EVALUATION OF THE EFFECTS OF PROPOSED RELEASE OPERATION PLANS FOR LAKE TEXANA ON LAVACA BAY SALINITIES

Prepared for

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SECTION 1. STUDY BACKGROUND

This report presents the results and findings of a study conducted for the Texas Parks and Wildlife Department (TPWD) and the Texas Water Development Board (TWDB) of the potential effects on salinities in Lavaca Bay of proposed low-flow release programs for Lake Texana. This study effort has been funded through a TWDB research and planning grant, and the work has been conducted by R. J. Brandes Company, in association with Michael Sullivan and Assoc., under Contract No. 330-0644 with the TPWD.

Lake Texana (formerly called Stage I. of Palmetto Bend Reservoir [1][1]) is located on the Navidad River between the towns of Edna and Ganado in Jackson County (see Figure 1-1). The dam and reservoir are jointly owned by the Lavaca-Navidad River Authority (LNRA) and the TWDB. The dam was completed in 1981, and since that time, the LNRA has operated the facility primarily for water supply purposes.

By virtue of its financing of the project, the TWDB owns 57.33 percent of the water rights for Lake Texana, and LNRA owns the balance (42.67 percent). A certificate of adjudication for the project has been issued by the Texas Water Commission (TWC), which authorizes an impoundment with a capacity of 170,300 acre-feet and an annual diversion of 75,000 acre-feet. The certificate has a priority date of May 15, 1972, and is subject to all superior and senior water rights in the Lavaca River Basin, including, "as may be determined by the Commission, the release of water for the maintenance of the Lavaca-Matagorda Bay and Estuary System".

The Lavaca-Matagorda Bay and Estuary System covers about 350 square miles of water surface area in Calhoun, Victoria, Jackson and Matagorda Counties (see Figure 1-2). It includes Matagorda Bay, Lavaca Bay, Cox Bay, Keller Bay, Carancahua Bay, Tres Palacios Bay, several smaller bays, extensive fresh and salt water marsh areas, and the estuarine segments of the Lavaca and Navidad Rivers and several other tidally-influenced creeks [2]. The overall bay and estuary system receives inflow from over 44,000 square miles of drainage area that includes all or portions of the Colorado

[1] Numbers in brackets refer to corresponding items in the List of References.

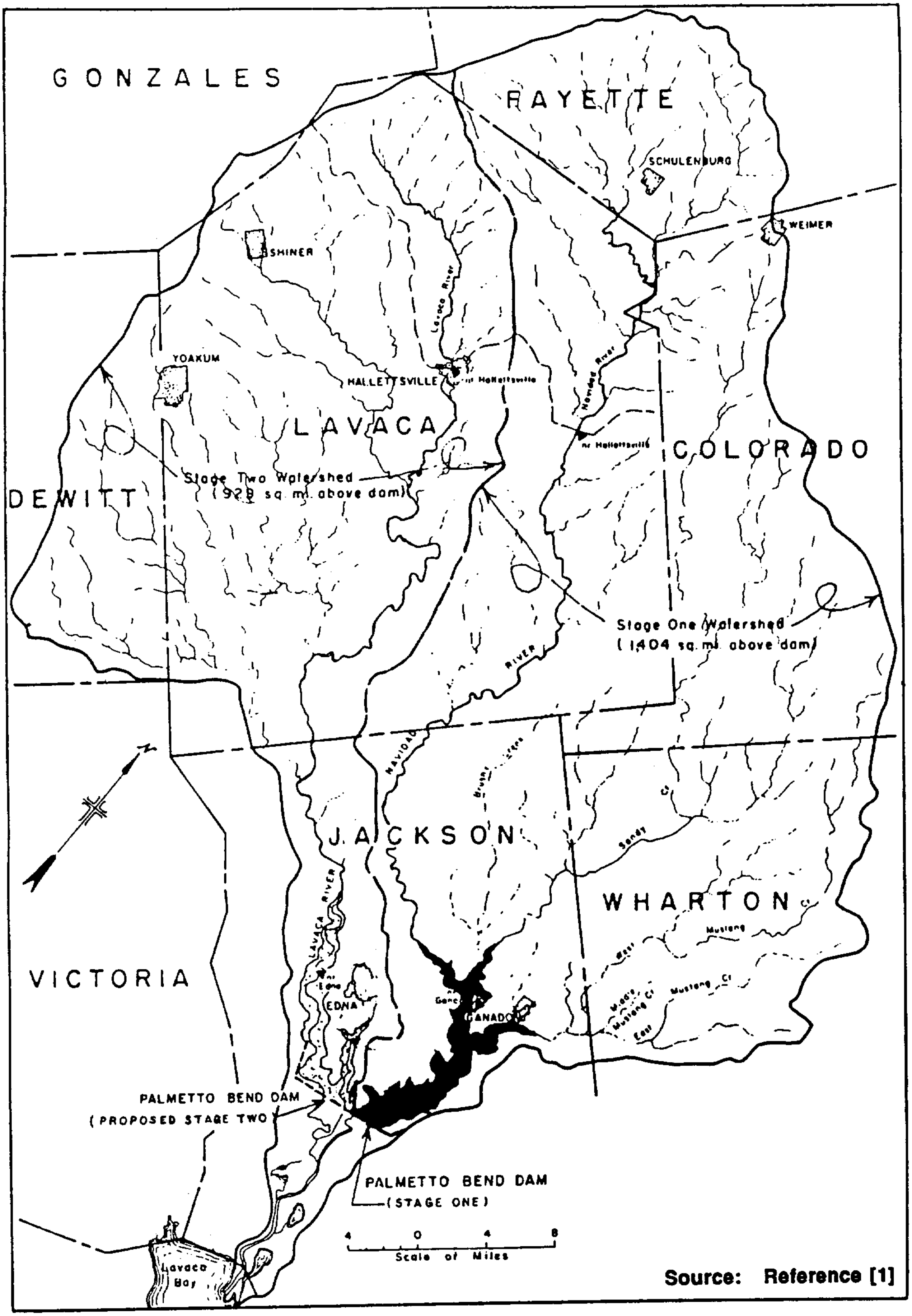
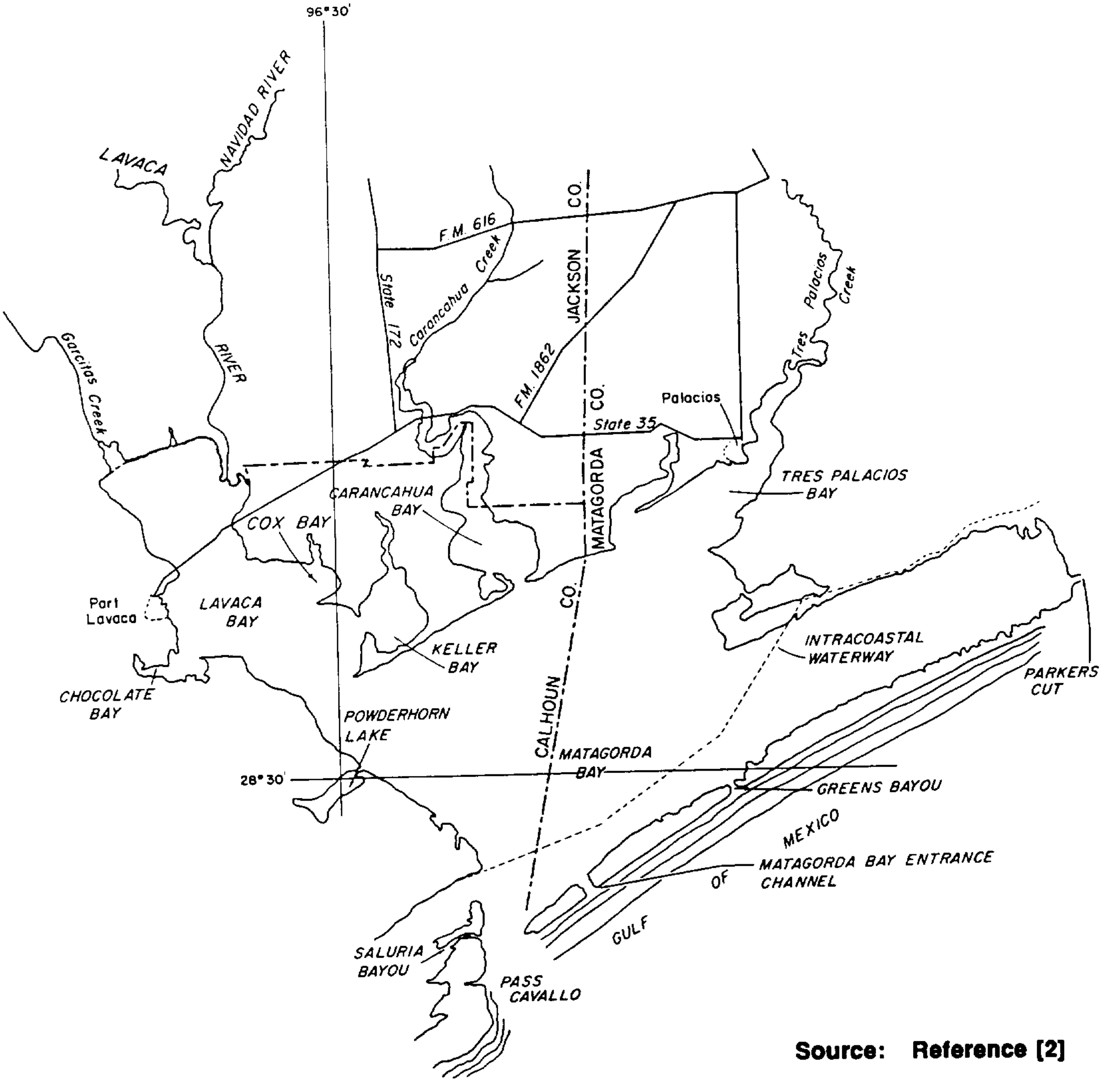


FIGURE 1-1 LOCATION OF LAKE TEXANA AND THE LAVACA-NAVIDAD RIVER BASIN



Source: Reference [2]

FIGURE 1-2 LAVACA-MATAGORDA BAY AND ESTUARY SYSTEM

and Lavaca River Basins and the Colorado-Lavaca and Lavaca-Guadalupe Coastal Basins. The Lavaca River Basin, which includes the Lake Texana watershed, encompasses about 2,260 square miles, or approximately 51 percent of the total system drainage area.

The Lavaca-Matagorda Bay and Estuary System provides habitat areas and food sources for an abundance and variety of estuarine-dependent aquatic species, particularly fish and shellfish, and it serves as a significant resource for the commercial fishing industry in Texas. According to TPWD records, the Lavaca-Matagorda Bay and Estuary System ranks second only to the Galveston Bay System in annual commercial inshore catch (all species).

Freshwater inflows from rivers and streams and from adjacent land areas play a dominant role in influencing the environmental behavior and condition of all estuarine ecosystems. Salinity gradients throughout an estuary or bay are directly related to the quantity of fresh water that flows into the system, with the lowest salinities (typically less than 1.0 ppt) occuring at or near points where freshwater inflows are discharged. Salinity levels gradually increase toward the Gulf where ocean salinities (on the order of 33.0 to 35.0 ppt) prevail. It is this broad range of salinity that tends to provide stable and suitable conditions for various aquatic species during critical stages of their life cycles. Without enough freshwater inflow, salinities can become too high for many organisms to effectively function; conversely, too much fresh water can cause depressed salinities that are too low for certain marine organisms. Freshwater inflows to bays and estuaries also transport sediments, nutrients and other food materials that are essential for species survival. The influx of these constituents, at the proper times and in the proper amounts, is critical with regard to the preservation and maintenance of a viable estuarine ecosystem. Generally, these constituents are transported into the estuarine system with flood flows.

Because of concern regarding the potential adverse impacts that Lake Texana may have with respect to reducing the normal freshwater inflows to Lavaca Bay and its associated estuarine water bodies, extensive studies have been undertaken by the TWDB and TPWD for the purpose of developing an effective program for releasing water from the impoundment. To date, considerable data and information describing the estuarine resources and historical inflow regimes of the Lavaca Bay system have been compiled and analyzed [2,3], and a wide range of alternative schemes for operating and for releasing water from Lake Texana have been proposed and studied [2,4,5]. Still, no program for releasing water from Lake Texana for bay and estuary purposes has been adopted and implemented.

Over the past year or so, however, the TPWD and TWDB jointly have established the technical basis for a proposed release program for Lake Texana that appears to offer the potential for finally being accepted and possibly resolving the freshwater inflow issue [4]. This proposed approach is founded on the concept of maintaining, as a minimum, certain monthly median and mean inflows to Lavaca Bay from the Navidad River alone, based on historical pre-project hydrologic conditions, including the extreme low flows that occurred during the drought of the 1950's. In effect, depending on the natural hydrologic conditions that may be occurring within the Navidad River Basin and on the amount of water stored in Lake Texana at any given time, the TPWD/TWDB proposed release program defines the specific rate of inflow that is to be maintained into Lavaca Bay from the Navidad River, i. e., released from Lake Texana, for each month of the year, such that historical hydrologic influences on the estuarine ecosystem are mimicked. The theory underlying this release program is that if the historical freshwater inflow regime is maintained, or at least approximated, then the estuarine ecosystem also will be preserved.

The purpose of the study described herein, in general, has been to examine the effects of the TPWD/TWDB proposed Lake Texana release program on the Lavaca Bay ecosystem. Specifically, this effort has focused on salinity as the indicator parameter for the overall condition of the estuarine ecosystem, and projected salinity levels within the bay under various release and inflow regimes have been investigated. Salinity comparisons have been made assuming various "with" and "without" project conditions, as well as, different levels of releases from Lake Texana for alternative release programs.

Pursuant to the contract with TPWD, this study has been undertaken in three phases:

- Phase I. Documentation of TPWD/TWDB Release Program
- Phase II. Evaluation of the Salinity Impacts
- Phase III. Modification and Analysis of Alternative Lake Texana Release Programs

This report presents the results from the first two study phases in Sections 2, 3 and 4. Projected salinity levels for Lavaca Bay for different cases of reservoir releases and freshwater inflows are presented in tabular form, and plots are provided that illustrate the effectiveness of the TPWD/TWDB proposed release program with respect to salinity compared to conditions without Lake Texana and with Lake Texana, but without dedicated releases. Results from performing Phase III of the contract, as authorized by the TPWD and TWDB following review of the initial findings, are contained in Section 5. These results describe salinity conditions in Lavaca Bay for different levels of releases corresponding to operational variations in the TPWD/TWDB proposed release program. Section 6 presents a summary of the overall study, with conclusions.

It should be emphasized that this study has focused solely on salinity as the indicator to test the effectiveness of the TPWD/TWDB proposed Lake Texana release programs with regard to impacts on the Lavaca-Matagorda Bay and Estuary ecosystem. In this sense, this effort is considered to provide an initial and preliminary assessment of bay and estuary impacts, which should be useful in weighing current options regarding the required releases. Certainly, there are other parameters and analyses that could and should be considered in evaluating the overall effectiveness of the release program that ultimately is adopted. The potential effect on nutrient loadings to the estuarine system is an important factor to be evaluated, and an assessment of impacts on the fisheries resources of the estuarine system would provide the ultimate test of the ability of the release program to maintain a stable and balanced ecosystem. Other issues include the overall effect of a fluctuating lake level with respect to the viability of the inlake ecosystem, the impacts on public recreation and other uses of the lake, and the mechanical/operational aspects of how the proposed release program can be physically implemented using the existing gate structures and outlet works at the dam. These types of analyses are beyond the scope of this present study; however, they will need to be considered and evaluated. Some of the broader issues pertaining to impacts on estuarine nutrient loadings and fishery resources are being undertaken as part of the State's overall cooperative program for investigating the freshwater needs of Texas bays and estuaries [3].

SECTION 2. PROPOSED LAKE TEXANA RELEASE PROGRAM

The basic structure of the TPWD/TWDB proposed release program for Lake Texana has evolved through an extensive analytical process involving investigations of historical hydrology, alternative release schemes and reservoir yield impacts. To date, very little emphasis has been placed on evaluating the bay impacts of the various alternatives for the proposed release program. Studies conducted by the TWDB [4] have addressed as many as eight different release schedules for Lake Texana, with the primary focus being on the development and hydrologic assessment of the TPWD/TWDB proposed release program as described and analyzed herein.

The basis for the TPWD/TWDB proposed release program was originally formulated by the TPWD in its initial effort to define an appropriate release schedule for Lake Texana. The release schedule, as initially proposed, calls for the release from the reservoir of all daily inflows up to the historical (1940 - 1979) daily equivalent of the monthly median inflows during the months of January, February, March, July, November and December. During April, May, June, August, September and October, all daily inflows up to the daily equivalent of the historical monthly mean inflow amounts would be released. The monthly median and mean flows corresponding to the TPWD initial release schedule are listed below:

MONTH	FLOW, CFS
January	84.5
February	142.4
March	86.8
April	806.8
May	1,169.3
June	1,191.4
July	126.5
August	265.7
September	1,029.3
October	708.1
November	68.8
December	79.3

The consequences of making freshwater releases from Lake Texana in accordance with the initial TPWD release schedule described above have been evaluated by the TWDB in terms of the ability of Lake Texana to supply the permitted annual withdrawal of 75,000 acre-feet, after having first satisfied the release requirements[1]. The necessary computations were made using TWDB's RESOP-II reservoir operations model, which simulates the hydraulic behavior of a single reservoir subject to monthly inflows, demands, evaporative losses and, in this case, releases for freshwater inflows to bays and estuaries. The results from this analysis indicate that, with the initial TPWD release schedule in operation, only 70 percent (52,421 acre-feet) of the authorized annual diversion (75,000 acre-feet), or only about 65 percent of the firm annual yield of the reservoir without releases (80,984 acre-feet), would be available as a water supply during the critical drought period.

