0.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

BASELINE

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)						CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	NET LEAKANCE TO MESILLA BOLSON (10)	TOTAL OUTFLOW (11)	IN STORAGE (1000 ac-ft) (12)
JANUARY	0.0	0.3	0.0	5.6	5.9	0.0	0.0	5.7	0.0	0.2	5.9	0.0
FEBRUARY	0.0	1.4	4.3	8.1	13.8	0.0	0.0	4.9	0.0	8.9	13.8	0.0
MARCH	0.0	6.9	24.1	12.3	43.3	0.0	0.0	7.5	1.7	34.0	43.3	0.0
APRIL	0.0	6.7	21.6	7.0	35.3	0.0	0.0	10.4	3.2	21.7	35.3	0.0
MAY	0.0	8.2	24.4	3.6	36.2	0.0	0.0	10.3	5.2	20.7	36.2	0.0
JUNE	0.0	10.4	29.8	5.7	45.9	0.0	0.0	10.7	7.3	27.9	45.9	0.0
JULY	0.0	11.1	29.5	5.7	46.3	0.0	0.0	12.9	8.0	25.4	46.3	0.0
AUGUST	0.0	10.2	24.1	10.2	44.5	0.0	0.0	14.7	6.8	22.9	44.5	0.0
SEPTEMBER	0.0	6.9	18.7	5.6	31.2	0.0	0.0	14.5	4.8	11.9	31.2	0.0
OCTOBER	0.0	1.7	5.4	5.1	12.2	0.0	0.0	12.4	0.0	-0.1	12.2	0.0
NOVEMBER	0.0	0.1	0.0	2.7	2.8	0.0	0.0	5.9	0.0	-3.1	2.8	0.0
DECEMBER	0.0	0.3	0.0	3.1	3.4	0.0	0.0	4.4	0.0	-1.1	3.4	0.0
TOTAL	0.3	64.2	181.9	74.5	320.8	0.1	0.0	114.3	37.1	169.3	320.8	0.0

Phreatophyte area	=	0.0
Average consumptive use	=	0.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

BASELINE

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)										CHANGE IN STORAGE (1000 ac-ft) (19)
MONTH	GROSS PRECIP. (1)	DRAIN & CANAL INFLOW (2)	RIVER FLOW TO AGR. (3)	RIVER FLOW TO M&I (4)	NET GW INFLOW TO DRAIN (5)	AGR. GW PUMPING (6)	M&I GW PUMPING (7)	TOTAL INFLOW (8)	NET CANAL EVAP. (9)	DRAIN & CANAL OUTFLOW (10)	PLANT C.U. (11)	M&I C.U. (12)	LAT. & CANAL SEEPAGE (13)	DEEP PERC. (14)	M&I RETURN FLOW (15)	CANAL WASTE RETURN (16)	DRAIN FLOW TO RIVER (17)	TOTAL OUTFLOW (18)	
JANUARY	5.4	0.0	0.8	0.0	5.7	0.0	2.1	14.0	0.0	0.0	5.3	1.1	0.3	0.3	1.1	0.1	6.0	14.0	0.0
FEBRUARY	5.1	0.0	5.4	0.0	4.6	0.0	2.4	17.6	0.0	0.0	6.5	1.2	2.3	0.7	1.2	0.5	5.1	17.6	0.0
MARCH	2.6	0.0	54.3	0.0	4.8	4.9	2.6	69.2	1.4	0.0	21.7	1.3	23.8	7.0	1.3	4.3	8.3	69.2	0.0
APRIL	2.2	0.0	45.9	0.0	7.5	9.0	3.8	68.4	1.8	0.0	21.1	1.9	19.9	6.9	1.9	3.8	11.0	68.4	0.0
MAY	4.0	0.0	45.2	0.0	7.1	14.6	4.3	75.3	2.1	0.0	26.0	2.2	19.7	8.2	2.2	3.8	11.2	75.3	0.0
JUNE	5.2	0.0	56.3	0.0	7.0	20.1	5.8	94.5	2.5	0.0	33.9	2.9	24.4	10.7	2.9	4.8	12.4	94.5	0.0
JULY	14.3	0.0	66.7	0.0	8.3	22.3	5.4	117.0	2.0	0.0	47.6	2.7	28.9	12.6	2.7	5.5	14.9	117.0	0.0
AUGUST	30.0	0.0	56.8	0.0	9.8	18.9	4.8	120.4	1.3	0.0	57.1	2.4	24.8	11.6	2.4	4.5	16.3	120.4	0.0
SEPTEMBER	10.3	0.0	39.4	0.0	10.1	13.3	4.5	77.7	1.4	0.0	29.8	2.2	17.1	7.6	2.2	3.2	14.1	77.7	0.0
OCTOBER	9.5	0.0	5.8	0.0	9.3	0.0	4.2	28.8	0.0	0.0	10.6	2.1	2.5	1.0	2.1	0.5	10.0	28.8	0.0
NOVEMBER	3.2	0.0	0.4	0.0	5.9	0.0	3.3	12.7	0.0	0.0	3.1	1.6	0.2	0.1	1.6	0.0	6.0	12.7	0.0
DECEMBER	9.2	0.0	0.1	0.0	4.9	0.0	2.9	17.1	0.0	0.0	8.5	1.5	0.0	0.4	1.5	0.0	5.2	17.1	0.0
TOTAL	101.1	0.0	377.1	0.0	85.0	103.2	46.2	712.6	12.4	0.0	271.3	23.1	163.8	67.2	23.1	31.0	120.6	712.6	0.0

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.02
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.44
Fraction of "river flow to agr." as canal waste return	=	0.08	Fraction of M&I flow as M&I return flow	=	0.50
Area of alluvial valley (ac)	=	147974	Canal area (ac)	=	3690

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

BASELINE

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)										CHANGE
MONTH	GROSS PRECIP. (1)	DRAIN & CANAL INFLOW (2)	RIVER FLOW TO AGR. (3)	RIVER FLOW TO M&I (4)	NET GW INFLOW TO DRAIN (5)	AGR. GW PUMPING (6)	M&I GW PUMPING (7)	TOTAL INFLOW (8)	NET CANAL EVAP. (9)	DRAIN & CANAL OUTFLOW (10)	PLANT C.U. (11)	M&I C.U. (12)	LAT. & CANAL SEEPAGE (13)	DEEP PERC. (14)	M&I RETURN FLOW (15)	CANAL WASTE RETURN (16)	DRAIN FLOW TO RIVER (17)	TOTAL OUTFLOW (18)	IN STORAGE (1000 ac-ft) (19)
JANUARY	1.7	0.0	0.0	0.0	6.5	0.0	2.1	10.3	0.0	0.0	1.7	1.1	0.0	0.0	1.1	0.0	6.5	10.3	0.0
FEBRUARY	2.0	0.0	0.0	0.0	4.9	0.0	2.4	9.4	0.0	0.0	1.9	1.2	0.0	0.0	1.2	0.0	5.0	9.4	0.0
MARCH	0.8	0.0	51.4	0.0	2.9	6.8	2.6	64.6	1.5	0.0	19.7	1.3	24.8	6.8	1.3	2.8	6.3	64.6	0.0
APRIL	2.4	0.0	41.7	0.0	5.5	12.6	3.8	66.0	1.9	0.0	21.9	1.9	19.6	7.1	1.9	2.6	9.0	66.0	0.0
MAY	1.3	0.0	30.9	0.0	4.3	20.4	4.3	61.3	2.3	0.0	22.2	2.2	15.2	7.6	2.2	1.6	8.1	61.3	0.0
JUNE	5.8	0.0	40.8	0.0	2.8	28.2	5.8	83.5	2.6	0.0	34.3	2.9	19.5	10.6	2.9	2.4	8.2	83.5	0.0
JULY	20.7	0.0	55.9	0.0	2.9	31.3	5.4	116.2	2.0	0.0	55.6	2.7	26.5	13.2	2.7	3.4	10.1	116.2	0.0
AUGUST	16.3	0.0	57.7	0.0	4.6	26.5	4.8	109.9	1.8	0.0	48.9	2.4	27.3	12.4	2.4	3.5	11.2	109.9	0.0
SEPTEMBER	7.5	0.0	29.8	0.0	5.8	18.7	4.5	66.3	1.6	0.0	27.2	2.2	14.2	7.5	2.2	1.6	9.7	66.3	0.0
OCTOBER	8.3	0.0	1.7	0.0	6.0	0.0	4.2	20.3	0.0	0.0	8.5	2.1	0.8	0.2	2.1	0.1	6.5	20.3	0.0
NOVEMBER	4.4	0.0	0.8	0.0	4.5	0.0	3.3	12.9	0.0	0.0	4.4	1.6	0.4	0.2	1.6	0.0	4.7	12.9	0.0
DECEMBER	7.4	0.0	0.3	0.0	4.4	0.0	2.9	15.0	0.0	0.0	7.1	1.5	0.1	0.1	1.5	0.0	4.7	15.0	0.0
TOTAL	78.7	0.0	311.1	0.0	55.1	144.5	46.2	635.5	13.6	0.0	253.5	23.1	148.4	65.6	23.1	18.1	90.0	635.5	0.0

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.01
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.47
Fraction of "river flow to agr." as canal waste return	=	0.06	Fraction of M&I flow as M&I return flow	=	0.50
Area of alluvial valley (ac)	=	147974	Canal area (ac)	=	3690

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

BASELINE

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)										CHANGE
MONTH	GROSS PRECIP. (1)	DRAIN & CANAL INFLOW (2)	RIVER FLOW TO AGR. (3)	RIVER FLOW TO M&I (4)	NET GW INFLOW TO DRAIN (5)	AGR. GW PUMPING (6)	M&I GW PUMPING (7)	TOTAL INFLOW (8)	NET CANAL EVAP. (9)	DRAIN & CANAL OUTFLOW (10)	PLANT C.U. (11)	M&I C.U. (12)	LAT. & CANAL SEEPAGE (13)	DEEP PERC. (14)	M&I RETURN FLOW (15)	CANAL WASTE RETURN (16)	DRAIN FLOW TO RIVER (17)	TOTAL OUTFLOW (18)	IN STORAGE (1000 ac-ft) (19)
JANUARY	5.1	0.0	2.3	0.0	4.9	0.0	2.1	14.5	0.0	0.0	5.4	1.1	1.0	0.5	1.1	0.2	5.3	14.5	0.0
FEBRUARY	5.7	0.0	5.9	0.0	4.1	0.0	2.4	18.1	0.0	0.0	7.3	1.2	2.5	0.8	1.2	0.5	4.6	18.1	0.0
MARCH	3.5	0.0	54.0	0.0	4.0	4.9	2.6	69.1	1.3	0.0	23.3	1.3	22.5	7.3	1.3	4.4	7.7	69.1	0.0
APRIL	2.7	0.0	44.5	0.0	6.6	9.0	3.8	66.7	1.7	0.0	21.8	1.9	18.5	7.0	1.9	3.7	10.2	66.7	0.0
MAY	8.0	0.0	46.7	0.0	6.6	14.6	4.3	80.3	1.9	0.0	30.7	2.2	19.4	8.9	2.2	3.9	11.1	80.3	0.0
JUNE	5.8	0.0	57.2	0.0	7.5	20.1	5.8	96.4	2.3	0.0	35.4	2.9	23.8	11.2	2.9	4.7	13.1	96.4	0.0
JULY	5.3	0.0	74.0	0.0	9.1	22.3	5.4	116.0	2.1	0.0	42.2	2.7	30.8	13.6	2.7	6.1	15.9	116.0	0.0
AUGUST	29.4	0.0	55.3	0.0	10.2	18.9	4.8	118.7	1.2	0.0	56.4	2.4	23.0	12.3	2.4	4.3	16.7	118.7	0.0
SEPTEMBER	11.1	0.0	43.9	0.0	10.2	13.3	4.5	82.9	1.3	0.0	32.4	2.2	18.3	8.3	2.2	3.6	14.5	82.9	0.0
OCTOBER	11.6	0.0	3.0	0.0	9.4	0.0	4.2	28.3	0.0	0.0	11.5	2.1	1.2	1.1	2.1	0.2	10.1	28.3	0.0
NOVEMBER	3.1	0.0	0.4	0.0	7.2	0.0	3.3	14.0	0.0	0.0	3.0	1.6	0.2	0.2	1.6	0.0	7.4	14.0	0.0
DECEMBER	10.5	0.0	0.0	0.0	5.8	0.0	2.9	19.2	0.0	0.0	9.4	1.5	0.0	0.7	1.5	0.0	6.2	19.2	0.0
TOTAL	101.9	0.0	387.3	0.0	85.7	103.1	46.2	724.2	11.8	0.0	278.6	23.1	161.2	71.8	23.1	31.7	122.8	724.2	0.0

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.03
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.42
Fraction of "river flow to agr." as canal waste return	=	0.08	Fraction of M&I flow as M&I return flow	=	0.50
Area of alluvial valley (ac)	=	147974	Canal area (ac)	=	3690

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

BASELINE

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)										CHANGE
MONTH	GROSS PRECIP. (1)	DRAIN & CANAL INFLOW (2)	RIVER FLOW TO AGR. (3)	RIVER FLOW TO M&I (4)	NET GW INFLOW TO DRAIN (5)	AGR. GW PUMPING (6)	M&I GW PUMPING (7)	TOTAL INFLOW (8)	NET CANAL EVAP. (9)	DRAIN & CANAL OUTFLOW (10)	PLANT C.U. (11)	M&I C.U. (12)	LAT. & CANAL SEEPAGE (13)	DEEP PERC. (14)	M&I RETURN FLOW (15)	CANAL WASTE RETURN (16)	DRAIN FLOW TO RIVER (17)	TOTAL OUTFLOW (18)	IN STORAGE (1000 ac-ft) (19)
JANUARY	9.5	0.0	0.0	0.0	5.7	0.0	2.1	17.3	0.0	0.0	8.8	1.1	0.0	0.3	1.1	0.0	6.1	17.3	0.0
FEBRUARY	7.6	0.0	10.2	0.0	4.9	0.0	2.4	25.2	0.0	0.0	10.3	1.2	4.3	1.4	1.2	1.0	5.8	25.2	0.0
MARCH	3.5	0.0	57.3	0.0	7.5	2.9	2.6	73.8	1.3	0.0	22.1	1.3	24.1	6.9	1.3	5.7	11.0	73.8	0.0
APRIL	1.4	0.0	51.5	0.0	10.4	5.4	3.8	72.4	1.8	0.0	19.7	1.9	21.6	6.7	1.9	5.2	13.7	72.4	0.0
MAY	2.8	0.0	58.1	0.0	10.3	8.7	4.3	84.3	2.1	0.0	25.1	2.2	24.4	8.2	2.2	5.8	14.4	84.3	0.0
JUNE	3.9	0.0	71.0	0.0	10.7	12.1	5.8	103.5	2.5	0.0	32.1	2.9	29.8	10.4	2.9	7.1	15.9	103.5	0.0
JULY	16.9	0.0	70.3	0.0	12.9	13.4	5.4	118.9	1.9	0.0	45.2	2.7	29.5	11.1	2.7	7.0	18.8	118.9	0.0
AUGUST	44.4	0.0	57.3	0.0	14.7	11.4	4.8	132.7	0.9	0.0	66.0	2.4	24.1	10.2	2.4	5.7	20.9	132.7	0.0
SEPTEMBER	12.4	0.0	44.5	0.0	14.5	8.0	4.5	83.8	1.4	0.0	29.7	2.2	18.7	6.9	2.2	4.5	18.2	83.8	0.0
OCTOBER	8.5	0.0	12.8	0.0	12.4	0.0	4.2	37.9	0.0	0.0	11.9	2.1	5.4	1.7	2.1	1.3	13.4	37.9	0.0
NOVEMBER	2.1	0.0	0.0	0.0	5.9	0.0	3.3	11.2	0.0	0.0	1.9	1.6	0.0	0.1	1.6	0.0	6.0	11.2	0.0
DECEMBER	9.7	0.0	0.0	0.0	4.4	0.0	2.9	17.0	0.0	0.0	9.0	1.5	0.0	0.3	1.5	0.0	4.8	17.0	0.0
TOTAL	122.6	0.0	433.0	0.0	114.3	61.9	46.2	778.1	11.8	0.0	281.8	23.1	181.9	64.2	23.1	43.3	149.0	778.1	0.0

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.03
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.42
Fraction of "river flow to agr." as canal waste return	=	0.10	Fraction of M&I flow as M&I return flow	=	0.50
Area of alluvial valley (ac)	=	147974	Canal area (ac)	=	3690

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

BASELINE

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)												OUTFLOW (1000 ac-ft)							
		LEASBURG DAM TO MESILLA DAM					MESILLA DAM TO AMERICAN DAM							LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	NET PRECIP. (7)	CANAL WASTE RETURN (8)	M&I RETURN FLOW (9)	DRAIN INFLOW (10)	TRIB. INFLOW (11)	TOTAL INFLOW (12)	RIVER OUTFLOW - AMERICAN (13)	RIVER FLOW TO M&I (14)	RIVER FLOW TO AGR. (15)	NET RIVER SEEPAGE (16)	RIVER FLOW TO M&I (17)	RIVER FLOW TO AGR. (18)	NET RIVER SEEPAGE (19)	TOTAL OUTFLOW (20)
JANUARY	4.0	0.0	0.0	0.4	2.2	0.1	-0.1	0.0	0.7	3.8	0.6	11.7	6.8	0.0	0.3	1.7	0.0	0.5	2.5	11.7
FEBRUARY	11.9	-0.1	0.2	0.5	1.9	0.1	-0.2	0.3	0.8	3.2	0.7	19.4	7.8	0.0	2.0	2.5	0.0	3.4	3.7	19.4
MARCH	95.2	-0.2	1.6	0.5	3.1	0.1	-0.3	2.7	0.8	5.3	0.4	109.1	47.0	0.0	20.1	3.1	0.0	34.2	4.7	109.1
APRIL	72.5	-0.3	1.4	0.7	4.1	0.0	-0.5	2.4	1.2	6.9	0.3	88.8	40.3	0.0	17.0	1.1	0.0	28.9	1.6	88.8
MAY	71.0	-0.3	1.4	0.8	4.1	0.1	-0.5	2.4	1.4	7.1	0.4	87.8	40.4	0.0	16.7	0.9	0.0	28.5	1.3	87.8
JUNE	92.5	-0.4	1.8	1.1	4.6	0.1	-0.6	3.0	1.8	7.8	0.6	112.3	49.5	0.0	20.8	2.6	0.0	35.5	3.8	112.3
JULY	106.9	-0.3	2.0	1.0	5.5	0.3	-0.5	3.5	1.7	9.4	2.1	131.6	57.7	0.0	24.7	2.9	0.0	42.0	4.3	131.6
AUGUST	89.8	-0.2	1.7	0.9	6.0	0.5	-0.3	2.8	1.5	10.2	3.4	116.4	52.4	0.0	21.0	2.9	0.0	35.8	4.3	116.4
SEPTEMBER	52.6	-0.2	1.2	0.8	5.2	0.2	-0.4	2.0	1.4	8.9	1.3	73.1	30.7	0.0	14.6	1.2	0.0	24.8	1.8	73.1
OCTOBER	9.9	-0.1	0.2	0.8	3.7	0.2	-0.2	0.3	1.3	6.3	1.2	23.6	13.1	0.0	2.2	1.9	0.0	3.7	2.8	23.6
NOVEMBER	3.1	-0.1	0.0	0.6	2.2	0.1	-0.1	0.0	1.0	3.8	0.4	11.0	6.9	0.0	0.2	1.5	0.0	0.3	2.2	11.0
DECEMBER	2.8	-0.1	0.0	0.5	1.9	0.2	-0.1	0.0	0.9	3.3	1.1	10.5	6.2	0.0	0.0	1.7	0.0	0.1	2.5	10.5
TOTAL	612.2	-2.2	11.5	8.5	44.6	1.9	-3.8	19.5	14.6	76.0	12.4	795.3	358.9	0.0	139.5	23.7	0.0	237.6	35.6	795.3

River width (Leasburg to Mesilla)	=	200.0	River width (Mesilla to American)	= 200.0
River length (Leasburg to Mesilla)	=	21.9	River length (Mesilla to American)	= 38.5
River seepage rate (Leasburg to Mesilla)	=	-	River seepage rate (Mesilla to American)	= -
Percent of population (Leasburg to Mesilla)	=	0.37	Percent of population (Mesilla to American)	= 0.6
Percent of agricultural area (Leasburg to Mesilla)	=	0.37	Percent of agricultural area (Mesilla to American)	= 0.6
Percent of drainage area (Leasburg to Mesilla)	=	0.13	Percent of drainage area (Mesilla to American)	= 0.9
Percent of river seepage (Leasburg to Mesilla)	=	0.40	Percent of river seepage (Mesilla to American)	= 0.6

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

BASELINE

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)												OUTFLOW (1000 ac-ft)							
		LEASBURG DAM TO MESILLA DAM					MESILLA DAM TO AMERICAN DAM							LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	NET PRECIP. (7)	CANAL WASTE RETURN (8)	M&I RETURN FLOW (9)	DRAIN INFLOW (10)	TRIB. INFLOW (11)	TOTAL INFLOW (12)	RIVER OUTFLOW - AMERICAN (13)	RIVER FLOW TO M&I (14)	RIVER FLOW TO AGR. (15)	NET RIVER SEEPAGE (16)	RIVER FLOW TO M&I (17)	RIVER FLOW TO AGR. (18)	NET RIVER SEEPAGE (19)	TOTAL OUTFLOW (20)
JANUARY	1.8	-0.1	0.0	0.4	2.4	0.0	-0.1	0.0	0.7	4.1	0.3	9.6	5.7	0.0	0.0	1.6	0.0	0.0	2.3	9.6
FEBRUARY	1.8	-0.1	0.0	0.5	1.9	0.1	-0.2	0.0	0.8	3.2	0.4	8.1	4.1	0.0	0.0	1.6	0.0	0.0	2.4	8.1
MARCH	82.5	-0.2	1.0	0.5	2.3	0.0	-0.4	1.7	0.8	4.0	0.2	92.4	38.0	0.0	19.0	1.2	0.0	32.4	1.8	92.4
APRIL	51.6	-0.3	1.0	0.7	3.3	0.1	-0.5	1.7	1.2	5.7	0.5	65.0	29.5	0.0	15.4	-2.5	0.0	26.3	-3.7	65.0
MAY	39.1	-0.3	0.6	0.8	3.0	0.0	-0.6	1.0	1.4	5.1	0.2	50.2	25.2	0.0	11.4	-2.4	0.0	19.5	-3.6	50.2
JUNE	62.1	-0.4	0.9	1.1	3.0	0.1	-0.7	1.5	1.8	5.1	0.7	75.4	32.1	0.0	15.1	1.0	0.0	25.7	1.5	75.4
JULY	81.7	-0.3	1.3	1.0	3.7	0.5	-0.5	2.1	1.7	6.4	3.4	101.1	38.9	0.0	20.7	2.5	0.0	35.2	3.8	101.1
AUGUST	82.4	-0.3	1.3	0.9	4.1	0.4	-0.5	2.2	1.5	7.1	2.5	101.6	37.3	0.0	21.3	2.6	0.0	36.4	4.0	101.6
SEPTEMBER	36.8	-0.2	0.6	0.8	3.6	0.2	-0.4	1.0	1.4	6.1	1.0	50.9	19.2	0.0	11.0	0.7	0.0	18.8	1.1	50.9
OCTOBER	3.3	-0.1	0.0	0.8	2.4	0.2	-0.2	0.1	1.3	4.1	1.5	13.4	5.6	0.0	0.6	2.5	0.0	1.1	3.7	13.4
NOVEMBER	2.1	-0.1	0.0	0.6	1.7	0.1	-0.1	0.0	1.0	3.0	0.6	9.1	3.7	0.0	0.3	1.8	0.0	0.5	2.8	9.1
DECEMBER	2.0	-0.1	0.0	0.5	1.7	0.2	-0.1	0.0	0.9	3.0	1.2	9.4	3.7	0.0	0.1	2.2	0.0	0.2	3.2	9.4
TOTAL	447.3	-2.4	6.7	8.5	33.3	1.9	-4.2	11.4	14.6	56.7	12.4	586.2	243.0	0.0	115.1	12.8	0.0	196.0	19.3	586.2

River width (Leasburg to Mesilla)	=	200.0	River width (Mesilla to American)	=	200.0
River length (Leasburg to Mesilla)	=	21.9	River length (Mesilla to American)	=	38.5
River seepage rate (Leasburg to Mesilla)	=	-	River seepage rate (Mesilla to American)	=	-
Percent of population (Leasburg to Mesilla)	=	0.37	Percent of population (Mesilla to American)	=	0.6
Percent of agricultural area (Leasburg to Mesilla)	=	0.37	Percent of agricultural area (Mesilla to American)	=	0.6
Percent of drainage area (Leasburg to Mesilla)	=	0.13	Percent of drainage area (Mesilla to American)	=	0.9
Percent of river seepage (Leasburg to Mesilla)	=	0.40	Percent of river seepage (Mesilla to American)	=	0.6
Annual runoff	=	0.25	Total drainage area (ac)	=	685387.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

BASELINE

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)												OUTFLOW (1000 ac-ft)							
		LEASBURG DAM TO MESILLA DAM					MESILLA DAM TO AMERICAN DAM							LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	NET PRECIP. (7)	CANAL WASTE RETURN (8)	M&I RETURN FLOW (9)	DRAIN INFLOW (10)	TRIB. INFLOW (11)	TOTAL INFLOW (12)	RIVER OUTFLOW - AMERICAN (13)	RIVER FLOW TO M&I (14)	RIVER FLOW TO AGR. (15)	NET RIVER SEEPAGE (16)	RIVER FLOW TO M&I (17)	RIVER FLOW TO AGR. (18)	NET RIVER SEEPAGE (19)	TOTAL OUTFLOW (20)
JANUARY	4.4	0.0	0.1	0.4	1.9	0.1	-0.1	0.1	0.7	3.3	0.5	11.4	6.2	0.0	0.9	1.2	0.0	1.4	1.7	11.4
FEBRUARY	13.0	-0.1	0.2	0.5	1.7	0.1	-0.1	0.3	0.8	2.9	1.0	20.3	7.9	0.0	2.2	2.6	0.0	3.7	3.8	20.3
MARCH	86.2	-0.2	1.6	0.5	2.9	0.1	-0.3	2.8	0.8	4.9	0.8	100.1	37.7	0.0	20.0	3.3	0.0	34.0	5.0	100.1
APRIL	73.5	-0.2	1.4	0.7	3.8	0.1	-0.4	2.3	1.2	6.4	0.3	89.0	37.3	0.0	16.5	2.9	0.0	28.1	4.3	89.0
MAY	80.1	-0.3	1.4	0.8	4.1	0.1	-0.5	2.5	1.4	7.0	0.8	97.5	41.9	0.0	17.3	3.6	0.0	29.4	5.3	97.5
JUNE	96.8	-0.3	1.8	1.1	4.8	0.1	-0.6	3.0	1.8	8.3	0.7	117.5	49.2	0.0	21.2	4.4	0.0	36.0	6.6	117.5
JULY	119.2	-0.3	2.2	1.0	5.9	0.2	-0.5	3.8	1.7	10.0	1.1	144.3	60.7	0.0	27.4	3.8	0.0	46.6	5.7	144.3
AUGUST	88.0	-0.2	1.6	0.9	6.2	0.5	-0.3	2.7	1.5	10.5	3.2	114.6	54.4	0.0	20.5	1.9	0.0	34.9	2.9	114.6
SEPTEMBER	56.8	-0.2	1.3	0.8	5.4	0.2	-0.3	2.3	1.4	9.2	1.6	78.4	32.9	0.0	16.2	0.7	0.0	27.7	1.0	78.4
OCTOBER	6.9	-0.1	0.1	0.8	3.7	0.2	-0.2	0.1	1.3	6.3	1.1	20.3	14.7	0.0	1.1	1.0	0.0	1.9	1.6	20.3
NOVEMBER	2.7	-0.1	0.0	0.6	2.7	0.0	-0.1	0.0	1.0	4.7	0.3	11.9	7.7	0.0	0.2	1.5	0.0	0.3	2.3	11.9
DECEMBER	2.9	0.0	0.0	0.5	2.3	0.1	-0.1	0.0	0.9	3.9	1.0	11.6	7.3	0.0	0.0	1.7	0.0	0.0	2.6	11.6
TOTAL	630.5	-2.0	11.7	8.5	45.4	1.9	-3.6	19.9	14.6	77.4	12.4	816.7	358.0	0.0	143.3	28.6	0.0	244.0	42.8	816.7

River width (Leasburg to Mesilla)	=	200.0	River width (Mesilla to American)	=	200.0
River length (Leasburg to Mesilla)	=	21.9	River length (Mesilla to American)	=	38.5
River seepage rate (Leasburg to Mesilla)	=	-	River seepage rate (Mesilla to American)	=	-
Percent of population (Leasburg to Mesilla)	=	0.37	Percent of population (Mesilla to American)	=	0.6
Percent of agricultural area (Leasburg to Mesilla)	=	0.37	Percent of agricultural area (Mesilla to American)	=	0.6
Percent of drainage area (Leasburg to Mesilla)	=	0.13	Percent of drainage area (Mesilla to American)	=	0.9
Percent of river seepage (Leasburg to Mesilla)	=	0.40	Percent of river seepage (Mesilla to American)	=	0.6
Annual runoff	=	0.25	Total drainage area (ac)	=	685387.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

BASELINE

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)												OUTFLOW (1000 ac-ft)							
		LEASBURG DAM TO MESILLA DAM					MESILLA DAM TO AMERICAN DAM							LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	NET PRECIP. (7)	CANAL WASTE RETURN (8)	M&I RETURN FLOW (9)	DRAIN INFLOW (10)	TRIB. INFLOW (11)	TOTAL INFLOW (12)	RIVER OUTFLOW - AMERICAN (13)	RIVER FLOW TO M&I (14)	RIVER FLOW TO AGR. (15)	NET RIVER SEEPAGE (16)	RIVER FLOW TO M&I (17)	RIVER FLOW TO AGR. (18)	NET RIVER SEEPAGE (19)	TOTAL OUTFLOW (20)
JANUARY	5.9	0.0	0.0	0.4	2.3	0.1	-0.1	0.0	0.7	3.8	1.0	14.1	8.6	0.0	0.0	2.2	0.0	0.0	3.4	14.1
FEBRUARY	21.0	-0.1	0.4	0.5	2.1	0.1	-0.1	0.6	0.8	3.7	0.8	29.7	11.3	0.0	3.8	3.3	0.0	6.4	4.9	29.7
MARCH	116.8	-0.2	2.1	0.5	4.1	0.1	-0.3	3.6	0.8	6.9	0.4	134.8	65.2	0.0	21.2	4.9	0.0	36.1	7.4	134.8
APRIL	92.3	-0.3	1.9	0.7	5.1	0.0	-0.4	3.2	1.2	8.6	0.1	112.5	54.0	0.0	19.1	2.8	0.0	32.4	4.2	112.5
MAY	93.9	-0.3	2.2	0.8	5.3	0.0	-0.5	3.7	1.4	9.1	0.3	115.8	54.1	0.0	21.5	1.4	0.0	36.6	2.1	115.8
JUNE	118.6	-0.4	2.6	1.1	5.9	0.1	-0.6	4.5	1.8	10.0	0.4	143.9	67.3	0.0	26.3	2.3	0.0	44.7	3.4	143.9
JULY	119.7	-0.3	2.6	1.0	7.0	0.3	-0.5	4.4	1.7	11.8	1.7	149.5	73.5	0.0	26.0	2.3	0.0	44.3	3.4	149.5
AUGUST	99.1	-0.1	2.1	0.9	7.7	0.7	-0.2	3.6	1.5	13.2	4.5	133.0	65.5	0.0	21.2	4.1	0.0	36.1	6.1	133.0
SEPTEMBER	64.3	-0.2	1.6	0.8	6.7	0.2	-0.3	2.8	1.4	11.5	1.2	90.1	40.0	0.0	16.5	2.2	0.0	28.0	3.3	90.1
OCTOBER	19.6	-0.1	0.5	0.8	5.0	0.1	-0.2	0.8	1.3	8.4	0.8	37.0	19.1	0.0	4.7	2.0	0.0	8.1	3.1	37.0
NOVEMBER	4.3	-0.1	0.0	0.6	2.2	0.0	-0.1	0.0	1.0	3.8	0.2	12.0	9.3	0.0	0.0	1.1	0.0	0.0	1.6	12.0
DECEMBER	3.4	-0.1	0.0	0.5	1.8	0.1	-0.1	0.0	0.9	3.0	1.0	10.7	7.6	0.0	0.0	1.2	0.0	0.0	1.8	10.7
TOTAL	759.0	-2.0	16.0	8.5	55.1	1.9	-3.6	27.3	14.6	93.9	12.4	983.1	475.5	0.0	160.2	29.8	0.0	272.8	44.7	983.1

River width (Leasburg to Mesilla)	=	200.0	River width (Mesilla to American)	=	200.0
River length (Leasburg to Mesilla)	=	21.9	River length (Mesilla to American)	=	38.5
River seepage rate (Leasburg to Mesilla)	=	-	River seepage rate (Mesilla to American)	=	-
Percent of population (Leasburg to Mesilla)	=	0.37	Percent of population (Mesilla to American)	=	0.6
Percent of agricultural area (Leasburg to Mesilla)	=	0.37	Percent of agricultural area (Mesilla to American)	=	0.6
Percent of drainage area (Leasburg to Mesilla)	=	0.13	Percent of drainage area (Mesilla to American)	=	0.9
Percent of river seepage (Leasburg to Mesilla)	=	0.40	Percent of river seepage (Mesilla to American)	=	0.6
Annual runoff	=	0.25	Total drainage area (ac)	=	685387.0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

BASELINE

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS)										OUTFLOW (Tons of TDS)								
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN				
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	OUTFLOW TO CANALS (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	OUTFLOW TO CANALS (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)	CHANGE IN MASS (Tons of TDS) (19)
JANUARY	4751.7	34.2	482.9	4177.6	176.5	58.2	822.3	7113.2	1181.3	18797.9	12726.8	0.0	341.6	2059.1	0.0	581.7	3088.7	18798	0.0
FEBRUARY	10355.8	162.0	538.6	3705.2	202.2	275.8	917.1	6308.8	1353.3	23818.7	13230.1	0.0	1690.9	2407.4	0.0	2879.2	3611.1	23819	0.0
MARCH	65591.7	1084.8	569.6	5122.3	122.1	1847.1	969.9	8721.8	817.1	84846.5	41805.7	0.0	13979.4	2103.5	0.0	23802.7	3155.2	84846	0.0
APRIL	52963.1	1029.5	778.2	6730.9	88.5	1752.9	1325.0	11460.7	592.2	76720.8	41100.9	0.0	12632.7	591.0	0.0	21509.7	886.5	76721	0.0
MAY	51803.7	1007.9	853.1	6937.7	124.7	1716.1	1452.5	11812.9	834.4	76543.1	42065.4	0.0	12415.3	369.1	0.0	21139.6	553.7	76543	0.0
JUNE	70976.6	1333.1	1085.4	7554.7	170.8	2269.9	1848.1	12863.5	1143.3	99245.5	51080.1	0.0	16086.3	1875.6	0.0	27390.2	2813.3	99246	0.0
JULY	79329.2	1480.6	1070.3	9122.8	585.6	2521.0	1822.4	15533.5	3918.7	115384.1	60052.4	0.0	18479.4	2155.0	0.0	31464.9	3232.5	115384	0.0
AUGUST	79935.6	1435.8	1011.5	9660.5	967.3	2444.7	1722.3	16449.0	6473.5	120100.2	62000.7	0.0	19139.7	2548.2	0.0	32589.2	3822.4	120100	0.0
SEPTEMBER	47329.2	1020.1	984.2	8494.9	358.7	1736.9	1675.8	14464.3	2400.4	78464.5	39668.4	0.0	13383.2	1050.1	0.0	22787.6	1575.2	78464	0.0
OCTOBER	11778.8	225.4	830.6	6383.8	328.1	383.9	1414.2	10869.8	2196.0	34410.5	20827.2	0.0	2553.5	2672.8	0.0	4347.9	4009.2	34411	0.0
NOVEMBER	3657.8	12.3	698.4	4038.2	110.5	20.9	1189.2	6875.9	739.2	17342.3	12032.8	0.0	210.2	1896.5	0.0	358.0	2844.8	17342	0.0
DECEMBER	3979.7	6.2	671.1	3743.9	299.4	10.5	1142.7	6374.7	2003.4	18231.4	11607.6	0.0	61.6	2583.0	0.0	104.8	3874.4	18231	0.0
TOTAL	482452.9	8831.8	9573.8	75672.6	3534.3	15037.9	16301.4	128848.0	23652.7	763905.5	408198.1	0.0	110973.8	22311.3	0.0	188955.4	33466.9	763905.5	0.0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

BASELINE

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS)										OUTFLOW (Tons of TDS)								
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN				
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	OUTFLOW TO CANALS (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	OUTFLOW TO CANALS (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)	CHANGE IN MASS (Tons of TDS) (19)
JANUARY	2671.8	0.0	482.9	4568.8	95.2	0.0	822.3	7779.2	636.9	17057.2	11310	0.0	0.0	2299.0	0.0	0.0	3448.4	17057	0.0
FEBRUARY	2422.0	0.0	538.6	3496.5	104.0	0.0	917.1	5953.5	696.3	14128.0	8430	0.0	0.0	2279.2	0.0	0.0	3418.9	14128	0.0
MARCH	63993.2	795.3	569.6	4405.6	42.9	1354.1	969.9	7501.4	287.3	79919.3	37608	0.0	14779.1	946.9	0.0	25164.5	1420.4	79919	0.0
APRIL	44542.2	843.3	778.2	6317.0	133.3	1435.9	1325.0	10756.0	892.1	67023.0	36392	0.0	13327.9	-2156.0	0.0	22693.4	-3234.0	67023	0.0
MAY	35736.0	534.3	853.1	5664.3	46.6	909.8	1452.5	9644.7	312.1	55153.5	32164	0.0	10538.9	-2197.5	0.0	17944.6	-3296.3	55154	0.0
JUNE	58932.8	852.4	1085.4	5711.0	198.7	1451.4	1848.1	9724.1	1329.6	81133.5	40008	0.0	14353.4	933.2	0.0	24439.6	1399.7	81133	0.0
JULY	77415.6	1186.8	1070.3	7086.2	961.2	2020.8	1822.4	12065.8	6432.3	110061.5	51188	0.0	19585.8	2375.6	0.0	33348.9	3563.3	110062	0.0
AUGUST	108852.5	1727.0	1011.5	7832.2	698.0	2940.6	1722.3	13335.8	4671.2	142791.1	57841	0.0	28210.7	3482.0	0.0	48034.4	5223.0	142791	0.0
SEPTEMBER	53850.1	883.6	984.2	6783.2	286.5	1504.5	1675.8	11549.8	1917.6	79435.4	33087	0.0	16147.8	1082.3	0.0	27495.0	1623.5	79435	0.0
OCTOBER	5419.9	59.5	830.6	4522.1	440.7	101.3	1414.2	7699.9	2949.1	23437.1	9467	0.0	1101.3	4397.5	0.0	1875.1	6596.3	23437	0.0
NOVEMBER	3068.6	27.1	698.4	3286.7	184.3	46.2	1189.2	5596.3	1233.3	15330.1	7348	0.0	437.0	2720.5	0.0	744.1	4080.7	15330	0.0
DECEMBER	3128.0	18.5	671.1	3286.7	342.9	31.4	1142.7	5596.3	2294.8	16512.3	7052	0.0	184.7	3584.5	0.0	314.5	5376.7	16512	0.0
TOTAL	460032.6	6927.9	9573.8	62960.3	3534.3	11796.1	16301.4	107202.7	23652.7	701981.9	331893.4	0.0	118666.6	19747.1	0.0	202054.0	29620.7	701981.9	0.0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

BASELINE

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS)										OUTFLOW (Tons of TDS)								
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN				CHANGE IN MASS (Tons of TDS)
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	OUTFLOW TO CANALS (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	OUTFLOW TO CANALS (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)	(19)
JANUARY	5205.8	102.5	482.9	4014.3	152.6	174.5	822.3	6835.1	1021.4	18811.3	12530	0.0	1024.9	1404.4	0.0	1745.1	2106.6	18811	0.0
FEBRUARY	11063.1	168.3	538.6	3520.1	283.8	286.6	917.1	5993.7	1899.5	24670.7	14015	0.0	1896.0	2212.7	0.0	3228.3	3319.1	24671	0.0
MARCH	60687.2	1149.6	569.6	4625.8	215.6	1957.5	969.9	7876.4	1442.9	79494.7	35636	0.0	14064.7	2338.6	0.0	23947.9	3507.9	79495	0.0
APRIL	54611.4	1011.1	778.2	6018.7	96.0	1721.6	1325.0	10248.0	642.5	76452.4	38109	0.0	12230.0	2115.9	0.0	20824.0	3173.8	76452	0.0
MAY	51077.7	917.7	853.1	6659.6	240.1	1562.6	1452.5	11339.3	1607.1	75709.8	40340	0.0	10991.0	2265.9	0.0	18714.3	3398.9	75710	0.0
JUNE	65652.9	1190.5	1085.4	7383.6	201.1	2027.0	1848.1	12572.1	1346.1	93306.8	47046	0.0	14341.0	3000.4	0.0	24418.4	4500.6	93307	0.0
JULY	79920.1	1504.0	1070.3	8804.9	312.5	2560.9	1822.4	14992.1	2091.3	113078.6	57096	0.0	18342.7	2562.9	0.0	31232.2	3844.3	113079	0.0
AUGUST	63217.7	1129.5	1011.5	8982.8	913.4	1923.1	1722.3	15295.0	6112.7	100308.0	57134	0.0	14699.4	1378.3	0.0	25028.7	2067.5	100308	0.0
SEPTEMBER	43327.0	1029.1	984.2	7904.7	450.2	1752.3	1675.8	13459.3	3012.6	73595.1	38449	0.0	12526.3	516.5	0.0	21328.6	774.8	73595	0.0
OCTOBER	9472.0	112.1	830.6	6977.5	307.1	190.9	1414.2	11880.7	2055.0	33240.0	25558	0.0	1512.2	1438.1	0.0	2574.9	2157.2	33240	0.0
NOVEMBER	3375.7	9.7	698.4	5357.4	86.7	16.5	1189.2	9122.0	580.1	20435.6	15368	0.0	193.8	1817.6	0.0	329.9	2726.3	20436	0.0
DECEMBER	4650.3	0.0	671.1	4641.5	275.2	0.0	1142.7	7903.1	1841.5	21125.3	14438	0.0	0.0	2674.9	0.0	0.0	4012.3	21125	0.0
TOTAL	452260.7	8324.2	9573.8	74890.8	3534.3	14173.6	16301.4	127516.8	23652.7	730228.3	395718.5	0.0	101821.9	23726.2	0.0	173372.4	35589.3	730228.3	0.0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

BASELINE

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS)										OUTFLOW (Tons of TDS)								
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN				
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	OUTFLOW TO CANALS (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	OUTFLOW TO CANALS (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)	CHANGE IN MASS (Tons of TDS) (19)
JANUARY	6377.4	0.0	482.9	3949.8	281.8	0.0	822.3	6725.3	1885.7	20525.2	14340	0.0	0.0	2474.0	0.0	0.0	3711.0	20525	0.0
FEBRUARY	17582.2	317.7	538.6	4098.9	218.8	540.9	917.1	6979.1	1464.1	32657.4	17246	0.0	3176.8	2730.2	0.0	5409.2	4095.3	32657	0.0
MARCH	72094.7	1309.4	569.6	6335.6	107.7	2229.6	969.9	10787.7	721.1	95125.5	52173	0.0	13094.4	3024.9	0.0	22295.8	4537.4	95125	0.0
APRIL	59735.6	1234.0	778.2	7857.0	36.2	2101.2	1325.0	13378.1	242.0	86687.0	48802	0.0	12340.2	1813.2	0.0	21011.7	2719.7	86687	0.0
MAY	68597.5	1571.6	853.1	8489.3	87.3	2676.0	1452.5	14454.7	584.0	98765.9	53693	0.0	15716.1	1038.9	0.0	26759.9	1558.4	98766	0.0
JUNE	88344.1	1956.4	1085.4	9569.7	112.7	3331.2	1848.1	16294.3	754.3	123296.3	66187	0.0	19564.5	1693.1	0.0	33312.5	2539.7	123296	0.0
JULY	80651.8	1751.0	1070.3	11477.4	483.0	2981.4	1822.4	19542.6	3232.4	123012.2	71873	0.0	17509.5	1526.5	0.0	29813.5	2289.7	123012	0.0
AUGUST	67736.7	1450.9	1011.5	12166.6	1290.5	2470.4	1722.3	20716.1	8636.5	117201.5	71027	0.0	14508.9	2784.4	0.0	24704.4	4176.6	117202	0.0
SEPTEMBER	44810.5	1147.5	984.2	10796.8	339.3	1953.9	1675.8	18383.8	2270.9	82362.9	47470	0.0	11475.4	1551.5	0.0	19539.2	2327.2	82363	0.0
OCTOBER	20444.6	504.7	830.6	7651.8	236.7	859.4	1414.2	13028.8	1583.8	46554.5	27457	0.0	5047.0	2182.7	0.0	8593.6	3274.1	46555	0.0
NOVEMBER	4529.2	0.0	698.4	3470.6	60.4	0.0	1189.2	5909.4	404.1	16261.3	13382	0.0	0.0	1151.5	0.0	0.0	1727.3	16261	0.0
DECEMBER	4160.9	0.0	671.1	3303.4	280.0	0.0	1142.7	5624.6	1873.8	17056.5	13333	0.0	0.0	1489.5	0.0	0.0	2234.3	17056	0.0
TOTAL	535065.3	11243.3	9573.8	89166.8	3534.3	19144.0	16301.4	151824.5	23652.7	859506.2	496982.5	0.0	112432.8	23460.4	0.0	191439.7	35190.7	859506.2	0.0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

BASELINE

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS/af)										OUTFLOW (Tons of TDS/af)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	OUTFLOW TO CANALS (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	OUTFLOW TO CANALS (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1.3	1.3	1.2	1.9	1.9	1.3	1.2	1.9	1.9	---	1.9	1.3	1.3	1.3	1.3	1.3	1.3	---
FEBRUARY	1.0	1.0	1.2	2.0	1.9	1.0	1.2	2.0	1.9	---	1.8	1.0	1.0	1.0	1.0	1.0	1.0	---
MARCH	0.7	0.7	1.2	1.7	1.9	0.7	1.2	1.7	1.9	---	0.9	0.7	0.7	0.7	0.7	0.7	0.7	---
APRIL	0.8	0.8	1.1	1.7	1.9	0.8	1.1	1.7	1.9	---	1.1	0.8	0.8	0.8	0.8	0.8	0.8	---
MAY	0.8	0.8	1.1	1.7	1.9	0.8	1.1	1.7	1.9	---	1.1	0.8	0.8	0.8	0.8	0.8	0.8	---
JUNE	0.8	0.8	1.0	1.7	1.9	0.8	1.0	1.7	1.9	---	1.1	0.8	0.8	0.8	0.8	0.8	0.8	---
JULY	0.8	0.8	1.1	1.7	1.9	0.8	1.1	1.7	1.9	---	1.1	0.8	0.8	0.8	0.8	0.8	0.8	---
AUGUST	0.9	0.9	1.1	1.6	1.9	0.9	1.1	1.6	1.9	---	1.2	0.9	0.9	0.9	0.9	0.9	0.9	---
SEPTEMBER	1.0	1.0	1.2	1.7	1.9	1.0	1.2	1.7	1.9	---	1.4	1.0	1.0	1.0	1.0	1.0	1.0	---
OCTOBER	1.4	1.4	1.1	1.8	1.9	1.4	1.1	1.8	1.9	---	1.7	1.4	1.4	1.4	1.4	1.4	1.4	---
NOVEMBER	1.2	1.2	1.2	1.8	1.9	1.2	1.2	1.8	1.9	---	1.8	1.2	1.2	1.2	1.2	1.2	1.2	---
DECEMBER	1.5	1.5	1.3	1.9	1.9	1.5	1.3	1.9	1.9	---	1.9	1.5	1.5	1.5	1.5	1.5	1.5	---
AVERAGE	0.8	0.8	1.1	1.7	1.9	0.8	1.1	1.7	1.9	---	1.1	---	0.8	0.9	---	0.8	0.9	---