It has been concluded by the TWDB that such a decrease in the firm annual yield of Lake Texana could cause the project owners to have to charge a higher price for the remaining yield in order to pay for the reservoir and its associated water supply facilities, which, in turn, could adversely impact financing of the project through water sales. Lake Texana currently is operating with water sales far below the permitted 75,000 acre-foot amount. The potential benefits of the freshwater inflows under the initial TPWD release program with regard to the Lavaca-Matagorda Bay and Estuary System, whether ecological, economic or both, have not been evaluated by the TWDB or the TPWD, either quantitatively or qualitatively.

As a result of the adverse yield impacts associated with the initial TPWD release schedule, three additional release programs for Lake Texana, as variations on the initial TPWD release schedule, have been developed and analyzed by the TPWD and TWDB. For the first of these, instead of releasing inflows up to the historical median flow level for the winter months and the month of July and up to the historical mean flow level in the remaining months, release amounts are adjusted depending on the amount of water stored in the reservoir at the beginning of each day. This storage-

[1] It should be noted that the actual firm annual yield of Lake Texana, as determined by the TWDB, is 80,984 acre-feet/year; hence, some 6,000 acre-feet/year of the reservoir yield remain unappropriated.

dependent release schedule works as follows (see Figure 2-1): (1) when the water level in the reservoir is between elevations 42 feet MSL and 44 feet MSL, daily releases are made in accordance with the original TPWD release schedule, i. e. all inflows up to the historical median flow are released during months of November-March and July and all inflows up to the historical mean flow are released in the remaining months; (2) at reservoir water levels between 39 feet MSL and 42 feet MSL, daily releases are made at a rate equivalent to the historical monthly median flows; and (3) when the reservoir water level is below 39 feet MSL, all inflows up to the historical annual median daily inflow for the critical drought period from January, 1954, through December, 1956, or 5.0 cfs (cubic feet per second), are released. The reservoir storage capacities and their relative portions of the total conservation pool in Lake Texana corresponding to the various stage levels used in this release schedule are indicated in Table 2-1.

This modified release schedule, called the multiple level release schedule by TWDB -- which for purposes here will be identified as MLRS1 -- results in a reduction in the volume of water released downstream compared to the initial TPWD release schedule. The effect of these reduced releases on the firm annual yield of Lake Texana also has been analyzed by the TWDB. Since these releases are dependent on the daily stage condition of the reservoir, TWDB developed and applied a version of the RESOP-II model, called SIMDLY, that performs daily reservoir operation simulations with multiple-level releases [7]. This model uses daily inflows to the reservoir and distributes the monthly evaporation and monthly demand evenly over each month. During a simulation, releases are determined daily as a function of the simulated reservoir stage.

Results from operating the SIMDLY model for Lake Texana using the MLRS1 release schedule indicate that the firm annual yield of the reservoir during the critical drought would be 74,400 acre-feet, or slightly greater than 99 percent of the currently permitted diversion mount, i. e. 75,000 acre-feet/year. This level of yield also is equivalent to approximately 92 percent of the total yield of the reservoir without any releases being made (80,984 acre-feet/year).

RELEASE SCHEDULE

El > 42' MSL	Median Flows - Jan., Feb., Mar., July, Nov., Dec. Mean Flows - Apr. May, June, Aug., Sep., Oct.
39' MSL < El < 42' MSL	Median Flows - all months
El < 39' MSL	5.0 cfs

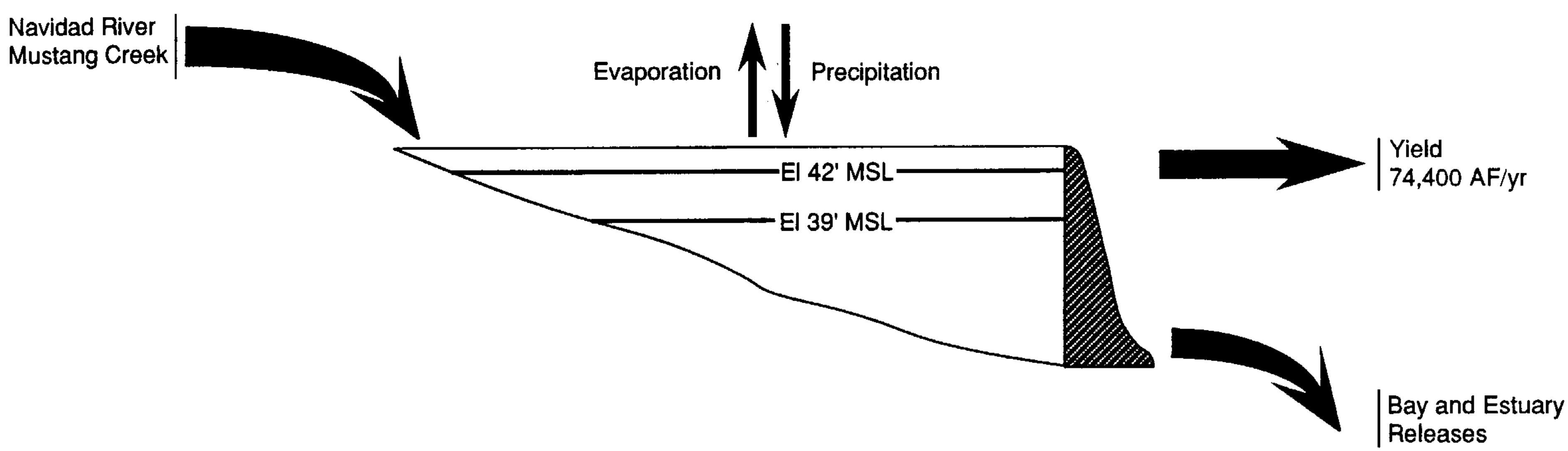


FIGURE 2-1 SCHEMATIC OF MLRS1 LAKE TEXANA RELEASE SCHEDULE

TABLE 2-1 STAGE - CAPACITY DATA FOR LAKE TEXANA

RESERVOIR STAGE LEVEL Feet MSL	RESERVOIR STORAGE CAPACITY Acre-Feet	PERCENT OF CONSERVATION STORAGE %
44.0	165,900	100.0
42.0	147,000	88.6
41.0	140,250	85.1
40.0	129,700	78.2
39.0	125,000	75.3

Source: Reference [4]

The formulation of the MLRS1 release schedule appears to consider three primary interests: (1) to allow the maximum permitted municipal and industrial diversions from the reservoir; (2) to provide adequate downstream inflows to Lavaca Bay; and (3) to be sensitive to the onset of a drought. The first seems to have been accomplished in a determinate manner, viz., firm annual yield equal to 99 percent of the authorized diversion amount, and the third perhaps has been met, in at least an approximate sense, though it is not tied to any recognizable drought definition. The extent to which the second goal has been achieved has not been analyzed by TWDB or TPWD.

The second variation on the original TPWD release schedule has been formulated by making a minor modification to the MLRS1 release schedule. This second variant, designated MLRS2, has the same release rates as MLRS1, but expands the range of applicability for the highest release-rate zone from a minimum cutoff elevation of 42 feet MSL to 41 feet MSL (see Figure 2-2). At elevation 41 feet MSL, the storage capacity in Lake Texana is 140,250 acre-feet, which represents 85.1 percent of the total conservation pool. The extra foot of capacity in this highest release band is taken from the middle range, which for MLRS2 is reduced to the elevation range between 39 feet MSL and 41 feet MSL. The zone for the lowest release rate (5.0 cfs) is unchanged from the MLRS1 release schedule.

Because the only months impacted by the MLRS2 release schedule with respect to MLRS1, i. e., shifted from the middle zone to the upper zone, would be those requiring median-based releases anyway in the upper zone, the potential effect of MLRS2 on the ability of the reservoir to supply the authorized annual diversion amount of 75,000 acre-feet is virtually unchanged from that of MLRS1. Hence, more than 99 percent of the authorized diversion amount still could be met from Lake Texana even under the worst drought conditions of record.

The third variation in the TPWD's original release schedule, designated MLRS3, has been produced by further adjusting the release-zone definitions. For the MLRS3 release schedule, the middle zone has been eliminated and the upper zone has been extended downward to a minimum cutoff level at 40 feet MSL. The original TPWD release schedule applies when the reservoir stage is between 40 and 44 feet MSL,

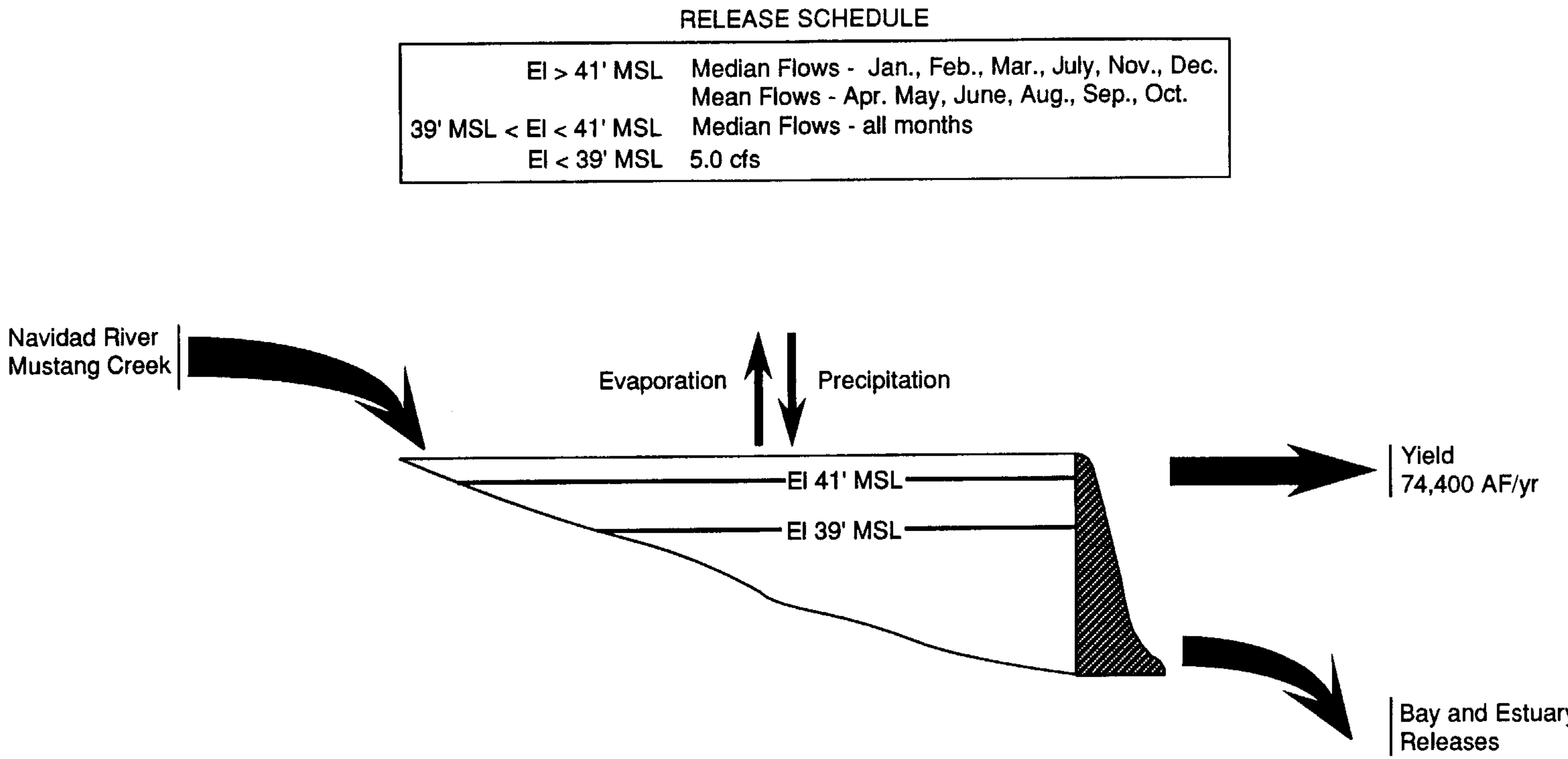


FIGURE 2-2 SCHEMATIC OF MLRS2 LAKE TEXANA RELEASE SCHEDULE

and the lowest-level release amount of 5.0 cfs applies whenever the daily stage falls below 40 feet MSL (see Figure 2-3). At elevation 40 feet MSL, the storage capacity in Lake Texana is 129,700 acre-feet, which represents 78.2 percent of the total conservation pool.

Results from operating the SIMDLY model using the MLRS3 release schedule indicate essentially no change from MLRS1, or MLRS2, with regard to the ability of Lake Texana to supply the authorized annual diversion of 75,000 acre-feet. For the MLRS3 release schedule, the firm annual yield as determined by TWDB is 74,400 acre-feet. A visual comparison of the monthly flow frequency exceedence curves for MSRL1 and MSRL3 as presented by TWDB [4], both mapped against historical flows, indicates no perceptible difference between the two sets.

The MLRS3 release schedule, as described above, is the same release schedule referred to in this study as the TPWD/TWDB proposed release program. The freshwater inflows to Lavaca Bay from the Navidad River that result from this release program are described in Section 3, along with corresponding inflows from the remainder of the Lavaca Bay drainage area. The impacts of these inflows on salinity levels in Lavaca Bay are analyzed and discussed in Section 4. The effects on Lavaca Bay salinities of varying the minimum cutoff level of the MLRS3 release schedule over the entire depth of the reservoir are described in Section 5. These results have been developed through Phase III of the contract, following authorization from the TPWD and TWDB.

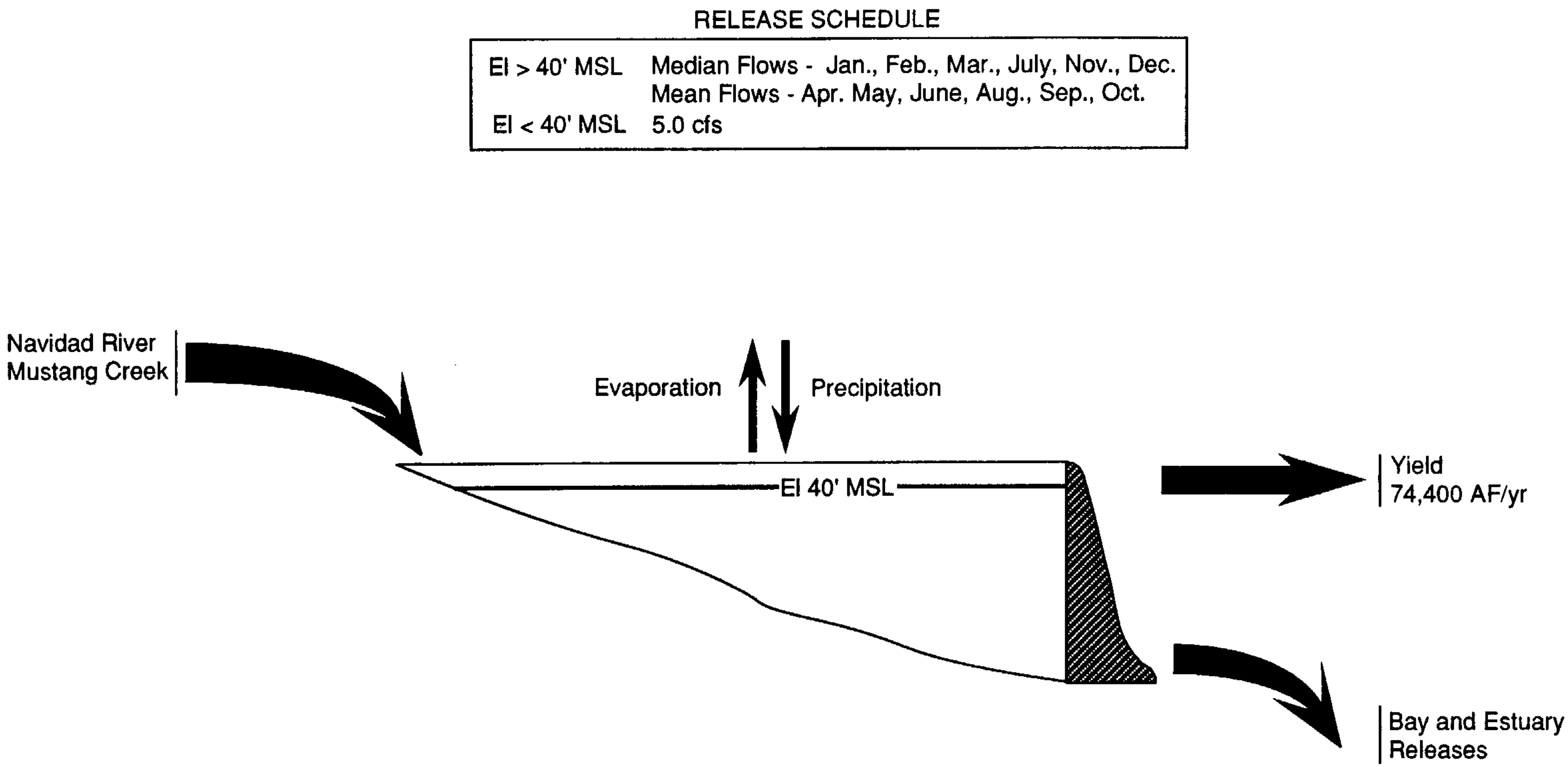


FIGURE 2-3 SCHEMATIC OF MLRS3 LAKE TEXANA RELEASE SCHEDULE (TPWD/TWDB PROPOSED RELEASE PROGRAM)

SECTION 3. LAVACA BAY INFLOWS

Lavaca Bay historically has received inflows primarily from the Lavaca and Navidad Rivers, which join together to form a single watercourse approximately ten miles above the upper reach of Lavaca Bay (see Figure 3-1). The flows in both of these rivers have been measured since the late 1930's at gages located just above their confluence, with the gage on the Navidad River near Ganado relocated in May, 1980, to avoid backwater effects from Lake Texana. There are approximately 2,950 square miles of drainage area that contribute inflows to Lavaca Bay [2]. Of this amount, about 1,880 square miles (or 64 percent) are above the lower gages on the Lavaca River (817 square miles above the gage near Edna) and the Navidad River (1,062 square miles above the gage near Ganado). For purposes of this report, the portion of the drainage area above the lowest gages on the Lavaca and Navidad Rivers is referred to as the "gaged area". The remainder of the drainage area below the two lowest river gages is called the "ungaged area".