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

BASELINE

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS/af)										OUTFLOW (Tons of TDS/af)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	OUTFLOW TO CANALS (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	OUTFLOW TO CANALS (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1.5	1.5	1.2	1.9	1.9	1.5	1.2	1.9	1.9	---	2.0	1.5	1.5	1.5	1.5	1.5	1.5	---
FEBRUARY	1.4	1.4	1.2	1.9	1.9	1.4	1.2	1.9	1.9	---	2.1	1.4	1.4	1.4	1.4	1.4	1.4	---
MARCH	0.8	0.8	1.2	1.9	1.9	0.8	1.2	1.9	1.9	---	1.0	0.8	0.8	0.8	0.8	0.8	0.8	---
APRIL	0.9	0.9	1.1	1.9	1.9	0.9	1.1	1.9	1.9	---	1.2	0.9	0.9	0.9	0.9	0.9	0.9	---
MAY	0.9	0.9	1.1	1.9	1.9	0.9	1.1	1.9	1.9	---	1.3	0.9	0.9	0.9	0.9	0.9	0.9	---
JUNE	1.0	1.0	1.0	1.9	1.9	1.0	1.0	1.9	1.9	---	1.2	1.0	1.0	1.0	1.0	1.0	1.0	---
JULY	0.9	0.9	1.1	1.9	1.9	0.9	1.1	1.9	1.9	---	1.3	0.9	0.9	0.9	0.9	0.9	0.9	---
AUGUST	1.3	1.3	1.1	1.9	1.9	1.3	1.1	1.9	1.9	---	1.5	1.3	1.3	1.3	1.3	1.3	1.3	---
SEPTEMBER	1.5	1.5	1.2	1.9	1.9	1.5	1.2	1.9	1.9	---	1.7	1.5	1.5	1.5	1.5	1.5	1.5	---
OCTOBER	1.8	1.8	1.1	1.9	1.9	1.8	1.1	1.9	1.9	---	1.8	1.8	1.8	1.8	1.8	1.8	1.8	---
NOVEMBER	1.5	1.5	1.2	1.9	1.9	1.5	1.2	1.9	1.9	---	2.1	1.5	1.5	1.5	1.5	1.5	1.5	---
DECEMBER	1.7	1.7	1.3	1.9	1.9	1.7	1.3	1.9	1.9	---	2.0	1.7	1.7	1.7	1.7	1.7	1.7	---
AVERAGE	1.0	1.0	1.1	1.9	1.9	1.0	1.1	1.9	1.9	---	1.4	---	1.0	1.5	---	1.0	1.5	---

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

BASELINE

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS/af)										OUTFLOW (Tons of TDS/af)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	OUTFLOW TO CANALS (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	OUTFLOW TO CANALS (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1.2	1.2	1.2	2.1	1.9	1.2	1.2	2.1	1.9	---	1.9	1.2	1.2	1.2	1.2	1.2	1.2	---
FEBRUARY	0.9	0.9	1.2	2.1	1.9	0.9	1.2	2.1	1.9	---	1.8	0.9	0.9	0.9	0.9	0.9	0.9	---
MARCH	0.7	0.7	1.2	1.6	1.9	0.7	1.2	1.6	1.9	---	0.9	0.7	0.7	0.7	0.7	0.7	0.7	---
APRIL	0.7	0.7	1.1	1.6	1.9	0.7	1.1	1.6	1.9	---	1.0	0.7	0.7	0.7	0.7	0.7	0.7	---
MAY	0.6	0.6	1.1	1.6	1.9	0.6	1.1	1.6	1.9	---	1.0	0.6	0.6	0.6	0.6	0.6	0.6	---
JUNE	0.7	0.7	1.0	1.5	1.9	0.7	1.0	1.5	1.9	---	1.0	0.7	0.7	0.7	0.7	0.7	0.7	---
JULY	0.7	0.7	1.1	1.5	1.9	0.7	1.1	1.5	1.9	---	0.9	0.7	0.7	0.7	0.7	0.7	0.7	---
AUGUST	0.7	0.7	1.1	1.5	1.9	0.7	1.1	1.5	1.9	---	1.0	0.7	0.7	0.7	0.7	0.7	0.7	---
SEPTEMBER	0.8	0.8	1.2	1.5	1.9	0.8	1.2	1.5	1.9	---	1.2	0.8	0.8	0.8	0.8	0.8	0.8	---
OCTOBER	1.4	1.4	1.1	1.9	1.9	1.4	1.1	1.9	1.9	---	1.7	1.4	1.4	1.4	1.4	1.4	1.4	---
NOVEMBER	1.2	1.2	1.2	2.0	1.9	1.2	1.2	2.0	1.9	---	1.9	1.2	1.2	1.2	1.2	1.2	1.2	---
DECEMBER	1.6	1.6	1.3	2.0	1.9	1.6	1.3	2.0	1.9	---	1.9	1.6	1.6	1.6	1.6	1.6	1.6	---
AVERAGE	0.7	0.7	1.1	1.6	1.9	0.7	1.1	1.6	1.9	---	1.1	---	0.7	0.8	---	0.7	0.8	---

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

BASELINE

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS/af)										OUTFLOW (Tons of TDS/af)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	OUTFLOW TO CANALS (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	OUTFLOW TO CANALS (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1.1	1.1	1.2	1.8	1.9	1.1	1.2	1.8	1.9	---	1.7	1.1	1.1	1.1	1.1	1.1	1.1	---
FEBRUARY	0.8	0.8	1.2	1.9	1.9	0.8	1.2	1.9	1.9	---	1.5	0.8	0.8	0.8	0.8	0.8	0.8	---
MARCH	0.6	0.6	1.2	1.6	1.9	0.6	1.2	1.6	1.9	---	0.8	0.6	0.6	0.6	0.6	0.6	0.6	---
APRIL	0.6	0.6	1.1	1.6	1.9	0.6	1.1	1.6	1.9	---	0.9	0.6	0.6	0.6	0.6	0.6	0.6	---
MAY	0.7	0.7	1.1	1.6	1.9	0.7	1.1	1.6	1.9	---	1.0	0.7	0.7	0.7	0.7	0.7	0.7	---
JUNE	0.7	0.7	1.0	1.6	1.9	0.7	1.0	1.6	1.9	---	1.0	0.7	0.7	0.7	0.7	0.7	0.7	---
JULY	0.7	0.7	1.1	1.7	1.9	0.7	1.1	1.7	1.9	---	1.0	0.7	0.7	0.7	0.7	0.7	0.7	---
AUGUST	0.7	0.7	1.1	1.6	1.9	0.7	1.1	1.6	1.9	---	1.1	0.7	0.7	0.7	0.7	0.7	0.7	---
SEPTEMBER	0.7	0.7	1.2	1.6	1.9	0.7	1.2	1.6	1.9	---	1.2	0.7	0.7	0.7	0.7	0.7	0.7	---
OCTOBER	1.1	1.1	1.1	1.5	1.9	1.1	1.1	1.5	1.9	---	1.5	1.1	1.1	1.1	1.1	1.1	1.1	---
NOVEMBER	1.1	1.1	1.2	1.6	1.9	1.1	1.2	1.6	1.9	---	1.5	1.1	1.1	1.1	1.1	1.1	1.1	---
DECEMBER	1.2	1.2	1.3	1.9	1.9	1.2	1.3	1.9	1.9	---	1.8	1.2	1.2	1.2	1.2	1.2	1.2	---
AVERAGE	0.7	0.7	1.1	1.6	1.9	0.7	1.1	1.6	1.9	---	1.0	---	0.7	0.8	---	0.7	0.8	---

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 1

DRY YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)					CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	TOTAL OUTFLOW (10)	IN STORAGE (1000 ac-ft) (11)
JANUARY	0.3	0.0	0.0	-0.9	-0.7	0.0	0.0	0.9	0.0	0.9	-1.6
FEBRUARY	0.3	0.0	0.1	1.3	1.6	0.0	0.0	0.7	0.1	0.8	0.7
MARCH	0.3	2.0	4.7	7.4	14.3	0.0	0.1	-0.1	7.2	7.3	7.1
APRIL	0.3	1.7	4.2	-4.0	2.2	0.0	0.1	0.9	5.8	6.9	-4.6
MAY	0.3	1.4	3.1	-0.2	4.5	0.0	0.1	0.8	5.0	6.0	-1.5
JUNE	0.3	1.5	3.4	1.4	6.5	0.0	0.2	0.2	4.9	5.3	1.3
JULY	0.3	2.3	5.3	0.8	8.7	0.0	0.1	0.2	7.5	7.9	0.8
AUGUST	0.3	2.6	5.6	-4.6	3.8	0.0	0.1	0.2	8.0	8.3	-4.5
SEPTEMBER	0.3	1.4	2.9	-8.7	-4.1	0.0	0.1	0.8	4.5	5.4	-9.6
OCTOBER	0.3	0.0	0.0	-1.1	-0.9	0.0	0.1	0.8	0.1	1.0	-1.8
NOVEMBER	0.3	0.0	0.0	-1.3	-1.0	0.0	0.0	0.7	0.1	0.9	-1.9
DECEMBER	0.3	0.1	0.0	-0.9	-0.6	0.0	0.0	0.6	0.0	0.6	-1.2
TOTAL	3.0	13.0	29.3	-11.0	34.4	0.3	1.1	6.7	43.1	51.3	-16.9

Phreatophyte area (ac)	=	200.0
Average consumptive use (ft/yr)	=	5.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 1

AVERAGE YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)					CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	TOTAL OUTFLOW (10)	IN STORAGE (1000 ac-ft) (11)
JANUARY	0.3	0.6	0.0	-1.1	-0.3	0.0	0.0	0.3	0.0	0.4	-0.6
FEBRUARY	0.3	0.6	1.5	1.3	3.6	0.0	0.0	0.1	1.1	1.2	2.5
MARCH	0.3	1.7	5.2	1.9	9.1	0.0	0.1	-0.2	2.6	2.6	6.5
APRIL	0.3	1.7	5.6	-6.0	1.6	0.0	0.1	0.7	2.6	3.5	-1.9
MAY	0.3	1.8	5.6	-2.8	4.9	0.0	0.1	0.9	2.6	3.7	1.2
JUNE	0.3	2.7	6.3	-3.7	5.5	0.0	0.2	1.1	3.5	4.9	0.6
JULY	0.3	2.2	6.0	-2.5	6.0	0.0	0.1	1.2	3.4	4.8	1.2
AUGUST	0.3	3.3	6.3	-7.4	2.5	0.0	0.1	0.9	2.6	3.7	-1.2
SEPTEMBER	0.3	1.0	2.6	-1.2	2.6	0.0	0.1	1.5	1.8	3.4	-0.7
OCTOBER	0.3	1.1	1.7	-6.9	-3.9	0.0	0.1	0.9	0.2	1.1	-5.0
NOVEMBER	0.3	0.3	0.4	-2.6	-1.6	0.0	0.0	0.7	0.1	0.9	-2.5
DECEMBER	0.3	0.5	0.0	-1.7	-0.9	0.0	0.0	0.6	0.0	0.7	-1.5
TOTAL	3.0	17.6	41.2	-32.6	29.2	0.3	1.1	8.7	20.6	30.7	-1.5

Phreatophyte area (ac)	=	200.0
Average consumptive use (ft/yr)	=	5.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 1

NORMAL YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)					CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	TOTAL OUTFLOW (10)	IN STORAGE (1000ac-ft) (11)
JANUARY	0.3	0.0	0.0	-1.6	-1.4	0.0	0.0	0.2	0.0	0.3	-1.7
FEBRUARY	0.3	0.7	2.4	-0.5	2.8	0.0	0.0	-0.1	0.5	0.5	2.4
MARCH	0.3	1.8	6.5	2.7	11.2	0.0	0.1	0.4	1.5	2.0	9.3
APRIL	0.3	1.9	7.1	0.4	9.6	0.0	0.1	1.2	1.6	2.9	6.6
MAY	0.3	2.0	7.7	-2.1	7.9	0.0	0.1	1.3	1.7	3.1	4.8
JUNE	0.3	2.0	7.5	-0.4	9.4	0.0	0.2	1.5	1.6	3.3	6.0
JULY	0.3	1.9	6.6	-2.2	6.5	0.0	0.1	1.3	1.5	2.9	3.6
AUGUST	0.3	1.3	4.4	-9.6	-3.6	0.0	0.1	1.0	1.0	2.1	-5.7
SEPTEMBER	0.3	1.1	4.2	-6.1	-0.5	0.0	0.1	1.0	0.9	2.0	-2.5
OCTOBER	0.3	0.3	1.2	-6.5	-4.7	0.0	0.1	1.1	0.3	1.5	-6.3
NOVEMBER	0.3	0.0	0.0	-3.4	-3.2	0.0	0.0	0.6	0.1	0.8	-3.9
DECEMBER	0.3	0.0	0.0	-2.7	-2.4	0.0	0.0	0.3	0.0	0.4	-2.8
TOTAL	3.0	13.2	47.5	-32.0	31.6	0.3	1.1	9.8	10.7	21.9	9.8

Phreatophyte area (ac)	=	200.0
Average consumptive use (ft/yr)	=	5.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 1

COMPOSITE

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE IN STORAGE (1000 ac-ft) (17)	MAIN SUPPLY CANAL INFLOW (18)	MAIN SUPPLY CANAL OUTFLOW (19)
MONTH	GROSS PRECIP. (1)	RIVER FLOW TO AGR. (2)	RIVER FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)			
JANUARY	2.9	0.0	0.0	0.5	0.0	0.0	3.4	0.0	2.6	0.0	0.0	0.2	0.0	0.0	0.6	3.4	0.0	10.6	10.6
FEBRUARY	1.6	2.9	0.0	0.2	0.5	0.0	5.3	0.0	2.7	0.0	1.3	0.4	0.0	0.4	0.5	5.3	0.0	11.5	11.5
MARCH	0.6	11.0	0.0	0.0	3.7	0.1	15.5	0.0	5.6	0.1	5.5	1.8	0.1	1.4	1.0	15.5	0.0	31.6	31.5
APRIL	0.5	11.7	0.0	1.0	3.2	0.1	16.5	0.0	5.4	0.1	5.6	1.8	0.1	1.6	1.9	16.5	0.0	34.7	34.6
MAY	0.6	11.4	0.0	1.0	3.0	0.1	16.0	0.1	5.3	0.1	5.5	1.8	0.1	1.5	1.9	16.0	0.0	37.9	37.8
JUNE	2.5	12.0	0.0	1.0	3.2	0.1	18.9	0.1	7.3	0.1	5.7	2.1	0.1	1.7	2.0	18.9	0.0	43.6	43.5
JULY	6.8	12.1	0.0	0.9	4.0	0.1	24.0	0.1	11.9	0.1	6.0	2.1	0.1	1.6	2.1	24.0	0.0	46.7	46.6
AUGUST	13.8	10.8	0.0	0.7	3.8	0.1	29.1	0.0	17.6	0.1	5.4	2.4	0.1	1.4	2.1	29.1	0.0	41.8	41.7
SEPTEMBER	4.4	6.5	0.0	1.1	2.3	0.1	14.4	0.0	7.2	0.1	3.2	1.2	0.1	0.9	1.8	14.4	0.0	31.0	30.9
OCTOBER	5.5	2.1	0.0	0.9	0.1	0.1	8.8	0.0	5.7	0.1	1.0	0.5	0.1	0.3	1.2	8.8	0.0	18.4	18.4
NOVEMBER	1.0	0.3	0.0	0.7	0.0	0.1	2.1	0.0	1.0	0.1	0.1	0.1	0.1	0.0	0.7	2.1	0.0	12.4	12.4
DECEMBER	3.4	0.0	0.0	0.5	0.0	0.0	3.9	0.0	3.1	0.0	0.0	0.2	0.0	0.0	0.6	3.9	0.0	11.1	11.1
TOTAL	43.8	80.9	0.0	8.4	23.9	0.9	158.0	0.3	75.4	0.5	39.3	14.6	0.5	10.9	16.4	158.0	0.0	331.2	330.5

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.02	
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04	
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.46	
Fraction of "river flow to agr." as canal waste return	=	0.12	Fraction of M&I flow as M&I return flow	=	0.50	
Existing Canal Area (ac)	=	102	New Canal Area (acres)	=	180	

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 1

DRY YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE	MAIN	MAIN
MONTH	GROSS PRECIP. (1)	RIVER FLOW TO AGR. (2)	RIVER FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	IN STORAGE (1000 ac-ft) (17)	SUPPLY CANAL INFLOW (18)	SUPPLY CANAL OUTFLOW (19)
JANUARY	0.3	0.0	0.0	0.9	0.0	0.0	1.2	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.9	1.2	0.0	8.3	8.3
FEBRUARY	0.3	0.1	0.0	0.7	0.1	0.0	1.2	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.7	1.2	0.0	7.9	7.9
MARCH	0.3	7.2	0.0	-0.1	7.1	0.1	14.7	0.0	6.0	0.1	4.7	2.0	0.1	0.9	1.0	14.7	0.0	31.7	31.6
APRIL	0.9	7.1	0.0	0.9	5.7	0.1	14.7	0.1	5.7	0.1	4.2	1.7	0.1	1.0	1.8	14.7	0.0	35.4	35.3
MAY	0.0	4.6	0.0	0.8	4.9	0.1	10.5	0.1	3.8	0.1	3.1	1.4	0.1	0.5	1.5	10.5	0.0	32.8	32.7
JUNE	3.0	5.7	0.0	0.2	4.8	0.1	13.8	0.1	6.8	0.1	3.4	1.5	0.1	0.8	1.1	13.8	0.0	36.8	36.7
JULY	4.2	8.8	0.0	0.2	7.4	0.1	20.7	0.1	10.2	0.1	5.3	2.3	0.1	1.2	1.5	20.7	0.0	42.7	42.6
AUGUST	11.1	9.2	0.0	0.2	7.9	0.1	28.4	0.0	17.1	0.1	5.6	2.6	0.1	1.3	1.8	28.4	0.0	44.2	44.1
SEPTEMBER	5.7	4.6	0.0	0.8	4.4	0.1	15.7	0.0	8.9	0.1	2.9	1.4	0.1	0.6	1.7	15.7	0.0	24.0	23.9
OCTOBER	6.6	0.0	0.0	0.8	0.0	0.1	7.5	0.0	6.3	0.1	0.0	0.0	0.1	0.0	1.0	7.5	0.0	17.4	17.4
NOVEMBER	1.0	0.0	0.0	0.7	0.0	0.1	1.8	0.0	0.9	0.1	0.0	0.0	0.1	0.0	0.8	1.8	0.0	11.0	11.0
DECEMBER	3.6	0.0	0.0	0.6	0.0	0.0	4.2	0.0	3.4	0.0	0.0	0.1	0.0	0.0	0.7	4.2	0.0	8.5	8.5
TOTAL	37.2	47.2	0.0	6.7	42.2	0.9	134.2	0.4	69.9	0.5	29.3	13.0	0.5	6.3	14.4	134.2	0.00	300.7	299.9

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.01
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.48
Fraction of "river flow to agr." as canal waste return	=	0.11	Fraction of M&I flow as M&I return flow	=	0.50
Existing Canal Area (ac)	=	102	New Canal Area (acres)	=	180

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 1

AVERAGE YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE IN	MAIN SUPPLY	MAIN SUPPLY
MONTH	GROSS PRECIP. (1)	RIVER FLOW TO AGR. (2)	RIVER FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	STORAGE (1000 ac-ft) (17)	CANAL INFLOW (18)	CANAL OUTFLOW (19)
JANUARY	4.2	0.0	0.0	0.3	0.0	0.0	4.5	0.0	3.5	0.0	0.0	0.6	0.0	0.0	0.5	4.5	0.0	11.2	11.2
FEBRUARY	0.9	3.3	0.0	0.1	1.1	0.0	5.3	0.0	2.4	0.0	1.5	0.6	0.0	0.5	0.4	5.3	0.0	11.7	11.7
MARCH	1.1	11.0	0.0	-0.2	2.5	0.1	14.5	0.0	5.5	0.1	5.2	1.7	0.1	1.2	0.7	14.5	0.0	30.5	30.4
APRIL	0.2	11.9	0.0	0.7	2.5	0.1	15.5	0.0	5.0	0.1	5.6	1.7	0.1	1.4	1.6	15.5	0.0	33.0	32.9
MAY	0.7	12.0	0.0	0.9	2.5	0.1	16.3	0.1	5.4	0.1	5.6	1.8	0.1	1.5	1.8	16.3	0.0	38.6	38.5
JUNE	4.1	13.4	0.0	1.1	3.4	0.1	22.2	0.1	9.1	0.1	6.3	2.7	0.1	1.7	2.3	22.2	0.0	44.9	44.8
JULY	5.5	12.7	0.0	1.2	3.3	0.1	22.8	0.1	10.7	0.1	6.0	2.2	0.1	1.4	2.4	22.8	0.0	49.2	49.1
AUGUST	14.5	13.3	0.0	0.9	2.5	0.1	31.4	0.0	17.7	0.1	6.3	3.3	0.1	1.4	2.4	31.4	0.0	40.3	40.3
SEPTEMBER	5.2	5.4	0.0	1.5	1.7	0.1	13.9	0.0	7.5	0.1	2.6	1.0	0.1	0.6	2.1	13.9	0.0	34.4	34.3
OCTOBER	7.2	3.7	0.0	0.9	0.1	0.1	12.0	0.0	7.2	0.1	1.7	1.1	0.1	0.6	1.3	12.0	0.0	17.3	17.3
NOVEMBER	1.4	0.9	0.0	0.7	0.0	0.1	3.2	0.0	1.4	0.1	0.4	0.3	0.1	0.1	0.8	3.2	0.0	12.3	12.2
DECEMBER	4.8	0.0	0.0	0.6	0.0	0.0	5.4	0.0	4.1	0.0	0.0	0.5	0.0	0.0	0.8	5.4	0.0	11.5	11.5
TOTAL	49.9	87.8	0.0	8.7	19.7	0.9	167.0	0.3	79.5	0.5	41.2	17.6	0.5	10.3	17.1	167.0	0.0	334.9	334.2

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.05
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.46
Fraction of "river flow to agr." as canal waste return	=	0.12	Fraction of M&I flow as M&I return flow	=	0.50
Existing Canal Area (ac)	=	102	New Canal Area (acres)	=	180

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 1

NORMAL YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE	MAIN	MAIN
MONTH	GROSS PRECIP. (1)	RIVER FLOW TO AGR. (2)	RIVER FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	IN STORAGE (1000 ac-ft) (17)	SUPPLY CANAL INFLOW (18)	SUPPLY CANAL OUTFLOW (19)
JANUARY	4.3	0.0	0.0	0.2	0.0	0.0	4.5	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.4	4.5	0.0	12.3	12.3
FEBRUARY	3.8	5.4	0.0	-0.1	0.5	0.0	9.6	0.0	5.3	0.0	2.4	0.7	0.0	0.8	0.4	9.6	0.0	14.9	14.9
MARCH	0.5	14.8	0.0	0.4	1.4	0.1	17.2	0.0	5.3	0.1	6.5	1.8	0.1	2.2	1.2	17.2	0.0	32.6	32.6
APRIL	0.5	16.0	0.0	1.2	1.5	0.1	19.3	0.0	5.6	0.1	7.1	1.9	0.1	2.4	2.2	19.3	0.0	35.6	35.5
MAY	1.0	17.5	0.0	1.3	1.6	0.1	21.4	0.1	6.6	0.1	7.7	2.0	0.1	2.6	2.3	21.4	0.0	42.1	42.0
JUNE	0.5	17.0	0.0	1.5	1.5	0.1	20.7	0.1	6.0	0.1	7.5	2.0	0.1	2.6	2.5	20.7	0.0	49.0	48.9
JULY	10.6	14.9	0.0	1.3	1.4	0.1	28.3	0.0	14.8	0.1	6.6	1.9	0.1	2.2	2.6	28.3	0.0	48.2	48.2
AUGUST	15.7	10.0	0.0	1.0	0.9	0.1	27.7	0.0	18.1	0.1	4.4	1.3	0.1	1.5	2.2	27.7	0.0	40.9	40.9
SEPTEMBER	2.3	9.5	0.0	1.0	0.8	0.1	13.7	0.0	5.2	0.1	4.2	1.1	0.1	1.4	1.6	13.7	0.0	34.7	34.6
OCTOBER	2.8	2.7	0.0	1.1	0.2	0.1	6.9	0.0	3.5	0.1	1.2	0.3	0.1	0.4	1.4	6.9	0.0	20.4	20.4
NOVEMBER	0.7	0.0	0.0	0.6	0.0	0.1	1.4	0.0	0.6	0.1	0.0	0.0	0.1	0.0	0.7	1.4	0.0	13.9	13.9
DECEMBER	1.7	0.0	0.0	0.3	0.0	0.0	2.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.4	2.0	0.0	13.3	13.3
TOTAL	44.3	107.9	0.0	9.8	9.8	0.9	172.6	0.3	76.9	0.5	47.5	13.2	0.5	16.2	17.7	172.6	0.0	358.0	357.3

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.01
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.44
Fraction of "river flow to agr." as canal waste return	=	0.15	Fraction of M&I flow as M&I return flow	=	0.50
Existing Canal Area (ac)	=	102	New Canal Area (acres)	=	180

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 1

COMPOSITE

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)					
MONTH	BASELINE RIVER INFLOW (1)	CHANGES IN RELEASES FROM CAB. RES. (2)	NET PRECIP. (3)	CANAL WASTE RETURN (4)	M&I RETURN FLOW (5)	DRAIN INFLOW (6)	TRIB. INFLOW (7)	TOTAL INFLOW (8)	RIVER OUTFLOW (9)	RIVER FLOW TO M&I (10)	RIVER FLOW TO AGR. (11)	NET RIVER SEEPAGE (12)	MAIN SUPPLY CANAL (13)	TOTAL OUTFLOW (14)
JANUARY	2.0	7.6	-0.1	0.0	0.0	0.6	0.3	10.4	1.0	0.0	0.0	-1.2	10.6	10.4
FEBRUARY	14.6	5.4	-0.2	0.4	0.0	0.5	0.2	21.0	5.8	0.0	2.9	0.7	11.5	21.0
MARCH	108.8	-10.7	-0.4	1.4	0.1	1.0	0.1	100.3	53.6	0.0	11.0	4.0	31.6	100.3
APRIL	78.6	-4.8	-0.5	1.6	0.1	1.9	0.1	76.8	33.7	0.0	11.7	-3.2	34.7	76.8
MAY	78.3	-2.9	-0.6	1.5	0.1	1.9	0.1	78.3	30.7	0.0	11.4	-1.7	37.9	78.3
JUNE	101.1	-5.1	-0.7	1.7	0.1	2.0	0.2	99.2	44.5	0.0	12.0	-0.9	43.6	99.2
JULY	114.4	-9.4	-0.6	1.6	0.1	2.1	1.0	109.2	51.7	0.0	12.1	-1.3	46.7	109.2
AUGUST	89.4	-9.1	-0.4	1.4	0.1	2.1	1.8	85.3	39.9	0.0	10.8	-7.2	41.8	85.3
SEPTEMBER	51.3	-0.3	-0.4	0.9	0.1	1.8	0.7	54.0	21.8	0.0	6.5	-5.3	31.0	54.0
OCTOBER	5.1	9.6	-0.2	0.3	0.1	1.2	0.8	16.8	1.1	0.0	2.1	-4.9	18.4	16.8
NOVEMBER	0.1	10.4	-0.1	0.0	0.1	0.7	0.1	11.3	1.1	0.0	0.3	-2.4	12.4	11.3
DECEMBER	0.1	9.4	-0.1	0.0	0.0	0.6	0.4	10.4	1.1	0.0	0.0	-1.7	11.1	10.4
TOTAL	643.9	0.0	-4.5	10.9	0.5	16.4	5.8	673.0	286.0	0.0	80.9	-25.2	331.2	673.0

River area (ac)	=	1114.1	Area in alluvial valley (ac)	=	0.0
Loss rate	=	371.4	Annual runoff (ft)	=	0.02
			Tributary area (ac)	=	279040

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 1

DRY YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)					
MONTH	BASELINE RIVER INFLOW (1)	CHANGES IN RELEASES FROM CAB. RES. (2)	NET PRECIP. (3)	CANAL WASTE RETURN (4)	M&I RETURN FLOW (5)	DRAIN INFLOW (6)	TRIB. INFLOW (7)	TOTAL INFLOW (8)	RIVER OUTFLOW (9)	RIVER FLOW TO M&I (10)	RIVER FLOW TO AGR. (11)	NET RIVER SEEPAGE (12)	MAIN SUPPLY CANAL (13)	TOTAL OUTFLOW (14)
JANUARY	0.1	7.5	-0.1	0.0	0.0	0.9	0.1	8.4	1.0	0.0	0.0	-0.9	8.3	8.4
FEBRUARY	2.6	7.1	-0.2	0.0	0.0	0.7	0.0	10.2	1.0	0.0	0.1	1.3	7.9	10.2
MARCH	97.6	-18.7	-0.4	0.9	0.1	1.0	0.1	80.4	34.1	0.0	7.2	7.4	31.7	80.4
APRIL	54.2	-4.3	-0.6	1.0	0.1	1.8	0.2	52.4	13.9	0.0	7.1	-4.0	35.4	52.4
MAY	43.5	0.4	-0.7	0.5	0.1	1.5	0.0	45.2	8.0	0.0	4.6	-0.2	32.8	45.2
JUNE	69.3	-4.9	-0.8	0.8	0.1	1.1	0.4	65.9	22.0	0.0	5.7	1.4	36.8	65.9
JULY	91.0	-10.1	-0.7	1.2	0.1	1.5	0.7	83.7	31.5	0.0	8.8	0.8	42.7	83.7
AUGUST	85.2	-7.5	-0.5	1.3	0.1	1.8	1.7	82.0	33.3	0.0	9.2	-4.6	44.2	82.0
SEPTEMBER	31.4	-2.2	-0.4	0.6	0.1	1.7	0.7	31.8	11.9	0.0	4.6	-8.7	24.0	31.8
OCTOBER	0.1	15.1	-0.2	0.0	0.1	1.0	1.2	17.3	1.0	0.0	0.0	-1.1	17.4	17.3
NOVEMBER	0.0	10.0	-0.2	0.0	0.1	0.8	0.1	10.8	1.1	0.0	0.0	-1.3	11.0	10.8
DECEMBER	0.0	7.6	-0.1	0.0	0.0	0.7	0.5	8.7	1.1	0.0	0.0	-0.9	8.5	8.7
TOTAL	474.8	0.0	-4.9	6.3	0.5	14.4	5.8	496.8	160.0	0.0	47.2	-11.0	300.7	496.8

River area (ac)	=	1114	Baseline SW flow needed by M&I in R1	0	Baseline SW flow needed by M&I in R2	43.1
Loss rate	=	0.0	Baseline SW flow needed by Agr. in R1	60.6	Baseline SW flow needed by Agr. in R2	311.1
Area in alluvial v	=	0.0	Baseline GW flow needed by M&I in R1	0.9	Baseline GW flow needed by M&I in R2	3.1
Annual runoff (ft	=	0.02	Baseline GW flow needed by Agr. in R1	28.8	Baseline GW flow needed by Agr. in R2	144.5
Tributary area (ac	=	279040				

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 1

AVERAGE YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)					
MONTH	BASELINE RIVER INFLOW (1)	CHANGES IN RELEASES FROM CAB. RES. (2)	NET PRECIP. (3)	CANAL WASTE RETURN (4)	M&I RETURN FLOW (5)	DRAIN INFLOW (6)	TRIB. INFLOW (7)	TOTAL INFLOW (8)	RIVER OUTFLOW (9)	RIVER FLOW TO M&I (10)	RIVER FLOW TO AGR. (11)	NET RIVER SEEPAGE (12)	MAIN SUPPLY CANAL (13)	TOTAL OUTFLOW (14)
JANUARY	2.5	7.8	-0.1	0.0	0.0	0.5	0.3	11.1	1.0	0.0	0.0	-1.1	11.2	11.1
FEBRUARY	16.9	4.6	-0.2	0.5	0.0	0.4	0.1	22.3	5.9	0.0	3.3	1.3	11.7	22.3
MARCH	97.6	-7.4	-0.4	1.2	0.1	0.7	0.1	91.9	48.5	0.0	11.0	1.9	30.5	91.9
APRIL	77.1	-4.3	-0.5	1.4	0.1	1.6	0.0	75.4	36.4	0.0	11.9	-6.0	33.0	75.4
MAY	86.8	-3.3	-0.6	1.5	0.1	1.8	0.0	86.2	38.4	0.0	12.0	-2.8	38.6	86.2
JUNE	103.2	-4.5	-0.7	1.7	0.1	2.3	0.3	102.3	47.7	0.0	13.4	-3.7	44.9	102.3
JULY	125.5	-12.1	-0.6	1.4	0.1	2.4	0.9	117.5	58.1	0.0	12.7	-2.5	49.2	117.5
AUGUST	89.0	-13.9	-0.3	1.4	0.1	2.4	1.6	80.3	34.0	0.0	13.3	-7.4	40.3	80.3
SEPTEMBER	57.7	1.6	-0.4	0.6	0.1	2.1	1.0	62.7	24.1	0.0	5.4	-1.2	34.4	62.7
OCTOBER	1.3	11.3	-0.2	0.6	0.1	1.3	0.7	15.1	1.0	0.0	3.7	-6.9	17.3	15.1
NOVEMBER	0.1	10.6	-0.1	0.1	0.1	0.8	0.1	11.7	1.0	0.0	0.9	-2.6	12.3	11.7
DECEMBER	0.1	9.6	-0.1	0.0	0.0	0.8	0.5	10.9	1.0	0.0	0.0	-1.7	11.5	10.9
TOTAL	657.7	0.0	-4.1	10.3	0.5	17.1	5.8	687.3	297.2	0.0	87.8	-32.6	334.9	687.3

River area (ac)	=	1114	Baseline SW flow needed by M&I in R1	0	Baseline SW flow needed by M&I in R2	43.1
Loss rate	=	0.0	Baseline SW flow needed by Agr. in R1	89.4	Baseline SW flow needed by Agr. in R2	387.3
Area in alluvial v	=	0.0	Baseline GW flow needed by M&I in R1	0.9	Baseline GW flow needed by M&I in R2	3.1
Annual runoff (ft	=	0.02	Baseline GW flow needed by Agr. in R1	18.1	Baseline GW flow needed by Agr. in R2	103.1
Tributary area (ac	=	279040				

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 1

NORMAL YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)					
MONTH	BASELINE RIVER INFLOW (1)	CHANGES IN RELEASES FROM CAB. RES. (2)	NET PRECIP. (3)	CANAL WASTE RETURN (4)	M&I RETURN FLOW (5)	DRAIN INFLOW (6)	TRIB. INFLOW (7)	TOTAL INFLOW (8)	RIVER OUTFLOW (9)	RIVER FLOW TO M&I (10)	RIVER FLOW TO AGR. (11)	NET RIVER SEEPAGE (12)	MAIN SUPPLY CANAL (13)	TOTAL OUTFLOW (14)
JANUARY	3.3	7.4	-0.1	0.0	0.0	0.4	0.6	11.7	1.0	0.0	0.0	-1.6	12.3	11.7
FEBRUARY	24.4	4.5	-0.1	0.8	0.0	0.4	0.4	30.4	10.6	0.0	5.4	-0.5	14.9	30.4
MARCH	131.2	-5.9	-0.4	2.2	0.1	1.2	0.1	128.5	78.3	0.0	14.8	2.7	32.6	128.5
APRIL	104.6	-5.9	-0.5	2.4	0.1	2.2	0.0	102.8	50.8	0.0	16.0	0.4	35.6	102.8
MAY	104.8	-5.9	-0.6	2.6	0.1	2.3	0.1	103.4	45.8	0.0	17.5	-2.1	42.1	103.4
JUNE	130.8	-5.9	-0.8	2.6	0.1	2.5	0.1	129.3	63.7	0.0	17.0	-0.4	49.0	129.3
JULY	126.8	-5.9	-0.5	2.2	0.1	2.6	1.3	126.5	65.6	0.0	14.9	-2.2	48.2	126.5
AUGUST	94.0	-5.9	-0.3	1.5	0.1	2.2	2.1	93.6	52.3	0.0	10.0	-9.6	40.9	93.6
SEPTEMBER	64.8	-0.3	-0.5	1.4	0.1	1.6	0.3	67.4	29.3	0.0	9.5	-6.1	34.7	67.4
OCTOBER	13.8	2.3	-0.3	0.4	0.1	1.4	0.4	18.1	1.5	0.0	2.7	-6.5	20.4	18.1
NOVEMBER	0.3	10.6	-0.1	0.0	0.1	0.7	0.1	11.5	1.0	0.0	0.0	-3.4	13.9	11.5
DECEMBER	0.2	10.9	-0.2	0.0	0.0	0.4	0.3	11.6	1.0	0.0	0.0	-2.7	13.3	11.6
TOTAL	799.1	0.0	-4.4	16.2	0.5	17.7	5.8	834.9	401.0	0.0	107.9	-32.0	358.0	834.9

River area (ac)	=	1114	Baseline SW flow needed by M&I in R1	0	Baseline SW flow needed by M&I in R2	43.1
Loss rate	=	0.0	Baseline SW flow needed by Agr. in R1	107.9	Baseline SW flow needed by Agr. in R2	433
Area in alluvial v	=	0.0	Baseline GW flow needed by M&I in R1	0.9	Baseline GW flow needed by M&I in R2	3.1
Annual runoff (ft	=	0.02	Baseline GW flow needed by Agr. in R1	9.8	Baseline GW flow needed by Agr. in R2	61.9
Tributary area (ac	=	279040				

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 1

COMPOSITE

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS)							OUTFLOW (Tons of TDS)						CHANGE IN MASS (Tons of TDS) (14)
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	MAIN SUPPLY CANAL (12)	TOTAL OUTFLOW (13)	
JANUARY	10071	0	0	0	901	650	11622	1750	0	0	-1268	11139	11622	0
FEBRUARY	16856	0	345	0	786	399	18386	5447	0	2332	683	9924	18386	0
MARCH	66020	0	954	46	1528	168	68715	36868	0	7335	2868	21644	68715	0
APRIL	51461	0	1122	42	2965	183	55772	25152	0	8102	-2472	24990	55772	0
MAY	52822	0	1057	38	3034	121	57071	23044	0	7874	-1113	27265	57071	0
JUNE	71063	0	1210	34	3127	452	75886	34856	0	8722	-467	32775	75886	0
JULY	74485	0	1137	43	3517	1828	81009	39474	0	8540	-756	33751	81009	0
AUGUST	69284	0	1195	52	2898	3458	76886	36560	0	9099	-5688	36915	76886	0
SEPTEMBER	42166	0	732	61	2750	1303	47011	19996	0	5579	-5807	27243	47011	0
OCTOBER	16719	0	353	49	1888	1478	20486	2529	0	2326	-5312	20942	20486	0
NOVEMBER	10956	0	46	51	1120	210	12383	1694	0	303	-2412	12799	12383	0
DECEMBER	11413	0	0	0	993	819	13225	1911	0	0	-2057	13370	13225	0
TOTAL	493316	0	8150	412	25505	11069	538451	229281	0	60213	-23800	272758	538451	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 1

DRY YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS)							OUTFLOW (Tons of TDS)						CHANGE IN MASS (Tons of TDS) (14)
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	MAIN SUPPLY CANAL (12)	TOTAL OUTFLOW (13)	
JANUARY	9728	0	0	0	1245	133	11106	1645	0	0	-1166	10627	11106	0
FEBRUARY	10537	0	5	0	1014	82	11638	1561	0	85	1368	8624	11638	0
MARCH	60202	0	675	46	1337	156	62415	27083	0	5485	5648	24198	62415	0
APRIL	41389	0	860	42	2490	384	45166	13250	0	5856	-3333	29392	45166	0
MAY	38603	0	441	38	2075	0	41156	8385	0	4086	-182	28867	41156	0
JUNE	59432	0	725	34	1476	708	62374	21885	0	5222	1256	34011	62374	0
JULY	74728	0	1126	43	2029	1282	79208	30992	0	8096	715	39405	79208	0
AUGUST	100967	0	1652	52	2444	3287	108402	45097	0	11904	-5997	57398	108402	0
SEPTEMBER	42000	0	862	61	2352	1393	46667	18038	0	6649	-12559	34539	46667	0
OCTOBER	19717	0	0	49	1429	2371	23565	2370	0	0	-1485	22680	23565	0
NOVEMBER	12742	0	0	51	1061	269	14122	1751	0	0	-1646	14018	14122	0
DECEMBER	9728	0	0	0	968	1003	11700	2003	0	0	-1156	10853	11700	0
TOTAL	479772	0	6347	412	19920	11069	517519	174061	0	47384	-18537	314612	517519	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 1

AVERAGE YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS)							OUTFLOW (Tons of TDS)						CHANGE IN MASS (Tons of TDS) (14)
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	MAIN SUPPLY CANAL (12)	TOTAL OUTFLOW (13)	
JANUARY	10540	0	0	0	865	648	12053	1762	0	0	-1109	11399	12053	0
FEBRUARY	17173	0	391	0	669	277	18509	5404	0	2645	1073	9388	18509	0
MARCH	62261	0	846	46	1244	227	64624	34680	0	7590	1314	21039	64624	0
APRIL	52149	0	1021	42	2656	71	55939	28055	0	8564	-4310	23631	55939	0
MAY	50657	0	896	38	3139	87	54816	25772	0	7309	-1701	23437	54816	0
JUNE	63804	0	1067	34	3757	524	69186	33851	0	8680	-2395	29050	69186	0
JULY	72177	0	865	43	4056	1725	78865	41069	0	8066	-1564	31294	78865	0
AUGUST	51068	0	979	52	2790	3073	57962	26494	0	9038	-5007	27436	57962	0
SEPTEMBER	41905	0	396	61	3179	1971	47511	20248	0	3840	-856	24279	47511	0
OCTOBER	14577	0	655	49	2316	1337	18934	2576	0	4291	-8016	20082	18934	0
NOVEMBER	10236	0	139	51	1344	176	11946	1796	0	908	-2495	11736	11946	0
DECEMBER	12857	0	0	0	1408	952	15217	2073	0	0	-2201	15345	15217	0
TOTAL	459405	0	7255	412	27421	11069	505561	223780	0	60933	-27268	248116	505561	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 1

NORMAL YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS)							OUTFLOW (Tons of TDS)						CHANGE IN MASS (Tons of TDS) (14)
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	MAIN SUPPLY CANAL (12)	TOTAL OUTFLOW (13)	
JANUARY	9946	0	0	0	592	1168	11706	1844	0	0	-1529	11391	11706	0
FEBRUARY	22857	0	640	0	675	840	25012	9376	0	4266	-391	11761	25012	0
MARCH	75598	0	1339	46	2002	120	79105	48840	0	8929	1640	19695	79105	0
APRIL	60844	0	1483	42	3748	93	66211	34150	0	9887	226	21947	66211	0
MAY	69207	0	1834	38	3887	274	75240	34977	0	12227	-1455	29491	75240	0
JUNE	89952	0	1840	34	4150	123	96098	48833	0	12264	-262	35263	96098	0
JULY	76549	0	1419	43	4466	2477	84953	46359	0	9458	-1419	30556	84953	0
AUGUST	55818	0	953	52	3459	4013	64295	38089	0	6354	-6060	25911	64295	0
SEPTEMBER	42592	0	937	61	2720	545	46855	21703	0	6248	-4005	22910	46855	0
OCTOBER	15864	0	403	49	1918	726	18960	2642	0	2688	-6434	20064	18960	0
NOVEMBER	9889	0	0	51	956	186	11081	1534	0	0	-3094	12642	11081	0
DECEMBER	11653	0	0	0	601	503	12757	1656	0	0	-2813	13913	12757	0
TOTAL	540769	0	10848	412	29174	11069	592272	290002	0	72321	-25596	255545	592272	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 1

COMPOSITE

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS/af)							OUTFLOW (Tons of TDS/af)					
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	MAIN SUPPLY CANAL (12)	TOTAL OUTFLOW (13)
JANUARY	1.1	0.0	1.1	1.0	1.6	1.9	---	1.7	1.1	1.1	1.1	1.1	---
FEBRUARY	0.9	0.0	0.9	1.0	1.7	1.9	---	1.1	0.9	0.9	0.9	0.9	---
MARCH	0.7	0.0	0.7	0.9	1.6	1.9	---	0.7	0.7	0.7	0.7	0.7	---
APRIL	0.7	0.0	0.7	0.8	1.6	1.9	---	0.8	0.7	0.7	0.7	0.7	---
MAY	0.7	0.0	0.7	0.8	1.6	1.9	---	0.8	0.7	0.7	0.7	0.7	---
JUNE	0.8	0.0	0.8	0.7	1.6	1.9	---	0.8	0.8	0.8	0.8	0.8	---
JULY	0.7	0.0	0.7	0.9	1.6	1.9	---	0.8	0.7	0.7	0.7	0.7	---
AUGUST	0.9	0.0	0.9	1.0	1.4	1.9	---	1.0	0.9	0.9	0.9	0.9	---
SEPTEMBER	0.9	0.0	0.9	1.2	1.5	1.9	---	1.0	0.9	0.9	0.9	0.9	---
OCTOBER	1.1	0.0	1.1	1.0	1.5	1.9	---	2.3	1.1	1.1	1.1	1.1	---
NOVEMBER	1.0	0.0	1.0	1.0	1.5	1.9	---	1.6	1.0	1.0	1.0	1.0	---
DECEMBER	1.2	0.0	1.2	1.1	1.5	1.9	---	1.8	1.2	1.2	1.2	1.2	---
AVERAGE	0.8	0.0	0.7	0.9	1.6	1.9	---	0.8	0.0	0.7	0.9	0.8	---

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 1

DRY YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS/af)							OUTFLOW (Tons of TDS/af)					
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	MAIN SUPPLY CANAL (12)	TOTAL OUTFLOW (13)
JANUARY	1.3	0.0	1.3	1.0	1.4	1.9	—	1.6	1.3	1.3	1.3	1.3	—
FEBRUARY	1.1	0.0	1.1	1.0	1.4	1.9	—	1.6	1.1	1.1	1.1	1.1	—
MARCH	0.8	0.0	0.8	0.9	1.4	1.9	—	0.8	0.8	0.8	0.8	0.8	—
APRIL	0.8	0.0	0.8	0.8	1.4	1.9	—	1.0	0.8	0.8	0.8	0.8	—
MAY	0.9	0.0	0.9	0.8	1.4	1.9	—	1.0	0.9	0.9	0.9	0.9	—
JUNE	0.9	0.0	0.9	0.7	1.4	1.9	—	1.0	0.9	0.9	0.9	0.9	—
JULY	0.9	0.0	0.9	0.9	1.4	1.9	—	1.0	0.9	0.9	0.9	0.9	—
AUGUST	1.3	0.0	1.3	1.0	1.4	1.9	—	1.4	1.3	1.3	1.3	1.3	—
SEPTEMBER	1.4	0.0	1.4	1.2	1.4	1.9	—	1.5	1.4	1.4	1.4	1.4	—
OCTOBER	1.3	0.0	1.3	1.0	1.4	1.9	—	2.4	1.3	1.3	1.3	1.3	—
NOVEMBER	1.3	0.0	1.3	1.0	1.4	1.9	—	1.6	1.3	1.3	1.3	1.3	—
DECEMBER	1.3	0.0	1.3	1.1	1.4	1.9	—	1.8	1.3	1.3	1.3	1.3	—
AVERAGE	1.0	0.0	1.0	0.9	1.4	1.9	—	1.1	0.0	1.0	1.7	1.0	—