The historical total annual inflows to Lavaca Bay and Matagorda Bay (1941 - 1987), excluding Colorado River inflows, as compiled by TWDB [3] are listed in Table 3-1. As shown, they have ranged from a minimum value of 38,169 acre-feet in 1956 to a maximum of 3,245,480 acre-feet in 1973, and they have averaged 1,241,902 acre-feet/year over the period of record. The statistical characteristics of these annual inflows to Lavaca and Matagorda Bays are presented in Table 3-2. Analysis of the arithmetic mean, standard deviation and skewness coefficient indicates a relatively-normal distribution of these annual data. The median of the data (1,120,440 acre-feet/year) is only slightly smaller than the mean, which suggests that the arithmetic mean is an appropriate measure of the central tendency of the total annual inflows to Lavaca and Matagorda Bays.

Corresponding statistical parameters for the historical total monthly inflows to Lavaca Bay and Matagorda Bay [3] are presented in Table 3-3. As indicated, the historical minimum monthly inflow to the bays was only 27 acre-feet, which is equivalent to an average daily inflow of less than 0.5 cfs (cubic feet per second); this occurred during

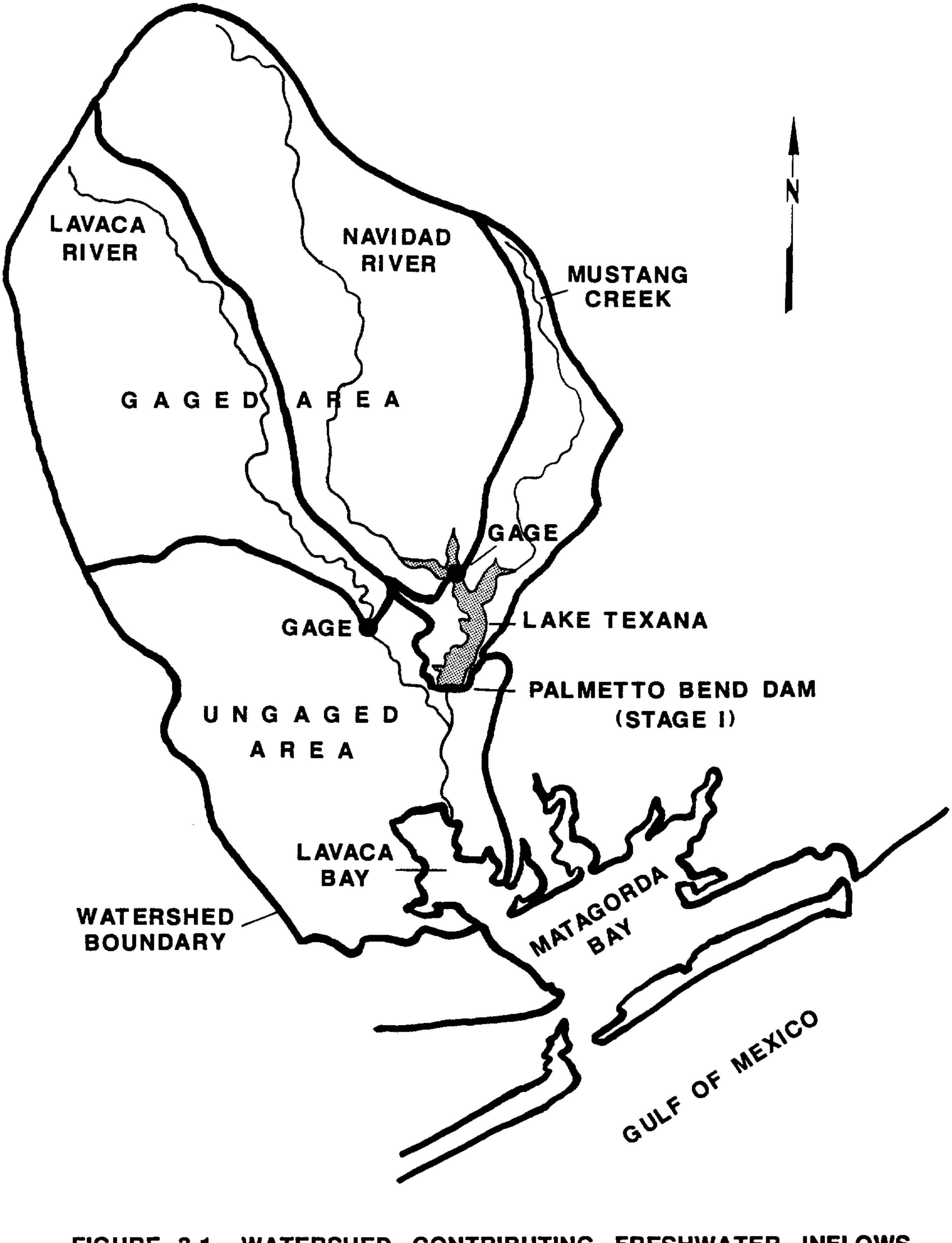


FIGURE 3-1 WATERSHED CONTRIBUTING FRESHWATER INFLOWS TO THE LAVACA BAY SYSTEM

TABLE 3-1 HISTORICAL TOTAL ANNUAL INFLOWS TO LAVACA-MATAGORDA BAYS, EXCLUDING COLORADO RIVER INFLOWS [3]

ANNUAL LAVACA BAY INFLOW (ACRE-FT)

Year	Combined inflow
1941	2798189
1942	883265
1943	504855
1944	1452387
1945	727130
1946	1974102
1947	640216
1948	515117
1949	1060587
1950	343404
1951	265319
1952	808798
1953	574598
1954	52734
1955	445993
1956	38169
1957	2065694
1958	980220
1959	1549894
1960	2834351
1961	2228327
1962	453516
1963	266261
1964	538793
1965	1120440
1966	920530
1967	1331009
1968	2075177
1969	1564041
1970	1588943
1971	1125417
1972	1600797
1973	3245480
1974	1818849
1975	1068210
1976	1403443
1977	1093710
1978	1204806
1979	2559546
1980	724315
1981	2212538
1982	1383954
1983	1712436
1984	587440
1985	1601041
1986	874979
1987	1550393

Source: Reference [3]

TABLE 3-2 STATISTICAL ANALYSIS OF HISTORICAL TOTAL ANNUAL INFLOWS TO LAVACA-MATAGORDA BAYS, EXCLUDING COLORADO RIVER INFLOWS [3]

Lavaca Bay annual combined inflow, 1941-1987

X_1: Combined Inflow

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
1.241902404E6	7.627204397E5	1.112542104E5	5.81742469E11	61.415489419	47
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum of Sqr.:**	**# Missing:**
38169	3245480	3207311	58369413	9.92492679E13	0
t 95%:	**95% Lower:**	**95% Upper:**	**t 99%:**	**99% Lower:**	**99% Upper:**
2.239658652E5	1.017936539E6	1.465868269E6	2.989544143E5	9.429479899E5	1.540856819E6
# < 10th %:	**10th %:**	**25th %:**	**50th %:**	**75th %:**	**90th %:**
5	363921.8	600634	1120440	1600980	2225169.2
# > 90th %:	**Mode:**	**Geo. Mean:**	**Har. Mean:**	**Kurtosis:**	**Skewness:**
5	•	9.482451127E5	4.885326245E5	-.135410139	.625440613

Source: Reference [3]

TABLE 3-3 STATISTICAL ANALYSIS OF HISTORICAL TOTAL MONTHLY INFLOWS TO LAVACA-MATAGORDA BAYS, EXCLUDING COLORADO RIVER INFLOWS [3]

Lavaca Bay monthly combined inflow, 1941-1987

X_1: Combined Inflow

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
1.03491867E5	1.553994763E5	6543.498375544	2.41489972E10	150.156220761	564
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum of Sqr.:**	**# Missing:**
27	1218729	1218702	58369413	1.96366450E13	0
t 95%:	**95% Lower:**	**95% Upper:**	**t 99%:**	**99% Lower:**	**99% Upper:**
12853.90807424	9.063795895E4	1.163457751E5	16912.94107589	8.657892595E4	1.204048081E5
# < 10th %:	**10th %:**	**25th %:**	**50th %:**	**75th %:**	**90th %:**
56	4633.2	13511	38595.5	122895	285684.1
# > 90th %:	**Mode:**	**Geo. Mean:**	**Har. Mean:**	**Kurtosis:**	**Skewness:**
56	8042	3.750048854E4	4221.976503867	10.138966856	2.826106117

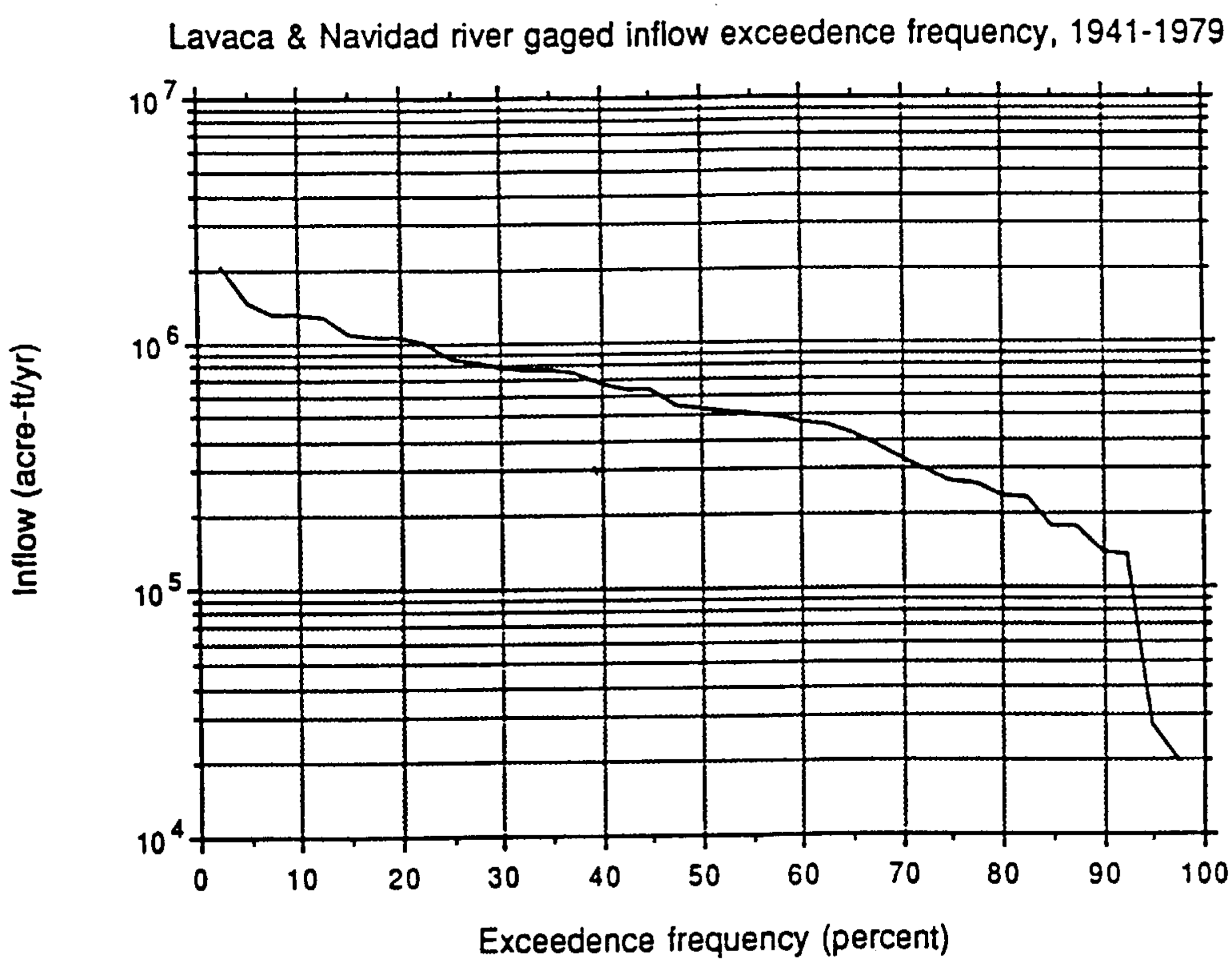
Source: Reference [3]

the month of January, 1957. The maximum monthly inflow to the bays occurred during June, 1973, when 1,218,729 acre-feet flowed into the system. For the 1941-1987 period of record, the total monthly inflows to Lavaca and Matagorda Bays have averaged 103,492 acre-feet, which is equivalent to a mean daily flow of about 1,740 cfs. Comparison of the arithmetic mean, standard deviation and skewness coefficient indicates a non-normally distributed data set skewed significantly to the right. The median of the data (38,596 acre-feet/year) is considerably less than the mean, and the variance is about 200,000 times larger than the mean. What this signifies is that the arithmetic mean is not an appropriate measure of the central tendency of this data set. More appropriate measures of central tendency would be the median (50% exceedence frequency) or the geometric mean. In this case, these parameters are nearly the same, and both are only a fraction of the arithmetic mean.

The historical exceedence frequency relationship for the combined annual flows of the Lavaca and Navidad Rivers from the gaged area [3] is shown in Figure 3-2. The curve drops off markedly at about 92-percent exceedence frequency indicating the presence of very few periods of extremely low flows. The relative horizontal nature of the curve illustrates the tightness of the flow variations from year to year.

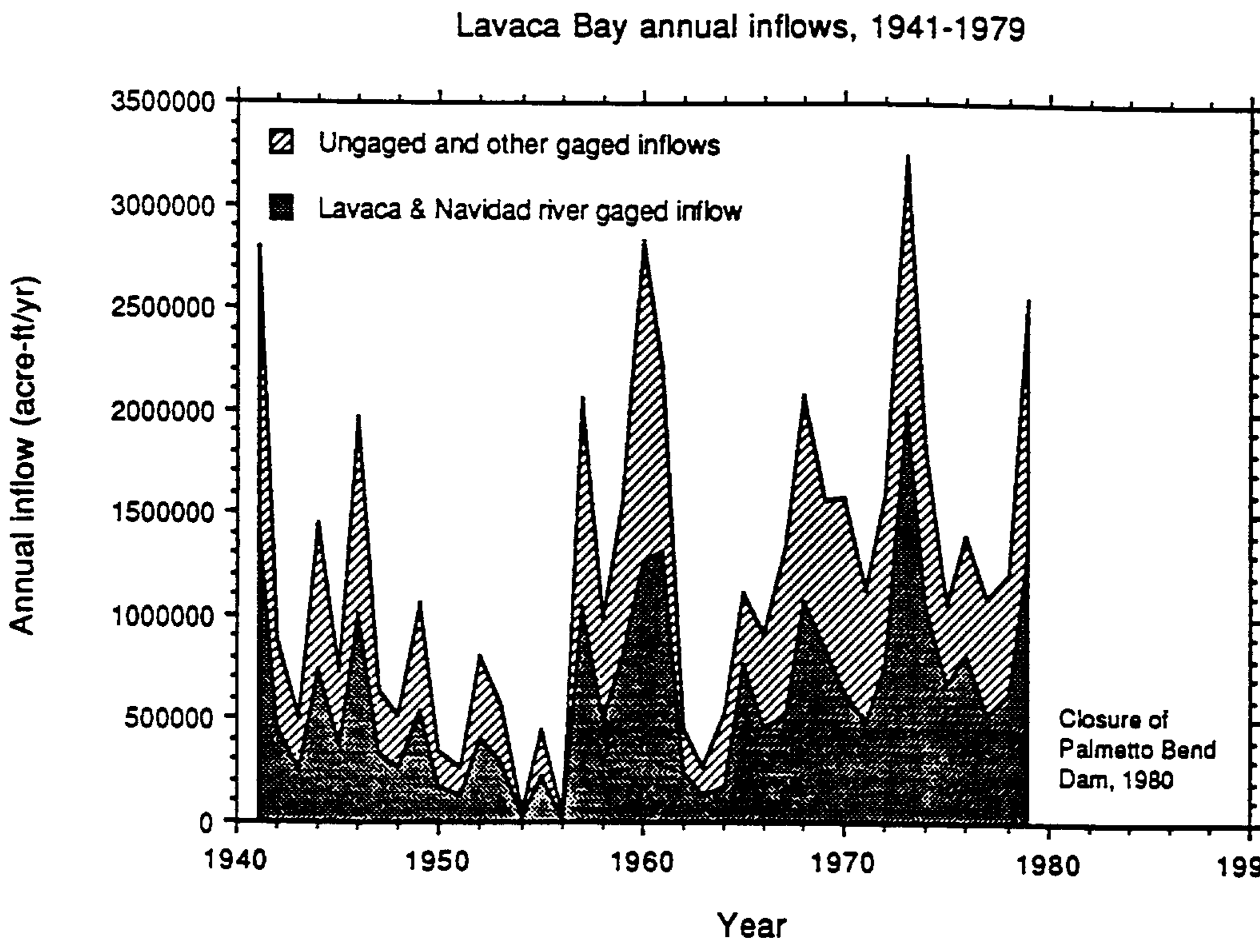
The TWDB has analyzed flows for the Lavaca and Navidad Rivers from the gaged area with respect to the total inflows to Lavaca Bay and Matagorda Bay [3]. Figure 3-3 illustrates the historical relationship between these annual flows since 1940 until the time Palmetto Bend Dam was closed to form Lake Texana in 1980. As shown, the contribution of inflow to Lavaca and Matagorda Bays from the ungaged area has been substantial compared to that from the gaged area. This is significant because it suggests that the salinities in Lavaca Bay are influenced, to a large extent, by flows from the lower portions of the overall drainage area, particularly from below Lake Texana.