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 1

AVERAGE YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS/af)							OUTFLOW (Tons of TDS/af)					
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	MAIN SUPPLY CANAL (12)	TOTAL OUTFLOW (13)
JANUARY	1.0	0.0	1.0	1.0	1.9	1.9	—	1.8	1.0	1.0	1.0	1.0	—
FEBRUARY	0.8	0.0	0.8	1.0	1.8	1.9	—	0.9	0.8	0.8	0.8	0.8	—
MARCH	0.7	0.0	0.7	0.9	1.8	1.9	—	0.7	0.7	0.7	0.7	0.7	—
APRIL	0.7	0.0	0.7	0.8	1.7	1.9	—	0.8	0.7	0.7	0.7	0.7	—
MAY	0.6	0.0	0.6	0.8	1.8	1.9	—	0.7	0.6	0.6	0.6	0.6	—
JUNE	0.6	0.0	0.6	0.7	1.6	1.9	—	0.7	0.6	0.6	0.6	0.6	—
JULY	0.6	0.0	0.6	0.9	1.7	1.9	—	0.7	0.6	0.6	0.6	0.6	—
AUGUST	0.7	0.0	0.7	1.0	1.1	1.9	—	0.8	0.7	0.7	0.7	0.7	—
SEPTEMBER	0.7	0.0	0.7	1.2	1.5	1.9	—	0.8	0.7	0.7	0.7	0.7	—
OCTOBER	1.2	0.0	1.2	1.0	1.7	1.9	—	2.7	1.2	1.2	1.2	1.2	—
NOVEMBER	1.0	0.0	1.0	1.0	1.7	1.9	—	1.7	1.0	1.0	1.0	1.0	—
DECEMBER	1.3	0.0	1.3	1.1	1.8	1.9	—	2.1	1.3	1.3	1.3	1.3	—
AVERAGE	0.7	0.0	0.7	0.9	1.6	1.9	—	0.8	0.0	0.7	0.8	0.7	—

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 1

NORMAL YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS/af)							OUTFLOW (Tons of TDS/af)					
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	MAIN SUPPLY CANAL (12)	TOTAL OUTFLOW (13)
JANUARY	0.9	0.0	0.9	1.0	1.5	1.9	—	1.8	0.9	0.9	0.9	0.9	—
FEBRUARY	0.8	0.0	0.8	1.0	1.8	1.9	—	0.9	0.8	0.8	0.8	0.8	—
MARCH	0.6	0.0	0.6	0.9	1.6	1.9	—	0.6	0.6	0.6	0.6	0.6	—
APRIL	0.6	0.0	0.6	0.8	1.7	1.9	—	0.7	0.6	0.6	0.6	0.6	—
MAY	0.7	0.0	0.7	0.8	1.7	1.9	—	0.8	0.7	0.7	0.7	0.7	—
JUNE	0.7	0.0	0.7	0.7	1.7	1.9	—	0.8	0.7	0.7	0.7	0.7	—
JULY	0.6	0.0	0.6	0.9	1.7	1.9	—	0.7	0.6	0.6	0.6	0.6	—
AUGUST	0.6	0.0	0.6	1.0	1.6	1.9	—	0.7	0.6	0.6	0.6	0.6	—
SEPTEMBER	0.7	0.0	0.7	1.2	1.7	1.9	—	0.7	0.7	0.7	0.7	0.7	—
OCTOBER	1.0	0.0	1.0	1.0	1.4	1.9	—	1.8	1.0	1.0	1.0	1.0	—
NOVEMBER	0.9	0.0	0.9	1.0	1.4	1.9	—	1.5	0.9	0.9	0.9	0.9	—
DECEMBER	1.0	0.0	1.0	1.1	1.5	1.9	—	1.6	1.0	1.0	1.0	1.0	—
AVERAGE	0.7	0.0	0.7	0.9	1.6	1.9	—	0.7	0.0	0.7	0.8	0.7	—

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 1

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)						CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	NET LEAKANCE TO MESILLA BOLSON (10)	TOTAL OUTFLOW (11)	IN STORAGE (1000 ac-ft) (12)
JANUARY	0.0	0.3	0.3	4.1	4.7	0.0	0.0	5.7	0.0	-1.0	4.7	0.0
FEBRUARY	0.0	0.7	2.3	6.2	9.2	0.0	0.0	4.6	0.0	4.6	9.2	0.0
MARCH	0.0	7.0	23.8	7.9	38.7	0.0	0.0	4.8	5.4	28.5	38.7	0.0
APRIL	0.0	6.9	19.9	2.6	29.5	0.0	0.0	7.5	7.4	14.6	29.5	0.0
MAY	0.0	8.2	19.7	2.2	30.1	0.0	0.0	7.1	10.3	12.7	30.1	0.0
JUNE	0.0	10.7	24.4	6.4	41.5	0.0	0.0	7.0	14.1	20.4	41.5	0.0
JULY	0.0	12.6	28.9	7.2	48.8	0.0	0.0	8.3	16.1	24.3	48.8	0.0
AUGUST	0.0	11.6	24.8	7.2	43.6	0.0	0.0	9.8	14.1	19.6	43.6	0.0
SEPTEMBER	0.0	7.6	17.1	3.0	27.7	0.0	0.0	10.1	9.5	8.0	27.7	0.0
OCTOBER	0.0	1.0	2.5	4.6	8.1	0.0	0.0	9.3	0.1	-1.3	8.1	0.0
NOVEMBER	0.0	0.1	0.2	3.7	4.0	0.0	0.0	5.9	0.0	-1.9	4.0	0.0
DECEMBER	0.0	0.4	0.0	4.2	4.7	0.0	0.0	4.9	0.0	-0.2	4.7	0.0
TOTAL	0.3	67.2	163.8	59.3	290.7	0.1	0.0	85.0	77.1	128.5	290.7	0.0

Phreatophyte area	=	0.0
Average consumptive use	=	0.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 1

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)						CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	NET LEAKANCE TO MESILLA BOLSON (10)	TOTAL OUTFLOW (11)	IN STORAGE (1000 ac-ft) (12)
JANUARY	0.0	0.0	0.0	3.9	3.9	0.0	0.0	6.5	0.0	-2.5	3.9	0.0
FEBRUARY	0.0	0.0	0.0	4.1	4.1	0.0	0.0	4.9	0.0	-0.8	4.1	0.0
MARCH	0.0	6.8	24.8	3.0	34.8	0.0	0.0	2.9	10.9	20.9	34.8	0.0
APRIL	0.0	7.1	19.6	-6.2	20.5	0.0	0.0	5.5	13.1	1.9	20.5	0.0
MAY	0.0	7.6	15.2	-6.0	16.9	0.0	0.0	4.3	16.4	-3.8	16.9	0.0
JUNE	0.0	10.6	19.5	2.5	32.6	0.0	0.0	2.8	22.4	7.4	32.6	0.0
JULY	0.0	13.2	26.5	6.3	46.0	0.0	0.0	2.9	26.2	16.8	46.0	0.0
AUGUST	0.0	12.4	27.3	6.6	46.2	0.0	0.0	4.6	23.6	18.1	46.2	0.0
SEPTEMBER	0.0	7.5	14.2	1.8	23.5	0.0	0.0	5.8	15.2	2.5	23.5	0.0
OCTOBER	0.0	0.2	0.8	6.2	7.2	0.0	0.0	6.0	0.2	0.9	7.2	0.0
NOVEMBER	0.0	0.2	0.4	4.6	5.2	0.0	0.0	4.5	0.1	0.6	5.2	0.0
DECEMBER	0.0	0.1	0.1	5.4	5.6	0.0	0.0	4.4	0.0	1.2	5.6	0.0
TOTAL	0.3	65.6	148.4	32.1	246.4	0.1	0.0	55.1	128.1	63.2	246.4	0.0

Phreatophyte area = 0.0
Average consumptive use = 0.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 1

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)						CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	NET LEAKANCE TO MESILLA BOLSON (10)	TOTAL OUTFLOW (11)	IN STORAGE (1000 ac-ft) (12)
JANUARY	0.0	0.5	1.0	2.9	4.4	0.0	0.0	4.9	0.0	-0.6	4.4	0.0
FEBRUARY	0.0	0.8	2.5	6.4	9.7	0.0	0.0	4.1	0.1	5.6	9.7	0.0
MARCH	0.0	7.3	22.5	8.3	38.1	0.0	0.0	4.0	3.5	30.5	38.1	0.0
APRIL	0.0	7.0	18.5	7.1	32.7	0.0	0.0	6.6	5.9	20.2	32.7	0.0
MAY	0.0	8.9	19.4	8.9	37.2	0.0	0.0	6.6	9.3	21.3	37.2	0.0
JUNE	0.0	11.2	23.8	11.1	46.1	0.0	0.0	7.5	12.7	25.9	46.1	0.0
JULY	0.0	13.6	30.8	9.6	53.9	0.0	0.0	9.1	14.2	30.7	53.9	0.0
AUGUST	0.0	12.3	23.0	4.8	40.1	0.0	0.0	10.2	11.9	18.0	40.1	0.0
SEPTEMBER	0.0	8.3	18.3	1.7	28.3	0.0	0.0	10.2	8.5	9.7	28.3	0.0
OCTOBER	0.0	1.1	1.2	2.6	4.9	0.0	0.0	9.4	0.0	-4.5	4.9	0.0
NOVEMBER	0.0	0.2	0.2	3.8	4.2	0.0	0.0	7.2	0.0	-3.1	4.2	0.0
DECEMBER	0.0	0.7	0.0	4.3	5.0	0.0	0.0	5.8	0.0	-0.8	5.0	0.0
TOTAL	0.3	71.8	161.2	71.4	304.7	0.1	0.0	85.7	66.0	152.9	304.7	0.0

Phreatophyte area = 0.0
Average consumptive use = 0.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 1

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)						CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	NET LEAKANCE TO MESILLA BOLSON (10)	TOTAL OUTFLOW (11)	IN STORAGE (1000 ac-ft) (12)
JANUARY	0.0	0.3	0.0	5.6	5.9	0.0	0.0	5.7	0.0	0.2	5.9	0.0
FEBRUARY	0.0	1.4	4.3	8.1	13.8	0.0	0.0	4.9	0.0	8.9	13.8	0.0
MARCH	0.0	6.9	24.1	12.3	43.3	0.0	0.0	7.5	1.7	34.0	43.3	0.0
APRIL	0.0	6.7	21.6	7.0	35.3	0.0	0.0	10.4	3.2	21.7	35.3	0.0
MAY	0.0	8.2	24.4	3.6	36.2	0.0	0.0	10.3	5.2	20.7	36.2	0.0
JUNE	0.0	10.4	29.8	5.7	45.9	0.0	0.0	10.7	7.3	27.9	45.9	0.0
JULY	0.0	11.1	29.5	5.7	46.3	0.0	0.0	12.9	8.0	25.4	46.3	0.0
AUGUST	0.0	10.2	24.1	10.2	44.5	0.0	0.0	14.7	6.8	22.9	44.5	0.0
SEPTEMBER	0.0	6.9	18.7	5.6	31.2	0.0	0.0	14.5	4.8	11.9	31.2	0.0
OCTOBER	0.0	1.7	5.4	5.1	12.2	0.0	0.0	12.4	0.0	-0.1	12.2	0.0
NOVEMBER	0.0	0.1	0.0	2.7	2.8	0.0	0.0	5.9	0.0	-3.1	2.8	0.0
DECEMBER	0.0	0.3	0.0	3.1	3.4	0.0	0.0	4.4	0.0	-1.1	3.4	0.0
TOTAL	0.3	64.2	181.9	74.5	320.8	0.1	0.0	114.3	37.1	169.3	320.8	0.0

Phreatophyte area	=	0.0
Average consumptive use	=	0.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 1

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE	MAIN	MAIN		
MONTH	GROSS PRECIP. (1)	RIVER FLOW TO AGR. (2)	CANAL FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	IN STORAGE (1000 ac-ft) (17)	SUPPLY CANAL INFLOW (18)	SUPPLY CANAL OUTFLOW (19)	OUTFLOW TO MEXICO (20)	DEFICIT IN FULL SUPPLY (21)
JANUARY	5.4	0.8	2.6	5.7	0.0	0.2	14.7	0.0	5.3	1.4	0.3	0.3	1.4	0.1	6.0	14.7	0.0	10.6	3.0	5.0	8.0
FEBRUARY	5.1	5.4	2.4	4.6	0.0	0.2	17.7	0.0	6.5	1.3	2.3	0.7	1.3	0.5	5.1	17.7	0.0	11.5	4.0	5.0	8.0
MARCH	2.6	50.1	3.1	4.8	9.0	0.3	69.9	1.4	21.7	1.7	23.8	7.0	1.7	4.3	8.3	69.9	0.0	31.5	23.4	5.0	0.7
APRIL	2.2	42.6	3.7	7.5	12.4	0.4	68.7	1.8	21.1	2.1	19.9	6.9	2.1	3.8	11.0	68.7	0.0	34.6	25.7	5.0	0.0
MAY	4.0	42.7	4.0	7.1	17.1	1.1	76.0	2.1	26.0	2.5	19.7	8.2	2.5	3.8	11.2	76.0	0.0	37.8	28.6	5.0	4.3
JUNE	5.2	53.0	3.9	7.0	23.5	1.5	94.1	2.5	33.9	2.7	24.4	10.7	2.7	4.8	12.4	94.1	0.0	43.5	34.4	5.0	6.0
JULY	14.3	62.1	4.0	8.3	26.9	1.2	116.8	2.0	47.6	2.6	28.9	12.6	2.6	5.5	14.9	116.8	0.0	46.6	37.5	5.0	4.0
AUGUST	30.0	52.2	3.9	9.8	23.5	0.5	120.0	1.3	57.1	2.2	24.8	11.6	2.2	4.5	16.3	120.0	0.0	41.7	32.8	5.0	0.0
SEPTEMBER	10.3	36.9	3.7	10.1	15.8	0.4	77.3	1.4	29.8	2.0	17.1	7.6	2.0	3.2	14.1	77.3	0.0	30.9	22.2	5.0	8.3
OCTOBER	9.5	5.7	3.1	9.3	0.1	0.3	28.0	0.0	10.6	1.7	2.5	1.0	1.7	0.5	10.0	28.0	0.0	18.4	10.2	5.0	3.0
NOVEMBER	3.2	0.3	2.7	5.9	0.1	0.2	12.4	0.0	3.1	1.5	0.2	0.1	1.5	0.0	6.0	12.4	0.0	12.4	4.6	5.0	7.2
DECEMBER	9.2	0.1	2.6	4.9	0.0	0.2	17.0	0.0	8.5	1.4	0.0	0.4	1.4	0.0	5.2	17.0	0.0	11.1	3.4	5.0	8.7
TOTAL	101.1	351.8	39.7	85.0	128.5	6.5	712.6	12.4	271.3	23.1	163.8	67.2	23.1	31.0	120.6	712.6	0.0	330.5	229.8	60.0	58.2

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.02
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to dr	=	0.33	Fraction of "river flow to agr." as canal see	=	0.44
Fraction of "river flow to agr." as canal waste return	=	0.08	Fraction of M&I flow as M&I return flow	=	0.50
Area of alluvial valley (ac)	=	147974	Canal area (ac)	=	3690
Canal outflow to M&I (acre-feet/yr)	=	166689	New Canal Area (acres)	=	249
Canal Outflow to Agr. (acre-feet/year)	=	131040			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 2

AVERAGE YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE	MAIN	MAIN
MONTH	GROSS PRECIP. (1)	CANAL FLOW TO AGR. (2)	CANAL FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	IN STORAGE (1000 ac-ft) (17)	SUPPLY CANAL INFLOW (18)	SUPPLY CANAL OUTFLOW (19)
JANUARY	4.2	0.0	0.0	0.3	0.0	0.0	4.5	0.0	3.5	0.0	0.0	0.6	0.0	0.0	0.5	4.5	0.0	15.1	15.1
FEBRUARY	0.9	2.4	0.0	0.1	1.5	0.0	4.8	0.0	2.4	0.0	1.0	0.6	0.0	0.5	0.4	4.8	0.0	20.5	18.1
MARCH	1.1	7.9	0.0	-0.2	3.8	0.1	12.7	0.0	5.5	0.1	3.4	1.7	0.1	1.2	0.7	12.7	0.0	81.6	73.7
APRIL	0.2	8.6	0.0	0.7	4.0	0.1	13.5	0.0	5.0	0.1	3.7	1.7	0.1	1.4	1.6	13.5	0.0	76.7	68.2
MAY	0.7	8.7	0.0	0.9	4.0	0.1	14.3	0.1	5.4	0.1	3.7	1.8	0.1	1.5	1.8	14.3	0.0	84.5	75.8
JUNE	4.1	9.6	0.0	1.1	5.1	0.1	20.0	0.1	9.1	0.1	4.1	2.7	0.1	1.7	2.3	20.0	0.0	99.2	89.6
JULY	5.5	9.1	0.0	1.2	4.9	0.1	20.7	0.1	10.7	0.1	3.9	2.2	0.1	1.4	2.4	20.7	0.0	116.3	107.2
AUGUST	14.5	9.5	0.0	0.9	4.1	0.1	29.2	0.0	17.7	0.1	4.1	3.3	0.1	1.4	2.4	29.2	0.0	93.0	83.5
SEPTEMBER	5.2	3.9	0.0	1.5	2.4	0.1	13.0	0.0	7.5	0.1	1.7	1.0	0.1	0.6	2.1	13.0	0.0	72.3	68.4
OCTOBER	7.2	2.7	0.0	0.9	0.5	0.1	11.4	0.0	7.2	0.1	1.1	1.1	0.1	0.6	1.3	11.4	0.0	21.2	18.5
NOVEMBER	1.4	0.7	0.0	0.7	0.1	0.1	3.1	0.0	1.4	0.1	0.3	0.3	0.1	0.1	0.8	3.1	0.0	14.4	13.7
DECEMBER	4.8	0.0	0.0	0.6	0.0	0.0	5.4	0.0	4.1	0.0	0.0	0.5	0.0	0.0	0.8	5.4	0.0	13.0	13.0
TOTAL	49.9	63.0	0.0	8.7	30.3	0.9	152.8	0.3	79.5	0.5	27.0	17.6	0.5	10.3	17.1	152.8	0.0	707.8	644.8

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.05
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.46
Fraction of "river flow to agr." as canal waste return	=	0.12	Fraction of M&I flow as M&I return flow	=	0.50
Canal area (ac)	=	102	Additional Canal Area (acres)	=	0
Percent Reduction in Seepage Losses Due to Project	=	35%	Canal outflow to M&I (acre-feet/yr)	=	166689
Canal Outflow to Agr. (acre-feet/year)	=	131040			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 2

NORMAL YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE	MAIN	MAIN
MONTH	GROSS PRECIP. (1)	CANAL FLOW TO AGR. (2)	CANAL FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	IN STORAGE (1000 ac-ft) (17)	SUPPLY CANAL INFLOW (18)	SUPPLY CANAL OUTFLOW (19)
JANUARY	4.3	0.0	0.0	0.2	0.0	0.0	4.5	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.4	4.5	0.0	16.1	16.1
FEBRUARY	3.8	4.3	0.0	-0.1	0.7	0.0	8.7	0.0	5.3	0.0	1.6	0.7	0.0	0.8	0.4	8.7	0.0	31.4	27.0
MARCH	0.5	11.9	0.0	0.4	2.0	0.1	14.9	0.0	5.3	0.1	4.3	1.8	0.1	2.2	1.2	14.9	0.0	97.9	86.0
APRIL	0.5	12.9	0.0	1.2	2.2	0.1	16.9	0.0	5.6	0.1	4.6	1.9	0.1	2.4	2.2	16.9	0.0	96.3	83.4
MAY	1.0	14.1	0.0	1.3	2.4	0.1	18.7	0.1	6.6	0.1	5.0	2.0	0.1	2.6	2.3	18.7	0.0	109.9	95.9
JUNE	0.5	13.7	0.0	1.5	2.3	0.1	18.1	0.1	6.0	0.1	4.9	2.0	0.1	2.6	2.5	18.1	0.0	126.5	112.8
JULY	10.6	12.0	0.0	1.3	2.0	0.1	26.0	0.0	14.8	0.1	4.3	1.9	0.1	2.2	2.6	26.0	0.0	123.7	111.7
AUGUST	15.7	8.1	0.0	1.0	1.3	0.1	26.1	0.0	18.1	0.1	2.9	1.3	0.1	1.5	2.2	26.1	0.0	101.0	92.9
SEPTEMBER	2.3	7.6	0.0	1.0	1.2	0.1	12.3	0.0	5.2	0.1	2.7	1.1	0.1	1.4	1.6	12.3	0.0	83.3	75.7
OCTOBER	2.8	2.2	0.0	1.1	0.4	0.1	6.5	0.0	3.5	0.1	0.8	0.3	0.1	0.4	1.4	6.5	0.0	35.9	33.7
NOVEMBER	0.7	0.0	0.0	0.6	0.0	0.1	1.4	0.0	0.6	0.1	0.0	0.0	0.1	0.0	0.7	1.4	0.0	16.7	16.7
DECEMBER	1.7	0.0	0.0	0.3	0.0	0.0	2.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.4	2.0	0.0	16.4	16.4
TOTAL	44.3	86.8	0.0	9.8	14.5	0.9	156.3	0.3	76.9	0.5	31.1	13.2	0.5	16.2	17.7	156.3	0.0	854.9	768.1

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.01
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.44
Fraction of "river flow to agr." as canal waste return	=	0.15	Fraction of M&I flow as M&I return flow	=	0.50
Canal area (ac)	=	102	Additional Canal Area (acres)	=	0
Percent Reduction in Seepage Losses Due to Project	=	35%	Canal outflow to M&I (acre-feet/yr)	=	166689
Canal Outflow to Agr. (acre-feet/year)	=	131040			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 1

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE	MAIN	MAIN		
MONTH	GROSS PRECIP. (1)	RIVER FLOW TO AGR. (2)	CANAL FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	IN STORAGE (1000 ac-ft) (17)	SUPPLY CANAL INFLOW (18)	SUPPLY CANAL OUTFLOW (19)	OUTFLOW TO MEXICO (20)	DEFICIT IN FULL SUPPLY (21)
JANUARY	1.7	0.0	2.2	6.5	0.0	0.6	11.0	0.0	1.7	1.4	0.0	0.0	1.4	0.0	6.5	11.0	0.0	8.3	1.1	5.0	20.0
FEBRUARY	2.0	0.0	2.0	4.9	0.0	0.6	9.5	0.0	1.9	1.3	0.0	0.0	1.3	0.0	5.0	9.5	0.0	7.9	0.8	5.0	20.0
MARCH	0.8	40.0	2.6	2.9	18.2	0.7	65.3	1.5	19.7	1.7	24.8	6.8	1.7	2.8	6.3	65.3	0.0	31.6	23.9	5.0	2.0
APRIL	2.4	32.5	3.2	5.5	21.9	1.0	66.3	1.9	21.9	2.1	19.6	7.1	2.1	2.6	9.0	66.3	0.0	35.3	27.0	5.0	0.0
MAY	1.3	24.1	3.4	4.3	27.3	1.7	62.1	2.3	22.2	2.5	15.2	7.6	2.5	1.6	8.1	62.1	0.0	32.7	24.1	5.0	13.0
JUNE	5.8	31.8	3.3	2.8	37.3	2.1	83.1	2.6	34.3	2.7	19.5	10.6	2.7	2.4	8.2	83.1	0.0	36.7	28.3	5.0	18.0
JULY	20.7	43.5	3.4	2.9	43.7	1.8	116.0	2.0	55.6	2.6	26.5	13.2	2.6	3.4	10.1	116.0	0.0	42.6	34.0	5.0	12.0
AUGUST	16.3	44.9	3.3	4.6	39.3	1.1	109.4	1.8	48.9	2.2	27.3	12.4	2.2	3.5	11.2	109.4	0.0	44.1	35.7	5.0	0.0
SEPTEMBER	7.5	23.2	3.1	5.8	25.3	1.0	65.8	1.6	27.2	2.0	14.2	7.5	2.0	1.6	9.7	65.8	0.0	23.9	15.7	5.0	25.0
OCTOBER	8.3	1.3	2.7	6.0	0.4	0.8	19.5	0.0	8.5	1.7	0.8	0.2	1.7	0.1	6.5	19.5	0.0	17.4	9.7	5.0	9.0
NOVEMBER	4.4	0.6	2.3	4.5	0.2	0.6	12.6	0.0	4.4	1.5	0.4	0.2	1.5	0.0	4.7	12.6	0.0	11.0	3.7	5.0	17.6
DECEMBER	7.4	0.2	2.2	4.4	0.1	0.6	15.0	0.0	7.1	1.4	0.1	0.1	1.4	0.0	4.7	15.0	0.0	8.5	1.2	5.0	22.0
TOTAL	78.7	242.1	33.5	55.1	213.5	12.7	635.5	13.6	253.5	23.1	148.4	65.6	23.1	18.1	90.0	635.5	0.0	299.9	205.3	60.0	158.6

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.01
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to dr	=	0.33	Fraction of "river flow to agr." as canal see	=	0.47
Fraction of "river flow to agr." as canal waste return	=	0.06	Fraction of M&I flow as M&I return flow	=	0.50
Area of alluvial valley (ac)	=	147974	Existing Canal area (ac)	=	3690
Canal outflow to M&I (acre-feet/yr)	=	166689	New Canal Area (acres)	=	249
Canal Outflow to Agr. (acre-feet/year)	=	131040			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 1

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE IN STORAGE	MAIN SUPPLY CANAL INFLOW	MAIN SUPPLY CANAL OUTFLOW	OUTFLOW TO MEXICO	DEFICIT IN FULL SUPPLY
MONTH	GROSS PRECIP. (1)	RIVER FLOW TO AGR. (2)	CANAL FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	(1000 ac-ft) (17)	(18)	(19)	(20)	(21)
JANUARY	5.1	2.3	2.8	4.9	0.0	0.1	15.1	0.0	5.4	1.4	1.0	0.5	1.4	0.2	5.3	15.1	0.0	11.2	3.4	5.0	4.0
FEBRUARY	5.7	5.8	2.6	4.1	0.1	0.0	18.3	0.0	7.3	1.3	2.5	0.8	1.3	0.5	4.6	18.3	0.0	11.7	4.1	5.0	4.0
MARCH	3.5	53.1	3.3	4.0	5.9	0.1	69.8	1.3	23.3	1.7	22.5	7.3	1.7	4.4	7.7	69.8	0.0	30.4	22.1	5.0	0.0
APRIL	2.7	43.7	4.0	6.6	9.8	0.1	67.0	1.7	21.8	2.1	18.5	7.0	2.1	3.7	10.2	67.0	0.0	32.9	23.8	5.0	0.0
MAY	8.0	45.8	4.3	6.6	15.4	0.8	81.0	1.9	30.7	2.5	19.4	8.9	2.5	3.9	11.1	81.0	0.0	38.5	29.1	5.0	0.0
JUNE	5.8	56.2	4.1	7.5	21.1	1.3	96.0	2.3	35.4	2.7	23.8	11.2	2.7	4.7	13.1	96.0	0.0	44.8	35.5	5.0	0.0
JULY	5.3	72.6	4.3	9.1	23.6	0.9	115.8	2.1	42.2	2.6	30.8	13.6	2.6	6.1	15.9	115.8	0.0	49.1	39.7	5.0	0.0
AUGUST	29.4	54.3	4.1	10.2	19.9	0.2	118.2	1.2	56.4	2.2	23.0	12.3	2.2	4.3	16.7	118.2	0.0	40.3	31.1	5.0	0.0
SEPTEMBER	11.1	43.1	3.9	10.2	14.1	0.2	82.5	1.3	32.4	2.0	18.3	8.3	2.0	3.6	14.5	82.5	0.0	34.3	25.3	5.0	0.0
OCTOBER	11.6	2.9	3.3	9.4	0.1	0.1	27.4	0.0	11.5	1.7	1.2	1.1	1.7	0.2	10.1	27.4	0.0	17.3	8.9	5.0	0.0
NOVEMBER	3.1	0.4	2.9	7.2	0.0	0.1	13.7	0.0	3.0	1.5	0.2	0.2	1.5	0.0	7.4	13.7	0.0	12.2	4.3	5.0	4.0
DECEMBER	10.5	0.0	2.8	5.8	0.0	0.1	19.2	0.0	9.4	1.4	0.0	0.7	1.4	0.0	6.2	19.2	0.0	11.5	3.7	5.0	4.0
TOTAL	101.9	380.4	42.3	85.7	110.0	3.9	724.2	11.8	278.6	23.1	161.2	71.8	23.1	31.7	122.8	724.2	0.0	334.2	231.0	60.0	16.0

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.03
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to dr	=	0.33	Fraction of "river flow to agr." as canal see	=	0.42
Fraction of "river flow to agr." as canal waste return	=	0.08	Fraction of M&I flow as M&I return flow	=	0.50
Area of alluvial valley (ac)	=	147974	Canal area (ac)	=	3690
Canal outflow to M&I (acre-feet/yr)	=	166689	New Canal Area (acres)	=	249
Canal Outflow to Agr. (acre-feet/year)	=	131040			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 1

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE	MAIN	MAIN		
MONTH	GROSS PRECIP. (1)	RIVER FLOW TO AGR. (2)	CANAL FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	IN STORAGE (1000 ac-ft) (17)	SUPPLY CANAL INFLOW (18)	SUPPLY CANAL OUTFLOW (19)	OUTFLOW TO MEXICO (20)	DEFICIT IN FULL SUPPLY (21)
JANUARY	9.5	0.0	2.8	5.7	0.0	0.0	18.0	0.0	8.8	1.4	0.0	0.3	1.4	0.0	6.1	18.0	0.0	12.3	4.5	5.0	0.0
FEBRUARY	7.6	10.2	2.6	4.9	0.0	0.0	25.4	0.0	10.3	1.3	4.3	1.4	1.3	1.0	5.8	25.4	0.0	14.9	7.2	5.0	0.0
MARCH	3.5	57.3	3.3	7.5	2.9	0.0	74.5	1.3	22.1	1.7	24.1	6.9	1.7	5.7	11.0	74.5	0.0	32.6	24.2	5.0	0.0
APRIL	1.4	51.5	4.1	10.4	5.4	0.1	72.8	1.8	19.7	2.1	21.6	6.7	2.1	5.2	13.7	72.8	0.0	35.5	26.3	5.0	0.0
MAY	2.8	58.1	4.4	10.3	8.7	0.7	85.0	2.1	25.1	2.5	24.4	8.2	2.5	5.8	14.4	85.0	0.0	42.0	32.5	5.0	0.0
JUNE	3.9	71.0	4.2	10.7	12.1	1.2	103.2	2.5	32.1	2.7	29.8	10.4	2.7	7.1	15.9	103.2	0.0	48.9	39.5	5.0	0.0
JULY	16.9	70.3	4.4	12.9	13.4	0.9	118.7	1.9	45.2	2.6	29.5	11.1	2.6	7.0	18.8	118.7	0.0	48.2	38.7	5.0	0.0
AUGUST	44.4	57.3	4.2	14.7	11.4	0.2	132.2	0.9	66.0	2.2	24.1	10.2	2.2	5.7	20.9	132.2	0.0	40.9	31.6	5.0	0.0
SEPTEMBER	12.4	44.5	4.0	14.5	8.0	0.1	83.4	1.4	29.7	2.0	18.7	6.9	2.0	4.5	18.2	83.4	0.0	34.6	25.6	5.0	0.0
OCTOBER	8.5	12.8	3.4	12.4	0.0	0.0	37.1	0.0	11.9	1.7	5.4	1.7	1.7	1.3	13.4	37.1	0.0	20.4	11.9	5.0	0.0
NOVEMBER	2.1	0.0	2.9	5.9	0.0	0.0	10.9	0.0	1.9	1.5	0.0	0.1	1.5	0.0	6.0	10.9	0.0	13.9	5.9	5.0	0.0
DECEMBER	9.7	0.0	2.9	4.4	0.0	0.0	16.9	0.0	9.0	1.4	0.0	0.3	1.4	0.0	4.8	16.9	0.0	13.3	5.4	5.0	0.0
TOTAL	122.6	433.0	43.1	114.3	61.9	3.1	778.1	11.8	281.8	23.1	181.9	64.2	23.1	43.3	149.0	778.1	0.0	357.3	253.2	60.0	0.0

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.03
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to dr	=	0.33	Fraction of "river flow to agr." as canal see	=	0.42
Fraction of "river flow to agr." as canal waste return	=	0.10	Fraction of M&I flow as M&I return flow	=	0.50
Area of alluvial valley (ac)	=	147974	Canal area (ac)	=	3690
Canal outflow to M&I (acre-feet/yr)	=	166689	New Canal Area (acres)	=	249
Canal Outflow to Agr. (acre-feet/year)	=	131040			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 1

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)												OUTFLOW (1000 ac-ft)							
		LEASBURG DAM TO MESILLA DAM					MESILLA DAM TO AMERICAN DAM							LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	NET PRECIP. (7)	CANAL WASTE RETURN (8)	M&I RETURN FLOW (9)	DRAIN INFLOW (10)	TRIB. INFLOW (11)	TOTAL INFLOW (12)	RIVER OUTFLOW - AMERICAN (13)	RIVER FLOW TO M&I (14)	RIVER FLOW TO AGR. (15)	NET RIVER SEEPAGE (16)	RIVER FLOW TO M&I (17)	RIVER FLOW TO AGR. (18)	NET RIVER SEEPAGE (19)	TOTAL OUTFLOW (20)
JANUARY	1.0	0.0	0.0	0.5	2.2	0.1	-0.1	0.0	0.9	3.8	0.6	9.0	4.2	0.0	0.3	1.7	0.0	0.5	2.5	9.0
FEBRUARY	5.8	-0.1	0.2	0.5	1.9	0.1	-0.2	0.3	0.8	3.2	0.7	13.4	1.8	0.0	2.0	2.5	0.0	3.4	3.7	13.4
MARCH	53.6	-0.2	1.6	0.6	3.1	0.1	-0.3	2.7	1.0	5.3	0.4	67.9	9.9	0.0	18.6	3.1	0.0	31.6	4.7	67.9
APRIL	33.7	-0.3	1.4	0.8	4.1	0.0	-0.5	2.4	1.3	6.9	0.3	50.2	5.0	0.0	15.8	1.1	0.0	26.8	1.6	50.2
MAY	30.7	-0.3	1.4	0.9	4.1	0.1	-0.5	2.4	1.6	7.1	0.4	47.9	3.1	0.0	15.8	0.9	0.0	26.9	1.3	47.9
JUNE	44.5	-0.4	1.8	1.0	4.6	0.1	-0.6	3.0	1.7	7.8	0.6	64.0	4.6	0.0	19.6	2.6	0.0	33.4	3.8	64.0
JULY	51.7	-0.3	2.0	1.0	5.5	0.3	-0.5	3.5	1.6	9.4	2.1	76.4	7.1	0.0	23.0	2.9	0.0	39.1	4.3	76.4
AUGUST	39.9	-0.2	1.7	0.8	6.0	0.5	-0.3	2.8	1.4	10.2	3.4	66.2	6.8	0.0	19.3	2.9	0.0	32.9	4.3	66.2
SEPTEMBER	21.8	-0.2	1.2	0.7	5.2	0.2	-0.4	2.0	1.3	8.9	1.3	42.1	2.1	0.0	13.7	1.2	0.0	23.3	1.8	42.1
OCTOBER	1.1	-0.1	0.2	0.6	3.7	0.2	-0.2	0.3	1.1	6.3	1.2	14.4	4.1	0.0	2.1	1.9	0.0	3.6	2.8	14.4
NOVEMBER	1.1	-0.1	0.0	0.5	2.2	0.1	-0.1	0.0	0.9	3.8	0.4	8.8	4.8	0.0	0.1	1.5	0.0	0.2	2.2	8.8
DECEMBER	1.1	-0.1	0.0	0.5	1.9	0.2	-0.1	0.0	0.9	3.3	1.1	8.8	4.5	0.0	0.0	1.7	0.0	0.0	2.5	8.8
TOTAL	286.0	-2.2	11.5	8.5	44.6	1.9	-3.8	19.5	14.6	76.0	12.4	469.1	58.0	0.0	130.2	23.7	0.0	221.6	35.6	469.1

River width (Leasburg to Mesilla)	=	200.0	River width (Mesilla to American)	=	200.0
River length (Leasburg to Mesilla)	=	21.9	River length (Mesilla to American)	=	38.5
River seepage rate (Leasburg to Mesilla)	=	-	River seepage rate (Mesilla to American)	=	-
Percent of population (Leasburg to Mesilla)	=	0.4	Percent of population (Mesilla to American)	=	0.6
Percent of agricultural area (Leasburg to Mesilla)	=	0.4	Percent of agricultural area (Mesilla to American)	=	0.6
Percent of drainage area (Leasburg to Mesilla)	=	0.1	Percent of drainage area (Mesilla to American)	=	0.9
Percent of river seepage (Leasburg to Mesilla)	=	0.4	Percent of river seepage (Mesilla to American)	=	0.6
Annual runoff	=	0.3	Total drainage area (ac)	=	685387.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 1

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)												OUTFLOW (1000 ac-ft)							
		LEASBURG DAM TO MESILLA DAM					MESILLA DAM TO AMERICAN DAM							LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	NET PRECIP. (7)	CANAL WASTE RETURN (8)	M&I RETURN FLOW (9)	DRAIN INFLOW (10)	TRIB. INFLOW (11)	TOTAL INFLOW (12)	RIVER OUTFLOW - AMERICAN (13)	RIVER FLOW TO M&I (14)	RIVER FLOW TO AGR. (15)	NET RIVER SEEPAGE (16)	RIVER FLOW TO M&I (17)	RIVER FLOW TO AGR. (18)	NET RIVER SEEPAGE (19)	TOTAL OUTFLOW (20)
JANUARY	1.0	-0.1	0.0	0.5	2.4	0.0	-0.1	0.0	0.9	4.1	0.3	9.2	5.3	0.0	0.0	1.6	0.0	0.0	2.3	9.2
FEBRUARY	1.0	-0.1	0.0	0.5	1.9	0.1	-0.2	0.0	0.8	3.2	0.4	7.4	3.3	0.0	0.0	1.6	0.0	0.0	2.4	7.4
MARCH	34.1	-0.2	1.0	0.6	2.3	0.0	-0.4	1.7	1.0	4.0	0.2	44.4	1.4	0.0	14.8	1.2	0.0	25.2	1.8	44.4
APRIL	13.9	-0.3	1.0	0.8	3.3	0.1	-0.5	1.7	1.3	5.7	0.5	27.4	1.2	0.0	12.0	-2.5	0.0	20.5	-3.7	27.4
MAY	8.0	-0.3	0.6	0.9	3.0	0.0	-0.6	1.0	1.6	5.1	0.2	19.5	1.4	0.0	8.9	-2.4	0.0	15.2	-3.6	19.5
JUNE	22.0	-0.4	0.9	1.0	3.0	0.1	-0.7	1.5	1.7	5.1	0.7	35.1	0.8	0.0	11.8	1.0	0.0	20.0	1.5	35.1
JULY	31.5	-0.3	1.3	1.0	3.7	0.5	-0.5	2.1	1.6	6.4	3.4	50.7	0.9	0.0	16.1	2.5	0.0	27.4	3.8	50.7
AUGUST	33.3	-0.3	1.3	0.8	4.1	0.4	-0.5	2.2	1.4	7.1	2.5	52.4	0.9	0.0	16.6	2.6	0.0	28.3	4.0	52.4
SEPTEMBER	11.9	-0.2	0.6	0.7	3.6	0.2	-0.4	1.0	1.3	6.1	1.0	25.8	0.8	0.0	8.6	0.7	0.0	14.6	1.1	25.8
OCTOBER	1.0	-0.1	0.0	0.6	2.4	0.2	-0.2	0.1	1.1	4.1	1.5	10.7	3.2	0.0	0.5	2.5	0.0	0.8	3.7	10.7
NOVEMBER	1.1	-0.1	0.0	0.5	1.7	0.1	-0.1	0.0	0.9	3.0	0.6	7.9	2.6	0.0	0.2	1.8	0.0	0.4	2.8	7.9
DECEMBER	1.1	-0.1	0.0	0.5	1.7	0.2	-0.1	0.0	0.9	3.0	1.2	8.5	2.9	0.0	0.1	2.2	0.0	0.1	3.2	8.5
TOTAL	160.0	-2.4	6.7	8.5	33.3	1.9	-4.2	11.4	14.6	56.7	12.4	298.9	24.7	0.0	89.6	12.8	0.0	152.5	19.3	298.9

River width (Leasburg to Mesilla)	=	200.0	River width (Mesilla to American)	=	200.0	Baseline SW flow needed by M&I 0
River length (Leasburg to Mesilla)	=	21.9	River length (Mesilla to American)	=	38.5	Baseline SW flow needed by Agr. i 60.6
River seepage rate (Leasburg to Mesilla)	=	-	River seepage rate (Mesilla to American)	=	-	Baseline GW flow needed by M&I 0.9
Percent of population (Leasburg to Mesilla)	=	0.37	Percent of population (Mesilla to American)	=	0.6	Baseline GW flow needed by Agr. 28.8
Percent of agricultural area (Leasburg to Mesilla)	=	0.37	Percent of agricultural area (Mesilla to American)	=	0.6	Baseline SW flow needed by M&I 43.1
Percent of drainage area (Leasburg to Mesilla)	=	0.13	Percent of drainage area (Mesilla to American)	=	0.9	Baseline SW flow needed by Agr. i 311.1
Percent of river seepage (Leasburg to Mesilla)	=	0.40	Percent of river seepage (Mesilla to American)	=	0.6	Baseline GW flow needed by M&I 3.1
Annual runoff	=	0.25	Total drainage area (ac)	=	685387.0	Baseline GW flow needed by Agr. 144.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 1

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)												OUTFLOW (1000 ac-ft)							
		LEASBURG DAM TO MESILLA DAM					MESILLA DAM TO AMERICAN DAM							LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	NET PRECIP. (7)	CANAL WASTE RETURN (8)	M&I RETURN FLOW (9)	DRAIN INFLOW (10)	TRIB. INFLOW (11)	TOTAL INFLOW (12)	RIVER OUTFLOW - AMERICAN (13)	RIVER FLOW TO M&I (14)	RIVER FLOW TO AGR. (15)	NET RIVER SEEPAGE (16)	RIVER FLOW TO M&I (17)	RIVER FLOW TO AGR. (18)	NET RIVER SEEPAGE (19)	TOTAL OUTFLOW (20)
JANUARY	1.0	0.0	0.1	0.5	1.9	0.1	-0.1	0.1	0.9	3.3	0.5	8.4	3.2	0.0	0.8	1.2	0.0	1.4	1.7	8.4
FEBRUARY	5.9	-0.1	0.2	0.5	1.7	0.1	-0.1	0.3	0.8	2.9	1.0	13.3	1.0	0.0	2.2	2.6	0.0	3.7	3.8	13.3
MARCH	48.5	-0.2	1.6	0.6	2.9	0.1	-0.3	2.8	1.0	4.9	0.8	62.7	1.3	0.0	19.6	3.3	0.0	33.4	5.0	62.7
APRIL	36.4	-0.2	1.4	0.8	3.8	0.1	-0.4	2.3	1.3	6.4	0.3	52.1	1.2	0.0	16.2	2.9	0.0	27.6	4.3	52.1
MAY	38.4	-0.3	1.4	0.9	4.1	0.1	-0.5	2.5	1.6	7.0	0.8	56.2	1.4	0.0	17.0	3.6	0.0	28.9	5.3	56.2
JUNE	47.7	-0.3	1.8	1.0	4.8	0.1	-0.6	3.0	1.7	8.3	0.7	68.1	0.8	0.0	20.8	4.4	0.0	35.4	6.6	68.1
JULY	58.1	-0.3	2.2	1.0	5.9	0.2	-0.5	3.8	1.6	10.0	1.1	83.1	0.9	0.0	26.9	3.8	0.0	45.8	5.7	83.1
AUGUST	34.0	-0.2	1.6	0.8	6.2	0.5	-0.3	2.7	1.4	10.5	3.2	60.3	1.2	0.0	20.1	1.9	0.0	34.2	2.9	60.3
SEPTEMBER	24.1	-0.2	1.3	0.7	5.4	0.2	-0.3	2.3	1.3	9.2	1.6	45.6	0.8	0.0	16.0	0.7	0.0	27.2	1.0	45.6
OCTOBER	1.0	-0.1	0.1	0.6	3.7	0.2	-0.2	0.1	1.1	6.3	1.1	13.9	8.4	0.0	1.1	1.0	0.0	1.8	1.6	13.9
NOVEMBER	1.0	-0.1	0.0	0.5	2.7	0.0	-0.1	0.0	0.9	4.7	0.3	10.1	5.9	0.0	0.2	1.5	0.0	0.3	2.3	10.1
DECEMBER	1.0	0.0	0.0	0.5	2.3	0.1	-0.1	0.0	0.9	3.9	1.0	9.6	5.3	0.0	0.0	1.7	0.0	0.0	2.6	9.6
TOTAL	297.2	-2.0	11.7	8.5	45.4	1.9	-3.6	19.9	14.6	77.4	12.4	483.4	31.6	0.0	140.7	28.6	0.0	239.6	42.8	483.4

River width (Leasburg to Mesilla)	=	200.0	River width (Mesilla to American)	=	200.0	Baseline SW flow needed by M&I 0
River length (Leasburg to Mesilla)	=	21.9	River length (Mesilla to American)	=	38.5	Baseline SW flow needed by Agr. i 89.4
River seepage rate (Leasburg to Mesilla)	=	-	River seepage rate (Mesilla to American)	=	-	Baseline GW flow needed by M&I 0.9
Percent of population (Leasburg to Mesilla)	=	0.37	Percent of population (Mesilla to American)	=	0.6	Baseline GW flow needed by Agr. 18.1
Percent of agricultural area (Leasburg to Mesilla)	=	0.37	Percent of agricultural area (Mesilla to American)	=	0.6	Baseline SW flow needed by M&I 43.1
Percent of drainage area (Leasburg to Mesilla)	=	0.13	Percent of drainage area (Mesilla to American)	=	0.9	Baseline SW flow needed by Agr. i 387.3
Percent of river seepage (Leasburg to Mesilla)	=	0.40	Percent of river seepage (Mesilla to American)	=	0.6	Baseline GW flow needed by M&I 3.1
Annual runoff	=	0.25	Total drainage area (ac)	=	685387.0	Baseline GW flow needed by Agr. 103.1