The drainage area for Lake Texana encompasses approximately 1,400 square miles, all of which, of course, is within the Navidad River Basin [6]. Of this amount, approximately 76 percent contributes inflows to the reservoir directly through the Navidad River, with the balance coming primarily from the Mustang Creek watershed.



Source: Reference [3]

FIGURE 3-2 INFLOW EXCEEDENCE FREQUENCY RELATIONSHIP FOR HISTORICAL ANNUAL INFLOWS TO LAVACA-MATAGORDA BAYS, EXCLUDING COLORADO RIVER INFLOWS



Source: Reference [3]

FIGURE 3-3 HISTORICAL ANNUAL INFLOWS TO LAVACA-MATAGORDA BAYS FROM GAGED AND UNGAGED AREAS, EXCLUDING COLORADO RIVER INFLOWS

The incremental drainage area of Lake Texana below the gage site on the Navidad River includes about 340 square miles. With respect to the runoff from the entire drainage area that contributes inflows to Lavaca Bay, Lake Texana controls approximately 47 percent. Hence, about half of the freshwater inflows to Lavaca Bay presently are uncontrolled (see Figure 3-1).

For purposes of analyzing Lavaca Bay inflows, several different sets of monthly flow data have been compiled from the previous studies conducted by the TWDB and the TPWD. These include the following data sets, each of which is tabulated for the period 1941 through 1979 and contained in the Appendix A of this report:

1. Historical gaged flows as measured at the gage on the Lavaca River near Edna [6].

2. Historical gaged flows as measured at the gage on the Navidad River near Ganado [6].

3. Total inflows into Lake Texana, recognizing senior water rights and including rice irrigation return flows from water diverted from the Colorado River Basin by the Garwood Irrigation Company [4].

4. Inflows to Lake Texana from the Mustang Creek watershed, recognizing senior water rights, as determined by TWDB and TWC [6].

5. Historical inflows to Lake Texana from the Mustang Creek watershed as simulated by the TWDB [6].

6. Total inflows to Lavaca Bay from the ungaged area below the gage on the Lavaca River near Edna and below Lake Texana [6].

7. Flood spills from Lake Texana as simulated by the TWDB using the RESOP-II model with inflows to the reservoir from Data Set No. 3 above and with firm annual yield operation and no bay and estuary releases [4].

8. Flood spills and releases from Lake Texana as simulated by the TWDB using the SIMDLY model with inflows to the reservoir from Data Set No. 3 above, with firm annual yield operation, and with daily releases according to the TPWD/TWDB proposed release program, MLRS3 [4].

From these various sets of flow data, four different cases of inflows to Lavaca Bay have been established to provide a basis for evaluating the inflow and salinity impacts of the TPWD/TWDB proposed Lake Texana release program. These are:

- Case A. Historical inflows.
- Case B. Historical inflows, with senior water rights recognized above Lake Texana, but without Lake Texana in operation.
- Case C. Historical inflows, with senior water rights recognized above Lake Texana and with Lake Texana in operation, but without TPWD/TWDB proposed release program.
- Case D. Historical inflows, with senior water rights recognized above Lake Texana and with Lake Texana in operation with the TPWD/TWDB proposed release program, MLRS3.

The Case A inflows represent historical conditions as reflected by the gaged flows for the Lavaca and the Navidad Rivers (Data Set Nos. 1 and 2), plus the simulated historical Mustang Creek inflows to Lake Texana (Data Set No. 5), plus the total ungaged inflows to Lavaca Bay from the drainage area below the lower Lavaca River gage and below Lake Texana (Data Set No. 6). For Case B, the total inflows to Lavaca Bay have been established by adding the gaged flows for the Lavaca River (Data Set No. 1) to the total inflows to Lake Texana (Data Set No. 3) and the total ungaged inflows to Lavaca Bay from the drainage area below the lower Lavaca River gage and below Lake Texana (Data Set No. 6). For Case C with Lake Texana in operation but without any provisions for bay and estuary releases, the sum of the gaged flows for the Lavaca River (Data Set No. 1), the simulated spills from Lake Texana (Data Set No. 7) and the total ungaged inflows to Lavaca Bay from the drainage area below the lower Lavaca River gage and below Lake Texana (Data Set No. 6) has been used for the total Lavaca Bay inflows. Similarly, for Case D with the TPWD/TWDB proposed release program (MLRS3) in effect, the total inflows to Lavaca Bay have been determined by adding the gaged flows for the Lavaca River (Data Set No. 1) to the simulated spills and releases from Lake Texana (Data Set No. 8) and the total ungaged inflows to Lavaca Bay from the drainage area below the lower Lavaca River gage and below Lake Texana (Data Set No. 6).

The monthly inflows to Lavaca Bay for these four cases (A, B, C and D) for the period 1941 through 1979 have been calculated and are summarized in tabular form in Appendix B of this report. Corresponding statistical parameters for these four sets of monthly Lavaca Bay inflows are listed in Table 3-4. Minimum, maximum and average monthly values are indicated in the table, along with the 10-, 50- (median) and 80-percent monthly exceedence flows. These exceedence flows represent the average monthly inflow levels that are exceeded the indicated percentages of the time. For example, 80 percent of the time the historical average monthly inflow to Lavaca Bay (Case A) exceeded 55 cfs, whereas with all senior water rights satisfied within the Lake Texana watershed (Case B), an average monthly inflow of only 43 cfs is exceeded 80 percent of the time. With Lake Texana in operation without any low flow releases, i. e. with only flood spills discharged into Lavaca Bay (Case C), the 80-percent exceedence flow is reduced to 15 cfs. With the TPWD/TWDB proposed release program (MLRS3) in effect (Case D), the 80-percent exceedence flow is increased to 22 cfs. These are the trends that would be expected with respect to these different data sets.

It is interesting to note that the effect of the TPWD/TWDB proposed release program (MLRS3) on average monthly flows is minimal, i. e. 891 cfs for Case C without the releases and 893 cfs for Case D with the releases. It is apparent that the higher flood flows and spills dominate the average monthly flow values. The higher 10-percent exceedence flows exhibit similar characteristics for the same reason. Also, it should be pointed out that, although the median inflow for Case D, i. e. with Lake Texana in operation with the TPWD/TWDB proposed release program in effect, is about 30 percent less than the baseline median flow (Case B), it is approximately 42 percent greater than the median inflow without the release program. This increase in the median flow condition of 68 cfs (229 - 161 = 68) is equivalent to about 49,000 acre-feet per year of additional inflows to Lavaca Bay that are the direct result of the low-flow releases. Hence, the TPWD/TWDB proposed release program for Lake Texana does provide for significant increases in the median inflows to Lavaca Bay compared to the no release (full capture mode) condition, which is significant with respect to the overall salinity conditions in the estuarine system.

TABLE 3-4 STATISTICAL COMPARISON OF LAVACA BAY TOTAL INFLOW CONDITIONS

	LAVACA BAY INFLOW CASE	MINIMUM MONTHLY FLOW cfs	MAXIMUM MONTHLY FLOW cfs	AVERAGE MONTHLY FLOW cfs	-------EXCEEDENCE FLOWS------- 10 PERCENT cfs	50 PERCENT cfs	80 PERCENT cfs
Case A.	Historical inflows.	0	15,908	1,012	1,576	370	55
Case B.	Historical inflows, with senior water rights recognized above Lake Texana, but without Lake Texana in operation.	0	15,621	1,021	1,597	330	43
Case C.	Historical inflows, with senior water rights recognized above Lake Texana and with Lake Texana in operation, but without TPWD/TWDB proposed release program.	0	15,493	891	1,316	161	15
Case D.	Historical inflows, with senior water rights recognized above Lake Texana and with Lake Texana in operation with TPWD/TWDB proposed release program.	0	15,428	893	1,337	229	22

SECTION 4. LAVACA BAY SALINITIES

In this study, the determination of salinities in Lavaca Bay corresponding to different levels of freshwater inflow has been made using previously developed regression relationships relating monthly salinity concentrations at specific locations in Lavaca Bay to specified monthly quantities of freshwater inflow. Two different sets of monthly regression equations have been applied for this purpose. One set was developed during the late 1970's by the TWDB during studies of the influence of freshwater inflows on Texas bays and estuaries [2]. In this report, these equations are referred to as the "gage site" series of salinity-flow regressions because they are based on the sum of the flows that occur at the lowest gage sites on the Lavaca River (near Edna) and the Navidad River (near Ganado). The other set, which was developed by the TWDB as part of the Lake Texana Post-Impoundment Study in the early 1980's [6], is called the "total inflow" series of salinity-flow regressions because they utilize the total inflow to Lavaca Bay as the independent flow parameter.

The two different sets of monthly salinity-flow regression relationships for Lavaca Bay have been used in this study primarily because of their availability. Inasmuch as both sets of equations were specifically derived for and are directly applicable to Lavaca Bay and since both sets can be readily utilized to predict salinities using straightforward computer processing, both have been applied in this study to project the salinity effects of the various inflow regimes. Based on the results from statistical analyses of the salinities determined with the two sets of regressions as originally performed by TWDB (see Tables 4-1 and 4-3), the total inflow series of equations (Post-Impoundment Study) would appear to predict salinities in Lavaca Bay that are more representative of actual historical conditions than the gage site regressions (LP 106). Still, the monthly coefficients of determination (r^2) for the gage site regressions indicate that these equations are capable of explaining a majority (average r^2 of 0.62) of the variation in the Lavaca Bay salinities.

Both sets of regressions are considered to be appropriate for purposes of this investigation since it is primarily the relative change in salinity conditions with inflows that is of most concern. In effect, the relative trends exhibited by the results from one set of monthly salinity-flow regression relationships have been used to verify corresponding results from the other set of equations. Results from both sets of regression equations are presented herein.

The gage site series of monthly salinity-flow regression equations [2] is listed in Table 4-1. As indicated, these equations relate the salinity concentration in Lavaca Bay in parts per thousand (ppt) to a single value of monthly flow expressed in cubic feet per second (cfs). In these equations, this flow is equal to the sum of the mean daily flows passing the lowest streamflow gages on the Lavaca and Navidad Rivers during a given month. The salinity concentration calculated with a particular equation for a given month of the year represents the average value of salinity for the month corresponding to its specified average flow value. The location of the calculated salinity value is in the upper end of Lavaca Bay. The following equation relates these calculated salinity values in upper Lavaca Bay (S_{UP}) to corresponding values in the lower to middle section of Lavaca Bay (S_{LM}).

$$S_{LM} = 3.883 \ (S_{UP})^{0.73}$$

In applying the gage site series of salinity-flow regressions to evaluate salinities in Lavaca Bay for different inflow conditions relating to Lake Texana releases, four different sets of monthly flows at the Lavaca and Navidad River gages have been determined. These correspond to the four different cases of total inflows to Lavaca Bay as defined in the previous section, i. e. Cases A, B, C and D. These flow sets for the Lavaca and Navidad River gage sites are referred to as follows:

Case A'. Historical flows at the lowest Lavaca and Navidad River gages.

Case B'. Historical flows at the lowest Lavaca and Navidad River gages, with senior water rights recognized above Lake Texana, but without Lake Texana in operation.

Case C'. Historical flows at the lowest Lavaca and Navidad River gages, with senior water rights recognized above Lake Texana and with Lake Texana in operation, but without TPWD/TWDB proposed release program.

TABLE 4-1 MONTHLY SALINITY-FLOW REGRESSION EQUATIONS BASED ON LAVACA AND NAVIDAD RIVER GAGE SITE FLOWS (LP 106)

Station a/	Class	Regression Equation (S_t in ppt and Q_t in cfs)	Correlation Coefficient r	Explained Variation r^2	Standard Error of Estimate s_e	F-test
85-1~3	Daily	$S_t = 2613.1\, Q_{t-7}^{-0.266} \left(\sum_{i=1}^{29} Q_{t-i} \right)^{-0.440}$	0.81	0.66	—	**
	Jan.	$S = 200.14\, Q^{-0.464} e^{0.462t}$, $30 \le Q \le 3{,}700$	0.82	0.67	0.462	**
	Feb.	$S = 249.76\, Q^{-0.498} e^{0.572t}$, $40 \le Q \le 4{,}100$	0.75	0.56	0.572	**
	Mar.	$S = 151.76\, Q^{-0.450} e^{0.439t}$, $30 \le Q \le 4{,}100$	0.81	0.65	0.439	**
	Apr.	$S = 157.37\, Q^{-0.412} e^{0.436t}$, $30 \le Q \le 6{,}400$	0.81	0.65	0.436	**
	May	$S = 150.41\, Q^{-0.416} e^{0.673t}$, $30 \le Q \le 7{,}300$	0.68	0.46	0.673	**
	Jun.	$S = 108.70\, Q^{-0.397} e^{0.631t}$, $25 \le Q \le 14{,}300$	0.70	0.49	0.631	**
	Jul.	$S = 280.58\, Q^{-0.583} e^{0.362}$ $30 \le Q \le 7{,}500$	0.89	0.80	0.362	**
	Aug.	$S = 159.42\, Q^{-0.435} e^{0.501t}$, $30 \le Q \le 2{,}000$	0.68	0.47	0.501	**
	Sep.	$S = 159.42\, Q^{-0.418} e^{0.443t}$, $40 \le Q \le 6{,}500$	0.77	0.59	0.443	**
	Oct.	$S = 157.44\, Q^{-0.437} e^{0.476t}$, $25 \le Q \le 6{,}300$	0.83	0.69	0.476	**
	Nov.	$S = 206.21\, Q^{-0.487} e^{0.582t}$, $30 \le Q \le 9{,}900$	0.79	0.63	0.582	**

(continued)

Station a/	Class	Regression Equation (S_t in ppt and Q_t in cfs)	Correlation Coefficient r	Explained Variation r^2	Standard Error of Estimate s_e	F-test
85-1∿3	Dec.	$S = 413.74\ Q^{-0.597} e^{0.467t}$, $50 \leq Q \leq 4,400$	0.86	0.75	0.476	**
85-1∿3	All Months	$S = 182.16\ Q^{-0.451}$, $25 \leq Q \leq 14,300$	0.78	0.61	0.533	**
85-1∿3 vs 150-4	Spatial	$S_{150} = 3.883\ S_{85}^{0.73}$	0.83	0.69	—	**

** Indicates a statistical significance level of $\alpha = 0.01$ (highly significant).

a/ See Figure 3-9.

Source: Reference [2]

Case D'. Historical flows at the lowest Lavaca and Navidad River gages, with senior water rights recognized above Lake Texana and with Lake Texana in operation with TPWD/TWDB proposed release program (MLRS3).

The Case A' flows represent historical conditions as reflected by the historical gaged flows for the Lavaca and the Navidad Rivers (Data Set Nos. 1 and 2 in the previous section). For Case B', the appropriate sum of the flows at the gage sites has been established by adding the gaged flows for the Lavaca River (Data Set No. 1) to the total inflows to Lake Texana (Data Set No. 3), less the Mustang Creek inflows to Lake Texana adjusted for senior water rights (Data Set No. 4). For Case C' with Lake Texana in operation but without any provisions for bay and estuary releases, the total of the gaged flows for the Lavaca River (Data Set No. 1) and the simulated spills from Lake Texana (Data Set No. 7) has been used for the sum of the flows at the gage sites. Similarly, for Case D' with the TPWD/TWDB proposed release program in effect, the appropriate sum of the flows at the gage sites has been determined by adding the gaged flows for the Lavaca River (Data Set No. 1) to the simulated spills and releases from Lake Texana (Data Set No. 8).

Tabulations of these four sets of flows representing flow sums at the Lavaca and Navidad River gage sites are presented in the tables in Appendix C for the 1941 through 1979 period. The corresponding statistical parameters for these data sets are listed in Table 4-2. As expected, the trends exhibited by these different flow cases under low flow conditions, i. e., 80-percent exceedence flows, are similar to those indicated by the statistical analysis of the total inflows to Lavaca Bay for the corresponding cases in Table 3-4 in the previous section. The average monthly flows, however, indicate some inconsistencies between the historical flows (Case A') and those for the other cases which include only unappropriated inflows to Lake Texana. It is possible that the flow values used for the ungaged and tributary flows in the various data sets are not based on consistent data.

The monthly salinity-inflow regression equations for total inflows to Lavaca Bay are listed in Table 4-3. As shown, these equations utilize values of the total inflows to

TABLE 4-2 STATISTICAL COMPARISON OF FLOW CONDITIONS FOR THE LAVACA AND NAVIDAD RIVER GAGE SITES

LAVACA AND NAVIDAD RIVER FLOW CASE	MINIMUM MONTHLY FLOW cfs	MAXIMUM MONTHLY FLOW cfs	AVERAGE MONTHLY FLOW cfs	-------EXCEEDENCE FLOWS------- 10 PERCENT cfs	50 PERCENT cfs	80 PERCENT cfs
Case A'. Historical flows at the lowest Lavaca and Navidad River gages.	0	14,275	878	1,365	301	38
Case B'. Historical flows at the lowest Lavaca and Navidad River gages, with senior water rights recognized above Lake Texana, but without Lake Texana in operation.	0	14,408	891	1,371	301	42
Case C'. Historical flows at the lowest Lavaca and Navidad River gages, with senior water rights recognized above Lake Texana and with Lake Texana in operation, but without TPWD/TWDB proposed release program.	0	15,382	880	1,281	159	15
Case D'. Historical flows at the lowest Lavaca and Navidad River gages, with senior water rights recognized above Lake Texana and with Lake Texana in operation with the TPWD/TWDB proposed release program.	0	15,317	882	1,306	226	22

TABLE 4-3 MONTHLY SALINITY-FLOW REGRESSION EQUATIONS BASED ON TOTAL INFLOWS TO LAVACA BAY (POST IMPOUNDMENT STUDY)

Months	Regression Equation (S in ppt, Q in cfs)	Regression Limits cfs	Correlation Coefficient (r)	Explained Variation (r^2)	Standard Error of Estimate (Se)
Jan	$S_m = 112.3\ (Q_{m-1} + Q_m)^{-.296}$	32.4 - 7,070	.93	.87	.165
Feb	$S_m = 136.7\ (Q_{m-1} + Q_m)^{-.331}$	56.7 - 7,550	.94	.89	.157
Mar	$S_m = 113.3\ (Q_{m-1} + Q_m)^{-.300}$	46.1 - 5,730	.94	.88	.142
Apr	$S_m = 126.9\ (Q_{m-1} + Q_m)^{-.316}$	56.4 -10,280	.93	.86	.168
May	$S_m = 629.6\ (0.25 \times Q_{m-2} + Q_{m-1} + Q_m)^{-.565}$	115 -10,960	.87	.76	.388
Jun	$S_m = 772.2\ (0.25 \times Q_{m-2} + Q_{m-1} + Q_m)^{-.600}$	192 -19,180	.90	.81	.328
Jul	$S_m = 1,504\ (0.5 \times Q_{m-2} + Q_{m-1} + Q_m)^{-.729}$	337 -17,550	.98	.95	.158
Aug	$S_m = 3,571\ (0.5 \times Q_{m-2} + Q_{m-1} + Q_m)^{-.814}$	288 - 9,840	.91	.82	.328
Sep	$S_m = 846.9\ (0.5 \times Q_{m-2} + Q_{m-1} + Q_m)^{-.607}$	262 - 8,950	.82	.67	.432
Oct	$S_m = 619.3\ (0.25 \times Q_{m-2} + Q_{m-1} + Q_m)^{-.566}$	170 - 8,350	.95	.90	.238
Nov	$S_m = 1,114\ (0.25 \times Q_{m-2} + Q_{m-1} + Q_m)^{-.647}$	170 - 9,830	.97	.95	.174
Dec	$S = 123.6\ (Q_{m-1} + Q_m)^{-.313}$	41.3 - 7,180	.94	.88	.152

Source: Reference [6]

Lavaca Bay (cfs) for the current month (Q_m) and the two preceding months (Q_{m-1} and Q_{m-2}) to calculate the current-month average salinity concentration (ppt) in the upper end of Lavaca Bay. These inflows correspond to those presented for the four cases in the previous section, i. e., Cases A, B, C and D.

Examination of the statistical parameters listed in Tables 4-1 and 4-3 for the two sets of monthly salinity-flow regression equations for Lavaca Bay suggests that the total inflow regressions (Post Impoundment Study [6]) may provide a better characterization of the relationship between monthly inflows to Lavaca Bay and the resulting salinities than the gage site flow equations (LP 106 [2]). Based on the indicated values of correlation coefficients and explained variations (r^2), it would appear that the total inflow equations produce fairly accurate estimates of the bay salinities. It should be noted, however, that both of these sets of regression equations were derived using salinity data corresponding to a limited time frame and a limited range of flow conditions. The total inflow salinity data set (Post Impoundment Study) included 115 salinity measurements made during the period 1960 through 1980, with most of the data obtained during 1974, 1975 and 1976. The salinity data used to derive the gage site equations were based on 87 values measured during the period February, 1968, through August, 1976. Neither of these data collection periods included extended low flow conditions similar to those that characterized the critical drought of the 1950's; hence, the utility of the regression equations has not been fully verified and tested for these types of extreme flow conditions. Although salinity data corresponding to the 1950's drought conditions are not available for Lavaca Bay, extensive salinity measurements in the bay have been made since 1980, and these data should be used to update and refine the existing salinity-flow regression equations. The TWDB has initiated efforts to make these analyses, but they have not been completed.

For purposes of evaluating the effectiveness of the TPWD/TWDB proposed Lake Texana release program (MLRS3) for maintaining acceptable salinity conditions in Lavaca Bay, salinities corresponding to the freshwater inflow conditions for Cases B and B' are considered to be the baseline. These are the salinities that should be used for comparison with the salinities associated with the freshwater inflow conditions with Lake Texana in operation, i. e., Cases C and C' without the TPWD/TWDB proposed release program and Cases D and D' with the TPWD/TWDB proposed release program (MLRS3) in effect. The freshwater inflow conditions corresponding to Cases B and B', C and C', and D and D' all are based on the same total inflows into Lake Texana, i. e., gaged flows adjusted for all water rights senior to the Lake Texana permit, and the same Lavaca River flows, i. e., historical gaged flows.

Salinity results for freshwater inflows corresponding to Cases A and A' (historical flows) are presented solely to provide a reference condition with respect to historical inflows to Lavaca Bay. Reservoir simulations of Lake Texana operated assuming historical inflows were not available from the TWDB for this study. Because the primary focus of TWDB's investigations to date has been primarily to examine the effects of Lake Texana releases on the firm annual yield of the reservoir, which requires the consideration of only unappropriated inflows that are junior (with respect to water rights) to the impoundment, simulations with either the RESOP-II or the SIMDLY models have not been made by TWDB for the purpose of evaluating the behavior of Lake Texana under historical inflow conditions with alternative release schemes. In the absence of these simulated results, the analyses in this study have been limited to evaluations based only on the unappropriated inflows to Lake Texana.

The salinity regression equations listed in Tables 4-1 (gage site) and 4-3 (total inflow) have been applied using the four corresponding cases of gaged river flows and total Lavaca Bay inflows for the 1941-1979 period. Two computer programs have been developed, one for each set of monthly regression equations, to perform these calculations sequentially from month to month beginning in January, 1941. The basic output from these programs is an array of average monthly salinity values for all of the monthly flows and inflows analyzed, i. e., 1941-1979. The results based on the total Lavaca Bay inflow regressions are presented in the tables in Appendix D. The corresponding results determined using the gage site regressions are listed in the tables in Appendix E.

The average salinity concentrations calculated for each of the gaged river flow and total Lavaca Bay inflow cases are listed in Table 4-4. As expected, the trend in salinities shows an increase from the highest freshwater inflow conditions (Cases A

TABLE 4-4 LAVACA BAY AVERAGE SALINITIES DETERMINED WITH THE TOTAL INFLOW AND THE GAGE SITE SALINITY-FLOW REGRESSIONS (1941-1979)

		AVERAGE SALINITY ppt
TOTAL LAVACA BAY INFLOW REGRESSIONS		
Case A.	Historical inflows.	14.46
Case B.	Historical inflows, with senior water rights recognized above Lake Texana, but without Lake Texana in operation.	15.14
Case C.	Historical inflows, with senior water rights recognized above Lake Texana and with Lake Texana in operation, but without TPWD/TWDB proposed release program.	19.77
Case D.	Historical inflows, with senior water rights recognized above Lake Texana and with Lake Texana in operation with TPWD/TWDB proposed release program.	17.95
LAVACA AND NAVIDAD RIVERS GAGE SITE REGRESSIONS		
Case A'.	Historical flows at the lowest gages on the Lavaca and Navidad Rivers.	15.58
Case B'.	Historical flows at the lowest Lavaca and Navidad River gages, with senior water rights recognized above Lake Texana, but without Lake Texana in operation.	15.64
Case C'.	Historical flows at the lowest Lavaca and Navidad River gages, with senior water rights recognized above Lake Texana and with Lake Texana in operation, but without TPWD/TWDB proposed release program.	20.15
Case D'.	Historical flows at the lowest Lavaca and Navidad River gages, with senior water rights recognized above Lake Texana and with Lake Texana in operation with the TPWD/TWDB proposed release program.	17.68

and A', historical flows) to the lowest freshwater inflow conditions (Cases C and C', with Lake Texana, but without any release program in effect). The average salinities with the TPWD/TWDB proposed Lake Texana release program (MLRS3) in effect (Cases D and D') are somewhat higher than those for the baseline inflow conditions, i. e., Cases B and B', which reflects the impact of the lower inflows to Lavaca Bay with Lake Texana in operation. The slight differences between the Cases B and B' baseline salinities and those corresponding to historical flow conditions (Cases A and A') are due to the adjustments for senior water rights in the inflows to Lake Texana for the baseline cases. The overall effect of the TPWD/TWDB proposed release program (MLRS3) is to reduce the average salinity level by about 2.0 to 2.5 ppt compared to conditions without any release program in operation (Cases C and C').

The variations of the monthly salinities corresponding to the various flow cases and regression relationships over time are illustrated by the plots in Figures 4-1 through 4-4 for Cases A, B, C and D and in Figures 4-5 through 4-8 for Cases A', B', C' and D'. Although it is difficult to make meaningful comparisons of salinity variations indicated in these plots, it is apparent that the TPWD/TWDB proposed release program for Lake Texana (Cases D and D' in Figures 4-4 and 4-8, respectively) is effective in eliminating many of the elevated salinity conditions, or spikes, that are prevalent in the salinity results corresponding to the no release conditions (Cases C and C' in Figures 4-3 and 4-7). Certainly, the salinity-time graphs with the releases from Lake Texana are more reflective of the baseline conditions (Cases B and B') than the corresponding plots without the releases.

One point of significance that is illustrated by the salinity-time plots relates to the baseline salinities that are indicated for the critical drought period during the 1950's without Lake Texana in operation (see Figures 4-2 and 4-6). The baseline salinity levels during this low-flow period regularly exceed 35 ppt. Even the projected salinities corresponding to historical flow conditions are substantially elevated above normal Gulf salinity levels (see Figures 4-1 and 4-5). This suggests that releases from the reservoir during critically-low flow periods such as those which occurred during the drought of the 1950's probably can not be effective in lowering the bay salinities to acceptable levels. There simply is not enough water available from all sources to

LAVACA BAY SALINITIES BASED ON INFLOWS FROM GAGED LAVACA RIVER NEAR EDNA, GAGED NAVIDAD RIVER NEAR GANADO, TWDB HISTORICAL MUSTANG CREEK AND UNGAGED RUNOFF

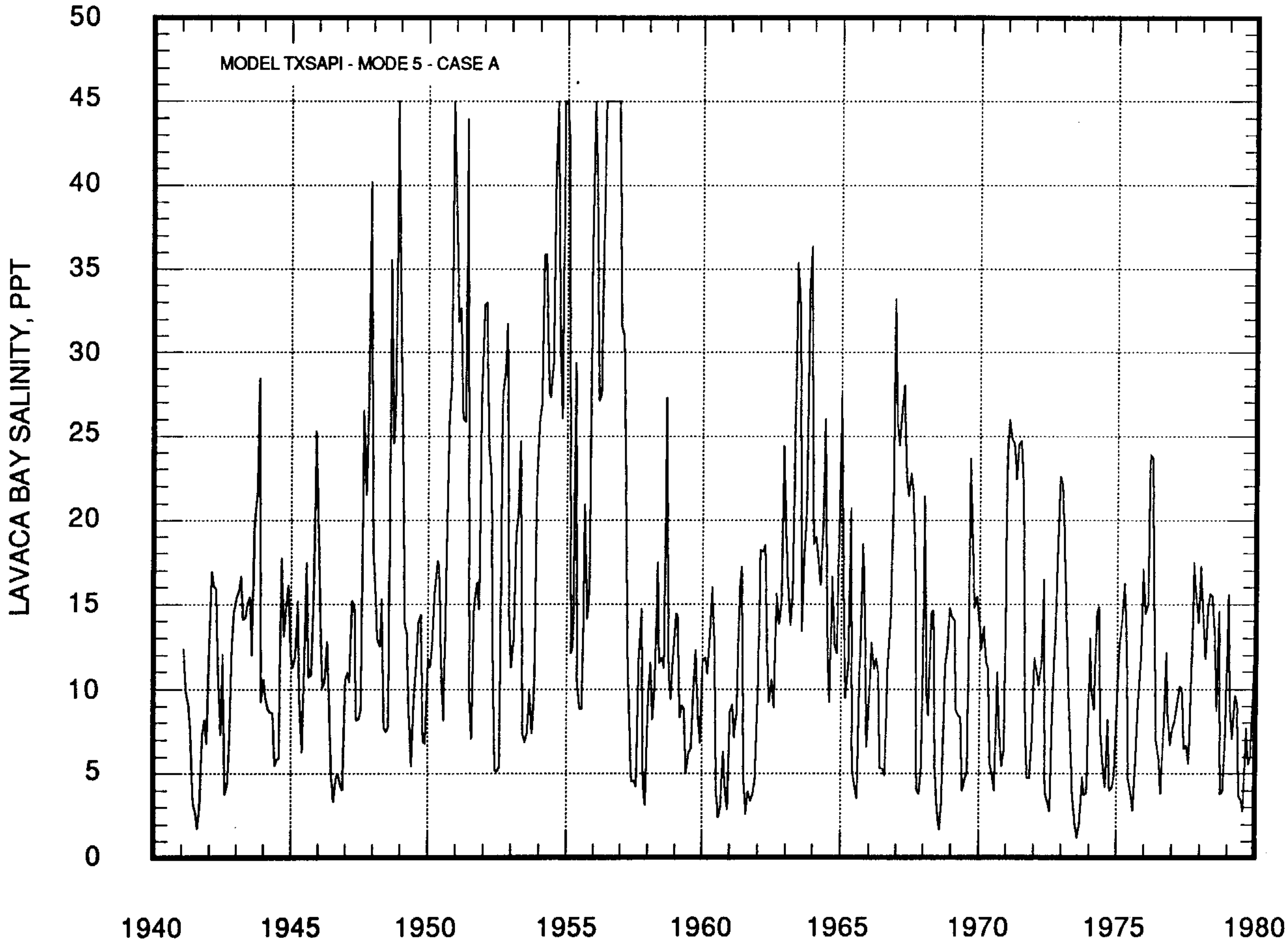


FIGURE 4-1 VARIATION OF CALCULATED AVERAGE MONTHLY SALINITIES DURING 1941-1979 FOR CASE A LAVACA BAY INFLOWS

LAVACA BAY SALINITIES BASED ON INFLOWS FROM GAGED LAVACA RIVER, TOTAL TWDB RESOP INFLOWS INTO LAKE TEXANA, AND UNGAGED RUNOFF

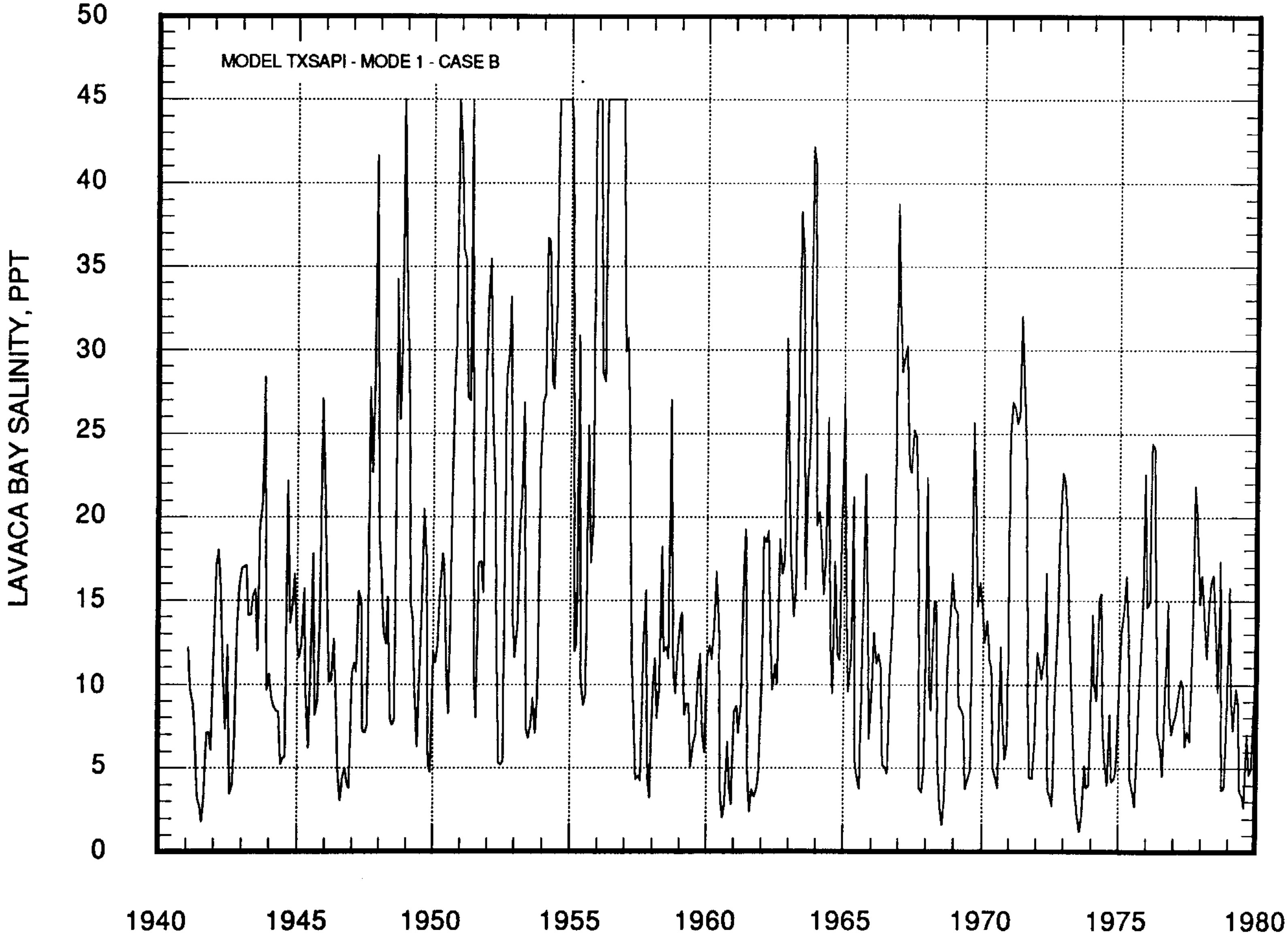


FIGURE 4-2 VARIATION OF CALCULATED AVERAGE MONTHLY SALINITIES DURING 1941-1979 FOR CASE B LAVACA BAY INFLOWS

LAVACA BAY SALINITIES BASED ON INFLOWS FROM GAGED LAVACA RIVER NEAR EDNA, LAKE TEXANA OUTFLOWS WITHOUT A RELEASE PROGRAM, AND UNGAGED RUNOFF