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 1

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)												OUTFLOW (1000 ac-ft)							
		LEASBURG DAM TO MESILLA DAM					MESILLA DAM TO AMERICAN DAM							LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	NET PRECIP. (7)	CANAL WASTE RETURN (8)	M&I RETURN FLOW (9)	DRAIN INFLOW (10)	TRIB. INFLOW (11)	TOTAL INFLOW (12)	RIVER OUTFLOW - AMERICAN (13)	RIVER FLOW TO M&I (14)	RIVER FLOW TO AGR. (15)	NET RIVER SEEPAGE (16)	RIVER FLOW TO M&I (17)	RIVER FLOW TO AGR. (18)	NET RIVER SEEPAGE (19)	TOTAL OUTFLOW (20)
JANUARY	1.0	0.0	0.0	0.5	2.3	0.1	-0.1	0.0	0.9	3.8	1.0	9.6	4.0	0.0	0.0	2.2	0.0	0.0	3.4	9.6
FEBRUARY	10.6	-0.1	0.4	0.5	2.1	0.1	-0.1	0.6	0.8	3.7	0.8	19.4	1.0	0.0	3.8	3.3	0.0	6.4	4.9	19.4
MARCH	78.3	-0.2	2.1	0.6	4.1	0.1	-0.3	3.6	1.0	6.9	0.4	96.6	27.0	0.0	21.2	4.9	0.0	36.1	7.4	96.6
APRIL	50.8	-0.3	1.9	0.8	5.1	0.0	-0.4	3.2	1.3	8.6	0.1	71.2	12.7	0.0	19.1	2.8	0.0	32.4	4.2	71.2
MAY	45.8	-0.3	2.2	0.9	5.3	0.0	-0.5	3.7	1.6	9.1	0.3	68.1	6.4	0.0	21.5	1.4	0.0	36.6	2.1	68.1
JUNE	63.7	-0.4	2.6	1.0	5.9	0.1	-0.6	4.5	1.7	10.0	0.4	88.9	12.2	0.0	26.3	2.3	0.0	44.7	3.4	88.9
JULY	65.6	-0.3	2.6	1.0	7.0	0.3	-0.5	4.4	1.6	11.8	1.7	95.2	19.3	0.0	26.0	2.3	0.0	44.3	3.4	95.2
AUGUST	52.3	-0.1	2.1	0.8	7.7	0.7	-0.2	3.6	1.4	13.2	4.5	85.9	18.5	0.0	21.2	4.1	0.0	36.1	6.1	85.9
SEPTEMBER	29.3	-0.2	1.6	0.7	6.7	0.2	-0.3	2.8	1.3	11.5	1.2	54.8	4.8	0.0	16.5	2.2	0.0	28.0	3.3	54.8
OCTOBER	1.5	-0.1	0.5	0.6	5.0	0.1	-0.2	0.8	1.1	8.4	0.8	18.5	0.6	0.0	4.7	2.0	0.0	8.1	3.1	18.5
NOVEMBER	1.0	-0.1	0.0	0.5	2.2	0.0	-0.1	0.0	0.9	3.8	0.2	8.6	5.8	0.0	0.0	1.1	0.0	0.0	1.6	8.6
DECEMBER	1.0	-0.1	0.0	0.5	1.8	0.1	-0.1	0.0	0.9	3.0	1.0	8.3	5.2	0.0	0.0	1.2	0.0	0.0	1.8	8.3
TOTAL	401.0	-2.0	16.0	8.5	55.1	1.9	-3.6	27.3	14.6	93.9	12.4	625.1	117.5	0.0	160.2	29.8	0.0	272.8	44.7	625.1

River width (Leasburg to Mesilla)	=	200.0	River width (Mesilla to American)	=	200.0	Baseline SW flow needed by M&I		0
River length (Leasburg to Mesilla)	=	21.9	River length (Mesilla to American)	=	38.5	Baseline SW flow needed by Agr. i		107.9
River seepage rate (Leasburg to Mesilla)	=	-	River seepage rate (Mesilla to American)	=	-	Baseline GW flow needed by M&I		0.9
Percent of population (Leasburg to Mesilla)	=	0.37	Percent of population (Mesilla to American)	=	0.6	Baseline GW flow needed by Agr.		9.8
Percent of agricultural area (Leasburg to Mesilla)	=	0.37	Percent of agricultural area (Mesilla to American)	=	0.6	Baseline SW flow needed by M&I		43.1
Percent of drainage area (Leasburg to Mesilla)	=	0.13	Percent of drainage area (Mesilla to American)	=	0.9	Baseline SW flow needed by Agr. i		433
Percent of river seepage (Leasburg to Mesilla)	=	0.40	Percent of river seepage (Mesilla to American)	=	0.6	Baseline GW flow needed by M&I		3.1
Annual runoff	=	0.25	Total drainage area (ac)	=	685387.0	Baseline GW flow needed by Agr.		61.9

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 1

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS)										OUTFLOW (Tons of TDS)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1750	50	636	5319	177	86	1082	9056	1181	19338	10893	0	496	2842	0	844	4263	19338
FEBRUARY	5447	171	575	3474	202	291	979	5915	1353	18408	7093	0	1774	2608	0	3021	3912	18408
MARCH	36868	1101	720	4306	122	1875	1226	7332	817	54368	13881	0	13007	2133	0	22147	3200	54368
APRIL	25152	1086	848	6001	88	1849	1444	10218	592	47278	12804	0	12231	567	0	20826	850	47278
MAY	23044	1073	1004	6230	125	1827	1709	10609	834	46456	12169	0	12387	324	0	21091	486	46456
JUNE	34856	1385	1015	6861	171	2358	1728	11683	1143	61200	14332	0	15533	1955	0	26448	2933	61200
JULY	39474	1552	1032	8126	586	2643	1756	13836	3919	72923	19340	0	17737	2258	0	30201	3387	72923
AUGUST	36560	1513	917	9559	967	2576	1561	16276	6473	76402	21440	0	17862	2675	0	30413	4012	76402
SEPTEMBER	19996	1084	893	8639	359	1846	1521	14710	2400	51447	13936	0	12853	1109	0	21885	1664	51447
OCTOBER	2529	379	668	10767	328	645	1138	18333	2196	36983	15501	0	4142	4115	0	7053	6173	36983
NOVEMBER	1694	14	626	5141	110	24	1066	8754	739	18169	11654	0	213	2376	0	362	3564	18169
DECEMBER	1911	7	663	4926	299	11	1129	8387	2003	19337	10448	0	88	4037	0	88	4676	19337
TOTAL	229281	9415	9596	79349	3534	16032	16340	135108	23653	522308	163490	0	108322	26999	0	184378	39120	522308

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 1

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS)										OUTFLOW (Tons of TDS)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1645	0	636	5548	95	0	1082	9447	637	19091	12865	0	0	2491	0	0	3736	19091
FEBRUARY	1561	0	575	4252	104	0	979	7239	696	15406	8907	0	0	2600	0	0	3900	15406
MARCH	27083	813	720	3482	43	1384	1226	5929	287	40969	6770	0	11758	968	0	20021	1452	40969
APRIL	13250	929	848	5518	133	1582	1444	9396	892	33994	9044	0	11429	-2376	0	19460	-3563	33994
MAY	8385	609	1004	5245	47	1037	1709	8930	312	27278	8266	0	9352	-2506	0	15924	-3759	27278
JUNE	21885	892	1015	5120	199	1519	1728	8717	1330	42404	8364	0	11691	977	0	19907	1465	42404
JULY	30992	1234	1032	6319	961	2101	1756	10759	6432	61587	12574	0	15850	2470	0	26988	3705	61587
AUGUST	45097	1769	917	8509	698	3012	1561	14488	4671	80721	11038	0	22484	3566	0	38284	5349	80721
SEPTEMBER	18038	912	893	7939	287	1553	1521	13517	1918	46577	8720	0	12974	1117	0	22090	1676	46577
OCTOBER	2370	80	668	7419	441	136	1138	12633	2949	27834	9940	0	1152	5912	0	1962	8868	27834
NOVEMBER	1751	29	626	3996	184	50	1066	6804	1233	15740	7384	0	368	2945	0	627	4417	15740
DECEMBER	2003	20	663	4324	343	34	1129	7363	2295	18174	5267	0	265	6606	0	263	5773	18174
TOTAL	174061	7288	9596	67671	3534	12409	16340	115223	23653	429775	109139	0	97323	24770	0	165524	33018	429775

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 1

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS)										OUTFLOW (Tons of TDS)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1762	151	636	4830	153	258	1082	8225	1021	18119	8915	0	1487	2074	0	2531	3111	18119
FEBRUARY	5404	179	575	2772	284	304	979	4720	1900	17116	5898	0	1977	2350	0	3367	3524	17116
MARCH	34680	1168	720	4047	216	1988	1226	6891	1443	52379	8527	0	14028	2375	0	23886	3562	52379
APRIL	28055	1049	848	5529	96	1786	1444	9414	643	48862	9706	0	12458	2194	0	21212	3292	48862
MAY	25772	969	1004	5652	240	1650	1709	9623	1607	48224	11447	0	11395	2392	0	19403	3588	48224
JUNE	33851	1248	1015	6836	201	2125	1728	11639	1346	59988	12219	0	14765	3145	0	25141	4718	59988
JULY	41069	1585	1032	8273	312	2699	1756	14087	2091	72906	14841	0	18986	2701	0	32327	4051	72906
AUGUST	26494	1225	917	9118	913	2086	1561	15525	6113	63952	17902	0	15656	1495	0	26657	2242	63952
SEPTEMBER	20248	1121	893	8281	450	1908	1521	14099	3013	51534	13914	0	13399	563	0	22814	844	51534
OCTOBER	2576	220	668	12652	307	374	1138	21543	2055	41533	26637	0	2907	2815	0	4950	4223	41533
NOVEMBER	1796	14	626	6604	87	23	1066	11245	580	22042	14876	0	270	2575	0	459	3863	22042
DECEMBER	2073	0	663	6382	275	0	1129	10867	1841	23232	14336	0	0	3558	0	0	5338	23232
TOTAL	223780	8927	9596	80977	3534	15200	16340	137880	23653	519887	159218	0	107328	28237	0	182747	42356	519887

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 1

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS)										OUTFLOW (Tons of TDS)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1844	0	636	5578	282	0	1082	9497	1886	20804	10900	0	0	3962	0	0	5942	20804
FEBRUARY	9376	335	575	3398	219	570	979	5786	1464	22701	6473	0	3345	2875	0	5696	4312	22701
MARCH	48840	1323	720	5388	108	2253	1226	9174	721	69755	26345	0	13234	3057	0	22533	4586	69755
APRIL	34150	1281	848	6955	36	2181	1444	11843	242	58980	19662	0	12807	1882	0	21807	2823	58980
MAY	34977	1641	1004	7795	87	2795	1709	13273	584	63865	16793	0	16413	1085	0	27947	1628	63865
JUNE	48833	2014	1015	8629	113	3430	1728	14692	754	81207	22411	0	20142	1743	0	34296	2615	81207
JULY	46359	1838	1032	9786	483	3129	1756	16663	3232	84277	30605	0	18377	1602	0	31290	2403	84277
AUGUST	38089	1544	917	11050	1291	2630	1561	18815	8637	84532	35380	0	15445	2964	0	26298	4446	84532
SEPTEMBER	21703	1219	893	9698	339	2075	1521	16513	2271	56231	19175	0	12187	1648	0	20751	2472	56231
OCTOBER	2642	837	668	12229	237	1425	1138	20823	1584	41582	9924	0	8366	3618	0	14245	5427	41582
NOVEMBER	1534	0	626	4823	60	0	1066	8212	404	16725	12703	0	0	1609	0	0	2413	16725
DECEMBER	1656	0	663	4071	280	0	1129	6931	1874	16604	11741	0	0	1945	0	0	2918	16604
TOTAL	290002	12032	9596	89400	3534	20486	16340	152221	23653	617263	222112	0	120316	27990	0	204862	41984	617263

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 1

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS/af)										OUTFLOW (Tons of TDS/af)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1.7	1.8	1.2	2.4	1.9	1.8	1.2	2.4	1.9	—	2.6	0.0	1.8	1.7	0.0	1.8	1.7	—
FEBRUARY	0.9	0.9	1.2	1.8	1.9	0.9	1.2	1.8	1.9	—	3.9	0.0	0.9	1.1	0.0	0.9	1.1	—
MARCH	0.7	0.7	1.2	1.4	1.9	0.7	1.2	1.4	1.9	—	1.4	0.0	0.7	0.7	0.0	0.7	0.7	—
APRIL	0.7	0.8	1.1	1.5	1.9	0.8	1.1	1.5	1.9	—	2.5	0.0	0.8	0.5	0.0	0.8	0.5	—
MAY	0.8	0.8	1.1	1.5	1.9	0.8	1.1	1.5	1.9	—	3.9	0.0	0.8	0.4	0.0	0.8	0.4	—
JUNE	0.8	0.8	1.0	1.5	1.9	0.8	1.0	1.5	1.9	—	3.1	0.0	0.8	0.8	0.0	0.8	0.8	—
JULY	0.8	0.8	1.1	1.5	1.9	0.8	1.1	1.5	1.9	—	2.7	0.0	0.8	0.8	0.0	0.8	0.8	—
AUGUST	0.9	0.9	1.1	1.6	1.9	0.9	1.1	1.6	1.9	—	3.1	0.0	0.9	0.9	0.0	0.9	0.9	—
SEPTEMBER	0.9	0.9	1.2	1.7	1.9	0.9	1.2	1.7	1.9	—	6.6	0.0	0.9	0.9	0.0	0.9	0.9	—
OCTOBER	2.2	1.9	1.1	2.9	1.9	1.9	1.1	2.9	1.9	—	3.8	0.0	2.0	2.2	0.0	2.0	2.2	—
NOVEMBER	1.6	1.6	1.2	2.3	1.9	1.6	1.2	2.3	1.9	—	2.4	0.0	1.6	1.6	0.0	1.6	1.6	—
DECEMBER	1.8	1.8	1.3	2.5	1.9	1.8	1.3	2.5	1.9	—	2.3	0.0	3.1	2.4	0.0	1.8	1.8	—
AVERAGE	0.8	0.8	1.1	1.8	1.9	0.8	1.1	1.8	1.9	—	2.8	0.0	0.8	1.1	0.0	0.8	1.1	—

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 1

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS/af)										OUTFLOW (Tons of TDS/af)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1.6	1.6	1.2	2.3	1.9	1.6	1.2	2.3	1.9	---	2.4	1.6	1.6	1.6	1.6	1.6	1.6	---
FEBRUARY	1.6	1.6	1.2	2.3	1.9	1.6	1.2	2.3	1.9	---	2.7	1.6	1.6	1.6	1.6	1.6	1.6	---
MARCH	0.8	0.8	1.2	1.5	1.9	0.8	1.2	1.5	1.9	---	5.0	0.8	0.8	0.8	0.8	0.8	0.8	---
APRIL	1.0	1.0	1.1	1.7	1.9	1.0	1.1	1.7	1.9	---	7.4	1.0	1.0	1.0	1.0	1.0	1.0	---
MAY	1.0	1.0	1.1	1.7	1.9	1.0	1.1	1.7	1.9	---	6.0	1.0	1.0	1.0	1.0	1.0	1.0	---
JUNE	1.0	1.0	1.0	1.7	1.9	1.0	1.0	1.7	1.9	---	9.9	1.0	1.0	1.0	1.0	1.0	1.0	---
JULY	1.0	1.0	1.1	1.7	1.9	1.0	1.1	1.7	1.9	---	13.4	1.0	1.0	1.0	1.0	1.0	1.0	---
AUGUST	1.4	1.4	1.1	2.1	1.9	1.4	1.1	2.1	1.9	---	12.8	1.4	1.4	1.4	1.4	1.4	1.4	---
SEPTEMBER	1.5	1.5	1.2	2.2	1.9	1.5	1.2	2.2	1.9	---	11.3	1.5	1.5	1.5	1.5	1.5	1.5	---
OCTOBER	2.4	2.4	1.1	3.1	1.9	2.4	1.1	3.1	1.9	---	3.1	2.4	2.4	2.4	2.4	2.4	2.4	---
NOVEMBER	1.6	1.6	1.2	2.3	1.9	1.6	1.2	2.3	1.9	---	2.8	1.6	1.6	1.6	1.6	1.6	1.6	---
DECEMBER	1.8	1.8	1.3	2.5	1.9	1.8	1.3	2.5	1.9	---	1.8	1.8	3.1	3.1	3.1	1.8	1.8	---
AVERAGE	1.1	1.1	1.1	2.0	1.9	1.1	1.1	2.0	1.9	---	4.4	0.0	1.1	1.9	0.0	1.1	1.7	---

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 1

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS/af)										OUTFLOW (Tons of TDS/af)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1.8	1.8	1.2	2.5	1.9	1.8	1.2	2.5	1.9	---	2.8	1.8	1.8	1.8	1.8	1.8	1.8	---
FEBRUARY	0.9	0.9	1.2	1.6	1.9	0.9	1.2	1.6	1.9	---	5.6	0.9	0.9	0.9	0.9	0.9	0.9	---
MARCH	0.7	0.7	1.2	1.4	1.9	0.7	1.2	1.4	1.9	---	6.3	0.7	0.7	0.7	0.7	0.7	0.7	---
APRIL	0.8	0.8	1.1	1.5	1.9	0.8	1.1	1.5	1.9	---	8.1	0.8	0.8	0.8	0.8	0.8	0.8	---
MAY	0.7	0.7	1.1	1.4	1.9	0.7	1.1	1.4	1.9	---	8.0	0.7	0.7	0.7	0.7	0.7	0.7	---
JUNE	0.7	0.7	1.0	1.4	1.9	0.7	1.0	1.4	1.9	---	14.4	0.7	0.7	0.7	0.7	0.7	0.7	---
JULY	0.7	0.7	1.1	1.4	1.9	0.7	1.1	1.4	1.9	---	15.8	0.7	0.7	0.7	0.7	0.7	0.7	---
AUGUST	0.8	0.8	1.1	1.5	1.9	0.8	1.1	1.5	1.9	---	15.1	0.8	0.8	0.8	0.8	0.8	0.8	---
SEPTEMBER	0.8	0.8	1.2	1.5	1.9	0.8	1.2	1.5	1.9	---	18.0	0.8	0.8	0.8	0.8	0.8	0.8	---
OCTOBER	2.7	2.7	1.1	3.4	1.9	2.7	1.1	3.4	1.9	---	3.2	2.7	2.7	2.7	2.7	2.7	2.7	---
NOVEMBER	1.7	1.7	1.2	2.4	1.9	1.7	1.2	2.4	1.9	---	2.5	1.7	1.7	1.7	1.7	1.7	1.7	---
DECEMBER	2.1	2.1	1.3	2.8	1.9	2.1	1.3	2.8	1.9	---	2.7	2.1	2.1	2.1	2.1	2.1	2.1	---
AVERAGE	0.8	0.8	1.1	1.8	1.9	0.8	1.1	1.8	1.9	---	5.0	0.0	0.8	1.0	0.0	0.8	1.0	---

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 1

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS/af)										OUTFLOW (Tons of TDS/af)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1.8	1.8	1.2	2.5	1.9	1.8	1.2	2.5	1.9	—	2.7	1.8	1.8	1.8	1.8	1.8	1.8	—
FEBRUARY	0.9	0.9	1.2	1.6	1.9	0.9	1.2	1.6	1.9	—	6.2	0.9	0.9	0.9	0.9	0.9	0.9	—
MARCH	0.6	0.6	1.2	1.3	1.9	0.6	1.2	1.3	1.9	—	1.0	0.6	0.6	0.6	0.6	0.6	0.6	—
APRIL	0.7	0.7	1.1	1.4	1.9	0.7	1.1	1.4	1.9	—	1.6	0.7	0.7	0.7	0.7	0.7	0.7	—
MAY	0.8	0.8	1.1	1.5	1.9	0.8	1.1	1.5	1.9	—	2.6	0.8	0.8	0.8	0.8	0.8	0.8	—
JUNE	0.8	0.8	1.0	1.5	1.9	0.8	1.0	1.5	1.9	—	1.8	0.8	0.8	0.8	0.8	0.8	0.8	—
JULY	0.7	0.7	1.1	1.4	1.9	0.7	1.1	1.4	1.9	—	1.6	0.7	0.7	0.7	0.7	0.7	0.7	—
AUGUST	0.7	0.7	1.1	1.4	1.9	0.7	1.1	1.4	1.9	—	1.9	0.7	0.7	0.7	0.7	0.7	0.7	—
SEPTEMBER	0.7	0.7	1.2	1.4	1.9	0.7	1.2	1.4	1.9	—	4.0	0.7	0.7	0.7	0.7	0.7	0.7	—
OCTOBER	1.8	1.8	1.1	2.5	1.9	1.8	1.1	2.5	1.9	—	16.5	1.8	1.8	1.8	1.8	1.8	1.8	—
NOVEMBER	1.5	1.5	1.2	2.2	1.9	1.5	1.2	2.2	1.9	—	2.2	1.5	1.5	1.5	1.5	1.5	1.5	—
DECEMBER	1.6	1.6	1.3	2.3	1.9	1.6	1.3	2.3	1.9	—	2.3	1.6	1.6	1.6	1.6	1.6	1.6	—
AVERAGE	0.7	0.8	1.1	1.6	1.9	0.8	1.1	1.6	1.9	—	1.9	0.0	0.8	0.9	0.0	0.8	0.9	—

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 2

COMPOSITE

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)					CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	TOTAL OUTFLOW (10)	IN STORAGE (1000ac-ft) (11)
JANUARY	0.3	0.2	0.0	-1.2	-0.8	0.0	0.0	0.5	0.0	0.5	-1.3
FEBRUARY	0.3	0.4	0.9	0.7	2.2	0.0	0.0	0.2	0.8	1.0	1.2
MARCH	0.3	1.8	3.6	4.0	9.7	0.0	0.1	0.0	4.6	4.7	4.9
APRIL	0.3	1.8	3.7	-3.2	2.5	0.0	0.1	1.0	4.2	5.3	-2.8
MAY	0.3	1.8	3.6	-1.7	3.9	0.0	0.1	1.0	4.0	5.1	-1.2
JUNE	0.3	2.1	3.7	-0.9	5.2	0.0	0.2	1.0	4.3	5.4	-0.3
JULY	0.3	2.1	3.9	-1.3	5.0	0.0	0.1	0.9	5.1	6.1	-1.2
AUGUST	0.3	2.4	3.6	-7.2	-1.0	0.0	0.1	0.7	4.8	5.6	-6.6
SEPTEMBER	0.3	1.2	2.1	-5.3	-1.8	0.0	0.1	1.1	2.9	4.1	-5.9
OCTOBER	0.3	0.5	0.6	-4.9	-3.5	0.0	0.1	0.9	0.4	1.4	-4.9
NOVEMBER	0.3	0.1	0.1	-2.4	-2.0	0.0	0.0	0.7	0.1	0.9	-2.9
DECEMBER	0.3	0.2	0.0	-1.7	-1.3	0.0	0.0	0.5	0.0	0.6	-1.9
TOTAL	3.0	14.6	25.8	-25.2	18.1	0.3	1.1	8.4	31.0	40.8	-22.7

Phreatophyte area (ac)	=	200.0
Average consumptive use (ft/yr)	=	5.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 2

DRY YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)					CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	TOTAL OUTFLOW (10)	IN STORAGE (1000 ac-ft) (11)
JANUARY	0.3	0.0	0.0	-0.9	-0.7	0.0	0.0	0.9	0.0	0.9	-1.6
FEBRUARY	0.3	0.0	0.0	1.3	1.6	0.0	0.0	0.7	0.1	0.9	0.7
MARCH	0.3	2.0	3.0	7.4	12.7	0.0	0.1	-0.1	7.7	7.8	5.0
APRIL	0.3	1.7	2.8	-4.0	0.8	0.0	0.1	0.9	6.3	7.4	-6.6
MAY	0.3	1.4	2.0	-0.2	3.5	0.0	0.1	0.8	5.3	6.3	-2.9
JUNE	0.3	1.5	2.2	1.4	5.4	0.0	0.2	0.2	5.3	5.7	-0.3
JULY	0.3	2.3	3.5	0.8	6.8	0.0	0.1	0.2	8.2	8.6	-1.7
AUGUST	0.3	2.6	3.7	-4.6	1.9	0.0	0.1	0.2	8.6	8.9	-7.1
SEPTEMBER	0.3	1.4	1.9	-8.7	-5.2	0.0	0.1	0.8	4.8	5.8	-10.9
OCTOBER	0.3	0.0	0.0	-1.1	-0.9	0.0	0.1	0.8	0.1	1.0	-1.8
NOVEMBER	0.3	0.0	0.0	-1.3	-1.0	0.0	0.0	0.7	0.1	0.9	-1.9
DECEMBER	0.3	0.1	0.0	-0.9	-0.6	0.0	0.0	0.6	0.0	0.6	-1.2
TOTAL	3.0	13.0	19.2	-11.0	24.2	0.3	1.1	6.7	46.5	54.7	-30.4

Phreatophyte area (ac)	=	200.0
Average consumptive use (ft/yr)	=	5.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 2

AVERAGE YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)					CHANGE IN STORAGE (1000 ac-ft)
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	TOTAL OUTFLOW (10)	(11)
JANUARY	0.3	0.6	0.0	-1.1	-0.3	0.0	0.0	0.3	0.0	0.4	-0.6
FEBRUARY	0.3	0.6	1.0	1.3	3.1	0.0	0.0	0.1	1.5	1.6	1.5
MARCH	0.3	1.7	3.4	1.9	7.3	0.0	0.1	-0.2	3.9	3.9	3.4
APRIL	0.3	1.7	3.7	-6.0	-0.4	0.0	0.1	0.7	4.1	4.9	-5.3
MAY	0.3	1.8	3.7	-2.8	3.0	0.0	0.1	0.9	4.1	5.1	-2.1
JUNE	0.3	2.7	4.1	-3.7	3.3	0.0	0.2	1.1	5.2	6.5	-3.2
JULY	0.3	2.2	3.9	-2.5	3.9	0.0	0.1	1.2	5.0	6.3	-2.4
AUGUST	0.3	3.3	4.1	-7.4	0.3	0.0	0.1	0.9	4.2	5.3	-5.0
SEPTEMBER	0.3	1.0	1.7	-1.2	1.8	0.0	0.1	1.5	2.5	4.0	-2.3
OCTOBER	0.3	1.1	1.1	-6.9	-4.5	0.0	0.1	0.9	0.6	1.6	-6.0
NOVEMBER	0.3	0.3	0.3	-2.6	-1.8	0.0	0.0	0.7	0.2	1.0	-2.8
DECEMBER	0.3	0.5	0.0	-1.7	-0.9	0.0	0.0	0.6	0.0	0.7	-1.5
TOTAL	3.0	17.6	27.0	-32.6	15.0	0.3	1.1	8.7	31.2	41.3	-26.3

Phreatophyte area (ac)	=	200.0
Average consumptive use (ft/yr)	=	5.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 2

NORMAL YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)					CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	TOTAL OUTFLOW (10)	IN STORAGE (1000ac-ft) (11)
JANUARY	0.3	0.0	0.0	-1.6	-1.4	0.0	0.0	0.2	0.0	0.3	-1.7
FEBRUARY	0.3	0.7	1.6	-0.5	2.0	0.0	0.0	-0.1	0.7	0.7	1.3
MARCH	0.3	1.8	4.3	2.7	9.0	0.0	0.1	0.4	2.1	2.6	6.4
APRIL	0.3	1.9	4.6	0.4	7.1	0.0	0.1	1.2	2.3	3.6	3.5
MAY	0.3	2.0	5.0	-2.1	5.2	0.0	0.1	1.3	2.5	3.9	1.4
JUNE	0.3	2.0	4.9	-0.4	6.8	0.0	0.2	1.5	2.4	4.1	2.7
JULY	0.3	1.9	4.3	-2.2	4.3	0.0	0.1	1.3	2.1	3.6	0.7
AUGUST	0.3	1.3	2.9	-9.6	-5.1	0.0	0.1	1.0	1.4	2.6	-7.6
SEPTEMBER	0.3	1.1	2.7	-6.1	-2.0	0.0	0.1	1.0	1.3	2.4	-4.4
OCTOBER	0.3	0.3	0.8	-6.5	-5.2	0.0	0.1	1.1	0.5	1.6	-6.8
NOVEMBER	0.3	0.0	0.0	-3.4	-3.2	0.0	0.0	0.6	0.1	0.8	-3.9
DECEMBER	0.3	0.0	0.0	-2.7	-2.4	0.0	0.0	0.3	0.0	0.4	-2.8
TOTAL	3.0	13.2	31.1	-32.0	15.2	0.3	1.1	9.8	15.4	26.6	-11.3

Phreatophyte area (ac)	=	200.0
Average consumptive use (ft/yr)	=	5.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 2

COMPOSITE

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE IN STORAGE (1000 ac-ft) (17)	MAIN SUPPLY CANAL INFLOW (18)	MAIN SUPPLY CANAL OUTFLOW (19)
MONTH	GROSS PRECIP. (1)	CANAL FLOW TO AGR. (2)	CANAL FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)			
JANUARY	2.9	0.0	0.0	0.5	0.0	0.0	3.4	0.0	2.6	0.0	0.0	0.2	0.0	0.0	0.6	3.4	0.0	13.5	13.5
FEBRUARY	1.6	2.3	0.0	0.2	0.8	0.0	4.9	0.0	2.7	0.0	0.9	0.4	0.0	0.4	0.5	4.9	0.0	20.1	17.8
MARCH	0.6	8.3	0.0	0.0	4.5	0.1	13.6	0.0	5.6	0.1	3.6	1.8	0.1	1.4	1.0	13.6	0.0	80.5	72.2
APRIL	0.5	8.8	0.0	1.0	4.1	0.1	14.5	0.0	5.4	0.1	3.7	1.8	0.1	1.6	1.9	14.5	0.0	77.2	68.3
MAY	0.6	8.7	0.0	1.0	3.9	0.1	14.2	0.1	5.3	0.1	3.6	1.8	0.1	1.5	1.9	14.2	0.0	82.5	73.8
JUNE	2.5	9.1	0.0	1.0	4.2	0.1	16.9	0.1	7.3	0.1	3.7	2.1	0.1	1.7	2.0	16.9	0.0	97.0	87.9
JULY	6.8	9.1	0.0	0.9	5.0	0.1	21.9	0.1	11.9	0.1	3.9	2.1	0.1	1.6	2.1	21.9	0.0	106.8	97.7
AUGUST	13.8	8.0	0.0	0.7	4.7	0.1	27.3	0.0	17.6	0.1	3.6	2.4	0.1	1.4	2.1	27.3	0.0	90.7	82.6
SEPTEMBER	4.4	4.9	0.0	1.1	2.8	0.1	13.3	0.0	7.2	0.1	2.1	1.2	0.1	0.9	1.8	13.3	0.0	67.8	62.8
OCTOBER	5.5	1.6	0.0	0.9	0.3	0.1	8.5	0.0	5.7	0.1	0.6	0.5	0.1	0.3	1.2	8.5	0.0	23.4	21.8
NOVEMBER	1.0	0.2	0.0	0.7	0.0	0.1	2.1	0.0	1.0	0.1	0.1	0.1	0.1	0.0	0.7	2.1	0.0	13.8	13.6
DECEMBER	3.4	0.0	0.0	0.5	0.0	0.0	3.9	0.0	3.1	0.0	0.0	0.2	0.0	0.0	0.6	3.9	0.0	13.0	13.0
TOTAL	43.8	61.1	0.0	8.4	30.1	0.9	144.4	0.3	75.4	0.5	25.8	14.6	0.5	10.9	16.4	144.4	0.0	686.3	625.1

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.02
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.46
Fraction of "river flow to agr." as canal waste return	=	0.12	Fraction of M&I flow as M&I return flow	=	0.50
Canal area (ac)	=	102	Additional Canal Area (acres)	=	0
Percent Reduction in Seepage Losses Due to Project	=	35%	Canal outflow to M&I (acre-feet/yr)	=	166689
Canal Outflow to Agr. (acre-feet/year)	=	131040			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 2

DRY YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE	MAIN	MAIN
MONTH	GROSS PRECIP. (1)	CANAL FLOW TO AGR. (2)	CANAL FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	IN STORAGE (1000 ac-ft) (17)	SUPPLY CANAL INFLOW (18)	SUPPLY CANAL OUTFLOW (19)
JANUARY	0.3	0.0	0.0	0.9	0.0	0.0	1.2	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.9	1.2	0.0	9.2	9.2
FEBRUARY	0.3	0.1	0.0	0.7	0.1	0.0	1.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.7	1.1	0.0	8.3	8.3
MARCH	0.3	5.1	0.0	-0.1	7.6	0.1	13.1	0.0	6.0	0.1	3.0	2.0	0.1	0.9	1.0	13.1	0.0	62.0	57.0
APRIL	0.9	5.1	0.0	0.9	6.2	0.1	13.2	0.1	5.7	0.1	2.8	1.7	0.1	1.0	1.8	13.2	0.0	58.5	53.5
MAY	0.0	3.3	0.0	0.8	5.2	0.1	9.4	0.1	3.8	0.1	2.0	1.4	0.1	0.5	1.5	9.4	0.0	53.1	49.8
JUNE	3.0	4.1	0.0	0.2	5.2	0.1	12.6	0.1	6.8	0.1	2.2	1.5	0.1	0.8	1.1	12.6	0.0	65.3	61.3
JULY	4.2	6.3	0.0	0.2	8.1	0.1	18.9	0.1	10.2	0.1	3.5	2.3	0.1	1.2	1.5	18.9	0.0	80.4	74.2
AUGUST	11.1	6.6	0.0	0.2	8.5	0.1	26.5	0.0	17.1	0.1	3.7	2.6	0.1	1.3	1.8	26.5	0.0	78.1	71.5
SEPTEMBER	5.7	3.3	0.0	0.8	4.7	0.1	14.6	0.0	8.9	0.1	1.9	1.4	0.1	0.6	1.7	14.6	0.0	47.7	44.4
OCTOBER	6.6	0.0	0.0	0.8	0.0	0.1	7.5	0.0	6.3	0.1	0.0	0.0	0.1	0.0	1.0	7.5	0.0	13.2	13.2
NOVEMBER	1.0	0.0	0.0	0.7	0.0	0.1	1.8	0.0	0.9	0.1	0.0	0.0	0.1	0.0	0.8	1.8	0.0	10.4	10.4
DECEMBER	3.6	0.0	0.0	0.6	0.0	0.0	4.2	0.0	3.4	0.0	0.0	0.1	0.0	0.0	0.7	4.2	0.0	9.7	9.7
TOTAL	37.2	33.6	0.0	6.7	45.6	0.9	124.1	0.4	69.9	0.5	19.2	13.0	0.5	6.3	14.4	124.1	0.0	496.1	462.5

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.01
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.48
Fraction of "river flow to agr." as canal waste return	=	0.11	Fraction of M&I flow as M&I return flow	=	0.50
Existing Canal Area (ac)	=	102	Additional Canal Area (acres)	=	0
Percent Reduction in Seepage Losses Due to Project	=	35%	Canal outflow to M&I (acre-feet/yr)	=	166689
Canal Outflow to Agr. (acre-feet/year)	=	131040			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 2

COMPOSITE

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)					
MONTH	RIVER INFLOW (1)	CHANGES IN RELEASES FROM CAB. RES. (2)	NET PRECIP. (3)	CANAL WASTE RETURN (4)	M&I RETURN FLOW (5)	DRAIN INFLOW (6)	TRIB. INFLOW (7)	TOTAL INFLOW (8)	RIVER OUTFLOW (9)	RIVER FLOW TO M&I (10)	RIVER FLOW TO AGR. (11)	NET RIVER SEEPAGE (12)	MAIN SUPPLY CANAL (13)	TOTAL OUTFLOW (14)
JANUARY	2.0	10.4	-0.1	0.0	0.0	0.6	0.3	13.3	1.0	0.0	0.0	-1.2	13.5	13.3
FEBRUARY	14.6	6.2	-0.2	0.4	0.0	0.5	0.2	21.7	1.0	0.0	0.0	0.7	20.1	21.7
MARCH	108.8	-25.4	-0.4	1.4	0.1	1.0	0.1	85.5	1.0	0.0	0.0	4.0	80.5	85.5
APRIL	78.6	-6.7	-0.5	1.6	0.1	1.9	0.1	74.9	1.0	0.0	0.0	-3.2	77.2	74.9
MAY	78.3	0.6	-0.6	1.5	0.1	1.9	0.1	81.8	1.0	0.0	0.0	-1.7	82.5	81.8
JUNE	101.1	-7.2	-0.7	1.7	0.1	2.0	0.2	97.1	1.0	0.0	0.0	-0.9	97.0	97.1
JULY	114.4	-12.1	-0.6	1.6	0.1	2.1	1.0	106.5	1.0	0.0	0.0	-1.3	106.8	106.5
AUGUST	89.4	-9.9	-0.4	1.4	0.1	2.1	1.8	84.5	1.0	0.0	0.0	-7.2	90.7	84.5
SEPTEMBER	51.3	9.2	-0.4	0.9	0.1	1.8	0.7	63.4	1.0	0.0	0.0	-5.3	67.8	63.4
OCTOBER	5.1	12.3	-0.2	0.3	0.1	1.2	0.8	19.6	1.0	0.0	0.0	-4.9	23.4	19.6
NOVEMBER	0.1	11.5	-0.1	0.0	0.1	0.7	0.1	12.4	1.0	0.0	0.0	-2.4	13.8	12.4
DECEMBER	0.1	11.2	-0.1	0.0	0.0	0.6	0.4	12.3	1.0	0.0	0.0	-1.7	13.0	12.3
TOTAL	643.9	0.0	-4.5	10.9	0.5	16.4	5.8	673.0	11.9	0.0	0.0	-25.2	686.3	673.0

River area (ac)	=	1114.1	Area in alluvial valley (ac)	=	0.0
Loss rate	=	0.0	Annual runoff	=	0.02
			Tributary area	=	279040

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 2

DRY YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)					
MONTH	RIVER INFLOW (1)	CHANGES IN RELEASES FROM CAB. RES. (2)	NET PRECIP. (3)	CANAL WASTE RETURN (4)	M&I RETURN FLOW (5)	DRAIN INFLOW (6)	TRIB. INFLOW (7)	TOTAL INFLOW (8)	RIVER OUTFLOW (9)	RIVER FLOW TO M&I (10)	RIVER FLOW TO AGR. (11)	NET RIVER SEEPAGE (12)	MAIN SUPPLY CANAL (13)	TOTAL OUTFLOW (14)
JANUARY	0.1	8.4	-0.1	0.0	0.0	0.9	0.1	9.3	1.0	0.0	0.0	-0.9	9.2	9.3
FEBRUARY	2.6	7.4	-0.2	0.0	0.0	0.7	0.0	10.6	1.0	0.0	0.0	1.3	8.3	10.6
MARCH	97.6	-28.7	-0.4	0.9	0.1	1.0	0.1	70.4	1.0	0.0	0.0	7.4	62.0	70.4
APRIL	54.2	-1.2	-0.6	1.0	0.1	1.8	0.2	55.5	1.0	0.0	0.0	-4.0	58.5	55.5
MAY	43.5	9.0	-0.7	0.5	0.1	1.5	0.0	53.8	1.0	0.0	0.0	-0.2	53.1	53.8
JUNE	69.3	-3.1	-0.8	0.8	0.1	1.1	0.4	67.7	1.0	0.0	0.0	1.4	65.3	67.7
JULY	91.0	-11.6	-0.7	1.2	0.1	1.5	0.7	82.2	1.0	0.0	0.0	0.8	80.4	82.2
AUGUST	85.2	-15.0	-0.5	1.3	0.1	1.8	1.7	74.5	1.0	0.0	0.0	-4.6	78.1	74.5
SEPTEMBER	31.4	6.0	-0.4	0.6	0.1	1.7	0.7	40.0	1.0	0.0	0.0	-8.7	47.7	40.0
OCTOBER	0.1	10.8	-0.2	0.0	0.1	1.0	1.2	13.0	1.0	0.0	0.0	-1.1	13.2	13.0
NOVEMBER	0.0	9.3	-0.2	0.0	0.1	0.8	0.1	10.1	1.0	0.0	0.0	-1.3	10.4	10.1
DECEMBER	0.0	8.7	-0.1	0.0	0.0	0.7	0.5	9.8	1.0	0.0	0.0	-0.9	9.7	9.8
TOTAL	474.8	0.0	-4.9	6.3	0.5	14.4	5.8	496.9	11.8	0.0	0.0	-11.0	496.1	496.9

River area (ac)	=	1114	Baseline SW flow needed by M&I in R1	0	Baseline SW flow needed by M&I in R2	43.1
Loss rate	=	0.0	Baseline SW flow needed by Agr. in R1	50.5	Baseline SW flow needed by Agr. in R2	292.9
Area in alluvial	=	0.0	Baseline GW flow needed by M&I in R1	0.9	Baseline GW flow needed by M&I in R2	3.1
Annual runoff	=	0.02	Baseline GW flow needed by Agr. in R1	28.8	Baseline GW flow needed by Agr. in R2	144.5
Tributary area	=	279040				

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 2

AVERAGE YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)					
MONTH	RIVER INFLOW (1)	CHANGES IN RELEASES FROM CAB. RES. (2)	NET PRECIP. (3)	CANAL WASTE RETURN (4)	M&I RETURN FLOW (5)	DRAIN INFLOW (6)	TRIB. INFLOW (7)	TOTAL INFLOW (8)	RIVER OUTFLOW (9)	RIVER FLOW TO M&I (10)	RIVER FLOW TO AGR. (11)	NET RIVER SEEPAGE (12)	MAIN SUPPLY CANAL (13)	TOTAL OUTFLOW (14)
JANUARY	2.5	11.8	-0.1	0.0	0.0	0.5	0.3	15.1	1.0	0.0	0.0	-1.1	15.1	15.1
FEBRUARY	16.9	5.1	-0.2	0.5	0.0	0.4	0.1	22.8	1.0	0.0	0.0	1.3	20.5	22.8
MARCH	97.6	-14.9	-0.4	1.2	0.1	0.7	0.1	84.4	1.0	0.0	0.0	1.9	81.6	84.4
APRIL	77.1	-7.9	-0.5	1.4	0.1	1.6	0.0	71.8	1.0	0.0	0.0	-6.0	76.7	71.8
MAY	86.8	-6.9	-0.6	1.5	0.1	1.8	0.0	82.6	1.0	0.0	0.0	-2.8	84.5	82.6
JUNE	103.2	-10.3	-0.7	1.7	0.1	2.3	0.3	96.5	1.0	0.0	0.0	-3.7	99.2	96.5
JULY	125.5	-14.7	-0.6	1.4	0.1	2.4	0.9	114.9	1.0	0.0	0.0	-2.5	116.3	114.9
AUGUST	89.0	-7.6	-0.3	1.4	0.1	2.4	1.6	86.6	1.0	0.0	0.0	-7.4	93.0	86.6
SEPTEMBER	57.7	11.0	-0.4	0.6	0.1	2.1	1.0	72.1	1.0	0.0	0.0	-1.2	72.3	72.1
OCTOBER	1.3	11.5	-0.2	0.6	0.1	1.3	0.7	15.3	1.0	0.0	0.0	-6.9	21.2	15.3
NOVEMBER	0.1	11.8	-0.1	0.1	0.1	0.8	0.1	12.9	1.0	0.0	0.0	-2.6	14.4	12.9
DECEMBER	0.1	11.1	-0.1	0.0	0.0	0.8	0.5	12.4	1.0	0.0	0.0	-1.7	13.0	12.4
TOTAL	657.7	0.0	-4.1	10.3	0.5	17.1	5.8	687.3	12.0	0.0	0.0	-32.6	707.8	687.3

River area (ac)	=	1114	Baseline SW flow needed by M&I in R1	0	Baseline SW flow needed by M&I in R2	43.1
Loss rate	=	0.0	Baseline SW flow needed by Agr. in R1	75.2	Baseline SW flow needed by Agr. in R2	367.5
Area in alluvial	=	0.0	Baseline GW flow needed by M&I in R1	0.9	Baseline GW flow needed by M&I in R2	3.1
Annual runoff	=	0.02	Baseline GW flow needed by Agr. in R1	18.1	Baseline GW flow needed by Agr. in R2	103.1
Tributary area	=	279040				

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 2

NORMAL YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)					
MONTH	RIVER INFLOW (1)	CHANGES IN RELEASES FROM CAB. RES. (2)	NET PRECIP. (3)	CANAL WASTE RETURN (4)	M&I RETURN FLOW (5)	DRAIN INFLOW (6)	TRIB. INFLOW (7)	TOTAL INFLOW (8)	RIVER OUTFLOW (9)	RIVER FLOW TO M&I (10)	RIVER FLOW TO AGR. (11)	NET RIVER SEEPAGE (12)	MAIN SUPPLY CANAL (13)	TOTAL OUTFLOW (14)
JANUARY	3.3	11.1	-0.1	0.0	0.0	0.4	0.6	15.4	1.0	0.0	0.0	-1.6	16.1	15.4
FEBRUARY	24.4	6.0	-0.1	0.8	0.0	0.4	0.4	31.9	1.0	0.0	0.0	-0.5	31.4	31.9
MARCH	131.2	-32.7	-0.4	2.2	0.1	1.2	0.1	101.7	1.0	0.0	0.0	2.7	97.9	101.7
APRIL	104.6	-11.1	-0.5	2.4	0.1	2.2	0.0	97.6	1.0	0.0	0.0	0.4	96.3	97.6
MAY	104.8	-0.4	-0.6	2.6	0.1	2.3	0.1	108.9	1.0	0.0	0.0	-2.1	109.9	108.9
JUNE	130.8	-8.1	-0.8	2.6	0.1	2.5	0.1	127.1	1.0	0.0	0.0	-0.4	126.5	127.1
JULY	126.8	-10.0	-0.5	2.2	0.1	2.6	1.3	122.4	1.0	0.0	0.0	-2.2	123.7	122.4
AUGUST	94.0	-7.1	-0.3	1.5	0.1	2.2	2.1	92.4	1.0	0.0	0.0	-9.6	101.0	92.4
SEPTEMBER	64.8	10.5	-0.5	1.4	0.1	1.6	0.3	78.2	1.0	0.0	0.0	-6.1	83.3	78.2
OCTOBER	13.8	14.6	-0.3	0.4	0.1	1.4	0.4	30.4	1.0	0.0	0.0	-6.5	35.9	30.4
NOVEMBER	0.3	13.3	-0.1	0.0	0.1	0.7	0.1	14.2	1.0	0.0	0.0	-3.4	16.7	14.2
DECEMBER	0.2	13.9	-0.2	0.0	0.0	0.4	0.3	14.6	1.0	0.0	0.0	-2.7	16.4	14.6
TOTAL	799.1	0.0	-4.4	16.2	0.5	17.7	5.8	834.9	12.0	0.0	0.0	-32.0	854.9	834.9

River area (ac)	=	1114	Baseline SW flow needed by M&I in R1	0	Baseline SW flow needed by M&I in R2	43.1
Loss rate	=	0.0	Baseline SW flow needed by Agr. in R1	91.5	Baseline SW flow needed by Agr. in R2	410.8
Area in alluvial	=	0.0	Baseline GW flow needed by M&I in R1	0.9	Baseline GW flow needed by M&I in R2	3.1
Annual runoff	=	0.02	Baseline GW flow needed by Agr. in R1	9.8	Baseline GW flow needed by Agr. in R2	61.9
Tributary area	=	279040				

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 2

COMPOSITE

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS)							OUTFLOW (Tons of TDS)						CHANGE
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	MAIN SUPPLY CANAL (12)	TOTAL OUTFLOW (13)	IN MASS (Tons of TDS) (14)
JANUARY	12958	0	0	0	901	650	14508	1741	0	0	-1268	14035	14508	0
FEBRUARY	17505	0	345	0	786	399	19036	1605	0	0	683	16748	19036	0
MARCH	56361	0	954	46	1528	168	59055	1957	0	0	2868	54230	59055	0
APRIL	50390	0	1122	42	2965	183	54701	2860	0	0	-2472	54313	54701	0
MAY	55900	0	1057	38	3034	121	60149	2961	0	0	-1113	58301	60149	0
JUNE	69839	0	1210	34	3127	452	74662	3275	0	0	-467	71854	74662	0
JULY	72606	0	1137	43	3517	1828	79130	4334	0	0	-756	75552	79130	0
AUGUST	67209	0	1195	52	2898	3458	74811	4268	0	0	-5688	76231	74811	0
SEPTEMBER	50692	0	732	61	2750	1303	55538	3081	0	0	-5807	58263	55538	0
OCTOBER	18980	0	353	49	1888	1478	22746	2356	0	0	-5312	25702	22746	0
NOVEMBER	11847	0	46	51	1120	210	13274	1614	0	0	-2412	14072	13274	0
DECEMBER	13594	0	0	0	993	819	15406	1838	0	0	-2057	15624	15406	0
TOTAL	497879	0	8150	412	25505	11069	543015	31891	0	0	-23800	534924	543015	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 2

DRY YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS)							OUTFLOW (Tons of TDS)						CHANGE IN MASS (Tons of TDS) (14)
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	MAIN SUPPLY CANAL (12)	TOTAL OUTFLOW (13)	
JANUARY	10880	0	0	0	1245	133	12258	1655	0	0	-1166	11768	12258	0
FEBRUARY	10900	0	5	0	1014	82	12002	1540	0	0	1368	9093	12002	0
MARCH	52568	0	675	46	1337	156	54782	1777	0	0	5648	47357	54782	0
APRIL	43962	0	860	42	2490	384	47739	2498	0	0	-3333	48574	47739	0
MAY	46171	0	441	38	2075	0	48724	2198	0	0	-182	46709	48724	0
JUNE	61094	0	725	34	1476	708	64036	2464	0	0	1256	60316	64036	0
JULY	73343	0	1126	43	2029	1282	77823	2831	0	0	715	74277	77823	0
AUGUST	91217	0	1652	52	2444	3287	98652	3140	0	0	-5997	101510	98652	0
SEPTEMBER	53808	0	862	61	2352	1393	58475	2310	0	0	-12559	68724	58475	0
OCTOBER	14170	0	0	49	1429	2371	18019	2331	0	0	-1485	17172	18019	0
NOVEMBER	11811	0	0	51	1061	269	13191	1585	0	0	-1646	13252	13191	0
DECEMBER	11136	0	0	0	968	1003	13108	1806	0	0	-1156	12458	13108	0
TOTAL	481060	0	6347	412	19920	11069	518807	26135	0	0	-18537	511210	518807	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 2

AVERAGE YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS)							OUTFLOW (Tons of TDS)						CHANGE IN MASS (Tons of TDS) (14)
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	MAIN SUPPLY CANAL (12)	TOTAL OUTFLOW (13)	
JANUARY	14620	0	0	0	865	648	16133	1803	0	0	-1109	15438	16133	0.0
FEBRUARY	17573	0	391	0	669	277	18909	1457	0	0	1073	16379	18909	0.0
MARCH	57086	0	846	46	1244	227	59449	1859	0	0	1314	56276	59449	0.0
APRIL	49569	0	1021	42	2656	71	53359	2675	0	0	-4310	54994	53359	0.0
MAY	48473	0	896	38	3139	87	52632	3089	0	0	-1701	51244	52632	0.0
JUNE	60054	0	1067	34	3757	524	65435	3680	0	0	-2395	64150	65435	0.0
JULY	70521	0	865	43	4056	1725	77210	4718	0	0	-1564	74056	77210	0.0
AUGUST	55352	0	979	52	2790	3073	62246	4009	0	0	-5007	63243	62246	0.0
SEPTEMBER	48548	0	396	61	3179	1971	54154	3917	0	0	-856	51093	54154	0.0
OCTOBER	14809	0	655	49	2316	1337	19166	2572	0	0	-8016	24609	19166	0.0
NOVEMBER	11384	0	139	51	1344	176	13094	1792	0	0	-2495	13797	13094	0.0
DECEMBER	14852	0	0	0	1408	952	17212	2136	0	0	-2201	17277	17212	0.0
TOTAL	462842	0	7255	412	27421	11069	508998	33708	0	0	-27268	502558	508998	0.0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 2

NORMAL YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS)							OUTFLOW (Tons of TDS)						CHANGE IN MASS (Tons of TDS) (14)
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	MAIN SUPPLY CANAL (12)	TOTAL OUTFLOW (13)	
JANUARY	13375	0	0	0	592	1168	15135	1766	0	0	-1529	14898	15135	0
FEBRUARY	24042	0	640	0	675	840	26197	1817	0	0	-391	24772	26197	0
MARCH	59428	0	1339	46	2002	120	62935	2237	0	0	1640	59059	62935	0
APRIL	57638	0	1483	42	3748	93	63004	3408	0	0	226	59370	63004	0
MAY	73057	0	1834	38	3887	274	79090	3595	0	0	-1455	76949	79090	0
JUNE	88368	0	1840	34	4150	123	94514	3681	0	0	-262	91095	94514	0
JULY	73952	0	1419	43	4466	2477	82357	5454	0	0	-1419	78323	82357	0
AUGUST	55058	0	953	52	3459	4013	63535	5655	0	0	-6060	63940	63535	0
SEPTEMBER	49720	0	937	61	2720	545	53983	3016	0	0	-4005	54973	53983	0
OCTOBER	27959	0	403	49	1918	726	31055	2165	0	0	-6434	35324	31055	0
NOVEMBER	12346	0	0	51	956	186	13538	1466	0	0	-3094	15166	13538	0
DECEMBER	14793	0	0	0	601	503	15897	1572	0	0	-2813	17138	15897	0
TOTAL	549736	0	10848	412	29174	11069	601239	35830	0	0	-25596	591005	601239	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 2

COMPOSITE

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS/af)							OUTFLOW (Tons of TDS/af)					
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	MAIN SUPPLY CANAL (12)	TOTAL OUTFLOW (13)
JANUARY	1.0	0.0	1.1	1.0	1.6	1.9	—	1.7	1.1	1.1	1.1	1.1	—
FEBRUARY	0.8	0.0	0.9	1.0	1.7	1.9	—	1.6	0.9	0.9	0.9	0.9	—
MARCH	0.7	0.0	0.7	0.9	1.6	1.9	—	2.0	0.7	0.7	0.7	0.7	—
APRIL	0.7	0.0	0.7	0.8	1.6	1.9	—	2.9	0.7	0.7	0.7	0.7	—
MAY	0.7	0.0	0.7	0.8	1.6	1.9	—	3.0	0.7	0.7	0.7	0.7	—
JUNE	0.7	0.0	0.8	0.7	1.6	1.9	—	3.3	0.8	0.8	0.8	0.8	—
JULY	0.7	0.0	0.7	0.9	1.6	1.9	—	4.3	0.7	0.7	0.7	0.7	—
AUGUST	0.8	0.0	0.9	1.0	1.4	1.9	—	4.2	0.9	0.9	0.9	0.9	—
SEPTEMBER	0.8	0.0	0.9	1.2	1.5	1.9	—	3.1	0.9	0.9	0.9	0.9	—
OCTOBER	1.1	0.0	1.1	1.0	1.5	1.9	—	2.4	1.1	1.1	1.1	1.1	—
NOVEMBER	1.0	0.0	1.0	1.0	1.5	1.9	—	1.6	1.0	1.0	1.0	1.0	—
DECEMBER	1.2	0.0	1.2	1.1	1.5	1.9	—	1.9	1.2	1.2	1.2	1.2	—
AVERAGE	0.8	0.0	0.7	0.9	1.6	1.9	—	2.7	#DIV/0!	#DIV/0!	0.9	0.8	—

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 2

DRY YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS/af)							OUTFLOW (Tons of TDS/af)					
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	MAIN SUPPLY CANAL (12)	TOTAL OUTFLOW (13)
JANUARY	1.3	0.0	1.3	1.0	1.4	1.9	---	1.6	1.3	1.3	1.3	1.3	---
FEBRUARY	1.1	0.0	1.1	1.0	1.4	1.9	---	1.6	1.1	1.1	1.1	1.1	---
MARCH	0.8	0.0	0.8	0.9	1.4	1.9	---	1.9	0.8	0.8	0.8	0.8	---
APRIL	0.8	0.0	0.8	0.8	1.4	1.9	---	2.6	0.8	0.8	0.8	0.8	---
MAY	0.9	0.0	0.9	0.8	1.4	1.9	---	2.3	0.9	0.9	0.9	0.9	---
JUNE	0.9	0.0	0.9	0.7	1.4	1.9	---	2.5	0.9	0.9	0.9	0.9	---
JULY	0.9	0.0	0.9	0.9	1.4	1.9	---	3.0	0.9	0.9	0.9	0.9	---
AUGUST	1.3	0.0	1.3	1.0	1.4	1.9	---	3.0	1.3	1.3	1.3	1.3	---
SEPTEMBER	1.4	0.0	1.4	1.2	1.4	1.9	---	2.3	1.4	1.4	1.4	1.4	---
OCTOBER	1.3	0.0	1.3	1.0	1.4	1.9	---	2.4	1.3	1.3	1.3	1.3	---
NOVEMBER	1.3	0.0	1.3	1.0	1.4	1.9	---	1.6	1.3	1.3	1.3	1.3	---
DECEMBER	1.3	0.0	1.3	1.1	1.4	1.9	---	1.9	1.3	1.3	1.3	1.3	---
AVERAGE	1.0	0.0	1.0	0.9	1.4	1.9	---	2.2	#DIV/0!	#DIV/0!	1.7	1.0	---

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 2

AVERAGE YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS/af)							OUTFLOW (Tons of TDS/af)					
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	MAIN SUPPLY CANAL (12)	TOTAL OUTFLOW (13)
JANUARY	1.0	0.0	1.0	1.0	1.9	1.9	---	1.7	1.0	1.0	1.0	1.0	---
FEBRUARY	0.8	0.0	0.8	1.0	1.8	1.9	---	1.5	0.8	0.8	0.8	0.8	---
MARCH	0.7	0.0	0.7	0.9	1.8	1.9	---	1.9	0.7	0.7	0.7	0.7	---
APRIL	0.7	0.0	0.7	0.8	1.7	1.9	---	2.6	0.7	0.7	0.7	0.7	---
MAY	0.6	0.0	0.6	0.8	1.8	1.9	---	3.2	0.6	0.6	0.6	0.6	---
JUNE	0.6	0.0	0.6	0.7	1.6	1.9	---	3.7	0.6	0.6	0.6	0.6	---
JULY	0.6	0.0	0.6	0.9	1.7	1.9	---	4.5	0.6	0.6	0.6	0.6	---
AUGUST	0.7	0.0	0.7	1.0	1.1	1.9	---	4.2	0.7	0.7	0.7	0.7	---
SEPTEMBER	0.7	0.0	0.7	1.2	1.5	1.9	---	3.9	0.7	0.7	0.7	0.7	---
OCTOBER	1.2	0.0	1.2	1.0	1.7	1.9	---	2.7	1.2	1.2	1.2	1.2	---
NOVEMBER	1.0	0.0	1.0	1.0	1.7	1.9	---	1.7	1.0	1.0	1.0	1.0	---
DECEMBER	1.3	0.0	1.3	1.1	1.8	1.9	---	2.0	1.3	1.3	1.3	1.3	---
AVERAGE	0.7	0.0	0.7	0.9	1.6	1.9	---	2.8	#DIV/0!	#DIV/0!	0.8	0.7	---

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 2

NORMAL YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS/af)							OUTFLOW (Tons of TDS/af)					
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	MAIN SUPPLY CANAL (12)	TOTAL OUTFLOW (13)
JANUARY	0.9	0.0	0.9	1.0	1.5	1.9	—	1.8	0.9	0.9	0.9	0.9	—
FEBRUARY	0.8	0.0	0.8	1.0	1.8	1.9	—	1.7	0.8	0.8	0.8	0.8	—
MARCH	0.6	0.0	0.6	0.9	1.6	1.9	—	2.1	0.6	0.6	0.6	0.6	—
APRIL	0.6	0.0	0.6	0.8	1.7	1.9	—	3.6	0.6	0.6	0.6	0.6	—
MAY	0.7	0.0	0.7	0.8	1.7	1.9	—	3.6	0.7	0.7	0.7	0.7	—
JUNE	0.7	0.0	0.7	0.7	1.7	1.9	—	3.8	0.7	0.7	0.7	0.7	—
JULY	0.6	0.0	0.6	0.9	1.7	1.9	—	5.5	0.6	0.6	0.6	0.6	—
AUGUST	0.6	0.0	0.6	1.0	1.6	1.9	—	5.4	0.6	0.6	0.6	0.6	—
SEPTEMBER	0.7	0.0	0.7	1.2	1.7	1.9	—	3.0	0.7	0.7	0.7	0.7	—
OCTOBER	1.0	0.0	1.0	1.0	1.4	1.9	—	2.1	1.0	1.0	1.0	1.0	—
NOVEMBER	0.9	0.0	0.9	1.0	1.4	1.9	—	1.5	0.9	0.9	0.9	0.9	—
DECEMBER	1.0	0.0	1.0	1.1	1.5	1.9	—	1.6	1.0	1.0	1.0	1.0	—
AVERAGE	0.7	0.0	0.7	0.9	1.6	1.9	—	3.0	#DIV/0!	#DIV/0!	0.8	0.7	—

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 2

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)						CHANGE IN STORAGE (1000 ac-ft) (12)
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	NET LEAKANCE TO MESILLA BOLSON (10)	TOTAL OUTFLOW (11)	
JANUARY	0.0	0.3	0.3	4.1	4.7	0.0	0.0	5.7	0.1	-1.1	4.7	0.0
FEBRUARY	0.0	0.7	2.0	6.2	8.9	0.0	0.0	4.6	0.3	4.0	8.9	0.0
MARCH	0.0	7.0	20.9	7.9	35.8	0.0	0.0	4.8	8.4	22.6	35.8	0.0
APRIL	0.0	6.9	17.5	2.6	27.1	0.0	0.0	7.5	9.9	9.7	27.1	0.0
MAY	0.0	8.2	17.3	2.2	27.7	0.0	0.0	7.1	12.7	7.9	27.7	0.0
JUNE	0.0	10.7	21.4	6.4	38.6	0.0	0.0	7.0	17.1	14.5	38.6	0.0
JULY	0.0	12.6	25.4	7.2	45.2	0.0	0.0	8.3	19.9	17.0	45.2	0.0
AUGUST	0.0	11.6	21.7	7.2	40.6	0.0	0.0	9.8	17.2	13.5	40.6	0.0
SEPTEMBER	0.0	7.6	15.0	3.0	25.6	0.0	0.0	10.1	11.7	3.8	25.6	0.0
OCTOBER	0.0	1.0	2.2	4.6	7.8	0.0	0.0	9.3	0.3	-1.8	7.8	0.0
NOVEMBER	0.0	0.1	0.2	3.7	4.0	0.0	0.0	5.9	0.1	-1.9	4.0	0.0
DECEMBER	0.0	0.4	0.0	4.2	4.7	0.0	0.0	4.9	0.0	-0.2	4.7	0.0
TOTAL	0.3	67.2	143.8	59.3	270.6	0.1	0.0	85.0	97.6	88.0	270.6	0.0

Phreatophyte area	=	0.0
Average consumptive use	=	0.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 2

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)						CHANGE IN STORAGE (1000 ac-ft) (12)
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	NET LEAKANCE TO MESILLA BOLSON (10)	TOTAL OUTFLOW (11)	
JANUARY	0.0	0.0	0.0	3.9	3.9	0.0	0.0	6.5	0.0	-2.5	3.9	0.0
FEBRUARY	0.0	0.0	0.0	4.1	4.1	0.0	0.0	4.9	0.0	-0.8	4.1	0.0
MARCH	0.0	6.8	21.8	3.0	31.7	0.0	0.0	2.9	13.8	15.0	31.7	0.0
APRIL	0.0	7.1	17.2	-6.2	18.1	0.0	0.0	5.5	15.4	-2.8	18.1	0.0
MAY	0.0	7.6	13.4	-6.0	15.0	0.0	0.0	4.3	18.1	-7.4	15.0	0.0
JUNE	0.0	10.6	17.1	2.5	30.2	0.0	0.0	2.8	24.6	2.8	30.2	0.0
JULY	0.0	13.2	23.3	6.3	42.7	0.0	0.0	2.9	29.3	10.5	42.7	0.0
AUGUST	0.0	12.4	23.9	6.6	42.9	0.0	0.0	4.6	26.8	11.5	42.9	0.0
SEPTEMBER	0.0	7.5	12.5	1.8	21.8	0.0	0.0	5.8	16.8	-0.9	21.8	0.0
OCTOBER	0.0	0.2	0.7	6.2	7.1	0.0	0.0	6.0	0.3	0.7	7.1	0.0
NOVEMBER	0.0	0.2	0.3	4.6	5.1	0.0	0.0	4.5	0.2	0.5	5.1	0.0
DECEMBER	0.0	0.1	0.1	5.4	5.6	0.0	0.0	4.4	0.1	1.2	5.6	0.0
TOTAL	0.3	65.6	130.3	32.1	228.3	0.1	0.0	55.1	145.3	27.8	228.3	0.0

Phreatophyte area	=	0.0
Average consumptive use	=	0.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 2

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)						CHANGE IN STORAGE (1000 ac-ft)
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	NET LEAKANCE TO MESILLA BOLSON (10)	TOTAL OUTFLOW (11)	(12)
JANUARY	0.0	0.5	0.8	2.9	4.3	0.0	0.0	4.9	0.2	-0.9	4.3	0.0
FEBRUARY	0.0	0.8	2.2	6.4	9.4	0.0	0.0	4.1	0.5	4.8	9.4	0.0
MARCH	0.0	7.3	19.7	8.3	35.4	0.0	0.0	4.0	7.9	23.4	35.4	0.0
APRIL	0.0	7.0	16.3	7.1	30.5	0.0	0.0	6.6	9.5	14.3	30.5	0.0
MAY	0.0	8.9	17.1	8.9	34.9	0.0	0.0	6.6	13.1	15.1	34.9	0.0
JUNE	0.0	11.2	20.9	11.1	43.2	0.0	0.0	7.5	17.3	18.3	43.2	0.0
JULY	0.0	13.6	27.0	9.6	50.2	0.0	0.0	9.1	20.2	20.9	50.2	0.0
AUGUST	0.0	12.3	20.2	4.8	37.3	0.0	0.0	10.2	16.4	10.6	37.3	0.0
SEPTEMBER	0.0	8.3	16.0	1.7	26.0	0.0	0.0	10.2	12.0	3.8	26.0	0.0
OCTOBER	0.0	1.1	1.1	2.6	4.8	0.0	0.0	9.4	0.3	-4.9	4.8	0.0
NOVEMBER	0.0	0.2	0.2	3.8	4.2	0.0	0.0	7.2	0.0	-3.1	4.2	0.0
DECEMBER	0.0	0.7	0.0	4.3	5.0	0.0	0.0	5.8	0.0	-0.8	5.0	0.0
TOTAL	0.3	71.8	141.5	71.4	285.0	0.1	0.0	85.7	97.6	101.6	285.0	0.0

Phreatophyte area	=	0.0
Average consumptive use	=	0.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 2

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)						CHANGE IN STORAGE (1000 ac-ft) (12)
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	NET LEAKANCE TO MESILLA BOLSON (10)	TOTAL OUTFLOW (11)	
JANUARY	0.0	0.3	0.0	5.6	5.9	0.0	0.0	5.7	0.0	0.2	5.9	0.0
FEBRUARY	0.0	1.4	3.8	8.1	13.3	0.0	0.0	4.9	0.3	8.1	13.3	0.0
MARCH	0.0	6.9	21.1	12.3	40.3	0.0	0.0	7.5	3.4	29.4	40.3	0.0
APRIL	0.0	6.7	19.0	7.0	32.7	0.0	0.0	10.4	4.7	17.6	32.7	0.0
MAY	0.0	8.2	21.4	3.6	33.2	0.0	0.0	10.3	6.9	16.0	33.2	0.0
JUNE	0.0	10.4	26.2	5.7	42.2	0.0	0.0	10.7	9.3	22.2	42.2	0.0
JULY	0.0	11.1	25.9	5.7	42.7	0.0	0.0	12.9	10.1	19.7	42.7	0.0
AUGUST	0.0	10.2	21.1	10.2	41.5	0.0	0.0	14.7	8.5	18.3	41.5	0.0
SEPTEMBER	0.0	6.9	16.4	5.6	28.9	0.0	0.0	14.5	6.1	8.4	28.9	0.0
OCTOBER	0.0	1.7	4.7	5.1	11.6	0.0	0.0	12.4	0.4	-1.2	11.6	0.0
NOVEMBER	0.0	0.1	0.0	2.7	2.8	0.0	0.0	5.9	0.0	-3.1	2.8	0.0
DECEMBER	0.0	0.3	0.0	3.1	3.4	0.0	0.0	4.4	0.0	-1.1	3.4	0.0
TOTAL	0.3	64.2	159.6	74.5	298.6	0.1	0.0	114.3	49.8	134.5	298.6	0.0

Phreatophyte area	=	0.0
Average consumptive use	=	0.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 2

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE IN STORAGE (1000 ac-ft)	MAIN SUPPLY CANAL INFLOW	MAIN SUPPLY CANAL OUTFLOW	OUTFLOW TO MEXICO	DEFICIT IN FULL SUPPLY
MONTH	GROSS PRECIP. (1)	CANAL FLOW TO AGR. (2)	CANAL FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	(17)	(18)	(19)	(20)	(21)
JANUARY	5.4	0.6	2.3	5.7	0.1	0.5	14.7	0.0	5.3	1.4	0.3	0.3	1.4	0.1	6.0	14.7	0.0	13.5	5.6	5.0	11.4
FEBRUARY	5.1	4.6	2.1	4.6	0.5	0.5	17.5	0.0	6.5	1.3	2.0	0.7	1.3	0.5	5.1	17.5	0.0	17.8	6.0	5.0	11.3
MARCH	2.6	42.3	2.7	4.8	13.9	0.6	67.0	1.4	21.7	1.7	20.9	7.0	1.7	4.3	8.3	67.0	0.0	72.2	22.2	5.0	11.3
APRIL	2.2	36.0	3.3	7.5	16.5	0.8	66.3	1.8	21.1	2.1	17.5	6.9	2.1	3.8	11.0	66.3	0.0	68.3	24.0	5.0	11.3
MAY	4.0	36.3	3.6	7.1	21.1	1.5	73.6	2.1	26.0	2.5	17.3	8.2	2.5	3.8	11.2	73.6	0.0	73.8	29.0	5.0	11.3
JUNE	5.2	45.0	3.4	7.0	28.5	2.0	91.1	2.5	33.9	2.7	21.4	10.7	2.7	4.8	12.4	91.1	0.0	87.9	34.4	5.0	11.3
JULY	14.3	52.4	3.6	8.3	33.1	1.6	113.3	2.0	47.6	2.6	25.4	12.6	2.6	5.5	14.9	113.3	0.0	97.7	36.8	5.0	11.3
AUGUST	30.0	43.9	3.4	9.8	28.7	0.9	116.9	1.3	57.1	2.2	21.7	11.6	2.2	4.5	16.3	116.9	0.0	82.6	30.3	5.0	11.3
SEPTEMBER	10.3	31.2	3.2	10.1	19.4	0.8	75.2	1.4	29.8	2.0	15.0	7.6	2.0	3.2	14.1	75.2	0.0	62.8	23.4	5.0	11.3
OCTOBER	9.5	5.0	2.8	9.3	0.5	0.6	27.7	0.0	10.6	1.7	2.2	1.0	1.7	0.5	10.0	27.7	0.0	21.8	9.1	5.0	11.3
NOVEMBER	3.2	0.3	2.4	5.9	0.1	0.5	12.4	0.0	3.1	1.5	0.2	0.1	1.5	0.0	6.0	12.4	0.0	13.6	5.9	5.0	11.3
DECEMBER	9.2	0.1	2.3	4.9	0.0	0.5	17.0	0.0	8.5	1.4	0.0	0.4	1.4	0.0	5.2	17.0	0.0	13.0	5.6	5.0	11.3
TOTAL	101.1	297.6	35.2	85.0	162.6	11.0	692.5	12.4	271.3	23.1	143.8	67.2	23.1	31.0	120.6	692.5	0.0	625.1	232.3	60.0	135.4

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.02
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.44
Fraction of "river flow to agr." as canal waste return	=	0.08	Fraction of M&I flow as M&I return flow	=	0.50
Area of alluvial valley (ac)	=	147974	Canal area (ac)	=	3690
Canal outflow to M&I (acre-feet/yr)	=	166689	Additional Canal Area (acres)	=	0
Canal Outflow to Agr. (acre-feet/year)	=	131040			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 2

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE	MAIN	MAIN		
MONTH	GROSS PRECIP. (1)	CANAL FLOW TO AGR. (2)	CANAL FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	IN STORAGE (1000 ac-ft) (17)	SUPPLY CANAL INFLOW (18)	SUPPLY CANAL OUTFLOW (19)	OUTFLOW TO MEXICO (20)	DEFICIT IN FULL SUPPLY (21)
JANUARY	1.7	0.0	1.9	6.5	0.0	0.9	11.0	0.0	1.7	1.4	0.0	0.0	1.4	0.0	6.5	11.0	0.0	9.2	2.3	5.0	18.6
FEBRUARY	2.0	0.0	1.7	4.9	0.0	0.9	9.5	0.0	1.9	1.3	0.0	0.0	1.3	0.0	5.0	9.5	0.0	8.3	1.6	5.0	18.6
MARCH	0.8	32.3	2.2	2.9	22.9	1.1	62.2	1.5	19.7	1.7	21.8	6.8	1.7	2.8	6.3	62.2	0.0	57.0	17.5	5.0	18.6
APRIL	2.4	26.2	2.7	5.5	25.7	1.4	63.9	1.9	21.9	2.1	17.2	7.1	2.1	2.6	9.0	63.9	0.0	53.5	19.5	5.0	18.5
MAY	1.3	19.4	2.9	4.3	30.1	2.2	60.2	2.3	22.2	2.5	13.4	7.6	2.5	1.6	8.1	60.2	0.0	49.8	22.5	5.0	18.5
JUNE	5.8	25.6	2.8	2.8	41.0	2.6	80.7	2.6	34.3	2.7	17.1	10.6	2.7	2.4	8.2	80.7	0.0	61.3	27.8	5.0	18.5
JULY	20.7	35.1	2.9	2.9	48.9	2.3	112.7	2.0	55.6	2.6	23.3	13.2	2.6	3.4	10.1	112.7	0.0	74.2	31.2	5.0	18.5
AUGUST	16.3	36.2	2.8	4.6	44.6	1.6	106.1	1.8	48.9	2.2	23.9	12.4	2.2	3.5	11.2	106.1	0.0	71.5	27.5	5.0	18.5
SEPTEMBER	7.5	18.7	2.6	5.8	28.1	1.4	64.1	1.6	27.2	2.0	12.5	7.5	2.0	1.6	9.7	64.1	0.0	44.4	18.1	5.0	18.5
OCTOBER	8.3	1.0	2.3	6.0	0.5	1.1	19.4	0.0	8.5	1.7	0.7	0.2	1.7	0.1	6.5	19.4	0.0	13.2	4.9	5.0	18.5
NOVEMBER	4.4	0.5	2.0	4.5	0.3	1.0	12.5	0.0	4.4	1.5	0.3	0.2	1.5	0.0	4.7	12.5	0.0	10.4	3.0	5.0	18.5
DECEMBER	7.4	0.2	1.9	4.4	0.1	1.0	14.9	0.0	7.1	1.4	0.1	0.1	1.4	0.0	4.7	14.9	0.0	9.7	2.6	5.0	18.5
TOTAL	78.7	195.2	28.7	55.1	242.2	17.5	617.4	13.6	253.5	23.1	130.3	65.6	23.1	18.1	90.0	617.4	0.0	462.5	178.6	60.0	222.3
			386.5																		

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.01
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.47
Fraction of "river flow to agr." as canal waste return	=	0.06	Fraction of M&I flow as M&I return flow	=	0.50
Area of alluvial valley (ac)	=	147974	Existing Canal area (ac)	=	3690
Canal outflow to M&I (acre-feet/yr)	=	166689	Additional Canal Area (acres)	=	0
Canal Outflow to Agr. (acre-feet/year)	=	131040			
Percent Reduction in Seepage Losses Due to Project	=	12%			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 2

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE IN	MAIN SUPPLY	MAIN SUPPLY	OUTFLOW	DEFICIT
MONTH	GROSS PRECIP. (1)	CANAL FLOW TO AGR. (2)	CANAL FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	STORAGE (1000 ac-ft) (17)	CANAL INFLOW (18)	CANAL OUTFLOW (19)	TO MEXICO (20)	IN FULL SUPPLY (21)
JANUARY	5.1	1.8	2.4	4.9	0.4	0.5	15.0	0.0	5.4	1.4	0.8	0.5	1.4	0.2	5.3	15.0	0.0	15.1	6.0	5.0	11.4
FEBRUARY	5.7	4.7	2.2	4.1	0.9	0.4	18.0	0.0	7.3	1.3	2.2	0.8	1.3	0.5	4.6	18.0	0.0	18.1	6.2	5.0	11.3
MARCH	3.5	43.0	2.8	4.0	13.2	0.5	67.1	1.3	23.3	1.7	19.7	7.3	1.7	4.4	7.7	67.1	0.0	73.7	22.9	5.0	11.3
APRIL	2.7	35.4	3.4	6.6	15.8	0.7	64.7	1.7	21.8	2.1	16.3	7.0	2.1	3.7	10.2	64.7	0.0	68.2	24.3	5.0	11.3
MAY	8.0	37.1	3.6	6.6	21.8	1.5	78.6	1.9	30.7	2.5	17.1	8.9	2.5	3.9	11.1	78.6	0.0	75.8	30.1	5.0	11.3
JUNE	5.8	45.5	3.5	7.5	28.9	1.9	93.1	2.3	35.4	2.7	20.9	11.2	2.7	4.7	13.1	93.1	0.0	89.6	35.5	5.0	11.3
JULY	5.3	58.8	3.6	9.1	33.7	1.6	112.0	2.1	42.2	2.6	27.0	13.6	2.6	6.1	15.9	112.0	0.0	107.2	39.8	5.0	11.3
AUGUST	29.4	44.0	3.5	10.2	27.4	0.8	115.4	1.2	56.4	2.2	20.2	12.3	2.2	4.3	16.7	115.4	0.0	83.5	30.9	5.0	11.3
SEPTEMBER	11.1	34.9	3.3	10.2	20.1	0.7	80.3	1.3	32.4	2.0	16.0	8.3	2.0	3.6	14.5	80.3	0.0	68.4	25.2	5.0	11.3
OCTOBER	11.6	2.4	2.9	9.4	0.5	0.6	27.3	0.0	11.5	1.7	1.1	1.1	1.7	0.2	10.1	27.3	0.0	18.5	8.3	5.0	11.3
NOVEMBER	3.1	0.3	2.5	7.2	0.1	0.5	13.7	0.0	3.0	1.5	0.2	0.2	1.5	0.0	7.4	13.7	0.0	13.7	5.9	5.0	11.3
DECEMBER	10.5	0.0	2.4	5.8	0.0	0.5	19.2	0.0	9.4	1.4	0.0	0.7	1.4	0.0	6.2	19.2	0.0	13.0	5.6	5.0	11.3
TOTAL	101.9	308.0	36.1	85.7	162.6	10.1	704.4	11.8	278.6	23.1	141.5	71.8	23.1	31.7	122.8	704.4	0.0	644.8	240.7	60.0	135.7

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.03
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.42
Fraction of "river flow to agr." as canal waste return	=	0.08	Fraction of M&I flow as M&I return flow	=	0.50
Area of alluvial valley (ac)	=	147974	Canal area (ac)	=	3690
Canal outflow to M&I (acre-feet/yr)	=	166689	Additional Canal Area (acres)	=	0
Canal Outflow to Agr. (acre-feet/year)	=	131040			
Percent Reduction in Seepage Losses Due to Project	=	12%			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 2

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE	MAIN	MAIN		
MONTH	GROSS PRECIP. (1)	CANAL FLOW TO AGR. (2)	CANAL FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	IN STORAGE (1000 ac-ft) (17)	SUPPLY CANAL INFLOW (18)	SUPPLY CANAL OUTFLOW (19)	OUTFLOW TO MEXICO (20)	DEFICIT IN FULL SUPPLY (21)
JANUARY	9.5	0.0	2.7	5.7	0.0	0.1	18.0	0.0	8.8	1.4	0.0	0.3	1.4	0.0	6.1	18.0	0.0	16.1	8.4	5.0	4.1
FEBRUARY	7.6	9.2	2.5	4.9	0.5	0.1	24.8	0.0	10.3	1.3	3.8	1.4	1.3	1.0	5.8	24.8	0.0	27.0	10.3	5.0	4.1
MARCH	3.5	51.6	3.2	7.5	5.7	0.2	71.6	1.3	22.1	1.7	21.1	6.9	1.7	5.7	11.0	71.6	0.0	86.0	26.2	5.0	4.0
APRIL	1.4	46.3	3.8	10.4	7.9	0.3	70.1	1.8	19.7	2.1	19.0	6.7	2.1	5.2	13.7	70.1	0.0	83.4	28.2	5.0	4.0
MAY	2.8	52.3	4.1	10.3	11.5	1.0	82.0	2.1	25.1	2.5	21.4	8.2	2.5	5.8	14.4	82.0	0.0	95.9	34.4	5.0	4.0
JUNE	3.9	63.9	4.0	10.7	15.6	1.4	99.5	2.5	32.1	2.7	26.2	10.4	2.7	7.1	15.9	99.5	0.0	112.8	39.9	5.0	4.0
JULY	16.9	63.2	4.1	12.9	16.8	1.1	115.1	1.9	45.2	2.6	25.9	11.1	2.6	7.0	18.8	115.1	0.0	111.7	39.3	5.0	4.0
AUGUST	44.4	51.5	4.0	14.7	14.2	0.4	129.3	0.9	66.0	2.2	21.1	10.2	2.2	5.7	20.9	129.3	0.0	92.9	32.3	5.0	4.0
SEPTEMBER	12.4	40.0	3.8	14.5	10.2	0.3	81.1	1.4	29.7	2.0	16.4	6.9	2.0	4.5	18.2	81.1	0.0	75.7	26.9	5.0	4.0
OCTOBER	8.5	11.5	3.2	12.4	0.6	0.2	36.4	0.0	11.9	1.7	4.7	1.7	1.7	1.3	13.4	36.4	0.0	33.7	14.0	5.0	4.0
NOVEMBER	2.1	0.0	2.8	5.9	0.0	0.2	10.9	0.0	1.9	1.5	0.0	0.1	1.5	0.0	6.0	10.9	0.0	16.7	8.9	5.0	4.0
DECEMBER	9.7	0.0	2.7	4.4	0.0	0.1	16.9	0.0	9.0	1.4	0.0	0.3	1.4	0.0	4.8	16.9	0.0	16.4	8.7	5.0	4.0
TOTAL	122.6	389.7	40.9	114.3	83.0	5.3	755.8	11.8	281.8	23.1	159.6	64.2	23.1	43.3	149.0	755.8	0.0	768.1	277.5	60.0	48.2

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.03
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.42
Fraction of "river flow to agr." as canal waste return	=	0.10	Fraction of M&I flow as M&I return flow	=	0.50
Area of alluvial valley (ac)	=	147974	Canal area (ac)	=	3690
Canal outflow to M&I (acre-feet/yr)	=	166689	Additional Canal Area (acres)	=	0
Canal Outflow to Agr. (acre-feet/year)	=	131040			
Percent Reduction in Seepage Losses Due to Project	=	12%			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 2

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)												OUTFLOW (1000 ac-ft)							
		LEASBURG DAM TO MESILLA DAM					MESILLA DAM TO AMERICAN DAM							LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	NET PRECIP. (7)	CANAL WASTE RETURN (8)	M&I RETURN FLOW (9)	DRAIN INFLOW (10)	TRIB. INFLOW (11)	TOTAL INFLOW (12)	RIVER OUTFLOW - AMERICAN (13)	RIVER FLOW TO M&I (14)	RIVER FLOW TO AGR. (15)	NET RIVER SEEPAGE (16)	RIVER FLOW TO M&I (17)	RIVER FLOW TO AGR. (18)	NET RIVER SEEPAGE (19)	TOTAL OUTFLOW (20)
JANUARY	1.0	0.0	0.0	0.5	2.2	0.1	-0.1	0.0	0.9	3.8	0.6	9.0	4.9	0.0	0.0	1.7	0.0	0.0	2.5	9.0
FEBRUARY	1.0	-0.1	0.2	0.5	1.9	0.1	-0.2	0.3	0.8	3.2	0.7	8.5	2.3	0.0	0.0	2.5	0.0	0.0	3.7	8.5
MARCH	1.0	-0.2	1.6	0.6	3.1	0.1	-0.3	2.7	1.0	5.3	0.4	15.3	7.4	0.0	0.0	3.1	0.0	0.0	4.7	15.3
APRIL	1.0	-0.3	1.4	0.8	4.1	0.0	-0.5	2.4	1.3	6.9	0.3	17.5	14.9	0.0	0.0	1.1	0.0	0.0	1.6	17.5
MAY	1.0	-0.3	1.4	0.9	4.1	0.1	-0.5	2.4	1.6	7.1	0.4	18.2	16.0	0.0	0.0	0.9	0.0	0.0	1.3	18.2
JUNE	1.0	-0.4	1.8	1.0	4.6	0.1	-0.6	3.0	1.7	7.8	0.6	20.5	14.1	0.0	0.0	2.6	0.0	0.0	3.8	20.5
JULY	1.0	-0.3	2.0	1.0	5.5	0.3	-0.5	3.5	1.6	9.4	2.1	25.6	18.5	0.0	0.0	2.9	0.0	0.0	4.3	25.6
AUGUST	1.0	-0.2	1.7	0.8	6.0	0.5	-0.3	2.8	1.4	10.2	3.4	27.3	20.2	0.0	0.0	2.9	0.0	0.0	4.3	27.3
SEPTEMBER	1.0	-0.2	1.2	0.7	5.2	0.2	-0.4	2.0	1.3	8.9	1.3	21.3	18.3	0.0	0.0	1.2	0.0	0.0	1.8	21.3
OCTOBER	1.0	-0.1	0.2	0.6	3.7	0.2	-0.2	0.3	1.1	6.3	1.2	14.2	9.6	0.0	0.0	1.9	0.0	0.0	2.8	14.2
NOVEMBER	1.0	-0.1	0.0	0.5	2.2	0.1	-0.1	0.0	0.9	3.8	0.4	8.8	5.1	0.0	0.0	1.5	0.0	0.0	2.2	8.8
DECEMBER	1.0	-0.1	0.0	0.5	1.9	0.2	-0.1	0.0	0.9	3.3	1.1	8.7	4.5	0.0	0.0	1.7	0.0	0.0	2.5	8.7
TOTAL	11.9	-2.2	11.5	8.5	44.6	1.9	-3.8	19.5	14.6	76.0	12.4	195.0	135.7	0.0	0.0	23.7	0.0	0.0	35.6	195.0

River width (Leasburg to Mesilla)	=	200.0	River width (Mesilla to American)	=	200.0
River length (Leasburg to Mesilla)	=	21.9	River length (Mesilla to American)	=	38.5
River seepage rate (Leasburg to Mesilla)	=	-	River seepage rate (Mesilla to American)	=	-
Percent of population (Leasburg to Mesilla)	=	0.4	Percent of population (Mesilla to American)	=	0.6
Percent of agricultural area (Leasburg to Mesilla)	=	0.4	Percent of agricultural area (Mesilla to American)	=	0.6
Percent of drainage area (Leasburg to Mesilla)	=	0.1	Percent of drainage area (Mesilla to American)	=	0.9
Percent of river seepage (Leasburg to Mesilla)	=	0.4	Percent of river seepage (Mesilla to American)	=	0.6
Annual runoff	=	0.3	Total drainage area (ac)	=	685387.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 2

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)												OUTFLOW (1000 ac-ft)							
		LEASBURG DAM TO MESILLA DAM					MESILLA DAM TO AMERICAN DAM							LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	NET PRECIP. (7)	CANAL WASTE RETURN (8)	M&I RETURN FLOW (9)	DRAIN INFLOW (10)	TRIB. INFLOW (11)	TOTAL INFLOW (12)	RIVER OUTFLOW - AMERICAN (13)	RIVER FLOW TO M&I (14)	RIVER FLOW TO AGR. (15)	NET RIVER SEEPAGE (16)	RIVER FLOW TO M&I (17)	RIVER FLOW TO AGR. (18)	NET RIVER SEEPAGE (19)	TOTAL OUTFLOW (20)
JANUARY	1.0	-0.1	0.0	0.5	2.4	0.0	-0.1	0.0	0.9	4.1	0.3	9.2	5.3	0.0	0.0	1.6	0.0	0.0	2.3	9.2
FEBRUARY	1.0	-0.1	0.0	0.5	1.9	0.1	-0.2	0.0	0.8	3.2	0.4	7.4	3.3	0.0	0.0	1.6	0.0	0.0	2.4	7.4
MARCH	1.0	-0.2	1.0	0.6	2.3	0.0	-0.4	1.7	1.0	4.0	0.2	11.3	8.2	0.0	0.0	1.2	0.0	0.0	1.8	11.3
APRIL	1.0	-0.3	1.0	0.8	3.3	0.1	-0.5	1.7	1.3	5.7	0.5	14.5	20.7	0.0	0.0	-2.5	0.0	0.0	-3.7	14.5
MAY	1.0	-0.3	0.6	0.9	3.0	0.0	-0.6	1.0	1.6	5.1	0.2	12.5	18.4	0.0	0.0	-2.4	0.0	0.0	-3.6	12.5
JUNE	1.0	-0.4	0.9	1.0	3.0	0.1	-0.7	1.5	1.7	5.1	0.7	14.0	11.6	0.0	0.0	1.0	0.0	0.0	1.5	14.0
JULY	1.0	-0.3	1.3	1.0	3.7	0.5	-0.5	2.1	1.6	6.4	3.4	20.2	13.9	0.0	0.0	2.5	0.0	0.0	3.8	20.2
AUGUST	1.0	-0.3	1.3	0.8	4.1	0.4	-0.5	2.2	1.4	7.1	2.5	20.1	13.5	0.0	0.0	2.6	0.0	0.0	4.0	20.1
SEPTEMBER	1.0	-0.2	0.6	0.7	3.6	0.2	-0.4	1.0	1.3	6.1	1.0	14.9	13.0	0.0	0.0	0.7	0.0	0.0	1.1	14.9
OCTOBER	1.0	-0.1	0.0	0.6	2.4	0.2	-0.2	0.1	1.1	4.1	1.5	10.7	4.5	0.0	0.0	2.5	0.0	0.0	3.7	10.7
NOVEMBER	1.0	-0.1	0.0	0.5	1.7	0.1	-0.1	0.0	0.9	3.0	0.6	7.7	3.1	0.0	0.0	1.8	0.0	0.0	2.8	7.7
DECEMBER	1.0	-0.1	0.0	0.5	1.7	0.2	-0.1	0.0	0.9	3.0	1.2	8.3	2.9	0.0	0.0	2.2	0.0	0.0	3.2	8.3
TOTAL	11.8	-2.4	6.7	8.5	33.3	1.9	-4.2	11.4	14.6	56.7	12.4	150.7	118.6	0.0	0.0	12.8	0.0	0.0	19.3	150.7

River width (Leasburg to Mesilla)	=	200.0	River width (Mesilla to American)	=	200.0	Baseline SW flow needed by M&I	0
River length (Leasburg to Mesilla)	=	21.9	River length (Mesilla to American)	=	38.5	Baseline SW flow needed by Agr. i	50.5
River seepage rate (Leasburg to Mesilla)	=	-	River seepage rate (Mesilla to American)	=	-	Baseline GW flow needed by M&I	0.9
Percent of population (Leasburg to Mesilla)	=	0.37	Percent of population (Mesilla to American)	=	0.63	Baseline GW flow needed by Agr.	28.8
Percent of agricultural area (Leasburg to Mesilla)	=	0.37	Percent of agricultural area (Mesilla to American)	=	0.63	Baseline SW flow needed by M&I	43.1
Percent of drainage area (Leasburg to Mesilla)	=	0.13	Percent of drainage area (Mesilla to American)	=	0.87	Baseline SW flow needed by Agr. i	292.9
Percent of river seepage (Leasburg to Mesilla)	=	0.40	Percent of river seepage (Mesilla to American)	=	0.60	Baseline GW flow needed by M&I	3.1
Annual runoff	=	0.25	Total drainage area (ac)	=	685387.0	Baseline GW flow needed by Agr.	144.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 2

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)												OUTFLOW (1000 ac-ft)							
		LEASBURG DAM TO MESILLA DAM					MESILLA DAM TO AMERICAN DAM							LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	NET PRECIP. (7)	CANAL WASTE RETURN (8)	M&I RETURN FLOW (9)	DRAIN INFLOW (10)	TRIB. INFLOW (11)	TOTAL INFLOW (12)	RIVER OUTFLOW - AMERICAN (13)	RIVER FLOW TO M&I (14)	RIVER FLOW TO AGR. (15)	NET RIVER SEEPAGE (16)	RIVER FLOW TO M&I (17)	RIVER FLOW TO AGR. (18)	NET RIVER SEEPAGE (19)	TOTAL OUTFLOW (20)
JANUARY	1.0	0.0	0.1	0.5	1.9	0.1	-0.1	0.1	0.9	3.3	0.5	8.4	5.5	0.0	0.0	1.2	0.0	0.0	1.7	8.4
FEBRUARY	1.0	-0.1	0.2	0.5	1.7	0.1	-0.1	0.3	0.8	2.9	1.0	8.3	1.9	0.0	0.0	2.6	0.0	0.0	3.8	8.3
MARCH	1.0	-0.2	1.6	0.6	2.9	0.1	-0.3	2.8	1.0	4.9	0.8	15.2	6.8	0.0	0.0	3.3	0.0	0.0	5.0	15.2
APRIL	1.0	-0.2	1.4	0.8	3.8	0.1	-0.4	2.3	1.3	6.4	0.3	16.7	9.5	0.0	0.0	2.9	0.0	0.0	4.3	16.7
MAY	1.0	-0.3	1.4	0.9	4.1	0.1	-0.5	2.5	1.6	7.0	0.8	18.8	9.9	0.0	0.0	3.6	0.0	0.0	5.3	18.8
JUNE	1.0	-0.3	1.8	1.0	4.8	0.1	-0.6	3.0	1.7	8.3	0.7	21.4	10.4	0.0	0.0	4.4	0.0	0.0	6.6	21.4
JULY	1.0	-0.3	2.2	1.0	5.9	0.2	-0.5	3.8	1.6	10.0	1.1	26.0	16.5	0.0	0.0	3.8	0.0	0.0	5.7	26.0
AUGUST	1.0	-0.2	1.6	0.8	6.2	0.5	-0.3	2.7	1.4	10.5	3.2	27.3	22.5	0.0	0.0	1.9	0.0	0.0	2.9	27.3
SEPTEMBER	1.0	-0.2	1.3	0.7	5.4	0.2	-0.3	2.3	1.3	9.2	1.6	22.5	20.8	0.0	0.0	0.7	0.0	0.0	1.0	22.5
OCTOBER	1.0	-0.1	0.1	0.6	3.7	0.2	-0.2	0.1	1.1	6.3	1.1	13.9	11.3	0.0	0.0	1.0	0.0	0.0	1.6	13.9
NOVEMBER	1.0	-0.1	0.0	0.5	2.7	0.0	-0.1	0.0	0.9	4.7	0.3	10.1	6.3	0.0	0.0	1.5	0.0	0.0	2.3	10.1
DECEMBER	1.0	0.0	0.0	0.5	2.3	0.1	-0.1	0.0	0.9	3.9	1.0	9.7	5.4	0.0	0.0	1.7	0.0	0.0	2.6	9.7
TOTAL	12.0	-2.0	11.7	8.5	45.4	1.9	-3.6	19.9	14.6	77.4	12.4	198.2	126.8	0.0	0.0	28.6	0.0	0.0	42.8	198.2