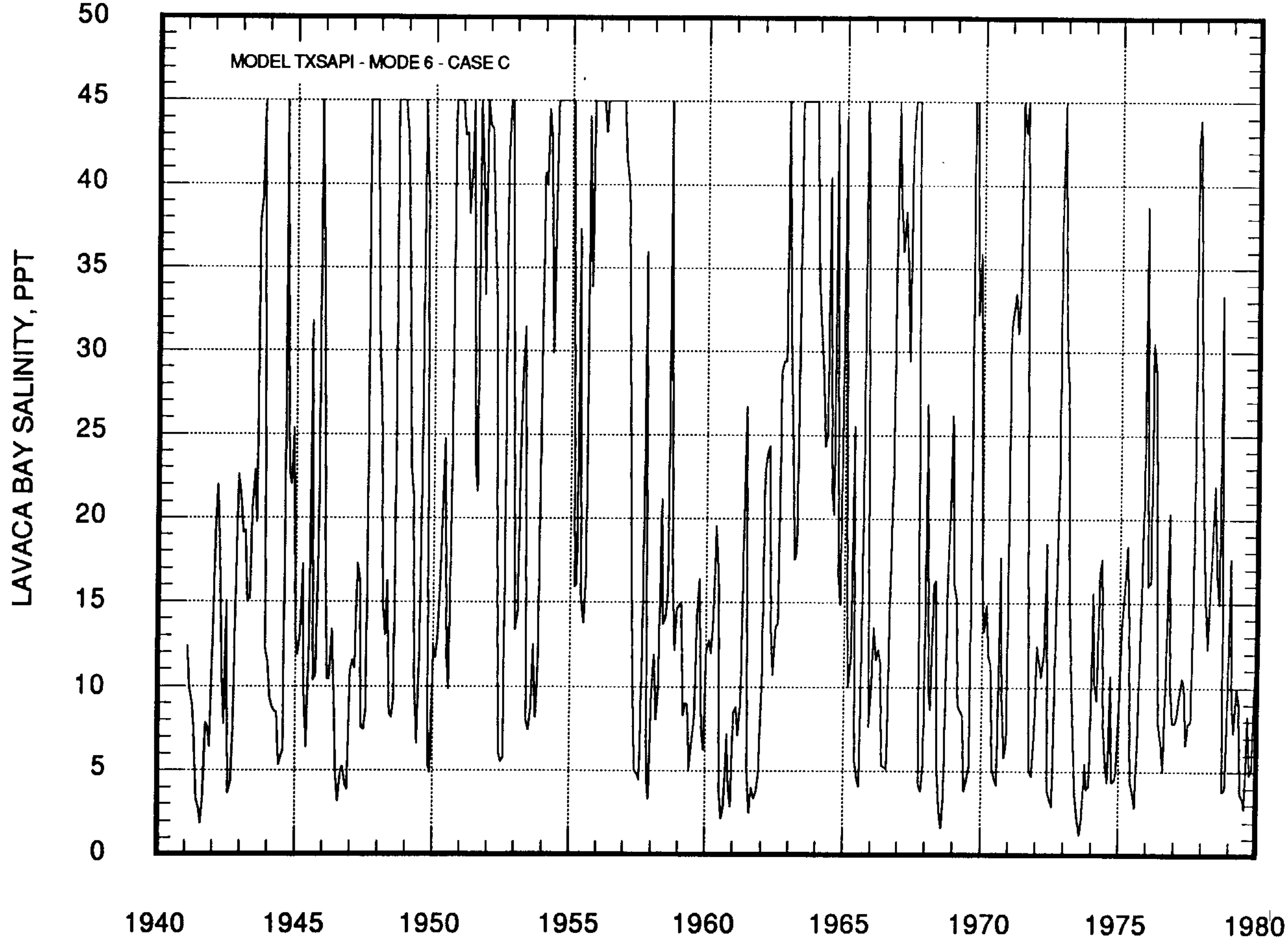


FIGURE 4-3 VARIATION OF CALCULATED AVERAGE MONTHLY SALINITIES DURING 1941-1979 FOR CASE C LAVACA BAY INFLOWS

LAVACA BAY SALINITIES BASED ON INFLOWS FROM GAGED LAVACA RIVER NEAR EDNA AND NAVIDAD RIVER NEAR GANADO

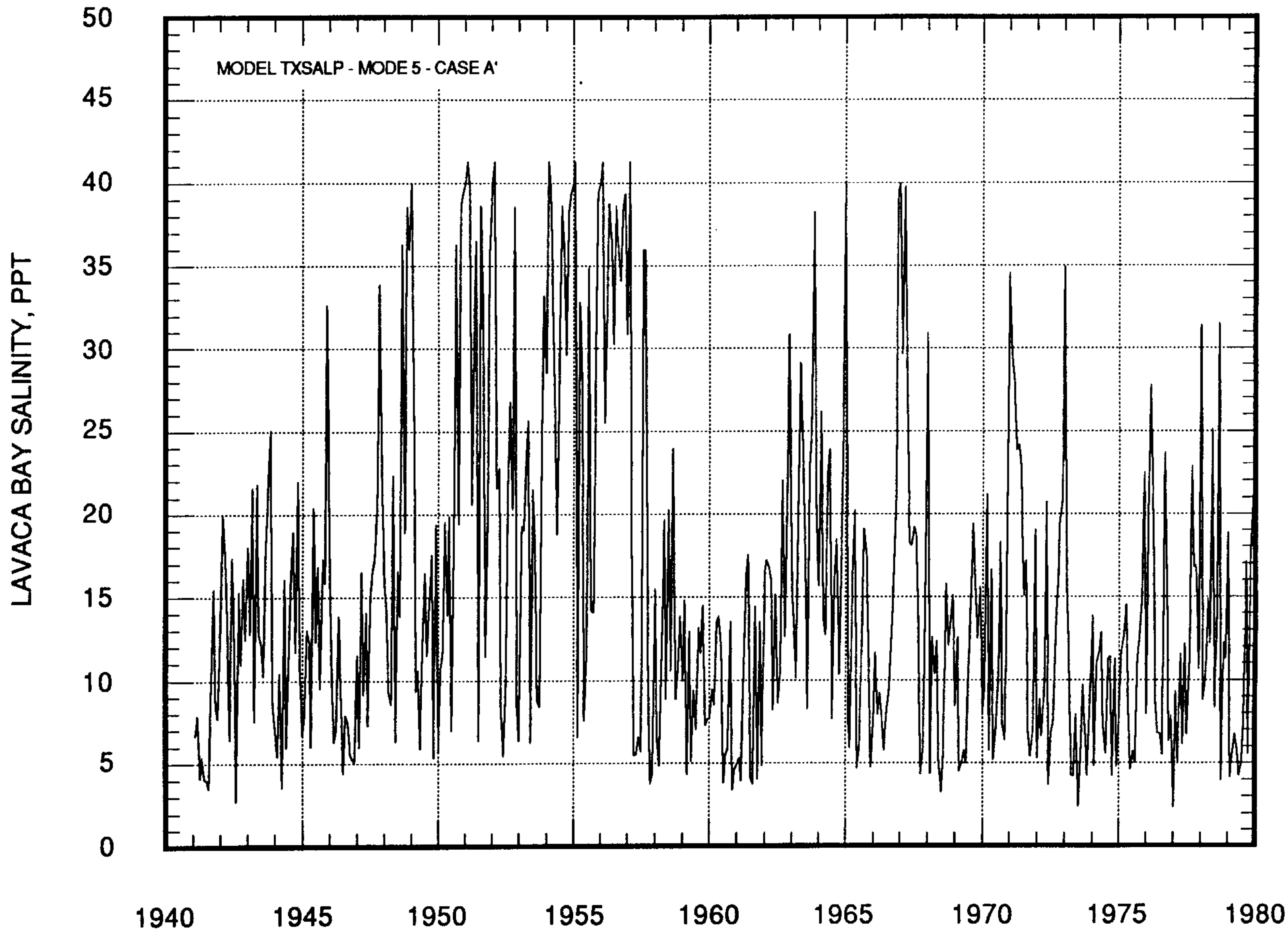


FIGURE 4-5 VARIATION OF CALCULATED AVERAGE MONTHLY SALINITIES DURING 1941-1979 FOR CASE A' RIVER FLOWS

LAVACA BAY SALINITIES BASED ON INFLOWS FROM GAGED LAVACA RIVER NEAR EDNA, LAKE TEXANA OUTFLOWS WITH A RELEASE PROGRAM, AND UNGAGED RUNOFF

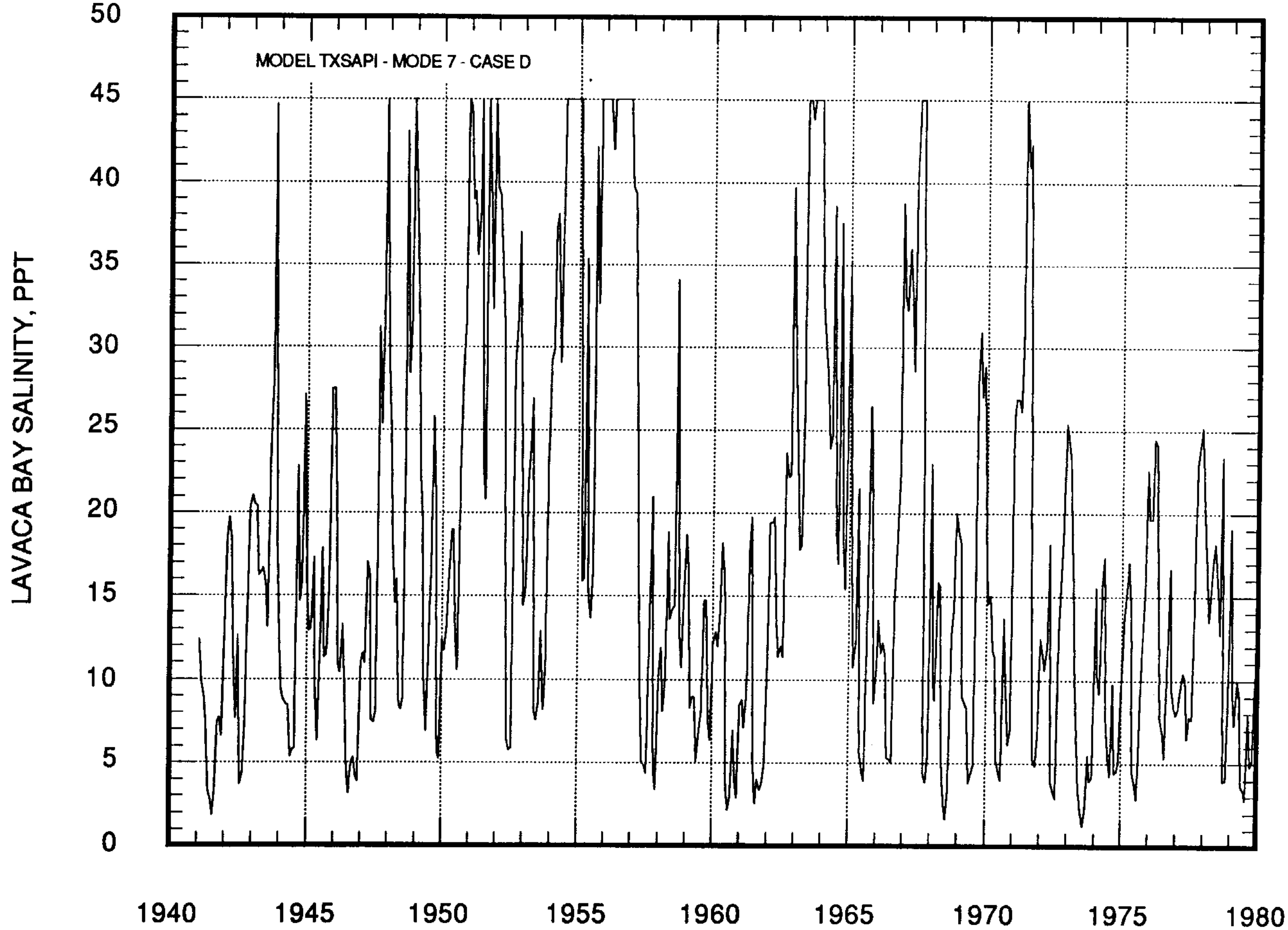


FIGURE 4-4 VARIATION OF CALCULATED AVERAGE MONTHLY SALINITIES DURING 1941-1979 FOR CASE D LAVACA BAY INFLOWS

LAVACA BAY SALINITIES BASED ON INFLOWS FROM GAGED LAVACA RIVER NEAR EDNA AND LAKE TEXANA INFLOWS LESS ADJUDICATED MUSTANG CREEK FLOWS

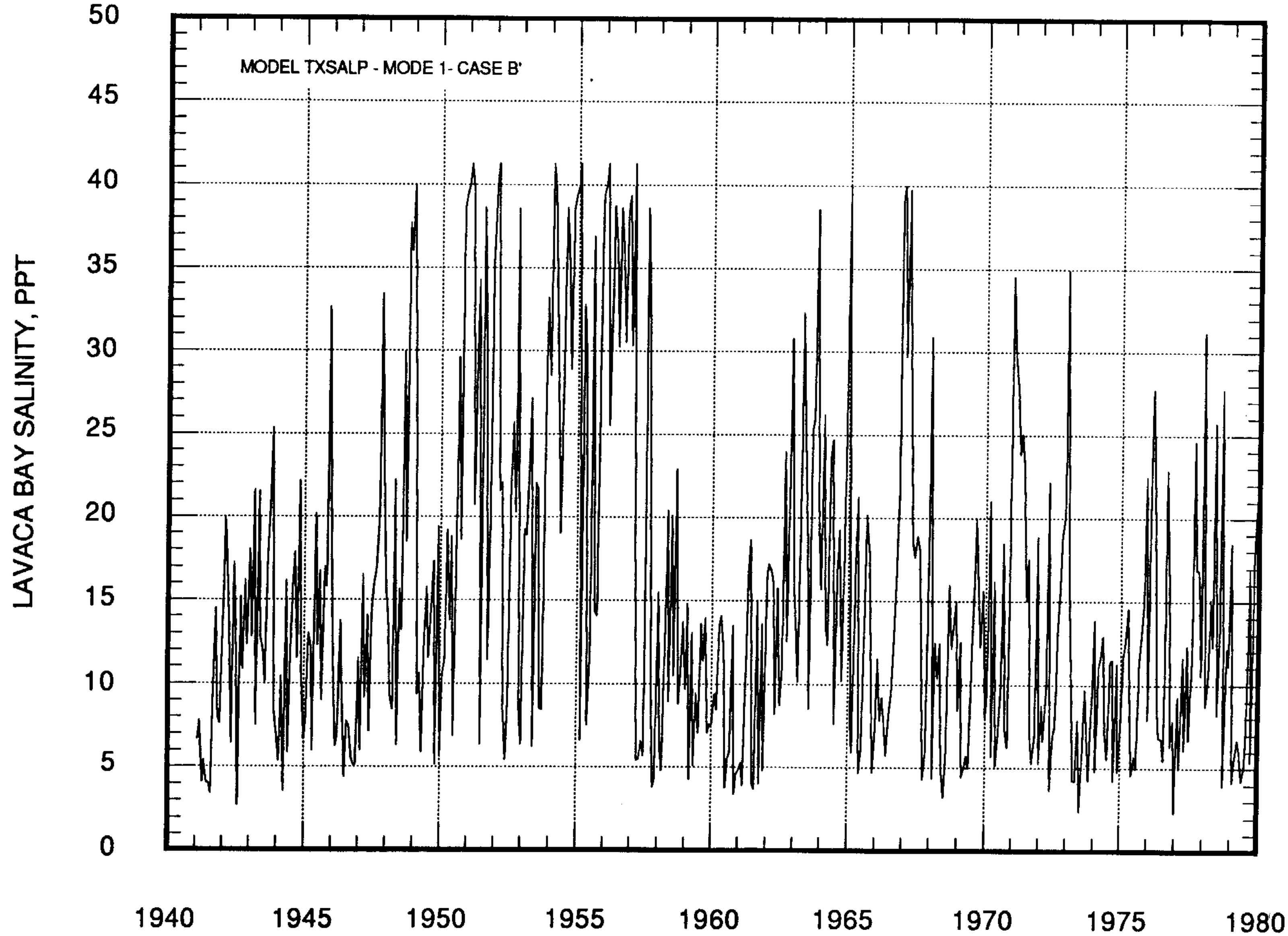


FIGURE 4-6 VARIATION OF CALCULATED AVERAGE MONTHLY SALINITIES DURING 1941-1979 FOR CASE B' RIVER FLOWS

LAVACA BAY SALINITIES BASED ON INFLOWS FROM GAGED LAVACA RIVER NEAR EDNA AND LAKE TEXANA OUTFLOWS WITHOUT A RELEASE PROGRAM