River width (Leasburg to Mesilla)	=	200.0	River width (Mesilla to American)	=	200.0	Baseline SW flow needed by M&I 0
River length (Leasburg to Mesilla)	=	21.9	River length (Mesilla to American)	=	38.5	Baseline SW flow needed by Agr. i 75.2
River seepage rate (Leasburg to Mesilla)	=	-	River seepage rate (Mesilla to American)	=	-	Baseline GW flow needed by M&I 0.9
Percent of population (Leasburg to Mesilla)	=	0.37	Percent of population (Mesilla to American)	=	0.63	Baseline GW flow needed by Agr. 18.1
Percent of agricultural area (Leasburg to Mesilla)	=	0.37	Percent of agricultural area (Mesilla to American)	=	0.63	Baseline SW flow needed by M&I 43.1
Percent of drainage area (Leasburg to Mesilla)	=	0.13	Percent of drainage area (Mesilla to American)	=	0.87	Baseline SW flow needed by Agr. i 367.5
Percent of river seepage (Leasburg to Mesilla)	=	0.40	Percent of river seepage (Mesilla to American)	=	0.60	Baseline GW flow needed by M&I 3.1
Annual runoff	=	0.25	Total drainage area (ac)	=	685387.0	Baseline GW flow needed by Agr. 103.1

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 3

DRY YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)					
MONTH	RIVER INFLOW (1)	CHANGES IN RELEASES FROM CAB. RES. (2)	NET PRECIP. (3)	CANAL WASTE RETURN (4)	M&I RETURN FLOW (5)	DRAIN INFLOW (6)	TRIB. INFLOW (7)	TOTAL INFLOW (8)	RIVER OUTFLOW (9)	RIVER FLOW TO M&I (10)	RIVER FLOW TO AGR. (11)	NET RIVER SEEPAGE (12)	PIPE FLOW (13)	TOTAL OUTFLOW (14)
JANUARY	0.1	13.2	-0.1	0.0	0.0	0.9	0.1	14.1	1.0	0.0	0.0	-0.9	14.1	14.1
FEBRUARY	2.6	12.3	-0.2	0.0	0.0	0.7	0.0	15.4	1.0	0.0	0.1	1.3	13.1	15.4
MARCH	97.6	-22.0	-0.4	0.9	0.1	1.0	0.1	77.1	41.3	0.0	8.3	7.4	20.0	77.1
APRIL	54.2	-9.1	-0.6	1.0	0.1	1.8	0.2	47.6	19.9	0.0	8.2	-4.0	23.5	47.6
MAY	43.5	0.8	-0.7	0.5	0.1	1.5	0.0	45.6	13.1	0.0	5.4	-0.2	27.3	45.6
JUNE	69.3	-6.7	-0.8	0.8	0.1	1.1	0.4	64.1	27.8	0.0	6.6	1.4	28.4	64.1
JULY	91.0	-15.0	-0.7	1.2	0.1	1.5	0.7	78.8	40.1	0.0	10.2	0.8	27.7	78.8
AUGUST	85.2	-16.7	-0.5	1.3	0.1	1.8	1.7	72.8	42.2	0.0	10.6	-4.6	24.6	72.8
SEPTEMBER	31.4	2.0	-0.4	0.6	0.1	1.7	0.7	36.0	16.2	0.0	5.4	-8.7	23.2	36.0
OCTOBER	0.1	14.4	-0.2	0.0	0.1	1.0	1.2	16.6	1.0	0.0	0.0	-1.1	16.8	16.6
NOVEMBER	0.0	13.5	-0.2	0.0	0.1	0.8	0.1	14.3	1.0	0.0	0.0	-1.3	14.6	14.3
DECEMBER	0.0	13.3	-0.1	0.0	0.0	0.7	0.5	14.4	1.0	0.0	0.0	-0.9	14.3	14.4
TOTAL	474.8	0.0	-4.9	6.3	0.5	14.4	5.8	496.8	205.6	0.0	54.7	-11.0	247.5	496.8

River area (ac)	=	1114	SW flow needed by M&I in R1	0	SW flow needed by M&I in R2	43.1
Loss rate	=	0.0	SW flow needed by Agr. in R1	60.6	SW flow needed by Agr. in R2	311.1
Area in alluvial valley (ac)	=	0.0	GW flow needed by M&I in R1	0.9	GW flow needed by M&I in R2	3.1
Annual runoff (ft)	=	0.02	GW flow needed by Agr. in R1	28.8	GW flow needed by Agr. in R2	144.5
Tributary area (ac)	=	279040				

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 3

AVERAGE YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)					
MONTH	RIVER INFLOW (1)	CHANGES IN RELEASES FROM CAB. RES. (2)	NET PRECIP. (3)	CANAL WASTE RETURN (4)	M&I RETURN FLOW (5)	DRAIN INFLOW (6)	TRIB. INFLOW (7)	TOTAL INFLOW (8)	RIVER OUTFLOW (9)	RIVER FLOW TO M&I (10)	RIVER FLOW TO AGR. (11)	NET RIVER SEEPAGE (12)	PIPE FLOW (13)	TOTAL OUTFLOW (14)
JANUARY	2.5	14.6	-0.1	0.0	0.0	0.5	0.3	17.9	1.0	0.0	0.0	-1.1	17.9	17.9
FEBRUARY	16.9	10.0	-0.2	0.5	0.0	0.4	0.1	27.7	6.0	0.0	3.4	1.3	17.0	27.7
MARCH	97.6	-10.0	-0.4	1.2	0.1	0.7	0.1	89.3	55.9	0.0	11.2	1.9	20.3	89.3
APRIL	77.1	-10.0	-0.5	1.4	0.1	1.6	0.0	69.7	39.6	0.0	12.2	-6.0	23.9	69.7
MAY	86.8	-9.5	-0.6	1.5	0.1	1.8	0.0	80.0	42.8	0.0	12.3	-2.8	27.8	80.0
JUNE	103.2	-9.5	-0.7	1.7	0.1	2.3	0.3	97.3	58.5	0.0	13.7	-3.7	28.8	97.3
JULY	125.5	-15.7	-0.6	1.4	0.1	2.4	0.9	113.9	75.3	0.0	12.9	-2.5	28.1	113.9
AUGUST	89.0	-9.5	-0.3	1.4	0.1	2.4	1.6	84.7	53.5	0.0	13.5	-7.4	25.0	84.7
SEPTEMBER	57.7	-8.3	-0.4	0.6	0.1	2.1	1.0	52.8	24.9	0.0	5.5	-1.2	23.6	52.8
OCTOBER	1.3	14.8	-0.2	0.6	0.1	1.3	0.7	18.6	1.0	0.0	3.8	-6.9	20.7	18.6
NOVEMBER	0.1	16.8	-0.1	0.1	0.1	0.8	0.1	17.9	1.0	0.0	1.0	-2.6	18.5	17.9
DECEMBER	0.1	16.3	-0.1	0.0	0.0	0.8	0.5	17.6	1.0	0.0	0.0	-1.7	18.2	17.6
TOTAL	657.7	0.0	-4.1	10.3	0.5	17.1	5.8	687.3	360.7	0.0	89.4	-32.6	269.8	687.3

River area (ac)	=	1114	SW flow needed by M&I in R1	0	SW flow needed by M&I in R2	43.1
Loss rate	=	0.0	SW flow needed by Agr. in R1	60.6	SW flow needed by Agr. in R2	311.1
Area in alluvial valley (ac)	=	0.0	GW flow needed by M&I in R1	0.9	GW flow needed by M&I in R2	3.1
Annual runoff (ft)	=	0.02	GW flow needed by Agr. in R1	28.8	GW flow needed by Agr. in R2	144.5
Tributary area (ac)	=	279040				

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 3

NORMAL YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)					
MONTH	RIVER INFLOW (1)	CHANGES IN RELEASES FROM CAB. RES. (2)	NET PRECIP. (3)	CANAL WASTE RETURN (4)	M&I RETURN FLOW (5)	DRAIN INFLOW (6)	TRIB. INFLOW (7)	TOTAL INFLOW (8)	RIVER OUTFLOW (9)	RIVER FLOW TO M&I (10)	RIVER FLOW TO AGR. (11)	NET RIVER SEEPAGE (12)	PIPE FLOW (13)	TOTAL OUTFLOW (14)
JANUARY	3.3	13.0	-0.1	0.0	0.0	0.4	0.6	17.3	1.0	0.0	0.0	-1.6	17.9	17.3
FEBRUARY	24.4	6.6	-0.1	0.8	0.0	0.4	0.4	32.5	10.6	0.0	5.4	-0.5	17.0	32.5
MARCH	131.2	-7.6	-0.4	2.2	0.1	1.2	0.1	126.8	88.9	0.0	14.8	2.7	20.3	126.8
APRIL	104.6	-7.6	-0.5	2.4	0.1	2.2	0.0	101.1	60.8	0.0	16.0	0.4	23.9	101.1
MAY	104.8	-7.5	-0.6	2.6	0.1	2.3	0.1	101.8	58.6	0.0	17.5	-2.1	27.8	101.8
JUNE	130.8	-7.5	-0.8	2.6	0.1	2.5	0.1	127.7	82.3	0.0	17.0	-0.4	28.8	127.7
JULY	126.8	-8.0	-0.5	2.2	0.1	2.6	1.3	124.4	83.6	0.0	14.9	-2.2	28.1	124.4
AUGUST	94.0	-7.5	-0.3	1.5	0.1	2.2	2.1	92.0	66.5	0.0	10.0	-9.6	25.0	92.0
SEPTEMBER	64.8	-7.5	-0.5	1.4	0.1	1.6	0.3	60.2	33.2	0.0	9.5	-6.1	23.6	60.2
OCTOBER	13.8	2.6	-0.3	0.4	0.1	1.4	0.4	18.4	1.5	0.0	2.7	-6.5	20.7	18.4
NOVEMBER	0.3	15.2	-0.1	0.0	0.1	0.7	0.1	16.1	1.0	0.0	0.0	-3.4	18.5	16.1
DECEMBER	0.2	15.8	-0.2	0.0	0.0	0.4	0.3	16.5	1.0	0.0	0.0	-2.7	18.2	16.5
TOTAL	799.1	0.0	-4.4	16.2	0.5	17.7	5.8	834.9	489.2	0.0	107.9	-32.0	269.8	834.9

River area (ac)	=	1114	SW flow needed by M&I in R1	0	SW flow needed by M&I in R2	43.1
Loss rate	=	0.0	SW flow needed by Agr. in R1	60.6	SW flow needed by Agr. in R2	311.1
Area in alluvial valley (ac)	=	0.0	GW flow needed by M&I in R1	0.9	GW flow needed by M&I in R2	3.1
Annual runoff (ft)	=	0.02	GW flow needed by Agr. in R1	28.8	GW flow needed by Agr. in R2	144.5
Tributary area (ac)	=	279040				

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 3

COMPOSITE

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS)							OUTFLOW (Tons of TDS)						CHANGE IN MASS (Tons of TDS) (14)
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	PIPE FLOW (12)	TOTAL OUTFLOW (13)	
JANUARY	16545	0	0	0	901	650	18095	1720	0	0	-1268	17643	18095	0
FEBRUARY	20738	0	345	0	786	399	22269	5479	0	2353	683	13754	22269	0
MARCH	64241	0	954	46	1528	168	66935	42529	0	7672	2868	13867	66935	0
APRIL	48422	0	1122	42	2965	183	52733	29636	0	8465	-2472	17104	52733	0
MAY	51312	0	1057	38	3034	121	55561	28432	0	8135	-1113	20106	55561	0
JUNE	69047	0	1210	34	3127	452	73870	43439	0	9052	-467	21846	73870	0
JULY	71769	0	1137	43	3517	1828	78293	49603	0	9018	-756	20428	78293	0
AUGUST	65957	0	1195	52	2898	3458	73559	47845	0	9786	-5688	21617	73559	0
SEPTEMBER	40266	0	732	61	2750	1303	45111	23081	0	5955	-5807	21881	45111	0
OCTOBER	17868	0	353	49	1888	1478	21634	2550	0	2352	-5312	22043	21634	0
NOVEMBER	15810	0	46	51	1120	210	17237	1649	0	308	-2412	17692	17237	0
DECEMBER	18524	0	0	0	993	819	20336	1866	0	0	-2057	20527	20336	0
TOTAL	500499	0	8150	412	25505	11069	545634	277830	0	63096	-23800	228509	545634	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 3

DRY YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS)							OUTFLOW (Tons of TDS)						CHANGE IN MASS (Tons of TDS) (14)
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	PIPE FLOW (12)	TOTAL OUTFLOW (13)	
JANUARY	17024	0	0	0	1245	133	18402	1566	0	0	-1166	18002	18402	0
FEBRUARY	16205	0	5	0	1014	82	17306	1553	0	98	1368	14287	17306	0
MARCH	57683	0	675	46	1337	156	59896	32606	0	6358	5648	15283	59896	0
APRIL	37405	0	860	42	2490	384	41182	18242	0	6789	-3333	19484	41182	0
MAY	38955	0	441	38	2075	0	41508	12903	0	4737	-182	24050	41508	0
JUNE	57770	0	725	34	1476	708	60712	27205	0	6053	1256	26198	60712	0
JULY	70204	0	1126	43	2029	1282	74683	39012	0	9385	715	25572	74683	0
AUGUST	89007	0	1652	52	2444	3287	96442	56650	0	13799	-5997	31990	96442	0
SEPTEMBER	48048	0	862	61	2352	1393	52715	24159	0	7708	-12559	33407	52715	0
OCTOBER	18807	0	0	49	1429	2371	22655	2359	0	0	-1485	21781	22655	0
NOVEMBER	17187	0	0	51	1061	269	18567	1665	0	0	-1646	18549	18567	0
DECEMBER	17024	0	0	0	968	1003	18996	1828	0	0	-1156	18324	18996	0
TOTAL	485318	0	6347	412	19920	11069	523065	219749	0	54927	-18537	266927	523065	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 3

AVERAGE YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS)							OUTFLOW (Tons of TDS)						CHANGE IN MASS (Tons of TDS) (14)
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	PIPE FLOW (12)	TOTAL OUTFLOW (13)	
JANUARY	17476	0	0	0	865	648	18989	1796	0	0	-1109	18302	18989	0
FEBRUARY	21493	0	391	0	669	277	22829	5491	0	2693	1073	13572	22829	0
MARCH	60467	0	846	46	1244	227	62830	39747	0	7728	1314	14040	62830	0
APRIL	48064	0	1021	42	2656	71	51854	30337	0	8719	-4310	17108	51854	0
MAY	46895	0	896	38	3139	87	51055	28476	0	7442	-1701	16839	51055	0
JUNE	60571	0	1067	34	3757	524	65953	40895	0	8838	-2395	18615	65953	0
JULY	69885	0	865	43	4056	1725	76573	52021	0	8213	-1564	17904	76573	0
AUGUST	54060	0	979	52	2790	3073	60954	39744	0	9203	-5007	17014	60954	0
SEPTEMBER	34909	0	396	61	3179	1971	40515	20793	0	3910	-856	16669	40515	0
OCTOBER	18637	0	655	49	2316	1337	22994	2637	0	4369	-8016	24003	22994	0
NOVEMBER	16168	0	139	51	1344	176	17877	1753	0	925	-2495	17695	17877	0
DECEMBER	21768	0	0	0	1408	952	24128	2122	0	0	-2201	24207	24128	0
TOTAL	470394	0	7255	412	27421	11069	516550	265811	0	62040	-27268	215966	516550	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 3

NORMAL YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS)							OUTFLOW (Tons of TDS)						CHANGE IN MASS (Tons of TDS) (14)
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	PIPE FLOW (12)	TOTAL OUTFLOW (13)	
JANUARY	15136	0	0	0	592	1168	16895	1797	0	0	-1529	16627	16895	0
FEBRUARY	24516	0	640	0	675	840	26671	9394	0	4266	-391	13403	26671	0
MARCH	74572	0	1339	46	2002	120	78079	55233	0	8929	1640	12276	78079	0
APRIL	59796	0	1483	42	3748	93	65163	40328	0	9887	226	14721	65163	0
MAY	68087	0	1834	38	3887	274	74120	43918	0	12227	-1455	19429	74120	0
JUNE	88800	0	1840	34	4150	123	94946	62218	0	12264	-262	20726	94946	0
JULY	75219	0	1419	43	4466	2477	83623	57775	0	9458	-1419	17810	83623	0
AUGUST	54804	0	953	52	3459	4013	63281	47140	0	6354	-6060	15846	63281	0
SEPTEMBER	37840	0	937	61	2720	545	42103	24292	0	6248	-4005	15568	42103	0
OCTOBER	16159	0	403	49	1918	726	19255	2654	0	2688	-6434	20347	19255	0
NOVEMBER	14075	0	0	51	956	186	15267	1530	0	0	-3094	16831	15267	0
DECEMBER	16782	0	0	0	601	503	17886	1648	0	0	-2813	19050	17886	0
TOTAL	545786	0	10848	412	29174	11069	597288	347928	0	72321	-25596	202635	597288	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 3

COMPOSITE

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS/af)							OUTFLOW (Tons of TDS/af)					
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	PIPE FLOW (12)	TOTAL OUTFLOW (13)
JANUARY	1.1	0.0	1.1	1.0	1.6	1.9	---	1.7	1.1	1.1	1.1	1.1	---
FEBRUARY	0.9	0.0	0.9	1.0	1.7	1.9	---	1.1	0.9	0.9	0.9	0.9	---
MARCH	0.7	0.0	0.7	0.9	1.6	1.9	---	0.7	0.7	0.7	0.7	0.7	---
APRIL	0.7	0.0	0.7	0.8	1.6	1.9	---	0.8	0.7	0.7	0.7	0.7	---
MAY	0.7	0.0	0.7	0.8	1.6	1.9	---	0.8	0.7	0.7	0.7	0.7	---
JUNE	0.7	0.0	0.8	0.7	1.6	1.9	---	0.8	0.8	0.8	0.8	0.8	---
JULY	0.7	0.0	0.7	0.9	1.6	1.9	---	0.8	0.7	0.7	0.7	0.7	---
AUGUST	0.8	0.0	0.9	1.0	1.4	1.9	---	0.9	0.9	0.9	0.9	0.9	---
SEPTEMBER	0.9	0.0	0.9	1.2	1.5	1.9	---	1.0	0.9	0.9	0.9	0.9	---
OCTOBER	1.1	0.0	1.1	1.0	1.5	1.9	---	2.3	1.1	1.1	1.1	1.1	---
NOVEMBER	1.0	0.0	1.0	1.0	1.5	1.9	---	1.6	1.0	1.0	1.0	1.0	---
DECEMBER	1.2	0.0	1.2	1.1	1.5	1.9	---	1.8	1.2	1.2	1.2	1.2	---
AVERAGE	0.8	0.0	0.7	0.9	1.6	1.9	---	0.8	---	0.8	0.9	0.9	---

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 3

DRY YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS/af)							OUTFLOW (Tons of TDS/af)					
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	PIPE FLOW (12)	TOTAL OUTFLOW (13)
JANUARY	1.3	0.0	1.3	1.0	1.4	1.9	—	1.6	1.3	1.3	1.3	1.3	—
FEBRUARY	1.1	0.0	1.1	1.0	1.4	1.9	—	1.6	1.1	1.1	1.1	1.1	—
MARCH	0.8	0.0	0.8	0.9	1.4	1.9	—	0.8	0.8	0.8	0.8	0.8	—
APRIL	0.8	0.0	0.8	0.8	1.4	1.9	—	0.9	0.8	0.8	0.8	0.8	—
MAY	0.9	0.0	0.9	0.8	1.4	1.9	—	1.0	0.9	0.9	0.9	0.9	—
JUNE	0.9	0.0	0.9	0.7	1.4	1.9	—	1.0	0.9	0.9	0.9	0.9	—
JULY	0.9	0.0	0.9	0.9	1.4	1.9	—	1.0	0.9	0.9	0.9	0.9	—
AUGUST	1.3	0.0	1.3	1.0	1.4	1.9	—	1.3	1.3	1.3	1.3	1.3	—
SEPTEMBER	1.4	0.0	1.4	1.2	1.4	1.9	—	1.5	1.4	1.4	1.4	1.4	—
OCTOBER	1.3	0.0	1.3	1.0	1.4	1.9	—	2.4	1.3	1.3	1.3	1.3	—
NOVEMBER	1.3	0.0	1.3	1.0	1.4	1.9	—	1.6	1.3	1.3	1.3	1.3	—
DECEMBER	1.3	0.0	1.3	1.1	1.4	1.9	—	1.9	1.3	1.3	1.3	1.3	—
AVERAGE	1.0	0.0	1.0	0.9	1.4	1.9	—	1.1	—	1.0	1.7	1.1	—

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 3

AVERAGE YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS/af)							OUTFLOW (Tons of TDS/af)					
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	PIPE FLOW (12)	TOTAL OUTFLOW (13)
JANUARY	1.0	0.0	1.0	1.0	1.9	1.9	—	1.8	1.0	1.0	1.0	1.0	—
FEBRUARY	0.8	0.0	0.8	1.0	1.8	1.9	—	0.9	0.8	0.8	0.8	0.8	—
MARCH	0.7	0.0	0.7	0.9	1.8	1.9	—	0.7	0.7	0.7	0.7	0.7	—
APRIL	0.7	0.0	0.7	0.8	1.7	1.9	—	0.8	0.7	0.7	0.7	0.7	—
MAY	0.6	0.0	0.6	0.8	1.8	1.9	—	0.7	0.6	0.6	0.6	0.6	—
JUNE	0.6	0.0	0.6	0.7	1.6	1.9	—	0.7	0.6	0.6	0.6	0.6	—
JULY	0.6	0.0	0.6	0.9	1.7	1.9	—	0.7	0.6	0.6	0.6	0.6	—
AUGUST	0.7	0.0	0.7	1.0	1.1	1.9	—	0.7	0.7	0.7	0.7	0.7	—
SEPTEMBER	0.7	0.0	0.7	1.2	1.5	1.9	—	0.8	0.7	0.7	0.7	0.7	—
OCTOBER	1.2	0.0	1.2	1.0	1.7	1.9	—	2.6	1.2	1.2	1.2	1.2	—
NOVEMBER	1.0	0.0	1.0	1.0	1.7	1.9	—	1.7	1.0	1.0	1.0	1.0	—
DECEMBER	1.3	0.0	1.3	1.1	1.8	1.9	—	2.1	1.3	1.3	1.3	1.3	—
AVERAGE	0.7	0.0	0.7	0.9	1.6	1.9	—	0.7	—	0.7	0.8	0.8	—

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 3

NORMAL YEAR

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (Tons of TDS/af)							OUTFLOW (Tons of TDS/af)					
MONTH	RIVER INFLOW (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	TOTAL INFLOW (7)	RIVER OUTFLOW (8)	RIVER FLOW TO M&I (9)	RIVER FLOW TO AGR. (10)	NET RIVER SEEPAGE (11)	PIPE FLOW (12)	TOTAL OUTFLOW (13)
JANUARY	0.9	0.0	0.9	1.0	1.5	1.9	—	1.8	0.9	0.9	0.9	0.9	—
FEBRUARY	0.8	0.0	0.8	1.0	1.8	1.9	—	0.9	0.8	0.8	0.8	0.8	—
MARCH	0.6	0.0	0.6	0.9	1.6	1.9	—	0.6	0.6	0.6	0.6	0.6	—
APRIL	0.6	0.0	0.6	0.8	1.7	1.9	—	0.7	0.6	0.6	0.6	0.6	—
MAY	0.7	0.0	0.7	0.8	1.7	1.9	—	0.7	0.7	0.7	0.7	0.7	—
JUNE	0.7	0.0	0.7	0.7	1.7	1.9	—	0.8	0.7	0.7	0.7	0.7	—
JULY	0.6	0.0	0.6	0.9	1.7	1.9	—	0.7	0.6	0.6	0.6	0.6	—
AUGUST	0.6	0.0	0.6	1.0	1.6	1.9	—	0.7	0.6	0.6	0.6	0.6	—
SEPTEMBER	0.7	0.0	0.7	1.2	1.7	1.9	—	0.7	0.7	0.7	0.7	0.7	—
OCTOBER	1.0	0.0	1.0	1.0	1.4	1.9	—	1.8	1.0	1.0	1.0	1.0	—
NOVEMBER	0.9	0.0	0.9	1.0	1.4	1.9	—	1.5	0.9	0.9	0.9	0.9	—
DECEMBER	1.0	0.0	1.0	1.1	1.5	1.9	—	1.6	1.0	1.0	1.0	1.0	—
AVERAGE	0.7	0.0	0.7	0.9	1.6	1.9	—	0.7	—	0.7	0.8	0.8	—

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 3

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)						CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	NET LEAKANCE TO MESILLA BOLSON (10)	TOTAL OUTFLOW (11)	IN STORAGE (1000 ac-ft) (12)
JANUARY	0.0	0.3	0.3	4.1	4.7	0.0	0.0	5.7	0.0	-1.0	4.7	0.0
FEBRUARY	0.0	0.7	2.3	6.2	9.2	0.0	0.0	4.6	0.0	4.6	9.2	0.0
MARCH	0.0	7.0	23.8	7.9	38.7	0.0	0.0	4.8	3.9	30.0	38.7	0.0
APRIL	0.0	6.9	19.9	2.6	29.5	0.0	0.0	7.5	6.2	15.8	29.5	0.0
MAY	0.0	8.2	19.7	2.2	30.1	0.0	0.0	7.1	9.3	13.7	30.1	0.0
JUNE	0.0	10.7	24.4	6.4	41.5	0.0	0.0	7.0	12.9	21.6	41.5	0.0
JULY	0.0	12.6	28.9	7.2	48.8	0.0	0.0	8.3	14.5	26.0	48.8	0.0
AUGUST	0.0	11.6	24.8	7.2	43.6	0.0	0.0	9.8	12.5	21.3	43.6	0.0
SEPTEMBER	0.0	7.6	17.1	3.0	27.7	0.0	0.0	10.1	8.6	8.9	27.7	0.0
OCTOBER	0.0	1.0	2.5	4.6	8.1	0.0	0.0	9.3	0.0	-1.2	8.1	0.0
NOVEMBER	0.0	0.1	0.2	3.7	4.0	0.0	0.0	5.9	0.0	-1.9	4.0	0.0
DECEMBER	0.0	0.4	0.0	4.2	4.7	0.0	0.0	4.9	0.0	-0.2	4.7	0.0
TOTAL	0.3	67.2	163.8	59.3	290.7	0.1	0.0	85.0	68.0	137.6	290.7	0.0

Phreatophyte area	=	0.0
Average consumptive use	=	0.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 3

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)						CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	NET LEAKANCE TO MESILLA BOLSON (10)	TOTAL OUTFLOW (11)	IN STORAGE (1000 ac-ft) (12)
JANUARY	0.0	0.0	0.0	3.9	3.9	0.0	0.0	6.5	0.0	-2.5	3.9	0.0
FEBRUARY	0.0	0.0	0.0	4.1	4.1	0.0	0.0	4.9	0.0	-0.8	4.1	0.0
MARCH	0.0	6.8	24.8	3.0	34.8	0.0	0.0	2.9	7.1	24.7	34.8	0.0
APRIL	0.0	7.1	19.6	-6.2	20.5	0.0	0.0	5.5	10.0	5.0	20.5	0.0
MAY	0.0	7.6	15.2	-6.0	16.9	0.0	0.0	4.3	14.1	-1.5	16.9	0.0
JUNE	0.0	10.6	19.5	2.5	32.6	0.0	0.0	2.8	19.3	10.5	32.6	0.0
JULY	0.0	13.2	26.5	6.3	46.0	0.0	0.0	2.9	22.1	21.0	46.0	0.0
AUGUST	0.0	12.4	27.3	6.6	46.2	0.0	0.0	4.6	19.3	22.4	46.2	0.0
SEPTEMBER	0.0	7.5	14.2	1.8	23.5	0.0	0.0	5.8	13.0	4.7	23.5	0.0
OCTOBER	0.0	0.2	0.8	6.2	7.2	0.0	0.0	6.0	0.1	1.0	7.2	0.0
NOVEMBER	0.0	0.2	0.4	4.6	5.2	0.0	0.0	4.5	0.0	0.6	5.2	0.0
DECEMBER	0.0	0.1	0.1	5.4	5.6	0.0	0.0	4.4	0.0	1.2	5.6	0.0
TOTAL	0.3	65.6	148.4	32.1	246.4	0.1	0.0	55.1	105.0	86.3	246.4	0.0

Phreatophyte area	=	0.0
Average consumptive use	=	0.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 3

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)						CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	NET LEAKANCE TO MESILLA BOLSON (10)	TOTAL OUTFLOW (11)	IN STORAGE (1000 ac-ft) (12)
JANUARY	0.0	0.5	1.0	2.9	4.4	0.0	0.0	4.9	0.0	-0.5	4.4	0.0
FEBRUARY	0.0	0.8	2.5	6.4	9.7	0.0	0.0	4.1	0.0	5.6	9.7	0.0
MARCH	0.0	7.3	22.5	8.3	38.1	0.0	0.0	4.0	2.9	31.1	38.1	0.0
APRIL	0.0	7.0	18.5	7.1	32.7	0.0	0.0	6.6	5.4	20.7	32.7	0.0
MAY	0.0	8.9	19.4	8.9	37.2	0.0	0.0	6.6	8.8	21.8	37.2	0.0
JUNE	0.0	11.2	23.8	11.1	46.1	0.0	0.0	7.5	12.1	26.5	46.1	0.0
JULY	0.0	13.6	30.8	9.6	53.9	0.0	0.0	9.1	13.4	31.5	53.9	0.0
AUGUST	0.0	12.3	23.0	4.8	40.1	0.0	0.0	10.2	11.3	18.6	40.1	0.0
SEPTEMBER	0.0	8.3	18.3	1.7	28.3	0.0	0.0	10.2	8.0	10.1	28.3	0.0
OCTOBER	0.0	1.1	1.2	2.6	4.9	0.0	0.0	9.4	0.0	-4.5	4.9	0.0
NOVEMBER	0.0	0.2	0.2	3.8	4.2	0.0	0.0	7.2	0.0	-3.1	4.2	0.0
DECEMBER	0.0	0.7	0.0	4.3	5.0	0.0	0.0	5.8	0.0	-0.8	5.0	0.0
TOTAL	0.3	71.8	161.2	71.4	304.7	0.1	0.0	85.7	61.9	157.0	304.7	0.0

Phreatophyte area = 0.0

Average consumptive use = 0.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 3

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)						CHANGE IN STORAGE (1000 ac-ft) (12)
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	NET LEAKANCE TO MESILLA BOLSON (10)	TOTAL OUTFLOW (11)	
JANUARY	0.0	0.3	0.0	5.6	5.9	0.0	0.0	5.7	0.0	0.2	5.9	0.0
FEBRUARY	0.0	1.4	4.3	8.1	13.8	0.0	0.0	4.9	0.0	8.9	13.8	0.0
MARCH	0.0	6.9	24.1	12.3	43.3	0.0	0.0	7.5	1.7	34.0	43.3	0.0
APRIL	0.0	6.7	21.6	7.0	35.3	0.0	0.0	10.4	3.2	21.7	35.3	0.0
MAY	0.0	8.2	24.4	3.6	36.2	0.0	0.0	10.3	5.2	20.7	36.2	0.0
JUNE	0.0	10.4	29.8	5.7	45.9	0.0	0.0	10.7	7.3	27.9	45.9	0.0
JULY	0.0	11.1	29.5	5.7	46.3	0.0	0.0	12.9	8.0	25.4	46.3	0.0
AUGUST	0.0	10.2	24.1	10.2	44.5	0.0	0.0	14.7	6.8	22.9	44.5	0.0
SEPTEMBER	0.0	6.9	18.7	5.6	31.2	0.0	0.0	14.5	4.8	11.9	31.2	0.0
OCTOBER	0.0	1.7	5.4	5.1	12.2	0.0	0.0	12.4	0.0	-0.1	12.2	0.0
NOVEMBER	0.0	0.1	0.0	2.7	2.8	0.0	0.0	5.9	0.0	-3.1	2.8	0.0
DECEMBER	0.0	0.3	0.0	3.1	3.4	0.0	0.0	4.4	0.0	-1.1	3.4	0.0
TOTAL	0.3	64.2	181.9	74.5	320.8	0.1	0.0	114.3	37.1	169.3	320.8	0.0

Phreatophyte area	=	0.0
Average consumptive use	=	0.0

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 3

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE				
MONTH	GROSS PRECIP (1)	RIVER FLOW TO AGR. (3)	PIPE FLOW TO M&I (4)	NET GW INFLOW TO DRAIN (5)	AGR. GW PUMPING (6)	M&I GW PUMPING (7)	TOTAL INFLOW (8)	NET CANAL EVAP. (9)	PLANT C.U. (11)	M&I C.U. (12)	LAT. & CANAL SEEPAGE (13)	DEEP PERC. (14)	M&I RETURN FLOW (15)	CANAL WASTE RETURN (16)	DRAIN FLOW TO RIVER (17)	TOTAL OUTFLOW (19)	IN STORAGE (1000 ac-ft) (20)	PIPE IN-FLOW (2)	PIPE OUT-FLOW (10)	OUTFLOW TO MEXICO (18)	DEFICIT IN FULL SUPPLY (21)
JANUARY	5.4	0.8	2.7	5.7	0.0	0.1	14.7	0.0	5.3	1.4	0.3	0.3	1.4	0.1	6.0	14.7	0.0	16.6	8.9	5.0	4.7
FEBRUARY	5.1	5.4	2.5	4.6	0.0	0.1	17.7	0.0	6.5	1.3	2.3	0.7	1.3	0.5	5.1	17.7	0.0	15.7	8.2	5.0	4.7
MARCH	2.6	52.6	3.2	4.8	6.5	0.1	69.9	1.4	21.7	1.7	23.8	7.0	1.7	4.3	8.3	69.9	0.0	20.2	12.0	5.0	0.0
APRIL	2.2	44.6	3.9	7.5	10.4	0.2	68.7	1.8	21.1	2.1	19.9	6.9	2.1	3.8	11.0	68.7	0.0	23.7	14.8	5.0	0.0
MAY	4.0	44.2	4.2	7.1	15.6	0.9	76.0	2.1	26.0	2.5	19.7	8.2	2.5	3.8	11.2	76.0	0.0	27.6	18.4	5.0	0.0
JUNE	5.2	55.0	4.1	7.0	21.5	1.3	94.1	2.5	33.9	2.7	24.4	10.7	2.7	4.8	12.4	94.1	0.0	28.6	19.6	5.0	0.0
JULY	14.3	64.9	4.2	8.3	24.2	1.0	116.8	2.0	47.6	2.6	28.9	12.6	2.6	5.5	14.9	116.8	0.0	28.0	18.8	5.0	0.0
AUGUST	30.0	54.9	4.1	9.8	20.8	0.3	120.0	1.3	57.1	2.2	24.8	11.6	2.2	4.5	16.3	120.0	0.0	24.9	15.8	5.0	0.0
SEPTEMBER	10.3	38.4	3.8	10.1	14.3	0.2	77.3	1.4	29.8	2.0	17.1	7.6	2.0	3.2	14.1	77.3	0.0	23.5	14.6	5.0	0.0
OCTOBER	9.5	5.8	3.3	9.3	0.1	0.1	28.0	0.0	10.6	1.7	2.5	1.0	1.7	0.5	10.0	28.0	0.0	19.4	11.1	5.0	4.7
NOVEMBER	3.2	0.4	2.8	5.9	0.0	0.1	12.4	0.0	3.1	1.5	0.2	0.1	1.5	0.0	6.0	12.4	0.0	17.2	9.4	5.0	4.7
DECEMBER	9.2	0.1	2.8	4.9	0.0	0.1	17.0	0.0	8.5	1.4	0.0	0.4	1.4	0.0	5.2	17.0	0.0	16.9	9.1	5.0	4.7
TOTAL	101.1	367.0	41.7	85.0	113.3	4.5	712.6	12.4	271.3	23.1	163.8	67.2	23.1	31.0	120.6	712.6	0.0	262.4	160.7	60.0	23.3

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.02
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.44
Fraction of "river flow to agr." as canal waste return	=	0.08	Fraction of M&I flow as M&I return flow	=	0.50
Area of alluvial valley (ac)	=	147974	Canal area (ac)	=	3690
Pipe outflow to M&I (acre-feet/yr)	=	166689	New Canal Area (acres)	=	0
Agr. demand d/s of American Dam (af/yr)	=	131040			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 3

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE				
MONTH	GROSS PRECIP. (1)	RIVER FLOW TO AGR. (2)	PIPE FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	IN STORAGE (1000 ac-ft) (17)	PIPE IN-FLOW (18)	PIPE OUT-FLOW (19)	OUTFLOW TO MEXICO (20)	DEFICIT IN FULL SUPPLY (21)
JANUARY	1.7	0.0	2.5	6.5	0.0	0.3	11.0	0.0	1.7	1.4	0.0	0.0	1.4	0.0	6.5	11.0	0.0	14.1	6.5	5.0	14.0
FEBRUARY	2.0	0.0	2.3	4.9	0.0	0.3	9.5	0.0	1.9	1.3	0.0	0.0	1.3	0.0	5.0	9.5	0.0	13.1	5.8	5.0	14.0
MARCH	0.8	46.4	3.0	2.9	11.8	0.3	65.3	1.5	19.7	1.7	24.8	6.8	1.7	2.8	6.3	65.3	0.0	20.0	12.0	5.0	0.0
APRIL	2.4	37.6	3.7	5.5	16.7	0.4	66.3	1.9	21.9	2.1	19.6	7.1	2.1	2.6	9.0	66.3	0.0	23.5	14.8	5.0	0.0
MAY	1.3	27.9	3.9	4.3	23.4	1.2	62.1	2.3	22.2	2.5	15.2	7.6	2.5	1.6	8.1	62.1	0.0	27.3	18.4	5.0	0.0
JUNE	5.8	36.8	3.8	2.8	32.2	1.6	83.1	2.6	34.3	2.7	19.5	10.6	2.7	2.4	8.2	83.1	0.0	28.4	19.6	5.0	0.0
JULY	20.7	50.4	3.9	2.9	36.8	1.3	116.0	2.0	55.6	2.6	26.5	13.2	2.6	3.4	10.1	116.0	0.0	27.7	18.8	5.0	0.0
AUGUST	16.3	52.1	3.8	4.6	32.1	0.6	109.4	1.8	48.9	2.2	27.3	12.4	2.2	3.5	11.2	109.4	0.0	24.6	15.8	5.0	0.0
SEPTEMBER	7.5	26.9	3.6	5.8	21.6	0.5	65.8	1.6	27.2	2.0	14.2	7.5	2.0	1.6	9.7	65.8	0.0	23.2	14.6	5.0	0.0
OCTOBER	8.3	1.5	3.1	6.0	0.2	0.3	19.5	0.0	8.5	1.7	0.8	0.2	1.7	0.1	6.5	19.5	0.0	16.8	8.7	5.0	14.0
NOVEMBER	4.4	0.7	2.6	4.5	0.1	0.3	12.6	0.0	4.4	1.5	0.4	0.2	1.5	0.0	4.7	12.6	0.0	14.6	7.0	5.0	14.0
DECEMBER	7.4	0.3	2.6	4.4	0.0	0.3	15.0	0.0	7.1	1.4	0.1	0.1	1.4	0.0	4.7	15.0	0.0	14.3	6.7	5.0	14.0
TOTAL	78.7	280.6	38.9	55.1	174.9	7.3	635.5	13.6	253.5	23.1	148.4	65.6	23.1	18.1	90.0	635.5	0.0	247.5	148.7	60.0	70.0

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.01
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.47
Fraction of "river flow to agr." as canal waste return	=	0.06	Fraction of M&I flow as M&I return flow	=	0.50
Area of alluvial valley (ac)	=	147974	Existing Canal area (ac)	=	3690
Pipe outflow to M&I (acre-feet/yr)	=	166689	New Canal Area (acres)	=	0
Agr. demand d/s of American Dam (af/yr)	=	131040			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 3

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE				
MONTH	GROSS PRECIP. (1)	RIVER FLOW TO AGR. (3)	PIPE FLOW TO M&I (4)	NET GW INFLOW TO DRAIN (5)	AGR. GW PUMPING (6)	M&I GW PUMPING (7)	TOTAL INFLOW (8)	NET CANAL EVAP. (9)	PLANT C.U. (11)	M&I C.U. (12)	LAT. & CANAL SEEPAGE (13)	DEEP PERC. (14)	M&I RETURN FLOW (15)	CANAL WASTE RETURN (16)	DRAIN FLOW TO RIVER (17)	TOTAL OUTFLOW (19)	IN STORAGE (1000 ac-ft) (20)	PIPE IN-FLOW (2)	PIPE OUT-FLOW (10)	OUTFLOW TO MEXICO (18)	DEFICIT IN FULL SUPPLY (21)
JANUARY	5.1	2.3	2.8	4.9	0.0	0.0	15.1	0.0	5.4	1.4	1.0	0.5	1.4	0.2	5.3	15.1	0.0	17.9	10.1	5.0	0.0
FEBRUARY	5.7	5.9	2.6	4.1	0.0	0.0	18.3	0.0	7.3	1.3	2.5	0.8	1.3	0.5	4.6	18.3	0.0	17.0	9.4	5.0	0.0
MARCH	3.5	54.0	3.3	4.0	4.9	0.0	69.8	1.3	23.3	1.7	22.5	7.3	1.7	4.4	7.7	69.8	0.0	20.3	12.0	5.0	0.0
APRIL	2.7	44.5	4.1	6.6	9.0	0.1	67.0	1.7	21.8	2.1	18.5	7.0	2.1	3.7	10.2	67.0	0.0	23.9	14.8	5.0	0.0
MAY	8.0	46.7	4.4	6.6	14.6	0.7	81.0	1.9	30.7	2.5	19.4	8.9	2.5	3.9	11.1	81.0	0.0	27.8	18.4	5.0	0.0
JUNE	5.8	57.2	4.2	7.5	20.1	1.2	96.0	2.3	35.4	2.7	23.8	11.2	2.7	4.7	13.1	96.0	0.0	28.8	19.6	5.0	0.0
JULY	5.3	74.0	4.4	9.1	22.3	0.9	115.8	2.1	42.2	2.6	30.8	13.6	2.6	6.1	15.9	115.8	0.0	28.1	18.8	5.0	0.0
AUGUST	29.4	55.3	4.2	10.2	18.9	0.2	118.2	1.2	56.4	2.2	23.0	12.3	2.2	4.3	16.7	118.2	0.0	25.0	15.8	5.0	0.0
SEPTEMBER	11.1	43.9	4.0	10.2	13.3	0.1	82.5	1.3	32.4	2.0	18.3	8.3	2.0	3.6	14.5	82.5	0.0	23.6	14.6	5.0	0.0
OCTOBER	11.6	3.0	3.4	9.4	0.0	0.0	27.4	0.0	11.5	1.7	1.2	1.1	1.7	0.2	10.1	27.4	0.0	20.7	12.3	5.0	0.0
NOVEMBER	3.1	0.4	2.9	7.2	0.0	0.0	13.7	0.0	3.0	1.5	0.2	0.2	1.5	0.0	7.4	13.7	0.0	18.5	10.6	5.0	0.0
DECEMBER	10.5	0.0	2.9	5.8	0.0	0.0	19.2	0.0	9.4	1.4	0.0	0.7	1.4	0.0	6.2	19.2	0.0	18.2	10.3	5.0	0.0
TOTAL	101.9	387.3	43.1	85.7	103.1	3.1	724.1	11.8	278.6	23.1	161.2	71.8	23.1	31.7	122.8	724.2	0.0	269.8	166.7	60.0	0.0

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.03
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.42
Fraction of "river flow to agr." as canal waste return	=	0.08	Fraction of M&I flow as M&I return flow	=	0.50
Area of alluvial valley (ac)	=	147974	Canal area (ac)	=	3690
Pipe outflow to M&I (acre-feet/yr)	=	166689	New Canal Area (acres)	=	0
Agr. demand d/s of American Dam (af/yr)	=	131040			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 3

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE				
MONTH	GROSS PRECIP. (1)	RIVER FLOW TO AGR. (3)	PIPE FLOW TO M&I (4)	NET GW INFLOW TO DRAIN (5)	AGR. GW PUMPING (6)	M&I GW PUMPING (7)	TOTAL INFLOW (8)	NET CANAL EVAP. (9)	PLANT C.U. (11)	M&I C.U. (12)	LAT. & CANAL SEEPAGE (13)	DEEP PERC. (14)	M&I RETURN FLOW (15)	CANAL WASTE RETURN (16)	DRAIN FLOW TO RIVER (17)	TOTAL OUTFLOW (19)	IN STORAGE (1000 ac-ft) (20)	PIPE IN-FLOW (2)	PIPE OUT-FLOW (10)	OUTFLOW TO MEXICO (18)	DEFICIT IN FULL SUPPLY (21)
JANUARY	9.5	0.0	2.8	5.7	0.0	0.0	18.0	0.0	8.8	1.4	0.0	0.3	1.4	0.0	6.1	18.0	0.0	17.9	10.1	5.0	0.0
FEBRUARY	7.6	10.2	2.6	4.9	0.0	0.0	25.4	0.0	10.3	1.3	4.3	1.4	1.3	1.0	5.8	25.4	0.0	17.0	9.4	5.0	0.0
MARCH	3.5	57.3	3.3	7.5	2.9	0.0	74.5	1.3	22.1	1.7	24.1	6.9	1.7	5.7	11.0	74.5	0.0	20.3	12.0	5.0	0.0
APRIL	1.4	51.5	4.1	10.4	5.4	0.1	72.8	1.8	19.7	2.1	21.6	6.7	2.1	5.2	13.7	72.8	0.0	23.9	14.8	5.0	0.0
MAY	2.8	58.1	4.4	10.3	8.7	0.7	85.0	2.1	25.1	2.5	24.4	8.2	2.5	5.8	14.4	85.0	0.0	27.8	18.4	5.0	0.0
JUNE	3.9	71.0	4.2	10.7	12.1	1.2	103.2	2.5	32.1	2.7	29.8	10.4	2.7	7.1	15.9	103.2	0.0	28.8	19.6	5.0	0.0
JULY	16.9	70.3	4.4	12.9	13.4	0.9	118.7	1.9	45.2	2.6	29.5	11.1	2.6	7.0	18.8	118.7	0.0	28.1	18.8	5.0	0.0
AUGUST	44.4	57.3	4.2	14.7	11.4	0.2	132.2	0.9	66.0	2.2	24.1	10.2	2.2	5.7	20.9	132.2	0.0	25.0	15.8	5.0	0.0
SEPTEMBER	12.4	44.5	4.0	14.5	8.0	0.1	83.4	1.4	29.7	2.0	18.7	6.9	2.0	4.5	18.2	83.4	0.0	23.6	14.6	5.0	0.0
OCTOBER	8.5	12.8	3.4	12.4	0.0	0.0	37.1	0.0	11.9	1.7	5.4	1.7	1.7	1.3	13.4	37.1	0.0	20.7	12.3	5.0	0.0
NOVEMBER	2.1	0.0	2.9	5.9	0.0	0.0	10.9	0.0	1.9	1.5	0.0	0.1	1.5	0.0	6.0	10.9	0.0	18.5	10.6	5.0	0.0
DECEMBER	9.7	0.0	2.9	4.4	0.0	0.0	16.9	0.0	9.0	1.4	0.0	0.3	1.4	0.0	4.8	16.9	0.0	18.2	10.3	5.0	0.0
TOTAL	122.6	433.0	43.1	114.3	61.9	3.1	778.1	11.8	281.8	23.1	181.9	64.2	23.1	43.3	149.0	778.1	0.0	269.8	166.7	60.0	0.0

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.03
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.42
Fraction of "river flow to agr." as canal waste return	=	0.10	Fraction of M&I flow as M&I return flow	=	0.50
Area of alluvial valley (ac)	=	147974	Canal area (ac)	=	3690
Pipe outflow to M&I (acre-feet/yr)	=	166689	New Canal Area (acres)	=	0
Agr. demand d/s of American Dam (af/yr)	=	131040			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 3

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)												OUTFLOW (1000 ac-ft)							
		LEASBURG DAM TO MESILLA DAM					MESILLA DAM TO AMERICAN DAM							LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	NET PRECIP. (7)	CANAL WASTE RETURN (8)	M&I RETURN FLOW (9)	DRAIN INFLOW (10)	TRIB. INFLOW (11)	TOTAL INFLOW (12)	RIVER OUTFLOW - AMERICAN (13)	RIVER FLOW TO M&I (14)	RIVER FLOW TO AGR. (15)	NET RIVER SEEPAGE (16)	RIVER FLOW TO M&I (17)	RIVER FLOW TO AGR. (18)	NET RIVER SEEPAGE (19)	TOTAL OUTFLOW (20)
JANUARY	1.0	0.0	0.0	0.4	2.2	0.1	-0.1	0.0	0.7	3.8	0.6	8.7	3.8	0.0	0.3	1.7	0.0	0.5	2.5	8.7
FEBRUARY	5.9	-0.1	0.2	0.5	1.9	0.1	-0.2	0.3	0.8	3.2	0.7	13.3	1.7	0.0	2.0	2.5	0.0	3.4	3.7	13.3
MARCH	62.0	-0.2	1.6	0.5	3.1	0.1	-0.3	2.7	0.8	5.3	0.4	76.0	15.5	0.0	19.5	3.1	0.0	33.1	4.7	76.0
APRIL	40.1	-0.3	1.4	0.7	4.1	0.0	-0.5	2.4	1.2	6.9	0.3	56.5	9.3	0.0	16.5	1.1	0.0	28.1	1.6	56.5
MAY	38.2	-0.3	1.4	0.8	4.1	0.1	-0.5	2.4	1.4	7.1	0.4	55.0	8.6	0.0	16.4	0.9	0.0	27.9	1.3	55.0
JUNE	56.2	-0.4	1.8	1.1	4.6	0.1	-0.6	3.0	1.8	7.8	0.6	76.0	14.5	0.0	20.4	2.6	0.0	34.7	3.8	76.0
JULY	66.4	-0.3	2.0	1.0	5.5	0.3	-0.5	3.5	1.7	9.4	2.1	91.1	19.0	0.0	24.0	2.9	0.0	40.9	4.3	91.1
AUGUST	54.1	-0.2	1.7	0.9	6.0	0.5	-0.3	2.8	1.5	10.2	3.4	80.6	18.6	0.0	20.3	2.9	0.0	34.6	4.3	80.6
SEPTEMBER	24.8	-0.2	1.2	0.8	5.2	0.2	-0.4	2.0	1.4	8.9	1.3	45.3	3.8	0.0	14.2	1.2	0.0	24.2	1.8	45.3
OCTOBER	1.2	-0.1	0.2	0.8	3.7	0.2	-0.2	0.3	1.3	6.3	1.2	14.8	4.4	0.0	2.1	1.9	0.0	3.6	2.8	14.8
NOVEMBER	1.0	-0.1	0.0	0.6	2.2	0.1	-0.1	0.0	1.0	3.8	0.4	9.0	4.9	0.0	0.1	1.5	0.0	0.2	2.2	9.0
DECEMBER	1.0	-0.1	0.0	0.5	1.9	0.2	-0.1	0.0	0.9	3.3	1.1	8.8	4.4	0.0	0.0	1.7	0.0	0.1	2.5	8.8
TOTAL	351.8	-2.2	11.5	8.5	44.6	1.9	-3.8	19.5	14.6	76.0	12.4	534.9	108.6	0.0	135.8	23.7	0.0	231.2	35.6	534.9

River width (Leasburg to Mesilla)	=	200.0	River width (Mesilla to American)	=	200.0	SW flow needed by M&I in R1 = 0
River length (Leasburg to Mesilla)	=	21.9	River length (Mesilla to American)	=	38.5	SW flow needed by Agr. in R1 = 60.6
River seepage rate (Leasburg to Mesilla)	=	-	River seepage rate (Mesilla to American)	=	-	GW flow needed by M&I in R1 = 0.9
Percent of population (Leasburg to Mesilla)	=	0.4	Percent of population (Mesilla to American)	=	0.6	GW flow needed by Agr. in R1 = 28.8
Percent of agricultural area (Leasburg to Mesilla)	=	0.4	Percent of agricultural area (Mesilla to American)	=	0.6	SW flow needed by M&I in R2 = 43.1
Percent of drainage area (Leasburg to Mesilla)	=	0.1	Percent of drainage area (Mesilla to American)	=	0.9	SW flow needed by Agr. in R2 = 311.1
Percent of river seepage (Leasburg to Mesilla)	=	0.4	Percent of river seepage (Mesilla to American)	=	0.6	GW flow needed by M&I in R2 = 3.1
Annual runoff	=	0.3	Total drainage area (ac)	=	685387.0	GW flow needed by Agr. in R2 = 144.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 3

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)												OUTFLOW (1000 ac-ft)							
		LEASBURG DAM TO MESILLA DAM					MESILLA DAM TO AMERICAN DAM							LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	NET PRECIP. (7)	CANAL WASTE RETURN (8)	M&I RETURN FLOW (9)	DRAIN INFLOW (10)	TRIB. INFLOW (11)	TOTAL INFLOW (12)	RIVER OUTFLOW - AMERICAN (13)	RIVER FLOW TO M&I (14)	RIVER FLOW TO AGR. (15)	NET RIVER SEEPAGE (16)	RIVER FLOW TO M&I (17)	RIVER FLOW TO AGR. (18)	NET RIVER SEEPAGE (19)	TOTAL OUTFLOW (20)
JANUARY	1.0	-0.1	0.0	0.4	2.4	0.0	-0.1	0.0	0.7	4.1	0.3	8.8	4.9	0.0	0.0	1.6	0.0	0.0	2.3	8.8
FEBRUARY	1.0	-0.1	0.0	0.5	1.9	0.1	-0.2	0.0	0.8	3.2	0.4	7.3	3.3	0.0	0.0	1.6	0.0	0.0	2.4	7.3
MARCH	41.3	-0.2	1.0	0.5	2.3	0.0	-0.4	1.7	0.8	4.0	0.2	51.3	1.9	0.0	17.2	1.2	0.0	29.2	1.8	51.3
APRIL	19.9	-0.3	1.0	0.7	3.3	0.1	-0.5	1.7	1.2	5.7	0.5	33.3	1.9	0.0	13.9	-2.5	0.0	23.7	-3.7	33.3
MAY	13.1	-0.3	0.6	0.8	3.0	0.0	-0.6	1.0	1.4	5.1	0.2	24.2	2.3	0.0	10.3	-2.4	0.0	17.6	-3.6	24.2
JUNE	27.8	-0.4	0.9	1.1	3.0	0.1	-0.7	1.5	1.8	5.1	0.7	41.0	1.7	0.0	13.6	1.0	0.0	23.2	1.5	41.0
JULY	40.1	-0.3	1.3	1.0	3.7	0.5	-0.5	2.1	1.7	6.4	3.4	59.5	2.8	0.0	18.6	2.5	0.0	31.8	3.8	59.5
AUGUST	42.2	-0.3	1.3	0.9	4.1	0.4	-0.5	2.2	1.5	7.1	2.5	61.5	2.8	0.0	19.3	2.6	0.0	32.8	4.0	61.5
SEPTEMBER	16.2	-0.2	0.6	0.8	3.6	0.2	-0.4	1.0	1.4	6.1	1.0	30.3	1.5	0.0	9.9	0.7	0.0	16.9	1.1	30.3
OCTOBER	1.0	-0.1	0.0	0.8	2.4	0.2	-0.2	0.1	1.3	4.1	1.5	11.1	3.4	0.0	0.6	2.5	0.0	0.9	3.7	11.1
NOVEMBER	1.0	-0.1	0.0	0.6	1.7	0.1	-0.1	0.0	1.0	3.0	0.6	8.0	2.6	0.0	0.3	1.8	0.0	0.5	2.8	8.0
DECEMBER	1.0	-0.1	0.0	0.5	1.7	0.2	-0.1	0.0	0.9	3.0	1.2	8.4	2.7	0.0	0.1	2.2	0.0	0.2	3.2	8.4
TOTAL	205.6	-2.4	6.7	8.5	33.3	1.9	-4.2	11.4	14.6	56.7	12.4	344.6	31.9	0.0	103.8	12.8	0.0	176.8	19.3	344.6

River width (Leasburg to Mesilla)	=	200.0	River width (Mesilla to American)	=	200.0	SW flow needed by M&I in R1	=	0
River length (Leasburg to Mesilla)	=	21.9	River length (Mesilla to American)	=	38.5	SW flow needed by Agr. in R1	=	60.6
River seepage rate (Leasburg to Mesilla)	=	-	River seepage rate (Mesilla to American)	=	-	GW flow needed by M&I in R1	=	0.9
Percent of population (Leasburg to Mesilla)	=	0.37	Percent of population (Mesilla to American)	=	0.6	GW flow needed by Agr. in R1	=	28.8
Percent of agricultural area (Leasburg to Mesilla)	=	0.37	Percent of agricultural area (Mesilla to American)	=	0.6	SW flow needed by M&I in R2	=	43.1
Percent of drainage area (Leasburg to Mesilla)	=	0.13	Percent of drainage area (Mesilla to American)	=	0.9	SW flow needed by Agr. in R2	=	311.1
Percent of river seepage (Leasburg to Mesilla)	=	0.40	Percent of river seepage (Mesilla to American)	=	0.6	GW flow needed by M&I in R2	=	3.1
Annual runoff	=	0.25	Total drainage area (ac)	=	685387.0	GW flow needed by Agr. in R2	=	144.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 3

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)												OUTFLOW (1000 ac-ft)							
		LEASBURG DAM TO MESILLA DAM					MESILLA DAM TO AMERICAN DAM							LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	NET PRECIP. (7)	CANAL WASTE RETURN (8)	M&I RETURN FLOW (9)	DRAIN INFLOW (10)	TRIB. INFLOW (11)	TOTAL INFLOW (12)	RIVER OUTFLOW - AMERICAN (13)	RIVER FLOW TO M&I (14)	RIVER FLOW TO AGR. (15)	NET RIVER SEEPAGE (16)	RIVER FLOW TO M&I (17)	RIVER FLOW TO AGR. (18)	NET RIVER SEEPAGE (19)	TOTAL OUTFLOW (20)
JANUARY	1.0	0.0	0.1	0.4	1.9	0.1	-0.1	0.1	0.7	3.3	0.5	8.1	2.9	0.0	0.9	1.2	0.0	1.4	1.7	8.1
FEBRUARY	6.0	-0.1	0.2	0.5	1.7	0.1	-0.1	0.3	0.8	2.9	1.0	13.3	1.0	0.0	2.2	2.6	0.0	3.7	3.8	13.3
MARCH	55.9	-0.2	1.6	0.5	2.9	0.1	-0.3	2.8	0.8	4.9	0.8	69.7	7.4	0.0	20.0	3.3	0.0	34.0	5.0	69.7
APRIL	39.6	-0.2	1.4	0.7	3.8	0.1	-0.4	2.3	1.2	6.4	0.3	55.1	3.4	0.0	16.5	2.9	0.0	28.1	4.3	55.1
MAY	42.8	-0.3	1.4	0.8	4.1	0.1	-0.5	2.5	1.4	7.0	0.8	60.2	4.7	0.0	17.3	3.6	0.0	29.4	5.3	60.2
JUNE	58.5	-0.3	1.8	1.1	4.8	0.1	-0.6	3.0	1.8	8.3	0.7	79.2	10.9	0.0	21.2	4.4	0.0	36.0	6.6	79.2
JULY	75.3	-0.3	2.2	1.0	5.9	0.2	-0.5	3.8	1.7	10.0	1.1	100.4	16.9	0.0	27.4	3.8	0.0	46.6	5.7	100.4
AUGUST	53.5	-0.2	1.6	0.9	6.2	0.5	-0.3	2.7	1.5	10.5	3.2	80.0	19.9	0.0	20.5	1.9	0.0	34.9	2.9	80.0
SEPTEMBER	24.9	-0.2	1.3	0.8	5.4	0.2	-0.3	2.3	1.4	9.2	1.6	46.5	1.0	0.0	16.2	0.7	0.0	27.7	1.0	46.5
OCTOBER	1.0	-0.1	0.1	0.8	3.7	0.2	-0.2	0.1	1.3	6.3	1.1	14.4	8.8	0.0	1.1	1.0	0.0	1.9	1.6	14.4
NOVEMBER	1.0	-0.1	0.0	0.6	2.7	0.0	-0.1	0.0	1.0	4.7	0.3	10.2	6.0	0.0	0.2	1.5	0.0	0.3	2.3	10.2
DECEMBER	1.0	0.0	0.0	0.5	2.3	0.1	-0.1	0.0	0.9	3.9	1.0	9.7	5.4	0.0	0.0	1.7	0.0	0.0	2.6	9.7
TOTAL	360.7	-2.0	11.7	8.5	45.4	1.9	-3.6	19.9	14.6	77.4	12.4	546.9	88.2	0.0	143.3	28.6	0.0	244.0	42.8	546.9

River width (Leasburg to Mesilla)	=	200.0	River width (Mesilla to American)	=	200.0	SW flow needed by M&I in R1 = 0
River length (Leasburg to Mesilla)	=	21.9	River length (Mesilla to American)	=	38.5	SW flow needed by Agr. in R1 = 60.6
River seepage rate (Leasburg to Mesilla)	=	-	River seepage rate (Mesilla to American)	=	-	GW flow needed by M&I in R1 = 0.9
Percent of population (Leasburg to Mesilla)	=	0.37	Percent of population (Mesilla to American)	=	0.6	GW flow needed by Agr. in R1 = 28.8
Percent of agricultural area (Leasburg to Mesilla)	=	0.37	Percent of agricultural area (Mesilla to American)	=	0.6	SW flow needed by M&I in R2 = 43.1
Percent of drainage area (Leasburg to Mesilla)	=	0.13	Percent of drainage area (Mesilla to American)	=	0.9	SW flow needed by Agr. in R2 = 311.1
Percent of river seepage (Leasburg to Mesilla)	=	0.40	Percent of river seepage (Mesilla to American)	=	0.6	GW flow needed by M&I in R2 = 3.1
Annual runoff	=	0.25	Total drainage area (ac)	=	685387.0	GW flow needed by Agr. in R2 = 144.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 3

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)												OUTFLOW (1000 ac-ft)							
		LEASBURG DAM TO MESILLA DAM					MESILLA DAM TO AMERICAN DAM							LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	NET PRECIP. (7)	CANAL WASTE RETURN (8)	M&I RETURN FLOW (9)	DRAIN INFLOW (10)	TRIB. INFLOW (11)	TOTAL INFLOW (12)	RIVER OUTFLOW - AMERICAN (13)	RIVER FLOW TO M&I (14)	RIVER FLOW TO AGR. (15)	NET RIVER SEEPAGE (16)	RIVER FLOW TO M&I (17)	RIVER FLOW TO AGR. (18)	NET RIVER SEEPAGE (19)	TOTAL OUTFLOW (20)
JANUARY	1.0	0.0	0.0	0.4	2.3	0.1	-0.1	0.0	0.7	3.8	1.0	9.2	3.6	0.0	0.0	2.2	0.0	0.0	3.4	9.2
FEBRUARY	10.6	-0.1	0.4	0.5	2.1	0.1	-0.1	0.6	0.8	3.7	0.8	19.4	1.0	0.0	3.8	3.3	0.0	6.4	4.9	19.4
MARCH	88.9	-0.2	2.1	0.5	4.1	0.1	-0.3	3.6	0.8	6.9	0.4	106.8	37.3	0.0	21.2	4.9	0.0	36.1	7.4	106.8
APRIL	60.8	-0.3	1.9	0.7	5.1	0.0	-0.4	3.2	1.2	8.6	0.1	81.0	22.5	0.0	19.1	2.8	0.0	32.4	4.2	81.0
MAY	58.6	-0.3	2.2	0.8	5.3	0.0	-0.5	3.7	1.4	9.1	0.3	80.5	18.8	0.0	21.5	1.4	0.0	36.6	2.1	80.5
JUNE	82.3	-0.4	2.6	1.1	5.9	0.1	-0.6	4.5	1.8	10.0	0.4	107.7	31.0	0.0	26.3	2.3	0.0	44.7	3.4	107.7
JULY	83.6	-0.3	2.6	1.0	7.0	0.3	-0.5	4.4	1.7	11.8	1.7	113.3	37.4	0.0	26.0	2.3	0.0	44.3	3.4	113.3
AUGUST	66.5	-0.1	2.1	0.9	7.7	0.7	-0.2	3.6	1.5	13.2	4.5	100.4	33.0	0.0	21.2	4.1	0.0	36.1	6.1	100.4
SEPTEMBER	33.2	-0.2	1.6	0.8	6.7	0.2	-0.3	2.8	1.4	11.5	1.2	59.0	8.9	0.0	16.5	2.2	0.0	28.0	3.3	59.0
OCTOBER	1.5	-0.1	0.5	0.8	5.0	0.1	-0.2	0.8	1.3	8.4	0.8	18.9	1.0	0.0	4.7	2.0	0.0	8.1	3.1	18.9
NOVEMBER	1.0	-0.1	0.0	0.6	2.2	0.0	-0.1	0.0	1.0	3.8	0.2	8.7	6.0	0.0	0.0	1.1	0.0	0.0	1.6	8.7
DECEMBER	1.0	-0.1	0.0	0.5	1.8	0.1	-0.1	0.0	0.9	3.0	1.0	8.3	5.2	0.0	0.0	1.2	0.0	0.0	1.8	8.3
TOTAL	489.2	-2.0	16.0	8.5	55.1	1.9	-3.6	27.3	14.6	93.9	12.4	713.3	205.7	0.0	160.2	29.8	0.0	272.8	44.7	713.3

River width (Leasburg to Mesilla)	=	200.0	River width (Mesilla to American)	=	200.0	SW flow needed by M&I in R1	=	0
River length (Leasburg to Mesilla)	=	21.9	River length (Mesilla to American)	=	38.5	SW flow needed by Agr. in R1	=	60.6
River seepage rate (Leasburg to Mesilla)	=	-	River seepage rate (Mesilla to American)	=	-	GW flow needed by M&I in R1	=	0.9
Percent of population (Leasburg to Mesilla)	=	0.37	Percent of population (Mesilla to American)	=	0.6	GW flow needed by Agr. in R1	=	28.8
Percent of agricultural area (Leasburg to Mesilla)	=	0.37	Percent of agricultural area (Mesilla to American)	=	0.6	SW flow needed by M&I in R2	=	43.1
Percent of drainage area (Leasburg to Mesilla)	=	0.13	Percent of drainage area (Mesilla to American)	=	0.9	SW flow needed by Agr. in R2	=	311.1
Percent of river seepage (Leasburg to Mesilla)	=	0.40	Percent of river seepage (Mesilla to American)	=	0.6	GW flow needed by M&I in R2	=	3.1
Annual runoff	=	0.25	Total drainage area (ac)	=	685387.0	GW flow needed by Agr. in R2	=	144.5

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 3

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS)										OUTFLOW (Tons of TDS)								
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN				
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)	CHANGE IN MASS (Tons of TDS) (19)
JANUARY	1720	50	483	5351	177	85	822	9112	1181	18981	10352	0	522	2887	0	889	4330	18981	0
FEBRUARY	5479	171	539	3475	202	291	917	5917	1353	18344	2905	0	2504	3469	0	4263	5203	18344	0
MARCH	42529	1096	570	4295	122	1866	970	7314	817	59579	11745	0	15483	2395	0	26363	3592	59579	0
APRIL	29636	1067	778	5939	88	1816	1325	10113	592	51354	10221	0	14611	658	0	24878	987	51354	0
MAY	28432	1047	853	6130	125	1783	1453	10438	834	51095	9927	0	14810	456	0	25217	684	51095	0
JUNE	43439	1364	1085	6807	171	2323	1848	11590	1143	69771	14151	0	18505	2242	0	31509	3363	69771	0
JULY	49603	1521	1070	8041	586	2590	1822	13692	3919	82844	17418	0	21781	2623	0	37087	3935	82844	0
AUGUST	47845	1474	1011	9417	967	2511	1722	16034	6473	87455	22758	0	21199	2960	0	36096	4441	87455	0
SEPTEMBER	23081	1073	984	8588	359	1827	1676	14623	2400	54611	8461	0	15870	1303	0	27022	1955	54611	0
OCTOBER	2550	376	831	10663	328	640	1414	18156	2196	37154	18434	0	3655	3536	0	6224	5304	37154	0
NOVEMBER	1649	15	698	5187	110	25	1189	8831	739	18444	11301	0	262	2573	0	447	3860	18444	0
DECEMBER	1866	7	671	4948	299	12	1143	8426	2003	19375	11286	0	64	3167	0	109	4750	19375	0
TOTAL	277830	9260	9574	78842	3534	15767	16301	134245	23653	569006	148958	0	129268	28270	0	220105	42405	569006	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 3

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS)										OUTFLOW (Tons of TDS)								
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN				
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)	CHANGE IN MASS (Tons of TDS) (19)
JANUARY	1566	0	483	5597	95	0	822	9530	637	18731	11744	0	0	2795	0	0	4192	18731	0
FEBRUARY	1553	0	539	4259	104	0	917	7251	696	15319	7763	0	0	3022	0	0	4534	15319	0
MARCH	32606	808	570	3470	43	1375	970	5908	287	46037	1503	0	15461	1098	0	26326	1647	46037	0
APRIL	18242	894	778	5396	133	1521	1325	9188	892	38370	4850	0	14869	-2666	0	25317	-3999	38370	0
MAY	12903	571	853	5045	47	972	1453	8591	312	30746	5492	0	11885	-2747	0	20237	-4121	30746	0
JUNE	27205	879	1085	5075	199	1497	1848	8642	1330	47760	3971	0	15189	1095	0	25863	1642	47760	0
JULY	39012	1217	1070	6268	961	2073	1822	10673	6432	69530	5050	0	21219	2853	0	36129	4279	69530	0
AUGUST	56650	1754	1011	8462	698	2987	1722	14409	4671	92365	8029	0	27699	3790	0	47162	5685	92365	0
SEPTEMBER	24159	901	984	7871	287	1534	1676	13402	1918	52730	6666	0	15948	1185	0	27154	1777	52730	0
OCTOBER	2359	80	831	7441	441	137	1414	12670	2949	28321	12350	0	1160	5134	0	1975	7702	28321	0
NOVEMBER	1665	30	698	4034	184	51	1189	6868	1233	15952	6155	0	491	3388	0	836	5082	15952	0
DECEMBER	1828	21	671	4447	343	35	1143	7572	2295	18354	7509	0	192	4130	0	327	6195	18354	0
TOTAL	219749	7154	9574	67366	3534	12180	16301	114703	23653	474214	81082	0	124113	23077	0	211327	34615	474214	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 3

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS)										OUTFLOW (Tons of TDS)								
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN				CHANGE
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)	IN MASS (Tons of TDS) (19)
JANUARY	1796	149	483	4782	153	254	822	8143	1021	17605	8004	0	1567	2147	0	2667	3220	17605	0
FEBRUARY	5491	178	539	2769	284	304	917	4714	1900	17094	123	0	3020	3524	0	5141	5286	17094	0
MARCH	39747	1162	570	4038	216	1979	970	6875	1443	57000	5348	0	16564	2754	0	28203	4131	57000	0
APRIL	30337	1043	778	5513	96	1776	1325	9387	643	50897	4722	0	14728	2548	0	25077	3822	50897	0
MAY	28476	959	853	5624	240	1633	1453	9575	1607	50419	5278	0	14027	2892	0	23884	4338	50419	0
JUNE	40895	1227	1085	6778	201	2089	1848	11542	1346	67012	10686	0	17461	3653	0	29732	5480	67012	0
JULY	52021	1549	1070	8180	312	2638	1822	13928	2091	83613	15658	0	22266	3111	0	37912	4667	83613	0
AUGUST	39744	1168	1011	8897	913	1989	1722	15148	6113	76706	22893	0	18322	1718	0	31196	2577	76706	0
SEPTEMBER	20793	1115	984	8258	450	1899	1676	14061	3013	52250	5794	0	16557	683	0	28192	1024	52250	0
OCTOBER	2637	213	831	12352	307	363	1414	21032	2055	41203	29123	0	2378	2261	0	4049	3392	41203	0
NOVEMBER	1753	14	698	6698	87	24	1189	11405	580	22448	14712	0	296	2775	0	504	4162	22448	0
DECEMBER	2122	0	671	6321	275	0	1143	10762	1841	23135	14621	0	0	3406	0	0	5109	23135	0
TOTAL	265811	8779	9574	80209	3534	14948	16301	136572	23653	559382	136962	0	127184	31471	0	216557	47207	559382	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 3

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS)										OUTFLOW (Tons of TDS)								
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN				
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)	CHANGE IN MASS (Tons of TDS) (19)
JANUARY	1797	0	483	5675	282	0	822	9662	1886	20607	11310	0	0	3719	0	0	5578	20607	0
FEBRUARY	9394	334	539	3398	219	569	917	5785	1464	22619	828	0	4492	3860	0	7648	5791	22619	0
MARCH	55233	1318	570	5378	108	2244	970	9157	721	75699	28384	0	14424	3332	0	24560	4998	75699	0
APRIL	40328	1263	778	6909	36	2151	1325	11764	242	64797	21090	0	14237	2092	0	24241	3138	64797	0
MAY	43918	1612	853	7722	87	2744	1453	13148	584	72121	19011	0	18518	1224	0	31531	1836	72121	0
JUNE	62218	1986	1085	8567	113	3382	1848	14586	754	94541	27797	0	22865	1979	0	38932	2968	94541	0
JULY	57775	1796	1070	9676	483	3059	1822	16475	3232	95389	31546	0	21859	1906	0	37220	2859	95389	0
AUGUST	47140	1501	1011	10891	1291	2556	1722	18544	8637	93293	37351	0	17578	3373	0	29931	5060	93293	0
SEPTEMBER	24292	1203	984	9634	339	2049	1676	16404	2271	58853	12923	0	15105	2042	0	25720	3063	58853	0
OCTOBER	2654	834	831	12197	237	1419	1414	20767	1584	41936	13828	0	7428	3213	0	12648	4819	41936	0
NOVEMBER	1530	0	698	4828	60	0	1189	8221	404	16931	13037	0	0	1557	0	0	2336	16931	0
DECEMBER	1648	0	671	4078	280	0	1143	6943	1874	16637	11727	0	0	1964	0	0	2946	16637	0
TOTAL	347928	11848	9574	88952	3534	20174	16301	151459	23653	673424	228831	0	136507	30262	0	232431	45392	673424	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 2

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS/af)										OUTFLOW (Tons of TDS/af)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1.8	0.9	1.2	1.5	1.9	0.9	1.2	1.5	1.9	---	1.2	1.8	1.8	1.8	1.8	1.8	1.8	---
FEBRUARY	1.7	0.8	1.2	1.8	1.9	0.8	1.2	1.8	1.9	---	1.9	1.6	1.6	1.6	1.6	1.6	1.6	---
MARCH	2.1	0.6	1.2	1.6	1.9	0.6	1.2	1.6	1.9	---	1.2	1.5	1.5	1.5	1.5	1.5	1.5	---
APRIL	3.6	0.6	1.1	1.7	1.9	0.6	1.1	1.7	1.9	---	1.2	2.2	2.2	2.2	2.2	2.2	2.2	---
MAY	3.6	0.7	1.1	1.7	1.9	0.7	1.1	1.7	1.9	---	1.4	2.3	2.3	2.3	2.3	2.3	2.3	---
JUNE	3.8	0.7	1.0	1.7	1.9	0.7	1.0	1.7	1.9	---	1.2	2.4	2.4	2.4	2.4	2.4	2.4	---
JULY	5.5	0.6	1.1	1.7	1.9	0.6	1.1	1.7	1.9	---	1.2	3.2	3.2	3.2	3.2	3.2	3.2	---
AUGUST	5.4	0.6	1.1	1.6	1.9	0.6	1.1	1.6	1.9	---	0.9	3.3	3.3	3.3	3.3	3.3	3.3	---
SEPTEMBER	3.0	0.7	1.2	1.7	1.9	0.7	1.2	1.7	1.9	---	1.4	2.1	2.1	2.1	2.1	2.1	2.1	---
OCTOBER	2.1	1.0	1.1	1.4	1.9	1.0	1.1	1.4	1.9	---	1.3	1.8	1.8	1.8	1.8	1.8	1.8	---
NOVEMBER	1.5	0.9	1.2	1.4	1.9	0.9	1.2	1.4	1.9	---	1.4	1.5	1.5	1.5	1.5	1.5	1.5	---
DECEMBER	1.6	1.0	1.3	1.5	1.9	1.0	1.3	1.5	1.9	---	1.5	1.7	1.7	1.7	1.7	1.7	1.7	---
AVERAGE	3.0	0.7	1.1	1.6	1.9	0.7	1.1	1.6	1.9	---	1.2	---	---	2.1	---	---	2.1	---

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 3

COMPOSITE

REACH 1 - RINCON VALLEY

MONTH	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)					CHANGE IN STORAGE (1000ac-ft) (11)
	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	TOTAL OUTFLOW (10)	
JANUARY	0.3	0.2	0.0	-1.2	-0.8	0.0	0.0	0.5	0.0	0.5	-1.3
FEBRUARY	0.3	0.4	1.3	0.7	2.7	0.0	0.0	0.2	0.5	0.8	1.9
MARCH	0.3	1.8	5.5	4.0	11.6	0.0	0.1	0.0	3.3	3.5	8.1
APRIL	0.3	1.8	5.6	-3.2	4.4	0.0	0.1	1.0	2.9	4.0	0.5
MAY	0.3	1.8	5.5	-1.7	5.8	0.0	0.1	1.0	2.8	3.9	1.8
JUNE	0.3	2.1	5.7	-0.9	7.1	0.0	0.2	1.0	3.0	4.1	3.0
JULY	0.3	2.1	6.0	-1.3	7.1	0.0	0.1	0.9	3.6	4.7	2.4
AUGUST	0.3	2.4	5.4	-7.2	0.9	0.0	0.1	0.7	3.3	4.1	-3.2
SEPTEMBER	0.3	1.2	3.2	-5.3	-0.7	0.0	0.1	1.1	2.1	3.3	-4.0
OCTOBER	0.3	0.5	1.0	-4.9	-3.2	0.0	0.1	0.9	0.2	1.2	-4.4
NOVEMBER	0.3	0.1	0.1	-2.4	-1.9	0.0	0.0	0.7	0.1	0.8	-2.8
DECEMBER	0.3	0.2	0.0	-1.7	-1.3	0.0	0.0	0.5	0.0	0.6	-1.9
TOTAL	3.0	14.6	39.3	-25.2	31.7	0.3	1.1	8.4	21.8	31.6	0.2

Phreatophyte area (ac) = 200.0

Average consumptive use (ft/yr) = 5.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 3

DRY YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)					CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	TOTAL OUTFLOW (10)	IN STORAGE (1000 ac-ft) (11)
JANUARY	0.3	0.0	0.0	-0.9	-0.7	0.0	0.0	0.9	0.0	0.9	-1.6
FEBRUARY	0.3	0.0	0.1	1.3	1.6	0.0	0.0	0.7	0.1	0.8	0.7
MARCH	0.3	2.0	4.7	7.4	14.3	0.0	0.1	-0.1	6.1	6.1	8.2
APRIL	0.3	1.7	4.2	-4.0	2.2	0.0	0.1	0.9	4.7	5.7	-3.5
MAY	0.3	1.4	3.1	-0.2	4.5	0.0	0.1	0.8	4.3	5.3	-0.7
JUNE	0.3	1.5	3.4	1.4	6.5	0.0	0.2	0.2	4.0	4.4	2.2
JULY	0.3	2.3	5.3	0.8	8.7	0.0	0.1	0.2	6.2	6.5	2.2
AUGUST	0.3	2.6	5.6	-4.6	3.8	0.0	0.1	0.2	6.5	6.8	-3.0
SEPTEMBER	0.3	1.4	2.9	-8.7	-4.1	0.0	0.1	0.8	3.7	4.7	-8.8
OCTOBER	0.3	0.0	0.0	-1.1	-0.9	0.0	0.1	0.8	0.1	1.0	-1.8
NOVEMBER	0.3	0.0	0.0	-1.3	-1.0	0.0	0.0	0.7	0.1	0.9	-1.9
DECEMBER	0.3	0.1	0.0	-0.9	-0.6	0.0	0.0	0.6	0.0	0.6	-1.2
TOTAL	3.0	13.0	29.3	-11.0	34.4	0.3	1.1	6.7	35.6	43.8	-9.4

Phreatophyte area (ac)	=	200.0
Average consumptive use (ft/yr)	=	5.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 3

AVERAGE YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)					CHANGE IN STORAGE (1000 ac-ft) (11)
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	TOTAL OUTFLOW (10)	
JANUARY	0.3	0.6	0.0	-1.1	-0.3	0.0	0.0	0.3	0.0	0.4	-0.6
FEBRUARY	0.3	0.6	1.5	1.3	3.6	0.0	0.0	0.1	1.0	1.1	2.5
MARCH	0.3	1.7	5.2	1.9	9.1	0.0	0.1	-0.2	2.4	2.4	6.7
APRIL	0.3	1.7	5.6	-6.0	1.6	0.0	0.1	0.7	2.4	3.3	-1.7
MAY	0.3	1.8	5.6	-2.8	4.9	0.0	0.1	0.9	2.4	3.4	1.5
JUNE	0.3	2.7	6.3	-3.7	5.5	0.0	0.2	1.1	3.3	4.6	0.8
JULY	0.3	2.2	6.0	-2.5	6.0	0.0	0.1	1.2	3.2	4.6	1.4
AUGUST	0.3	3.3	6.3	-7.4	2.5	0.0	0.1	0.9	2.4	3.5	-1.0
SEPTEMBER	0.3	1.0	2.6	-1.2	2.6	0.0	0.1	1.5	1.7	3.3	-0.6
OCTOBER	0.3	1.1	1.7	-6.9	-3.9	0.0	0.1	0.9	0.1	1.1	-4.9
NOVEMBER	0.3	0.3	0.4	-2.6	-1.6	0.0	0.0	0.7	0.1	0.9	-2.5
DECEMBER	0.3	0.5	0.0	-1.7	-0.9	0.0	0.0	0.6	0.0	0.7	-1.5
TOTAL	3.0	17.6	41.2	-32.6	29.2	0.3	1.1	8.7	19.0	29.1	0.1

Phreatophyte area (ac)	=	200.0
Average consumptive use (ft/yr)	=	5.5

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 3

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS/af)										OUTFLOW (Tons of TDS/af)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1.7	1.7	1.2	2.4	1.9	1.7	1.2	2.4	1.9	—	2.8	1.8	1.8	1.8	1.8	1.8	1.8	—
FEBRUARY	0.9	1.1	1.2	1.8	1.9	1.1	1.2	1.8	1.9	—	1.1	1.5	1.5	1.5	1.5	1.5	1.5	—
MARCH	0.7	0.7	1.2	1.4	1.9	0.7	1.2	1.4	1.9	—	0.8	0.8	0.8	0.8	0.8	0.8	0.8	—
APRIL	0.7	0.8	1.1	1.5	1.9	0.8	1.1	1.5	1.9	—	1.6	0.9	0.9	0.9	0.9	0.9	0.9	—
MAY	0.7	0.8	1.1	1.5	1.9	0.8	1.1	1.5	1.9	—	1.5	0.9	0.9	0.9	0.9	0.9	0.9	—
JUNE	0.8	0.8	1.0	1.5	1.9	0.8	1.0	1.5	1.9	—	1.4	0.9	0.9	0.9	0.9	0.9	0.9	—
JULY	0.7	0.8	1.1	1.5	1.9	0.8	1.1	1.5	1.9	—	1.2	0.9	0.9	0.9	0.9	0.9	0.9	—
AUGUST	0.9	0.9	1.1	1.6	1.9	0.9	1.1	1.6	1.9	—	1.7	1.1	1.1	1.1	1.1	1.1	1.1	—
SEPTEMBER	0.9	1.0	1.2	1.7	1.9	1.0	1.2	1.7	1.9	—	3.9	1.2	1.2	1.2	1.2	1.2	1.2	—
OCTOBER	2.2	2.3	1.1	3.0	1.9	2.3	1.1	3.0	1.9	—	6.8	1.9	1.9	1.9	1.9	1.9	1.9	—
NOVEMBER	1.6	1.6	1.2	2.3	1.9	1.6	1.2	2.3	1.9	—	2.3	1.7	1.7	1.7	1.7	1.7	1.7	—
DECEMBER	1.8	1.8	1.3	2.5	1.9	1.8	1.3	2.5	1.9	—	2.6	1.8	1.8	1.8	1.8	1.8	1.8	—
AVERAGE	0.8	0.8	1.1	1.8	1.9	0.8	1.1	1.8	1.9	—	1.4	—	1.0	1.2	—	1.0	1.2	—

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 3

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS/af)										OUTFLOW (Tons of TDS/af)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1.6	1.6	1.2	2.3	1.9	1.6	1.2	2.3	1.9	---	2.4	1.8	1.8	1.8	1.8	1.8	1.8	---
FEBRUARY	1.6	1.6	1.2	2.3	1.9	1.6	1.2	2.3	1.9	---	2.4	1.9	1.9	1.9	1.9	1.9	1.9	---
MARCH	0.8	0.8	1.2	1.5	1.9	0.8	1.2	1.5	1.9	---	0.8	0.9	0.9	0.9	0.9	0.9	0.9	---
APRIL	0.9	0.9	1.1	1.6	1.9	0.9	1.1	1.6	1.9	---	2.6	1.1	1.1	1.1	1.1	1.1	1.1	---
MAY	1.0	1.0	1.1	1.7	1.9	1.0	1.1	1.7	1.9	---	2.4	1.2	1.2	1.2	1.2	1.2	1.2	---
JUNE	1.0	1.0	1.0	1.7	1.9	1.0	1.0	1.7	1.9	---	2.3	1.1	1.1	1.1	1.1	1.1	1.1	---
JULY	1.0	1.0	1.1	1.7	1.9	1.0	1.1	1.7	1.9	---	1.8	1.1	1.1	1.1	1.1	1.1	1.1	---
AUGUST	1.3	1.3	1.1	2.0	1.9	1.3	1.1	2.0	1.9	---	2.8	1.4	1.4	1.4	1.4	1.4	1.4	---
SEPTEMBER	1.5	1.5	1.2	2.2	1.9	1.5	1.2	2.2	1.9	---	4.3	1.6	1.6	1.6	1.6	1.6	1.6	---
OCTOBER	2.4	2.4	1.1	3.1	1.9	2.4	1.1	3.1	1.9	---	3.6	2.1	2.1	2.1	2.1	2.1	2.1	---
NOVEMBER	1.6	1.6	1.2	2.3	1.9	1.6	1.2	2.3	1.9	---	2.3	1.8	1.8	1.8	1.8	1.8	1.8	---
DECEMBER	1.9	1.9	1.3	2.6	1.9	1.9	1.3	2.6	1.9	---	2.8	1.9	1.9	1.9	1.9	1.9	1.9	---
AVERAGE	1.1	1.1	1.1	2.0	1.9	1.1	1.1	2.0	1.9	---	2.5	---	1.2	1.8	---	1.2	1.8	---

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 3

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS/af)										OUTFLOW (Tons of TDS/af)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1.8	1.8	1.2	2.5	1.9	1.8	1.2	2.5	1.9	—	2.8	1.8	1.8	1.8	1.8	1.8	1.8	—
FEBRUARY	0.9	0.9	1.2	1.6	1.9	0.9	1.2	1.6	1.9	—	0.1	1.4	1.4	1.4	1.4	1.4	1.4	—
MARCH	0.7	0.7	1.2	1.4	1.9	0.7	1.2	1.4	1.9	—	0.7	0.8	0.8	0.8	0.8	0.8	0.8	—
APRIL	0.8	0.8	1.1	1.5	1.9	0.8	1.1	1.5	1.9	—	1.4	0.9	0.9	0.9	0.9	0.9	0.9	—
MAY	0.7	0.7	1.1	1.4	1.9	0.7	1.1	1.4	1.9	—	1.1	0.8	0.8	0.8	0.8	0.8	0.8	—
JUNE	0.7	0.7	1.0	1.4	1.9	0.7	1.0	1.4	1.9	—	1.0	0.8	0.8	0.8	0.8	0.8	0.8	—
JULY	0.7	0.7	1.1	1.4	1.9	0.7	1.1	1.4	1.9	—	0.9	0.8	0.8	0.8	0.8	0.8	0.8	—
AUGUST	0.7	0.7	1.1	1.4	1.9	0.7	1.1	1.4	1.9	—	1.1	0.9	0.9	0.9	0.9	0.9	0.9	—
SEPTEMBER	0.8	0.8	1.2	1.5	1.9	0.8	1.2	1.5	1.9	—	6.0	1.0	1.0	1.0	1.0	1.0	1.0	—
OCTOBER	2.6	2.6	1.1	3.3	1.9	2.6	1.1	3.3	1.9	—	3.3	2.2	2.2	2.2	2.2	2.2	2.2	—
NOVEMBER	1.7	1.7	1.2	2.4	1.9	1.7	1.2	2.4	1.9	—	2.4	1.8	1.8	1.8	1.8	1.8	1.8	—
DECEMBER	2.1	2.1	1.3	2.8	1.9	2.1	1.3	2.8	1.9	—	2.7	2.0	2.0	2.0	2.0	2.0	2.0	—
AVERAGE	0.7	0.7	1.1	1.8	1.9	0.7	1.1	1.8	1.9	—	1.6	—	0.9	1.1	—	0.9	1.1	—

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 3

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS/af)										OUTFLOW (Tons of TDS/af)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1.8	1.8	1.2	2.5	1.9	1.8	1.2	2.5	1.9	—	3.1	1.7	1.7	1.7	1.7	1.7	1.7	—
FEBRUARY	0.9	0.9	1.2	1.6	1.9	0.9	1.2	1.6	1.9	—	0.8	1.2	1.2	1.2	1.2	1.2	1.2	—
MARCH	0.6	0.6	1.2	1.3	1.9	0.6	1.2	1.3	1.9	—	0.8	0.7	0.7	0.7	0.7	0.7	0.7	—
APRIL	0.7	0.7	1.1	1.4	1.9	0.7	1.1	1.4	1.9	—	0.9	0.7	0.7	0.7	0.7	0.7	0.7	—
MAY	0.7	0.7	1.1	1.4	1.9	0.7	1.1	1.4	1.9	—	1.0	0.9	0.9	0.9	0.9	0.9	0.9	—
JUNE	0.8	0.8	1.0	1.5	1.9	0.8	1.0	1.5	1.9	—	0.9	0.9	0.9	0.9	0.9	0.9	0.9	—
JULY	0.7	0.7	1.1	1.4	1.9	0.7	1.1	1.4	1.9	—	0.8	0.8	0.8	0.8	0.8	0.8	0.8	—
AUGUST	0.7	0.7	1.1	1.4	1.9	0.7	1.1	1.4	1.9	—	1.1	0.8	0.8	0.8	0.8	0.8	0.8	—
SEPTEMBER	0.7	0.7	1.2	1.4	1.9	0.7	1.2	1.4	1.9	—	1.5	0.9	0.9	0.9	0.9	0.9	0.9	—
OCTOBER	1.8	1.8	1.1	2.5	1.9	1.8	1.1	2.5	1.9	—	13.4	1.6	1.6	1.6	1.6	1.6	1.6	—
NOVEMBER	1.5	1.5	1.2	2.2	1.9	1.5	1.2	2.2	1.9	—	2.2	1.4	1.4	1.4	1.4	1.4	1.4	—
DECEMBER	1.6	1.6	1.3	2.3	1.9	1.6	1.3	2.3	1.9	—	2.2	1.6	1.6	1.6	1.6	1.6	1.6	—
AVERAGE	0.7	0.7	1.1	1.6	1.9	0.7	1.1	1.6	1.9	—	1.1	—	0.9	1.0	—	0.9	1.0	—

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 2

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (1000 ac-ft)												OUTFLOW (1000 ac-ft)							
		LEASBURG DAM TO MESILLA DAM					MESILLA DAM TO AMERICAN DAM							LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	NET PRECIP. (2)	CANAL WASTE RETURN (3)	M&I RETURN FLOW (4)	DRAIN INFLOW (5)	TRIB. INFLOW (6)	NET PRECIP. (7)	CANAL WASTE RETURN (8)	M&I RETURN FLOW (9)	DRAIN INFLOW (10)	TRIB. INFLOW (11)	TOTAL INFLOW (12)	RIVER OUTFLOW - AMERICAN (13)	RIVER FLOW TO M&I (14)	RIVER FLOW TO AGR. (15)	NET RIVER SEEPAGE (16)	RIVER FLOW TO M&I (17)	RIVER FLOW TO AGR. (18)	NET RIVER SEEPAGE (19)	TOTAL OUTFLOW (20)
JANUARY	1.0	0.0	0.0	0.5	2.3	0.1	-0.1	0.0	0.9	3.8	1.0	9.5	3.9	0.0	0.0	2.2	0.0	0.0	3.4	9.5
FEBRUARY	1.0	-0.1	0.4	0.5	2.1	0.1	-0.1	0.6	0.8	3.7	0.8	9.8	1.7	0.0	0.0	3.3	0.0	0.0	4.9	9.8
MARCH	1.0	-0.2	2.1	0.6	4.1	0.1	-0.3	3.6	1.0	6.9	0.4	19.4	7.1	0.0	0.0	4.9	0.0	0.0	7.4	19.4
APRIL	1.0	-0.3	1.9	0.8	5.1	0.0	-0.4	3.2	1.3	8.6	0.1	21.3	14.3	0.0	0.0	2.8	0.0	0.0	4.2	21.3
MAY	1.0	-0.3	2.2	0.9	5.3	0.0	-0.5	3.7	1.6	9.1	0.3	23.3	19.7	0.0	0.0	1.4	0.0	0.0	2.1	23.3
JUNE	1.0	-0.4	2.6	1.0	5.9	0.1	-0.6	4.5	1.7	10.0	0.4	26.2	20.5	0.0	0.0	2.3	0.0	0.0	3.4	26.2
JULY	1.0	-0.3	2.6	1.0	7.0	0.3	-0.5	4.4	1.6	11.8	1.7	30.6	25.0	0.0	0.0	2.3	0.0	0.0	3.4	30.6
AUGUST	1.0	-0.1	2.1	0.8	7.7	0.7	-0.2	3.6	1.4	13.2	4.5	34.7	24.5	0.0	0.0	4.1	0.0	0.0	6.1	34.7
SEPTEMBER	1.0	-0.2	1.6	0.7	6.7	0.2	-0.3	2.8	1.3	11.5	1.2	26.5	21.0	0.0	0.0	2.2	0.0	0.0	3.3	26.5
OCTOBER	1.0	-0.1	0.5	0.6	5.0	0.1	-0.2	0.8	1.1	8.4	0.8	18.0	12.9	0.0	0.0	2.0	0.0	0.0	3.1	18.0
NOVEMBER	1.0	-0.1	0.0	0.5	2.2	0.0	-0.1	0.0	0.9	3.8	0.2	8.5	5.8	0.0	0.0	1.1	0.0	0.0	1.6	8.5
DECEMBER	1.0	-0.1	0.0	0.5	1.8	0.1	-0.1	0.0	0.9	3.0	1.0	8.2	5.1	0.0	0.0	1.2	0.0	0.0	1.8	8.2
TOTAL	12.0	-2.0	16.0	8.5	55.1	1.9	-3.6	27.3	14.6	93.9	12.4	236.0	161.5	0.0	0.0	29.8	0.0	0.0	44.7	236.0

River width (Leasburg to Mesilla)	=	200.0	River width (Mesilla to American)	=	200.0	Baseline SW flow needed by M&I	0
River length (Leasburg to Mesilla)	=	21.9	River length (Mesilla to American)	=	38.5	Baseline SW flow needed by Agr. i	91.5
River seepage rate (Leasburg to Mesilla)	=	-	River seepage rate (Mesilla to American)	=	-	Baseline GW flow needed by M&I	0.9
Percent of population (Leasburg to Mesilla)	=	0.37	Percent of population (Mesilla to American)	=	0.63	Baseline GW flow needed by Agr.	9.8
Percent of agricultural area (Leasburg to Mesilla)	=	0.37	Percent of agricultural area (Mesilla to American)	=	0.63	Baseline SW flow needed by M&I	43.1
Percent of drainage area (Leasburg to Mesilla)	=	0.13	Percent of drainage area (Mesilla to American)	=	0.87	Baseline SW flow needed by Agr. i	410.8
Percent of river seepage (Leasburg to Mesilla)	=	0.40	Percent of river seepage (Mesilla to American)	=	0.60	Baseline GW flow needed by M&I	3.1
Annual runoff	=	0.25	Total drainage area (ac)	=	685387.0	Baseline GW flow needed by Agr.	61.9

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 2

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS)										OUTFLOW (Tons of TDS)								
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN				CHANGE
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)	IN MASS (Tons of TDS) (19)
JANUARY	1741	29	636	3432	177	49	1082	5844	1181	14171	6752	0	0	2967	0	0	4451	14171	0
FEBRUARY	1605	152	575	3211	202	258	979	5468	1353	13803	3268	0	0	4214	0	0	6321	13803	0
MARCH	1957	1063	720	4972	122	1810	1226	8465	817	21153	9732	0	0	4568	0	0	6852	21153	0
APRIL	2860	987	848	6546	88	1681	1444	11145	592	26193	20592	0	0	2240	0	0	3360	26193	0
MAY	2961	964	1004	6823	125	1641	1709	11617	834	27678	22398	0	0	2112	0	0	3168	27678	0
JUNE	3275	1285	1015	7250	171	2189	1728	12344	1143	30399	15806	0	0	5837	0	0	8756	30399	0
JULY	4334	1411	1032	9077	586	2402	1756	15456	3919	39973	20780	0	0	7677	0	0	11516	39973	0
AUGUST	4268	1370	917	8384	967	2333	1561	14275	6473	40548	20365	0	0	8073	0	0	12109	40548	0
SEPTEMBER	3081	966	893	8142	359	1645	1521	13863	2400	32870	26326	0	0	2617	0	0	3926	32870	0
OCTOBER	2356	201	668	5579	328	342	1138	9499	2196	22308	12975	0	0	3733	0	0	5600	22308	0
NOVEMBER	1614	10	626	3396	110	18	1066	5782	739	13362	6873	0	0	2596	0	0	3893	13362	0
DECEMBER	1838	5	663	3038	299	8	1129	5172	2003	14156	6128	0	0	3211	0	0	4817	14156	0
TOTAL	31891	8443	9596	69848	3534	14376	16340	118931	23653	296612	171997	0	0	49846	0	0	74770	296612	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 2

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS)										OUTFLOW (Tons of TDS)								
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN				CHANGE IN MASS
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)	(Tons of TDS) (19)
JANUARY	1655	0	636	3344	95	0	1082	5694	637	13143	6201	0	0	2777	0	0	4166	13143	0
FEBRUARY	1540	0	575	2559	104	0	979	4358	696	10811	3243	0	0	3027	0	0	4541	10811	0
MARCH	1777	782	720	3225	43	1331	1226	5490	287	14881	10518	0	0	1745	0	0	2618	14881	0
APRIL	2498	811	848	4624	133	1381	1444	7873	892	20503	32292	0	0	-4716	0	0	-7074	20503	0
MAY	2198	511	1004	4146	47	869	1709	7059	312	17854	28654	0	0	-4320	0	0	-6480	17854	0
JUNE	2464	828	1015	4180	199	1411	1728	7117	1330	20271	15638	0	0	1853	0	0	2780	20271	0
JULY	2831	1157	1032	5187	961	1969	1756	8831	6432	30156	16788	0	0	5347	0	0	8021	30156	0
AUGUST	3140	1699	917	5733	698	2893	1561	9761	4671	31072	16160	0	0	5965	0	0	8947	31072	0
SEPTEMBER	2310	869	893	4965	287	1479	1521	8454	1918	22694	18995	0	0	1480	0	0	2220	22694	0
OCTOBER	2331	43	668	3310	441	74	1138	5636	2949	16590	3676	0	0	5166	0	0	7748	16590	0
NOVEMBER	1585	23	626	2406	184	40	1066	4096	1233	11259	2737	0	0	3409	0	0	5114	11259	0
DECEMBER	1806	14	663	2406	343	24	1129	4096	2295	12776	2423	0	0	4141	0	0	6212	12776	0
TOTAL	26135	6737	9596	46082	3534	11471	16340	78464	23653	222012	157325	0	0	25875	0	0	38812	222012	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 2

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS)										OUTFLOW (Tons of TDS)								
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN				CHANGE IN MASS (Tons of TDS)
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)	(19)
JANUARY	1803	87	636	3612	153	148	1082	6149	1021	14691	9332	0	0	2144	0	0	3215	14691	0
FEBRUARY	1457	156	575	3126	284	265	979	5322	1900	14064	3320	0	0	4298	0	0	6447	14064	0
MARCH	1859	1128	720	5084	216	1920	1226	8656	1443	22251	10395	0	0	4742	0	0	7114	22251	0
APRIL	2675	976	848	6244	96	1662	1444	10632	643	25221	12327	0	0	5157	0	0	7736	25221	0
MAY	3089	875	1004	7319	240	1489	1709	12462	1607	29794	11278	0	0	7406	0	0	11109	29794	0
JUNE	3680	1136	1015	7804	201	1934	1728	13287	1346	32131	6474	0	0	10263	0	0	15394	32131	0
JULY	4718	1429	1032	9942	312	2433	1756	16929	2091	40642	14660	0	0	10393	0	0	15589	40642	0
AUGUST	4009	1070	917	7071	913	1821	1561	12040	6113	35515	22998	0	0	5007	0	0	7510	35515	0
SEPTEMBER	3917	943	893	8012	450	1606	1521	13642	3013	33997	29705	0	0	1717	0	0	2575	33997	0
OCTOBER	2572	94	668	6469	307	161	1138	11014	2055	24478	18712	0	0	2306	0	0	3460	24478	0
NOVEMBER	1792	8	626	4600	87	13	1066	7832	580	16603	9724	0	0	2752	0	0	4127	16603	0
DECEMBER	2136	0	663	4037	275	0	1129	6875	1841	16957	8458	0	0	3400	0	0	5099	16957	0
TOTAL	33708	7901	9596	73319	3534	13453	16340	124841	23653	306344	157384	0	0	59584	0	0	89376	306344	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS) FOR RIVER

ALTERNATIVE 2

NORMAL YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS)										OUTFLOW (Tons of TDS)								
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN				CHANGE IN MASS (Tons of TDS)
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)	(19)
JANUARY	1766	0	636	3340	282	0	1082	5688	1886	14679	4725	0	0	3982	0	0	5972	14679	0
FEBRUARY	1817	299	575	3949	219	509	979	6723	1464	16534	3243	0	0	5316	0	0	7975	16534	0
MARCH	2237	1280	720	6607	108	2179	1226	11250	721	26328	8285	0	0	7217	0	0	10826	26328	0
APRIL	3408	1175	848	8769	36	2001	1444	14932	242	32855	17158	0	0	6279	0	0	9418	32855	0
MAY	3595	1506	1004	9004	87	2564	1709	15332	584	35385	27260	0	0	3250	0	0	4874	35385	0
JUNE	3681	1891	1015	9766	113	3221	1728	16628	754	38796	25307	0	0	5396	0	0	8093	38796	0
JULY	5454	1647	1032	12103	483	2804	1756	20609	3232	49119	30890	0	0	7292	0	0	10937	49119	0
AUGUST	5655	1342	917	12347	1291	2285	1561	21023	8637	55057	21938	0	0	13247	0	0	19871	55057	0
SEPTEMBER	3016	1087	893	11448	339	1850	1521	19492	2271	41917	30278	0	0	4655	0	0	6983	41917	0
OCTOBER	2165	466	668	6958	237	793	1138	11847	1584	25855	16536	0	0	3728	0	0	5591	25855	0
NOVEMBER	1466	0	626	3182	60	0	1066	5418	404	12223	8158	0	0	1626	0	0	2439	12223	0
DECEMBER	1572	0	663	2670	280	0	1129	4546	1874	12734	7503	0	0	2092	0	0	3139	12734	0
TOTAL	35830	10692	9596	90143	3534	18205	16340	153487	23653	361481	201281	0	0	64080	0	0	96120	361481	0

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 2

COMPOSITE

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS/af)										OUTFLOW (Tons of TDS/af)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1.7	1.1	1.2	1.6	1.9	1.1	1.2	1.6	1.9	---	1.4	1.8	1.8	1.8	1.8	1.8	1.8	---
FEBRUARY	1.6	0.9	1.2	1.7	1.9	0.9	1.2	1.7	1.9	---	1.5	1.7	1.7	1.7	1.7	1.7	1.7	---
MARCH	2.0	0.7	1.2	1.6	1.9	0.7	1.2	1.6	1.9	---	1.3	1.4	1.4	1.4	1.4	1.4	1.4	---
APRIL	2.9	0.7	1.1	1.6	1.9	0.7	1.1	1.6	1.9	---	1.4	2.0	2.0	2.0	2.0	2.0	2.0	---
MAY	3.0	0.7	1.1	1.6	1.9	0.7	1.1	1.6	1.9	---	1.4	2.1	2.1	2.1	2.1	2.1	2.1	---
JUNE	3.3	0.8	1.0	1.6	1.9	0.8	1.0	1.6	1.9	---	1.1	2.2	2.2	2.2	2.2	2.2	2.2	---
JULY	4.3	0.7	1.1	1.6	1.9	0.7	1.1	1.6	1.9	---	1.1	2.7	2.7	2.7	2.7	2.7	2.7	---
AUGUST	4.2	0.9	1.1	1.4	1.9	0.9	1.1	1.4	1.9	---	1.0	2.7	2.7	2.7	2.7	2.7	2.7	---
SEPTEMBER	3.1	0.9	1.2	1.5	1.9	0.9	1.2	1.5	1.9	---	1.4	2.2	2.2	2.2	2.2	2.2	2.2	---
OCTOBER	2.4	1.1	1.1	1.5	1.9	1.1	1.1	1.5	1.9	---	1.3	2.0	2.0	2.0	2.0	2.0	2.0	---
NOVEMBER	1.6	1.0	1.2	1.5	1.9	1.0	1.2	1.5	1.9	---	1.3	1.7	1.7	1.7	1.7	1.7	1.7	---
DECEMBER	1.9	1.2	1.3	1.5	1.9	1.2	1.3	1.5	1.9	---	1.3	1.9	1.9	1.9	1.9	1.9	1.9	---
AVERAGE	2.7	0.7	1.1	1.6	1.9	0.7	1.1	1.6	1.9	---	1.3	---	---	2.1	---	---	2.1	---

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 2

DRY YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS/af)										OUTFLOW (Tons of TDS/af)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1.6	1.3	1.2	1.4	1.9	1.3	1.2	1.4	1.9	—	1.2	1.8	1.8	1.8	1.8	1.8	1.8	—
FEBRUARY	1.6	1.1	1.2	1.4	1.9	1.1	1.2	1.4	1.9	—	1.0	1.9	1.9	1.9	1.9	1.9	1.9	—
MARCH	1.9	0.8	1.2	1.4	1.9	0.8	1.2	1.4	1.9	—	1.3	1.4	1.4	1.4	1.4	1.4	1.4	—
APRIL	2.6	0.8	1.1	1.4	1.9	0.8	1.1	1.4	1.9	—	1.6	1.9	1.9	1.9	1.9	1.9	1.9	—
MAY	2.3	0.9	1.1	1.4	1.9	0.9	1.1	1.4	1.9	—	1.6	1.8	1.8	1.8	1.8	1.8	1.8	—
JUNE	2.5	0.9	1.0	1.4	1.9	0.9	1.0	1.4	1.9	—	1.3	1.9	1.9	1.9	1.9	1.9	1.9	—
JULY	3.0	0.9	1.1	1.4	1.9	0.9	1.1	1.4	1.9	—	1.2	2.1	2.1	2.1	2.1	2.1	2.1	—
AUGUST	3.0	1.3	1.1	1.4	1.9	1.3	1.1	1.4	1.9	—	1.2	2.3	2.3	2.3	2.3	2.3	2.3	—
SEPTEMBER	2.3	1.4	1.2	1.4	1.9	1.4	1.2	1.4	1.9	—	1.5	2.0	2.0	2.0	2.0	2.0	2.0	—
OCTOBER	2.4	1.3	1.1	1.4	1.9	1.3	1.1	1.4	1.9	—	0.8	2.1	2.1	2.1	2.1	2.1	2.1	—
NOVEMBER	1.6	1.3	1.2	1.4	1.9	1.3	1.2	1.4	1.9	—	0.9	1.9	1.9	1.9	1.9	1.9	1.9	—
DECEMBER	1.9	1.3	1.3	1.4	1.9	1.3	1.3	1.4	1.9	—	0.8	1.9	1.9	1.9	1.9	1.9	1.9	—
AVERAGE	2.2	1.0	1.1	1.4	1.9	1.0	1.1	1.4	1.9	—	1.3	—	—	2.0	—	—	2.0	—

RIO GRANDE WATER PROJECT

MASS BALANCE (TDS/AF) FOR RIVER

ALTERNATIVE 2

AVERAGE YEAR

REACH 2 - MESILLA VALLEY

	INFLOW (Tons of TDS/af)										OUTFLOW (Tons of TDS/af)							
		LEASBURG DAM TO MESILLA DAM				MESILLA DAM TO AMERICAN DAM						LEASBURG TO MESILLA			MESILLA TO AMERICAN			
MONTH	RIVER INFLOW - LEASBRG (1)	CANAL WASTE RETURN (2)	M&I RETURN FLOW (3)	DRAIN INFLOW (4)	TRIB. INFLOW (5)	CANAL WASTE RETURN (6)	M&I RETURN FLOW (7)	DRAIN INFLOW (8)	TRIB. INFLOW (9)	TOTAL INFLOW (10)	RIVER OUTFLOW - AMERICAN (11)	RIVER FLOW TO M&I (12)	RIVER FLOW TO AGR. (13)	NET RIVER SEEPAGE (14)	RIVER FLOW TO M&I (15)	RIVER FLOW TO AGR. (16)	NET RIVER SEEPAGE (17)	TOTAL OUTFLOW (18)
JANUARY	1.7	1.0	1.2	1.9	1.9	1.0	1.2	1.9	1.9	—	1.7	1.8	1.8	1.8	1.8	1.8	1.8	—
FEBRUARY	1.5	0.8	1.2	1.8	1.9	0.8	1.2	1.8	1.9	—	1.7	1.7	1.7	1.7	1.7	1.7	1.7	—
MARCH	1.9	0.7	1.2	1.8	1.9	0.7	1.2	1.8	1.9	—	1.5	1.4	1.4	1.4	1.4	1.4	1.4	—
APRIL	2.6	0.7	1.1	1.7	1.9	0.7	1.1	1.7	1.9	—	1.3	1.8	1.8	1.8	1.8	1.8	1.8	—
MAY	3.2	0.6	1.1	1.8	1.9	0.6	1.1	1.8	1.9	—	1.1	2.1	2.1	2.1	2.1	2.1	2.1	—
JUNE	3.7	0.6	1.0	1.6	1.9	0.6	1.0	1.6	1.9	—	0.6	2.3	2.3	2.3	2.3	2.3	2.3	—
JULY	4.5	0.6	1.1	1.7	1.9	0.6	1.1	1.7	1.9	—	0.9	2.7	2.7	2.7	2.7	2.7	2.7	—
AUGUST	4.2	0.7	1.1	1.1	1.9	0.7	1.1	1.1	1.9	—	1.0	2.6	2.6	2.6	2.6	2.6	2.6	—
SEPTEMBER	3.9	0.7	1.2	1.5	1.9	0.7	1.2	1.5	1.9	—	1.4	2.6	2.6	2.6	2.6	2.6	2.6	—
OCTOBER	2.7	1.2	1.1	1.7	1.9	1.2	1.1	1.7	1.9	—	1.7	2.2	2.2	2.2	2.2	2.2	2.2	—
NOVEMBER	1.7	1.0	1.2	1.7	1.9	1.0	1.2	1.7	1.9	—	1.5	1.8	1.8	1.8	1.8	1.8	1.8	—
DECEMBER	2.0	1.3	1.3	1.8	1.9	1.3	1.3	1.8	1.9	—	1.6	2.0	2.0	2.0	2.0	2.0	2.0	—
AVERAGE	2.8	0.7	1.1	1.6	1.9	0.7	1.1	1.6	1.9	—	1.2	—	—	2.1	—	—	2.1	—

RIO GRANDE WATER PROJECT

WATER BALANCE FOR ALLUVIAL AQUIFER

ALTERNATIVE 3

NORMAL YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)					OUTFLOW (1000 ac-ft)					CHANGE
MONTH	GW BOUNDARY FLUX IN (1)	DEEP PERC. (2)	CANAL/ LATERAL SEEPAGE (3)	NET RIVER SEEPAGE (4)	TOTAL INFLOW (5)	GW BOUNDARY FLUX OUT (6)	PHREAT. C.U. (7)	GW FLOW TO DRAINS (8)	GW PUMPING (9)	TOTAL OUTFLOW (10)	IN STORAGE (1000ac-ft) (11)
JANUARY	0.3	0.0	0.0	-1.6	-1.4	0.0	0.0	0.2	0.0	0.3	-1.7
FEBRUARY	0.3	0.7	2.4	-0.5	2.8	0.0	0.0	-0.1	0.5	0.5	2.4
MARCH	0.3	1.8	6.5	2.7	11.2	0.0	0.1	0.4	1.5	2.0	9.3
APRIL	0.3	1.9	7.1	0.4	9.6	0.0	0.1	1.2	1.6	2.9	6.6
MAY	0.3	2.0	7.7	-2.1	7.9	0.0	0.1	1.3	1.7	3.1	4.8
JUNE	0.3	2.0	7.5	-0.4	9.4	0.0	0.2	1.5	1.6	3.3	6.0
JULY	0.3	1.9	6.6	-2.2	6.5	0.0	0.1	1.3	1.5	2.9	3.6
AUGUST	0.3	1.3	4.4	-9.6	-3.6	0.0	0.1	1.0	1.0	2.1	-5.7
SEPTEMBER	0.3	1.1	4.2	-6.1	-0.5	0.0	0.1	1.0	0.9	2.0	-2.5
OCTOBER	0.3	0.3	1.2	-6.5	-4.7	0.0	0.1	1.1	0.3	1.5	-6.3
NOVEMBER	0.3	0.0	0.0	-3.4	-3.2	0.0	0.0	0.6	0.1	0.8	-3.9
DECEMBER	0.3	0.0	0.0	-2.7	-2.4	0.0	0.0	0.3	0.0	0.4	-2.8
TOTAL	3.0	13.2	47.5	-32.0	31.6	0.3	1.1	9.8	10.7	21.9	9.8

Phreatophyte area (ac)	=	200.0
Average consumptive use (ft/yr)	=	5.5

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 3

COMPOSITE

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE IN STORAGE (1000 ac-ft) (17)	PIPE INFLOW (18)	PIPE OUTFLOW (19)
MONTH	GROSS PRECIP. (1)	RIVER FLOW TO AGR. (2)	RIVER FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)			
JANUARY	2.9	0.0	0.0	0.5	0.0	0.0	3.4	0.0	2.6	0.0	0.0	0.2	0.0	0.0	0.6	3.4	0.0	16.6	16.6
FEBRUARY	1.6	3.0	0.0	0.2	0.5	0.0	5.3	0.0	2.7	0.0	1.3	0.4	0.0	0.4	0.5	5.3	0.0	15.7	15.7
MARCH	0.6	11.4	0.0	0.0	3.2	0.1	15.5	0.0	5.6	0.1	5.5	1.8	0.1	1.4	1.0	15.5	0.0	20.2	20.2
APRIL	0.5	12.1	0.0	1.0	2.8	0.1	16.5	0.0	5.4	0.1	5.6	1.8	0.1	1.6	1.9	16.5	0.0	23.7	23.7
MAY	0.6	11.7	0.0	1.0	2.7	0.1	16.0	0.1	5.3	0.1	5.5	1.8	0.1	1.5	1.9	16.0	0.0	27.6	27.6
JUNE	2.5	12.4	0.0	1.0	2.9	0.1	18.9	0.1	7.3	0.1	5.7	2.1	0.1	1.7	2.0	18.9	0.0	28.6	28.6
JULY	6.8	12.7	0.0	0.9	3.5	0.1	24.0	0.1	11.9	0.1	6.0	2.1	0.1	1.6	2.1	24.0	0.0	28.0	28.0
AUGUST	13.8	11.4	0.0	0.7	3.2	0.1	29.1	0.0	17.6	0.1	5.4	2.4	0.1	1.4	2.1	29.1	0.0	24.9	24.9
SEPTEMBER	4.4	6.8	0.0	1.1	2.0	0.1	14.4	0.0	7.2	0.1	3.2	1.2	0.1	0.9	1.8	14.4	0.0	23.5	23.5
OCTOBER	5.5	2.2	0.0	0.9	0.1	0.1	8.8	0.0	5.7	0.1	1.0	0.5	0.1	0.3	1.2	8.8	0.0	19.4	19.4
NOVEMBER	1.0	0.3	0.0	0.7	0.0	0.1	2.1	0.0	1.0	0.1	0.1	0.1	0.1	0.0	0.7	2.1	0.0	17.2	17.2
DECEMBER	3.4	0.0	0.0	0.5	0.0	0.0	3.9	0.0	3.1	0.0	0.0	0.2	0.0	0.0	0.6	3.9	0.0	16.9	16.9
TOTAL	43.8	84.0	0.0	8.4	20.9	0.9	158.0	0.3	75.4	0.5	39.3	14.6	0.5	10.9	16.4	158.0	0.0	262.4	262.4

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.02
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.46
Fraction of "river flow to agr." as canal waste return	=	0.12	Fraction of M&I flow as M&I return flow	=	0.50
Canal area (ac)	=	102			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 3

DRY YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE IN		
MONTH	GROSS PRECIP. (1)	RIVER FLOW TO AGR. (2)	RIVER FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	STORAGE (1000 ac-ft) (17)	PIPE INFLOW (18)	PIPE OUTFLOW (19)
JANUARY	0.3	0.0	0.0	0.9	0.0	0.0	1.2	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.9	1.2	0.0	14.1	14.1
FEBRUARY	0.3	0.1	0.0	0.7	0.1	0.0	1.2	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.7	1.2	0.0	13.1	13.1
MARCH	0.3	8.3	0.0	-0.1	6.0	0.1	14.7	0.0	6.0	0.1	4.7	2.0	0.1	0.9	1.0	14.7	0.0	20.0	20.0
APRIL	0.9	8.2	0.0	0.9	4.6	0.1	14.7	0.1	5.7	0.1	4.2	1.7	0.1	1.0	1.8	14.7	0.0	23.5	23.5
MAY	0.0	5.4	0.0	0.8	4.2	0.1	10.5	0.1	3.8	0.1	3.1	1.4	0.1	0.5	1.5	10.5	0.0	27.3	27.3
JUNE	3.0	6.6	0.0	0.2	3.9	0.1	13.8	0.1	6.8	0.1	3.4	1.5	0.1	0.8	1.1	13.8	0.0	28.4	28.4
JULY	4.2	10.2	0.0	0.2	6.1	0.1	20.7	0.1	10.2	0.1	5.3	2.3	0.1	1.2	1.5	20.7	0.0	27.7	27.7
AUGUST	11.1	10.6	0.0	0.2	6.4	0.1	28.4	0.0	17.1	0.1	5.6	2.6	0.1	1.3	1.8	28.4	0.0	24.6	24.6
SEPTEMBER	5.7	5.4	0.0	0.8	3.6	0.1	15.7	0.0	8.9	0.1	2.9	1.4	0.1	0.6	1.7	15.7	0.0	23.2	23.2
OCTOBER	6.6	0.0	0.0	0.8	0.0	0.1	7.5	0.0	6.3	0.1	0.0	0.0	0.1	0.0	1.0	7.5	0.0	16.8	16.8
NOVEMBER	1.0	0.0	0.0	0.7	0.0	0.1	1.8	0.0	0.9	0.1	0.0	0.0	0.1	0.0	0.8	1.8	0.0	14.6	14.6
DECEMBER	3.6	0.0	0.0	0.6	0.0	0.0	4.2	0.0	3.4	0.0	0.0	0.1	0.0	0.0	0.7	4.2	0.0	14.3	14.3
TOTAL	37.2	54.7	0.0	6.7	34.7	0.9	134.2	0.4	69.9	0.5	29.3	13.0	0.5	6.3	14.4	134.2	0.00	247.5	247.5

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.01
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.48
Fraction of "river flow to agr." as canal waste return	=	0.11	Fraction of M&I flow as M&I return flow	=	0.50
Existing Canal Area (ac)	=	102	New Canal Area (acres)	=	180

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 3

AVERAGE YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE		
MONTH	GROSS PRECIP. (1)	RIVER FLOW TO AGR. (2)	RIVER FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	IN STORAGE (1000 ac-ft) (17)	PIPE INFLOW (18)	PIPE OUTFLOW (19)
JANUARY	4.2	0.0	0.0	0.3	0.0	0.0	4.5	0.0	3.5	0.0	0.0	0.6	0.0	0.0	0.5	4.5	0.0	17.9	17.9
FEBRUARY	0.9	3.4	0.0	0.1	1.0	0.0	5.3	0.0	2.4	0.0	1.5	0.6	0.0	0.5	0.4	5.3	0.0	17.0	17.0
MARCH	1.1	11.2	0.0	-0.2	2.3	0.1	14.5	0.0	5.5	0.1	5.2	1.7	0.1	1.2	0.7	14.5	0.0	20.3	20.3
APRIL	0.2	12.2	0.0	0.7	2.3	0.1	15.5	0.0	5.0	0.1	5.6	1.7	0.1	1.4	1.6	15.5	0.0	23.9	23.9
MAY	0.7	12.3	0.0	0.9	2.3	0.1	16.3	0.1	5.4	0.1	5.6	1.8	0.1	1.5	1.8	16.3	0.0	27.8	27.8
JUNE	4.1	13.7	0.0	1.1	3.2	0.1	22.2	0.1	9.1	0.1	6.3	2.7	0.1	1.7	2.3	22.2	0.0	28.8	28.8
JULY	5.5	12.9	0.0	1.2	3.1	0.1	22.8	0.1	10.7	0.1	6.0	2.2	0.1	1.4	2.4	22.8	0.0	28.1	28.1
AUGUST	14.5	13.5	0.0	0.9	2.3	0.1	31.4	0.0	17.7	0.1	6.3	3.3	0.1	1.4	2.4	31.4	0.0	25.0	25.0
SEPTEMBER	5.2	5.5	0.0	1.5	1.6	0.1	13.9	0.0	7.5	0.1	2.6	1.0	0.1	0.6	2.1	13.9	0.0	23.6	23.6
OCTOBER	7.2	3.8	0.0	0.9	0.0	0.1	12.0	0.0	7.2	0.1	1.7	1.1	0.1	0.6	1.3	12.0	0.0	20.7	20.7
NOVEMBER	1.4	1.0	0.0	0.7	0.0	0.1	3.2	0.0	1.4	0.1	0.4	0.3	0.1	0.1	0.8	3.2	0.0	18.5	18.5
DECEMBER	4.8	0.0	0.0	0.6	0.0	0.0	5.4	0.0	4.1	0.0	0.0	0.5	0.0	0.0	0.8	5.4	0.0	18.2	18.2
TOTAL	49.9	89.4	0.0	8.7	18.1	0.9	167.0	0.3	79.5	0.5	41.2	17.6	0.5	10.3	17.1	167.0	0.0	269.8	269.8

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.05
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.46
Fraction of "river flow to agr." as canal waste return	=	0.12	Fraction of M&I flow as M&I return flow	=	0.50
Canal area (ac)	=	102			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR LAND

ALTERNATIVE 3

NORMAL YEAR

REACH 1 - RINCON VALLEY

	INFLOW (1000 ac-ft)							OUTFLOW (1000 ac-ft)									CHANGE IN		
MONTH	GROSS PRECIP. (1)	RIVER FLOW TO AGR. (2)	RIVER FLOW TO M&I (3)	NET GW INFLOW TO DRAIN (4)	AGR. GW PUMPING (5)	M&I GW PUMPING (6)	TOTAL INFLOW (7)	NET CANAL EVAP. (8)	PLANT C.U. (9)	M&I C.U. (10)	LAT. & CANAL SEEPAGE (11)	DEEP PERC. (12)	M&I RETURN FLOW (13)	CANAL WASTE RETURN (14)	DRAIN FLOW TO RIVER (15)	TOTAL OUTFLOW (16)	STORAGE (1000 ac-ft) (17)	PIPE INFLOW (18)	PIPE OUTFLOW (19)
JANUARY	4.3	0.0	0.0	0.2	0.0	0.0	4.5	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.4	4.5	0.0	17.9	17.9
FEBRUARY	3.8	5.4	0.0	-0.1	0.5	0.0	9.6	0.0	5.3	0.0	2.4	0.7	0.0	0.8	0.4	9.6	0.0	17.0	17.0
MARCH	0.5	14.8	0.0	0.4	1.4	0.1	17.2	0.0	5.3	0.1	6.5	1.8	0.1	2.2	1.2	17.2	0.0	20.3	20.3
APRIL	0.5	16.0	0.0	1.2	1.5	0.1	19.3	0.0	5.6	0.1	7.1	1.9	0.1	2.4	2.2	19.3	0.0	23.9	23.9
MAY	1.0	17.5	0.0	1.3	1.6	0.1	21.4	0.1	6.6	0.1	7.7	2.0	0.1	2.6	2.3	21.4	0.0	27.8	27.8
JUNE	0.5	17.0	0.0	1.5	1.5	0.1	20.7	0.1	6.0	0.1	7.5	2.0	0.1	2.6	2.5	20.7	0.0	28.8	28.8
JULY	10.6	14.9	0.0	1.3	1.4	0.1	28.3	0.0	14.8	0.1	6.6	1.9	0.1	2.2	2.6	28.3	0.0	28.1	28.1
AUGUST	15.7	10.0	0.0	1.0	0.9	0.1	27.7	0.0	18.1	0.1	4.4	1.3	0.1	1.5	2.2	27.7	0.0	25.0	25.0
SEPTEMBER	2.3	9.5	0.0	1.0	0.8	0.1	13.7	0.0	5.2	0.1	4.2	1.1	0.1	1.4	1.6	13.7	0.0	23.6	23.6
OCTOBER	2.8	2.7	0.0	1.1	0.2	0.1	6.9	0.0	3.5	0.1	1.2	0.3	0.1	0.4	1.4	6.9	0.0	20.7	20.7
NOVEMBER	0.7	0.0	0.0	0.6	0.0	0.1	1.4	0.0	0.6	0.1	0.0	0.0	0.1	0.0	0.7	1.4	0.0	18.5	18.5
DECEMBER	1.7	0.0	0.0	0.3	0.0	0.0	2.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.4	2.0	0.0	18.2	18.2
TOTAL	44.3	107.9	0.0	9.8	9.8	0.9	172.6	0.3	76.9	0.5	47.5	13.2	0.5	16.2	17.7	172.6	0.0	269.8	269.8

Farm efficiency	=	0.65	Fraction of rainfall to deep percolation	=	0.01
Fraction of agricultural return flow to deep percolation	=	0.67	Fraction of rainfall that flows to drain	=	0.04
Fraction of agricultural return flow that flows over surface to drain	=	0.33	Fraction of "river flow to agr." as canal seepage	=	0.44
Fraction of "river flow to agr." as canal waste return	=	0.15	Fraction of M&I flow as M&I return flow	=	0.50
Canal area (ac)	=	102			

RIO GRANDE WATER PROJECT

WATER BALANCE FOR RIVER

ALTERNATIVE 3

COMPOSITE

REACH 1 - RINCON VALLEY (CABALLO DAM TO LEASBURG DAM)

	INFLOW (1000 ac-ft)								OUTFLOW (1000 ac-ft)					
MONTH	RIVER INFLOW (1)	CHANGES IN RELEASES FROM CAB. RES. (2)	NET PRECIP. (3)	CANAL WASTE RETURN (4)	M&I RETURN FLOW (5)	DRAIN INFLOW (6)	TRIB. INFLOW (7)	TOTAL INFLOW (8)	RIVER OUTFLOW (9)	RIVER FLOW TO M&I (10)	RIVER FLOW TO AGR. (11)	NET RIVER SEEPAGE (12)	PIPE FLOW (13)	TOTAL OUTFLOW (14)
JANUARY	2.0	13.6	-0.1	0.0	0.0	0.6	0.3	16.4	1.0	0.0	0.0	-1.2	16.6	16.4
FEBRUARY	14.6	9.6	-0.2	0.4	0.0	0.5	0.2	25.2	5.9	0.0	3.0	0.7	15.7	25.2
MARCH	108.8	-13.2	-0.4	1.4	0.1	1.0	0.1	97.7	62.0	0.0	11.4	4.0	20.2	97.7
APRIL	78.6	-8.9	-0.5	1.6	0.1	1.9	0.1	72.8	40.1	0.0	12.1	-3.2	23.7	72.8
MAY	78.3	-5.4	-0.6	1.5	0.1	1.9	0.1	75.8	38.2	0.0	11.7	-1.7	27.6	75.8
JUNE	101.1	-7.9	-0.7	1.7	0.1	2.0	0.2	96.4	56.2	0.0	12.4	-0.9	28.6	96.4
JULY	114.4	-12.9	-0.6	1.6	0.1	2.1	1.0	105.7	66.4	0.0	12.7	-1.3	28.0	105.7
AUGUST	89.4	-11.2	-0.4	1.4	0.1	2.1	1.8	83.2	54.1	0.0	11.4	-7.2	24.9	83.2
SEPTEMBER	51.3	-4.6	-0.4	0.9	0.1	1.8	0.7	49.7	24.8	0.0	6.8	-5.3	23.5	49.7
OCTOBER	5.1	10.6	-0.2	0.3	0.1	1.2	0.8	17.8	1.2	0.0	2.2	-4.9	19.4	17.8
NOVEMBER	0.1	15.2	-0.1	0.0	0.1	0.7	0.1	16.1	1.0	0.0	0.3	-2.4	17.2	16.1
DECEMBER	0.1	15.1	-0.1	0.0	0.0	0.6	0.4	16.2	1.0	0.0	0.0	-1.7	16.9	16.2
TOTAL	643.9	0.0	-4.5	10.9	0.5	16.4	5.8	673.0	351.8	0.0	84.0	-25.2	262.4	673.0

River area (ac)	=	1114	SW flow needed by M&I in R1	0	SW flow needed by M&I in R2	43.1
Loss rate	=	0.0	SW flow needed by Agr. in R1	60.6	SW flow needed by Agr. in R2	311.1
Area in alluvial valley (ac)	=	0.0	GW flow needed by M&I in R1	0.9	GW flow needed by M&I in R2	3.1
Annual runoff (ft)	=	0.02	GW flow needed by Agr. in R1	28.8	GW flow needed by Agr. in R2	144.5
Tributary area (ac)	=	279040				

AQUIFER MASS BALANCE SPREADSHEETS

Aquifer Mass Balance - Mesilla

Baseline

Mesilla	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Outflux	-45.81	-39.58	-33.32	-27.07	-20.81	-14.56	-8.30	-2.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Recharge :															
Leakage from alluvium	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7
Natural Mountain Front	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25
M & I Pumpage	-70.8	-77.1	-83.3	-89.6	-95.9	-102.1	-108.4	-114.6	-120.9	-127.1	-133.39	-137.6	-141.7	-145.9	-150.1
Agriculture Pumpage	-41.3	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28
Net Gain & Loss	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-4.2	-10.5	-16.7	-20.9	-25.1	-29.3	-33.4

Alternative No. 1

Mesilla	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Outflux	-11.65	-9.94	-8.22	-6.51	-4.80	-3.08	-1.37	0.00	0.00	0	0	0	0	0	0
Recharge :															
Leakage from alluvium	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5
Natural Mountain Front	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25
M & I Pumpage	-68.1	-69.8	-71.5	-73.2	-75.0	-76.7	-78.4	-80.1	-81.8	-83.5	-85.23	-86.0	-86.7	-87.4	-88.2
Agriculture Pumpage	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0
Net Gain & Loss	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.3	-2.1	-3.8	-5.5	-6.2	-7.0	-7.7	-8.4

Alternative No. 2

Mesilla	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Outflux	-1.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
Recharge :															
Leakage from alluvium	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7
Natural Mountain Front	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25
M & I Pumpage	-42.1	-45.0	-47.9	-50.8	-53.7	-56.6	-59.5	-62.5	-65.4	-68.3	-71.17	-71.2	-71.3	-71.4	-71.5
Agriculture Pumpage	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6
Net Gain & Loss	0.0	-1.7	-4.6	-7.5	-10.4	-13.3	-16.2	-19.1	-22.0	-24.9	-27.8	-27.9	-28.0	-28.0	-28.1

Alternative No. 3

Mesilla	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Outflux	-23.25	-21.54	-19.82	-18.11	-16.40	-14.68	-12.97	-11.26	-9.55	-7.83	-6.12	-5.38	-4.65	-3.91	-3.18
Recharge :															
Leakage from alluvium	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5
Natural Mountain Front	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25
M & I Pumpage	-68.1001	-69.8131	-71.5261	-73.2391	-74.9521	-76.6651	-78.3781	-80.0911	-81.8041	-83.5171	-85.2301	-85.966	-86.7018	-87.4376	-88.1734
Agriculture Pumpage	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4
Net Gain & Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

1. Outflux is the amount necessary to keep net gain zero or less.
2. Agricultural Pumpage will be constant and 40% of total is from the Mesilla Bolson.
3. M& I Pumpage for:
   - Baseline include Canutillo, Las Cruces and southern New Mexico average demand for the year
   - Alternative 1 includes Las Cruces average day demand and Canutillo and southern New Mexico half of average demand for peaking
   - Alternative 2 include half the average day demand to meet peaks in Canutillo, Las Cruces and southern New Mexico
   - 2035 accounts for water banking in Alternative 1 and Alternative 2

Aquifer Mass Balance - Mesilla (continued)

Baseline

Mesilla	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Outflux	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Recharge :																
Leakage from alluvium	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7	143.7
Natural Mountain Front	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25
M & I Pumpage	-154.3	-158.5	-162.6	-166.8	-171.0	-175.2	-179.4	-183.5	-187.7	-191.9	-196.1	-200.3	-204.4	-208.6	-212.8	-217.0
Agriculture Pumpage	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28	-41.28
Net Gain & Loss	-37.6	-41.8	-46.0	-50.2	-54.3	-58.5	-62.7	-66.9	-71.1	-75.2	-79.4	-83.6	-87.8	-92.0	-96.1	-100.3

Alternative No. 1

Mesilla	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Outflux	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Recharge :																
Leakage from alluvium	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5	121.5
Natural Mountain Front	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25
M & I Pumpage	-88.8	-89.6	-90.4	-91.1	-91.9	-92.6	-93.3	-94.1	-94.8	-95.5	-96.3	-97.0	-97.7	-98.5	-99.2	-99.9
Agriculture Pumpage	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0
Net Gain & Loss	-9.2	-9.9	-10.6	-11.4	-12.1	-12.8	-13.6	-14.3	-15.0	-15.8	-16.5	-17.3	-18.0	-18.7	-19.5	-20.2

Alternative No. 2

Mesilla	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Outflux																
Recharge :																
Leakage from alluvium	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.7
Natural Mountain Front	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25
M & I Pumpage	-71.5	-71.6	-71.7	-71.8	-71.8	-71.9	-72.0	-72.1	-72.1	-72.2	-72.3	-72.4	-72.4	-72.5	-72.6	-72.7
Agriculture Pumpage	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6	-62.6
Net Gain & Loss	-28.2	-28.3	-28.3	-28.4	-28.5	-28.6	-28.6	-28.7	-28.8	-28.9	-28.9	-29.0	-29.1	-29.2	-29.2	-29.3

Alternative No. 3

Mesilla	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Outflux	-2.44	-1.70	-0.97	-0.23	0	0	0	0	0	0	0	0	0	0	0	0
Recharge :																
Leakage from alluvium	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5	128.5
Natural Mountain Front	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25
M & I Pumpage	-88.9093	-89.6451	-90.3809	-91.1167	-91.8525	-92.5884	-93.3242	-94.06	-94.7958	-95.5317	-96.2675	-97.0033	-97.7391	-98.475	-99.2108	-99.9466
Agriculture Pumpage	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4	-51.4
Net Gain & Loss	0.00	0.00	0.00	0.00	-0.50	-1.24	-1.97	-2.71	-3.45	-4.18	-4.92	-5.65	-6.39	-7.12	-7.86	-8.60

Aquifer Mass Balance - Hueco

in kaf/yr

Baseline

Hueco	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Recharge :															
Leakage from alluvium	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5
Natural Mountain Front	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Fred Hervey Injection	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19
Juarez Pumpage	-281.8	-289.8	-297.8	-305.9	-313.9	-321.9	-329.9	-337.9	-346.0	-354.0	-362.0	-370.0	-378.0	-386.1	-394.1
EPWU Pumpage	-117.60	-115.8	-114.1	-112.3	-110.5	-108.8	-107.0	-105.2	-103.5	-101.7	-99.95	-100.6	-101.2	-101.9	-102.5
Juarez & EPWU Pumpage	-399.397	-405.653	-411.909	-418.164	-424.42	-430.676	-436.931	-443.187	-449.443	-455.698	-461.954	-470.606	-479.258	-487.911	-496.563
Net Gain and Loss	-345.21	-351.46	-357.72	-363.97	-370.23	-376.49	-382.74	-389.00	-395.25	-401.51	-407.76	-416.42	-425.07	-433.72	-442.37

Alternative 1, 2, & 3

Hueco	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Recharge :															
Leakage from alluvium	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5
Natural Mountain Front	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Fred Hervey Injection	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
M & I Pumpage	-89.60	-88.3	-86.9	-85.6	-84.2	-82.9	-81.5	-80.2	-78.8	-77.5	-76.16	-72.9	-69.7	-66.5	-63.2
Juarez Pumpage	-221.8	-229.82	-237.84	-245.86	-253.88	-261.9	-269.92	-277.94	-285.96	-293.98	-302	-310.02	-318.04	-326.06	-334.08
Net Gain and Loss	-257.2	-263.9	-270.6	-277.2	-283.9	-290.6	-297.3	-303.9	-310.6	-317.3	-324.0	-328.8	-333.5	-338.3	-343.1
	88.00	87.58	87.16	86.74	86.32	85.90	85.48	85.06	84.64	84.22	83.80	87.66	91.53	95.39	99.26

El Paso Hueco Alternative

Hueco	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Recharge :															
Leakage from alluvium	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5
Natural Mountain Front	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Fred Hervey Injection	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
M & I Pumpage	-89.60	-88.3	-86.9	-85.6	-84.2	-82.9	-81.5	-80.2	-78.8	-77.5	-76.16	-72.9	-69.7	-66.5	-63.2
Juarez Pumpage	-131	-131	-131	-131	-131	-131	-131	-131	-131	-131	-131	-131	-131	-131	-131
Net Gain and Loss	-166.4	-165.1	-163.7	-162.4	-161.0	-159.7	-158.3	-157.0	-155.7	-154.3	-153.0	-149.7	-146.5	-143.3	-140.0
Net Gain and Loss- w/o Juarez	-35.41	-34.06	-32.72	-31.38	-30.03	-28.69	-27.34	-26.00	-24.66	-23.31	-21.97	-18.74	-15.50	-12.27	-9.04

Assumption:

1. Recharge is constant through study period.
2. Juarez pumpage based on current pumpage and extrapolated based on population projections.
3. EPWU Baseline pumpage assumes 104 MGD surface water during the irrigation season.
4. Alternatives use suface water to meet base demand year round

Aquifer Mass Balance - Hueco (continued)

Baseline

Hueco	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Recharge :																
Leakage from alluvium	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5
Natural Mountain Front	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Fred Hervey Injection	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19	54.19
Juar Pumpage	-402.1	-410.1	-418.1	-426.2	-434.2	-442.2	-450.2	-458.2	-466.3	-474.3	-482.3	-490.3	-498.3	-506.4	-514.4	-522.4
EPW Pumpage	-103.1	-103.7	-104.4	-105.0	-105.6	-106.3	-106.9	-107.5	-108.2	-108.8	-109.4	-110.1	-110.7	-111.3	-112.0	-112.6
Juarez & EPWU Pumpage	-506.215	-513.868	-522.52	-531.172	-539.825	-548.477	-557.129	-565.782	-574.434	-583.086	-591.738	-600.391	-609.043	-617.695	-626.348	-635
Net Gain and Loss	-451.03	-458.68	-468.33	-476.98	-485.63	-494.29	-502.94	-511.59	-520.24	-528.90	-537.55	-546.20	-554.85	-563.51	-572.16	-580.81

Alternative 1, 2, & 3

Hueco	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Recharge :																
Leakage from alluvium	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5
Natural Mountain Front	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Fred Hervey Injection	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
M & I Pumpage	-60.0	-56.8	-53.5	-50.3	-47.1	-43.8	-40.6	-37.4	-34.1	-30.9	-27.7	-24.4	-21.2	-18.0	-14.7	-11.5
Juarez Pumpage	-342.1	-350.12	-358.14	-366.16	-374.18	-382.2	-390.22	-398.24	-406.26	-414.28	-422.3	-430.32	-438.34	-446.36	-454.38	-462.4
Net Gain and Loss	-347.9	-352.7	-357.5	-362.3	-367.1	-371.8	-376.6	-381.4	-386.2	-391.0	-395.8	-400.6	-405.3	-410.1	-414.9	-419.7
	103.12	106.99	110.85	114.72	118.59	122.45	126.31	130.18	134.04	137.91	141.77	145.64	149.50	153.37	157.23	161.10

El Paso Hueco Alternative

Hueco	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Recharge :																
Leakage from alluvium	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5
Natural Mountain Front	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Fred Hervey Injection	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
M & I Pumpage	-60.0	-56.8	-53.5	-50.3	-47.1	-43.8	-40.6	-37.4	-34.1	-30.9	-27.7	-24.4	-21.2	-18.0	-14.7	-11.5
Juarez Pumpage	-131	-131	-131	-131	-131	-131	-131	-131	-131	-131	-131	-131	-131	-131	-131	-131
Net Gain and Loss	-136.8	-133.6	-130.3	-127.1	-123.9	-120.6	-117.4	-114.2	-110.9	-107.7	-104.5	-101.2	-98.0	-94.8	-91.5	-88.3
Net Gain and Loss- w/o Juarez	-5.80	-2.57	0.66	3.90	7.13	10.36	13.59	16.83	20.06	23.29	26.53	29.76	32.99	36.22	39.46	42.69