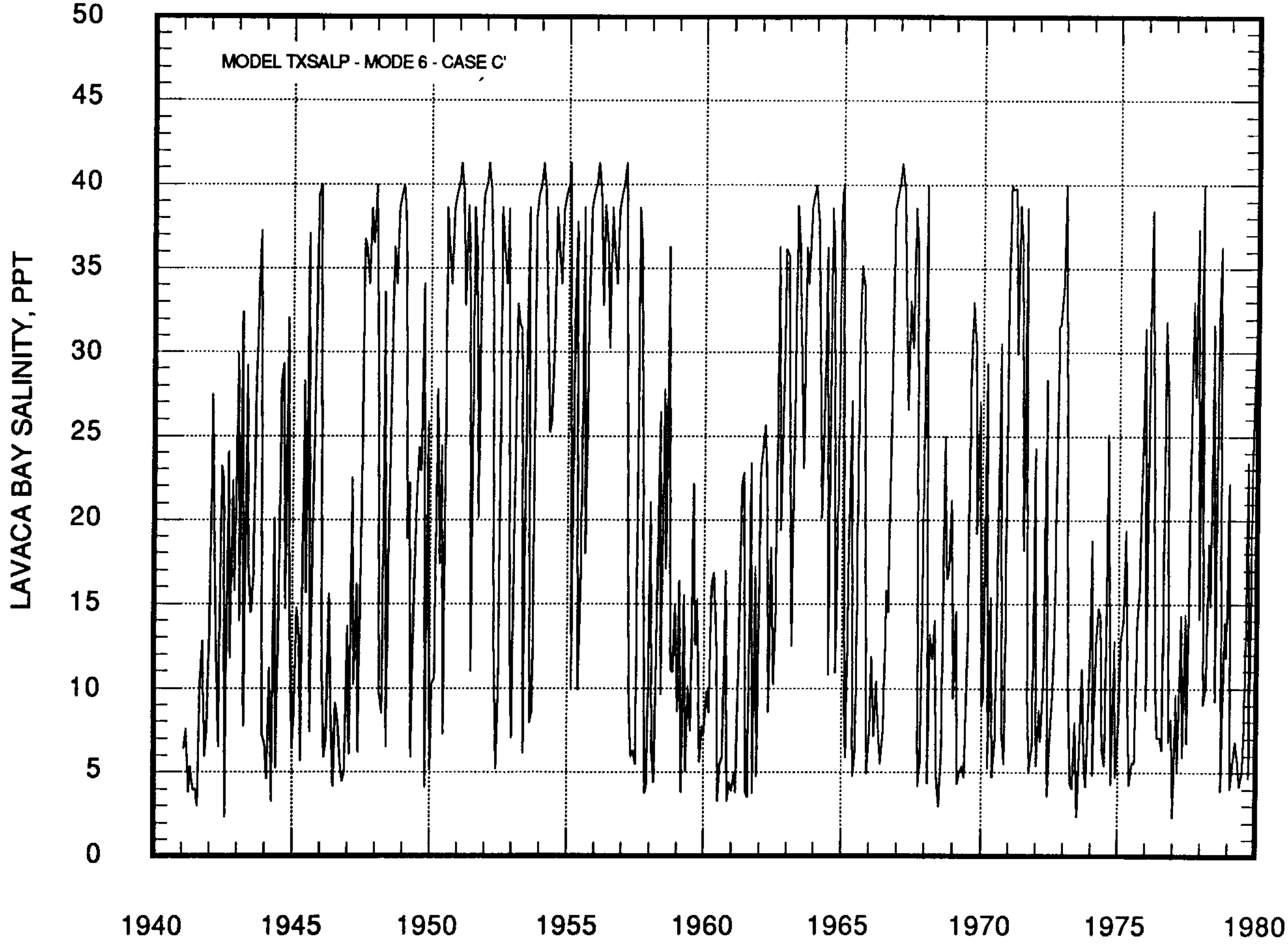


FIGURE 4-7 VARIATION OF CALCULATED AVERAGE MONTHLY SALINITIES DURING 1941-1979 FOR CASE C' RIVER FLOWS

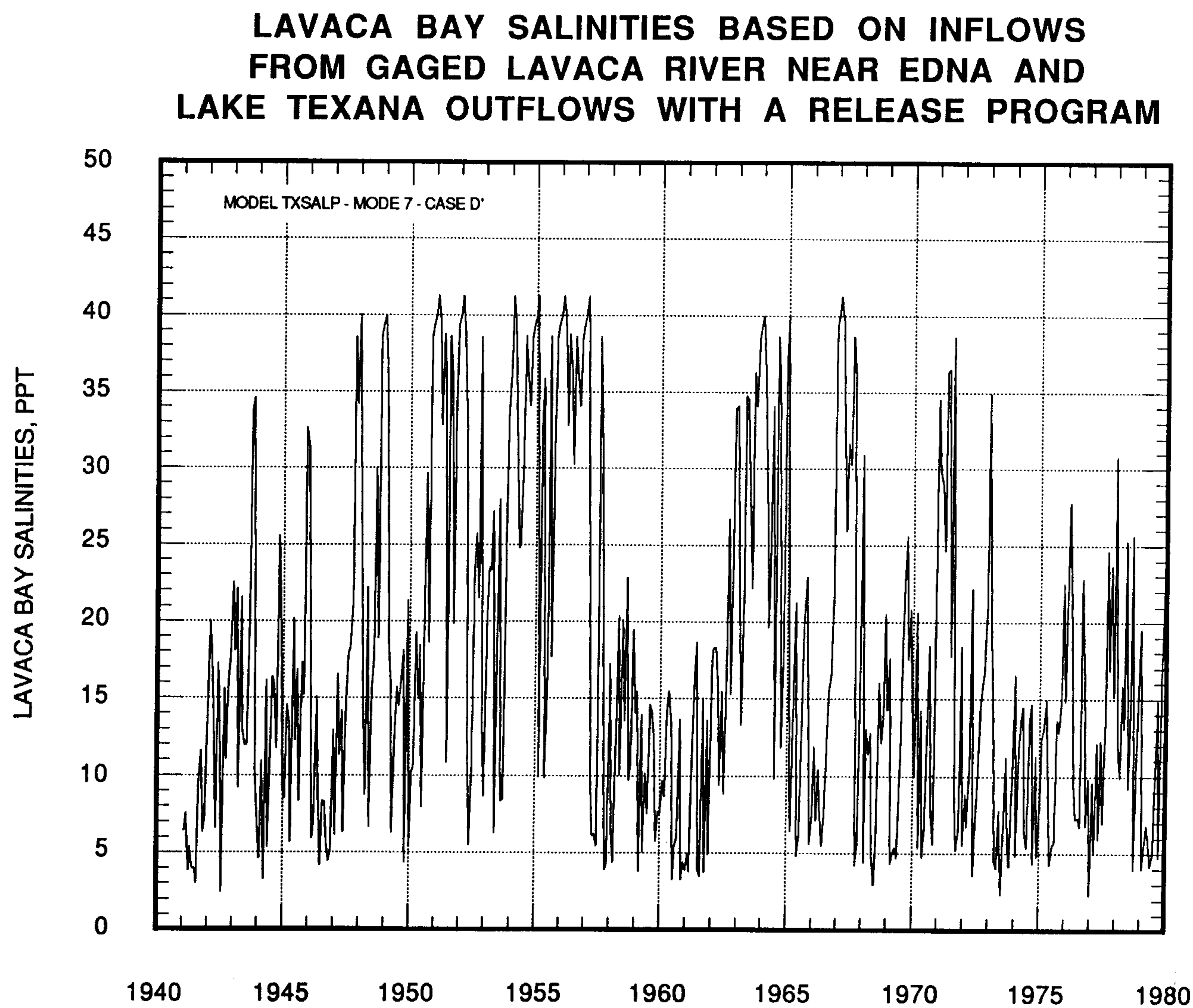


FIGURE 4-8 VARIATION OF CALCULATED AVERAGE MONTHLY SALINITIES DURING 1941-1979 FOR CASE D' RIVER FLOWS

significantly reduce the bay salinities.

A more definitive measure of the effectiveness of the TPWD/TWDB proposed Lake Texana release program for maintaining acceptable salinity levels in Lavaca Bay is provided by a comparison of the predicted salinities with established salinity viability limits for the organisms that typically use Lavaca Bay for habitat and nursery purposes. Such limits (upper and lower salinity concentrations) have been determined through previous studies conducted by the TWDB [2,6]. These bounding salinity concentrations for upper Lavaca Bay for each month of the year are listed in Table 4-5, along with those previously established by TWDB for the eastern end of Matagorda Bay. While other investigators may prefer some other variations of the salinity viability limits for Lavaca Bay, the values in Table 4-5 are considered to be appropriate for use in this study for the purpose of evaluating the relative effectiveness of the TPWD/TWDB proposed Lake Texana release program (MLRS3).

To provide a basis for comparing the Lavaca Bay salinity viability limits with the calculated salinity results corresponding to the various freshwater inflow cases and salinity regressions, monthly frequency-duration analyses have been performed for each set of predicted salinity data. Using all of the calculated monthly salinity values for a given month of the year for a particular freshwater inflow case and regression formulation, the frequencies at which specified levels of salinity are exceeded by the calculated values (or are less than) have been determined using a modified monthly flow-duration computer program. With this information developed for each freshwater inflow case and regression equation form, the exceedance frequencies of the calculated values have been be determined for the specific monthly salinity viability limits listed in Table 4-5.

The results from the salinity frequency-duration analyses are summarized in tabular form for each freshwater inflow case and for both of the salinity regression formulations in Appendix F. Plots of the frequencies (percent of the time) at which the calculated monthly salinities are less than specific values based on the Lavaca Bay total inflow regressions are presented in Figure 4-9 for all months of the year and in Figures 4-10 through 4-13 for the individual months of March, May, June and September,

TABLE 4-5 SALINITY VIABILITY LIMITS FOR THE LAVACA BAY ECOSYSTEM

Month	Salinity in Upper Lavaca Bay a/ (ppt)			Salinity in Eastern End of Matagorda Bay b/ (ppt)		
	Upper c/ Viability Limit	Lower c/ Viability Limit	Median Historic Salinity	Upper c/ Viability Limit	Lower c/ Viability Limit	Median Historic Salinity
January	20	10	13	30	10	19
February	20	10	12	30	10	19
March	20	10	12	25	10	19
April	15	5	13	20	5	21
May	15	1	10	20	5	19
June	15	1	9	20	5	19
July	20	10	11	25	10	21
August	20	10	17	25	10	24
September	15	5	13	20	5	23
October	15	5	13	20	5	20
November	20	10	13	30	10	19
December	20	10	14	30	10	19

a/ Represented by the average of sampling sites 1, 2, & 3 on linesite 85 (Figure 3-9)

b/ Represented by the average of sampling sites 1, 2, & 3 on linesite 333, site 330, and sites 1, 2, & 3 on linesite 340 (Figure 3-9)

c/ These values estimate the limits of long-term viable species activity at control points in the system, and not individual organism survival limits (Table 9-1).

Source: Reference [2]

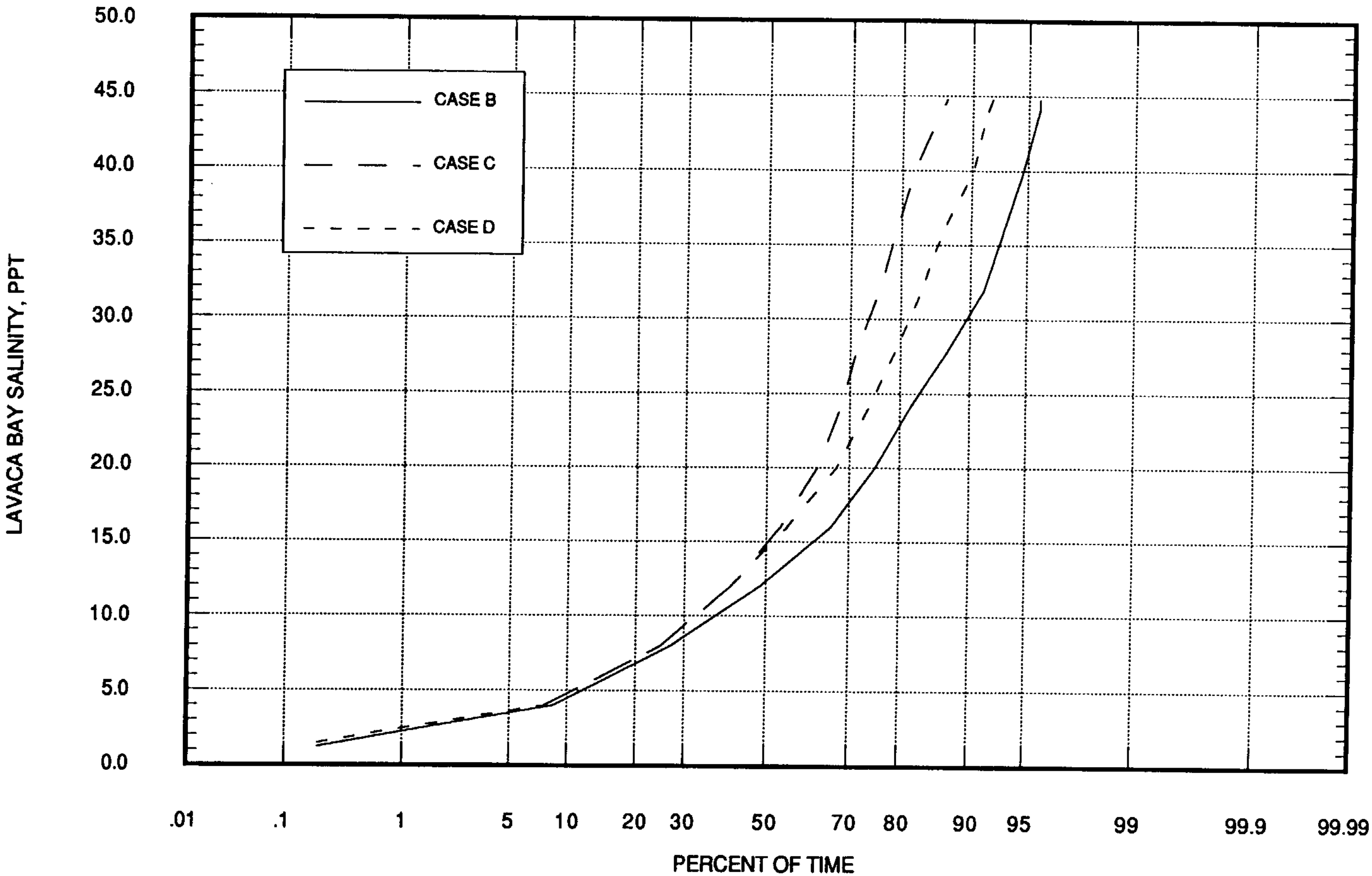


FIGURE 4-9 PERCENT OF TIME THAT AVERAGE MONTHLY SALINITIES ARE LESS THAN A SPECIFIED VALUE BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS

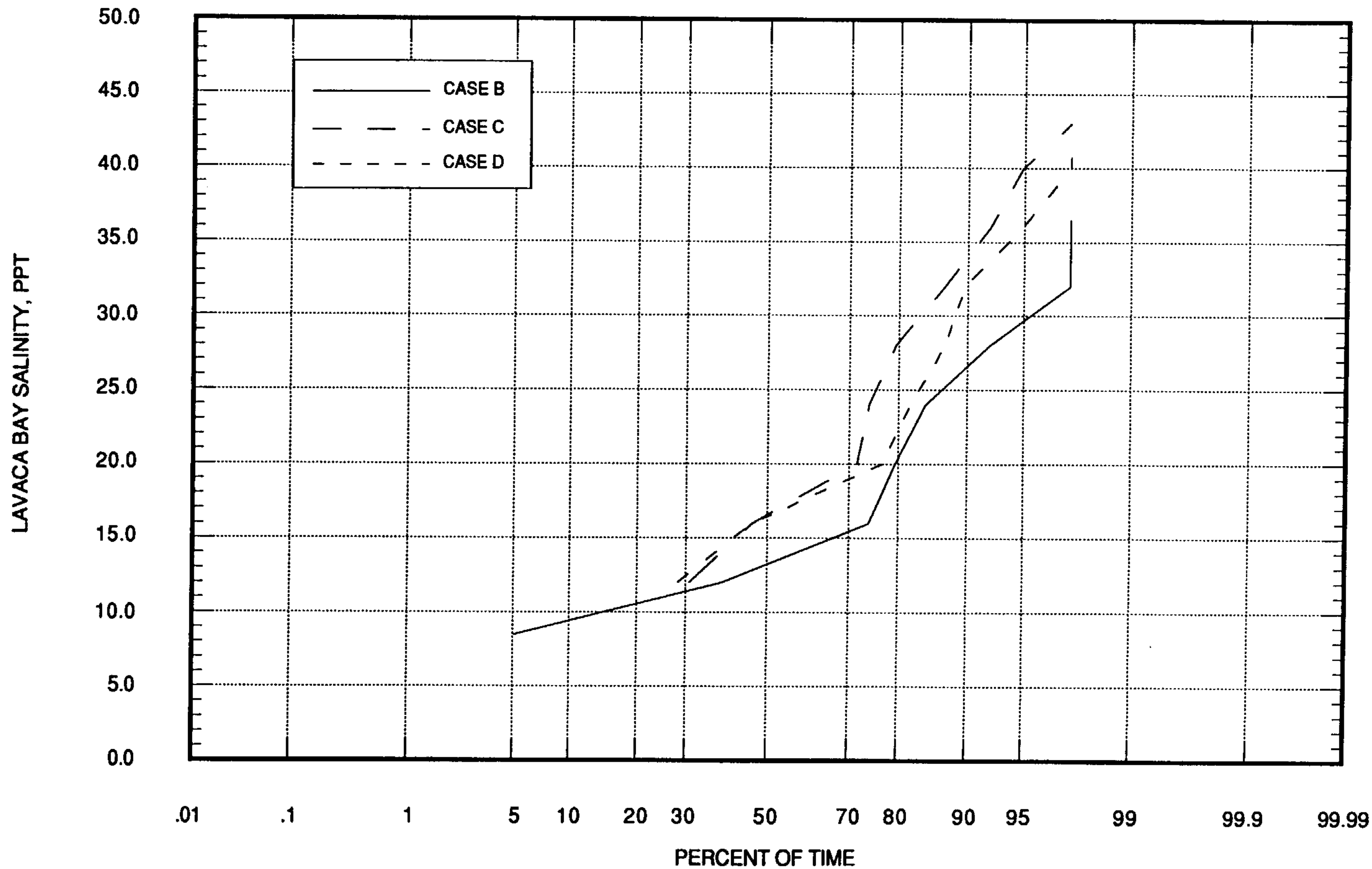


FIGURE 4-10 PERCENT OF TIME THAT AVERAGE MONTHLY SALINITIES DURING MARCH ARE LESS THAN A SPECIFIED VALUE BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS

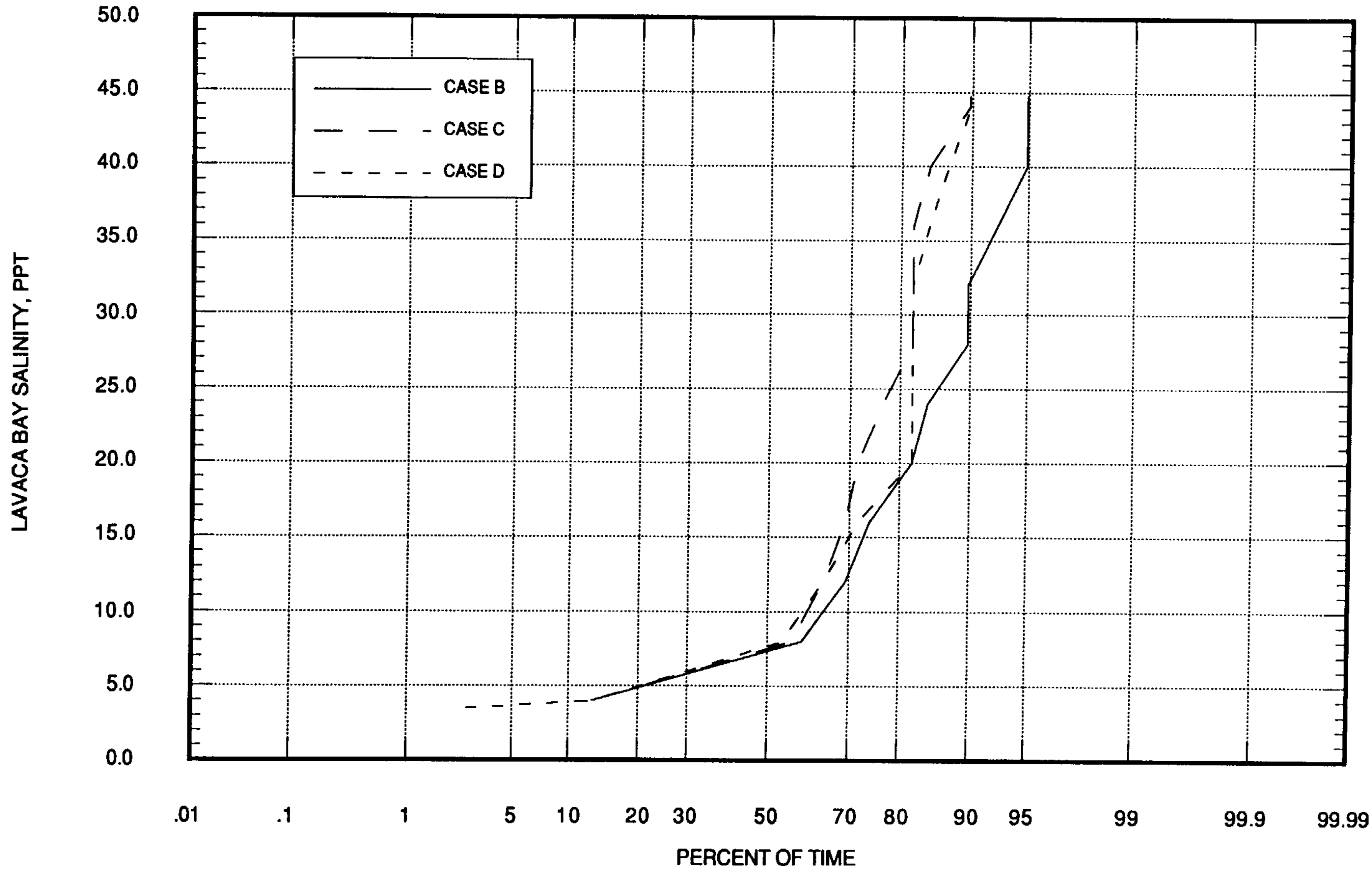


FIGURE 4-11 PERCENT OF TIME THAT AVERAGE MONTHLY SALINITIES DURING MAY ARE LESS THAN A SPECIFIED VALUE BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS

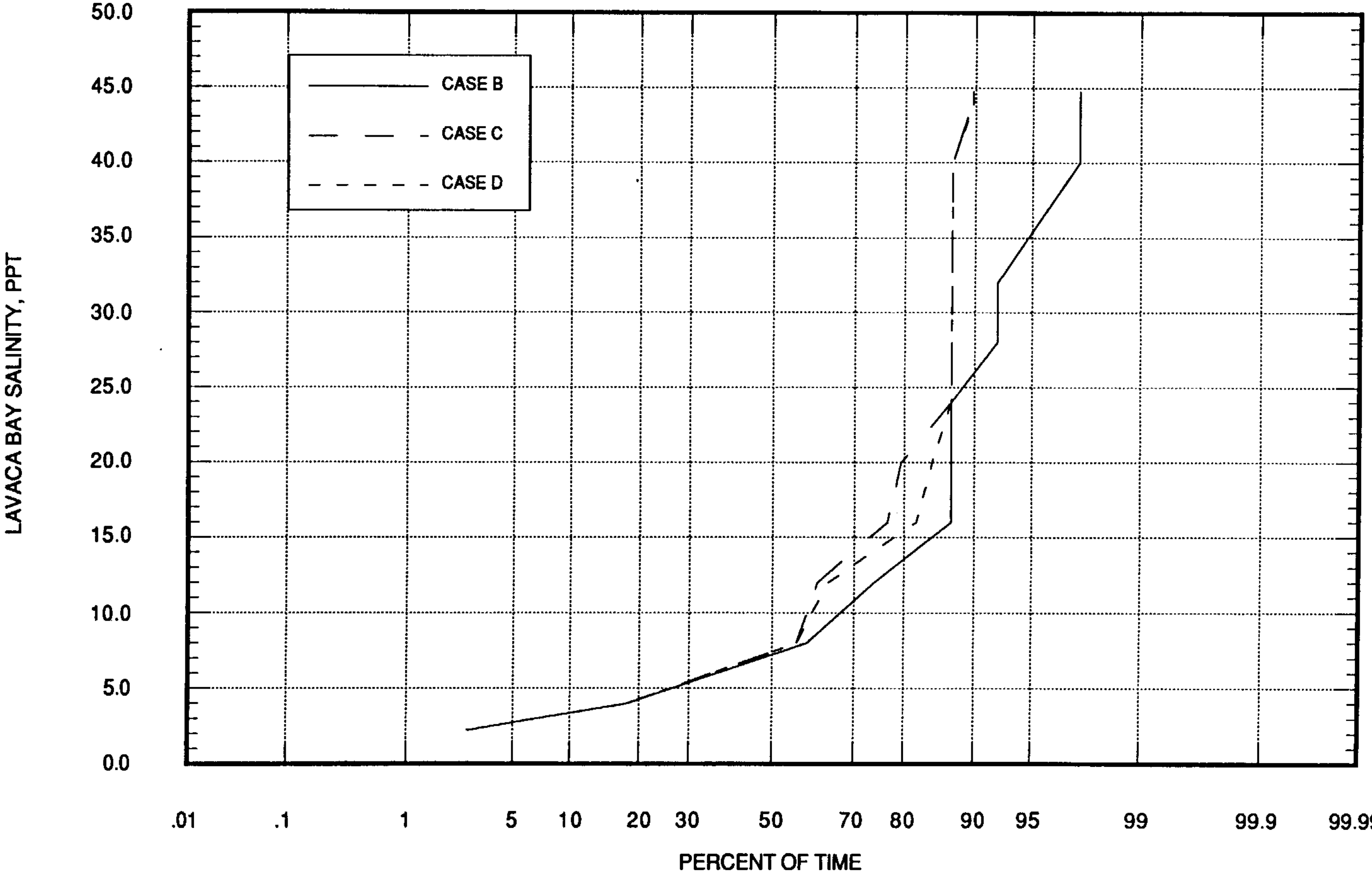


FIGURE 4-12 PERCENT OF TIME THAT AVERAGE MONTHLY SALINITIES DURING JUNE ARE LESS THAN A SPECIFIED VALUE BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS

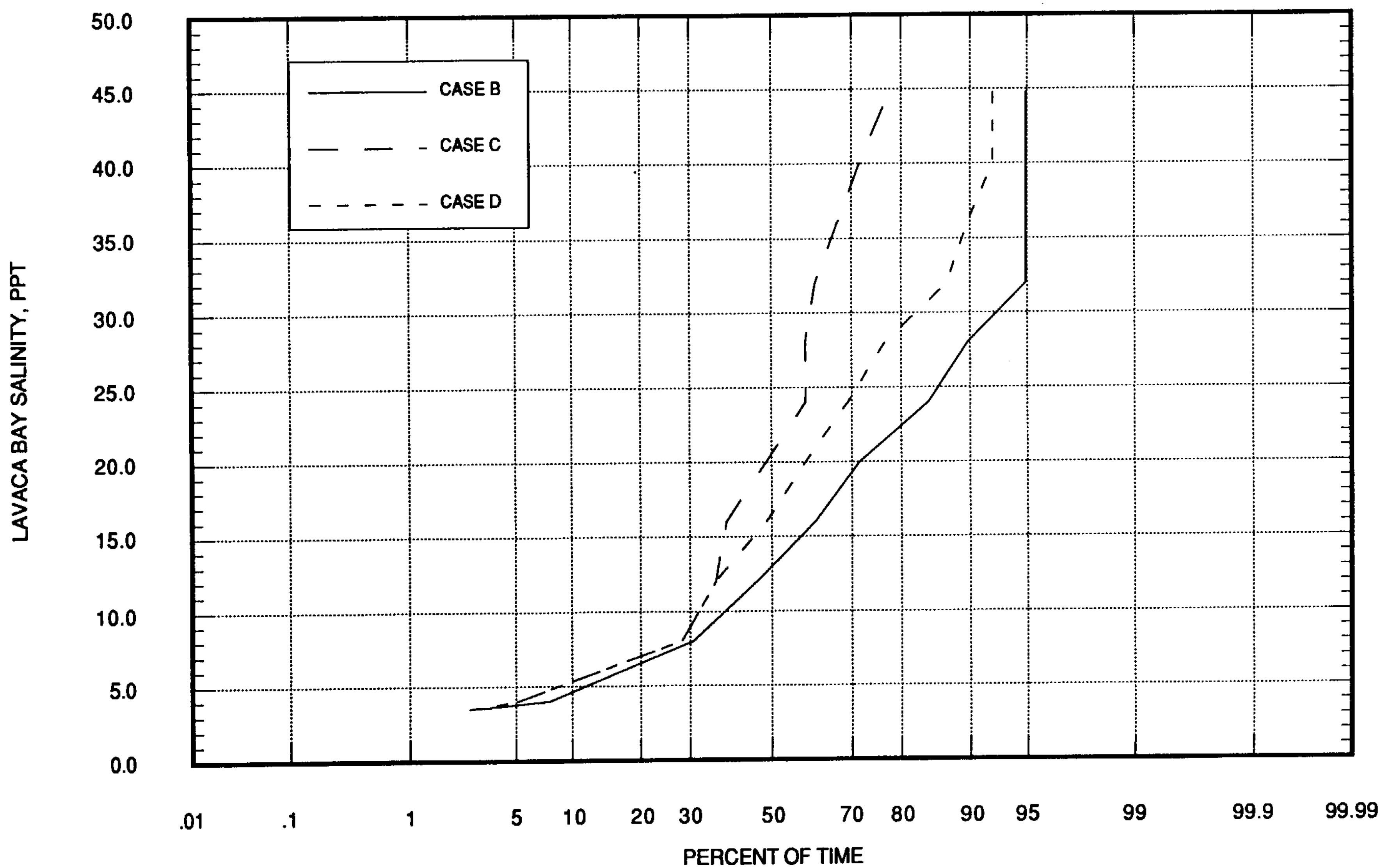


FIGURE 4-13 PERCENT OF TIME THAT AVERAGE MONTHLY SALINITIES DURING SEPTEMBER ARE LESS THAN A SPECIFIED VALUE BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS

respectively. These months have been identified by TPWD staff as being critical with regard to inflow effects on estuarine ecological activities in Lavaca Bay. Corresponding plots based on the salinities predicted with the gage site salinity-flow regressions are presented in Figures 4-14 through 4-18.

On each of these graphs, frequency curves for the three flow cases corresponding to baseline conditions (Cases B and B') and conditions with Lake Texana in operation without (Cases C and C') and with (Cases D and D') the TPWD/TWDB proposed release program (MLRS3) are shown. As expected, the curves consistently indicating the highest levels of salinity in the bay are those with Lake Texana in operation (full capture mode) without any release program in effect (Cases C and C'). The lowest salinity values, of course, are associated with the baseline flow cases, i. e., without Lake Texana in operation. The curves resulting from operating Lake Texana with the TPWD/TWDB proposed release program in effect fall in between. The sets of salinity frequency curves based on all of the monthly data (Figures 4-9 and 4-14) suggest that with the release program in operation, the salinities in Lavaca Bay will be less than 15 ppt about 50 percent of the time (median condition), instead of less than about 13 ppt under the baseline conditions. Without the release program, the average salinities would be less than 15 to 17 ppt about 50 percent of the time. Similarly, 80 percent of the time, the average salinities would be less than about 22 to 23 ppt under baseline flow conditions, but would rise to a level less than 28 to 30 ppt with the release program in operation. Without the release program, the corresponding 80-percent salinities are considerably higher at levels less than 36 to 37 ppt. Viewed in another way, if salinities less than 20 ppt, for example, are considered to be essential for certain species utilizing Lavaca Bay, these conditions would prevail about 75 percent of the time under the baseline conditions and about 65 percent of the time with Lake Texana in operation with the TPWD/TWDB proposed release program (MLRS3) in effect. With Lake Texana in full capture mode operation without any releases to the bay, salinities less than 20 ppt would occur only about 55 to 60 percent of the time.

A summary of the salinity frequency-duration results compared to the lower salinity viability limits for individual months of the year is presented in Table 4-6, and a corresponding comparison for the upper salinity viability limits is provided in Table 4-7.

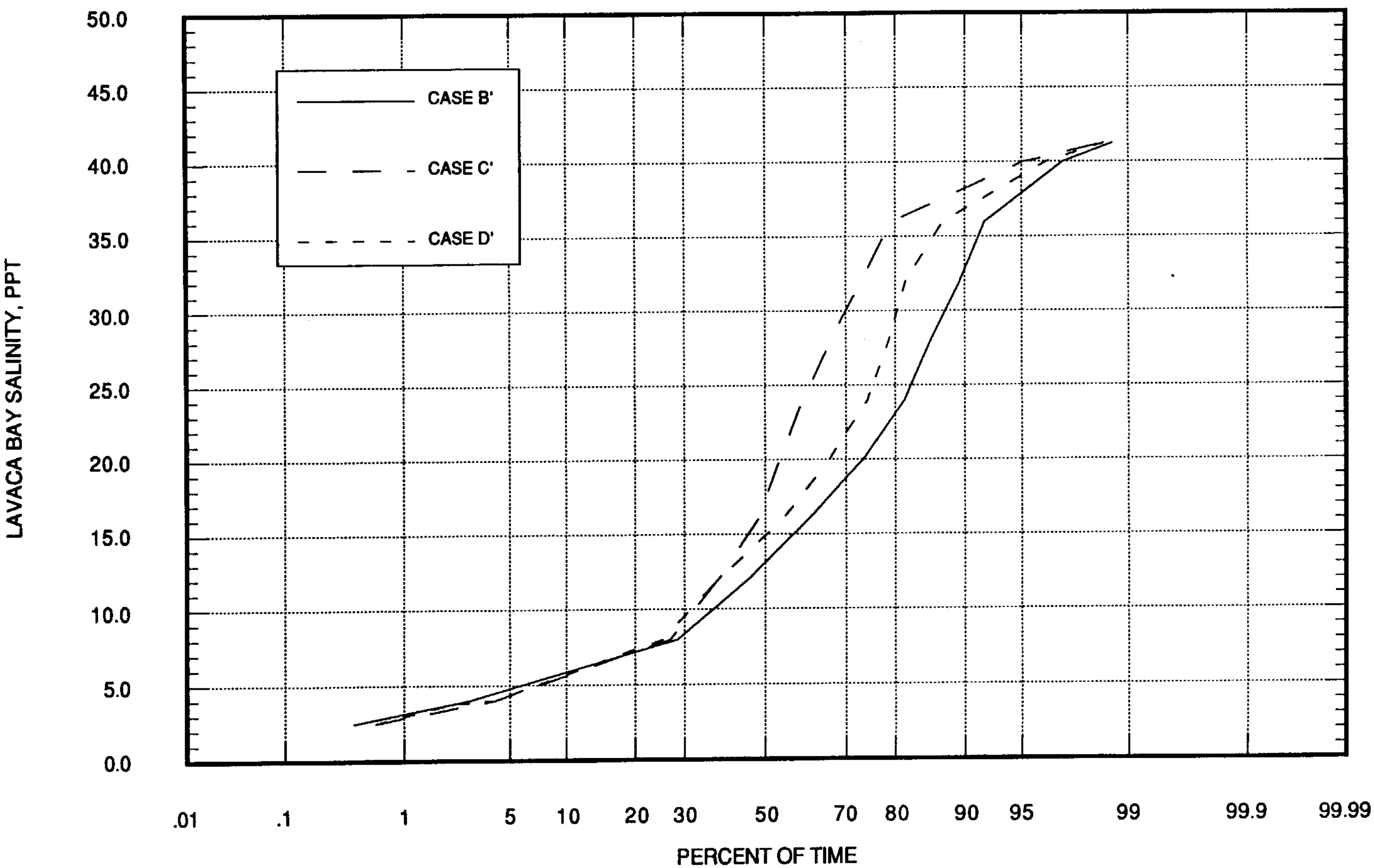


FIGURE 4-14 PERCENT OF TIME THAT AVERAGE MONTHLY SALINITIES ARE LESS THAN A SPECIFIED VALUE BASED ON RIVER GAGE SITE REGRESSIONS

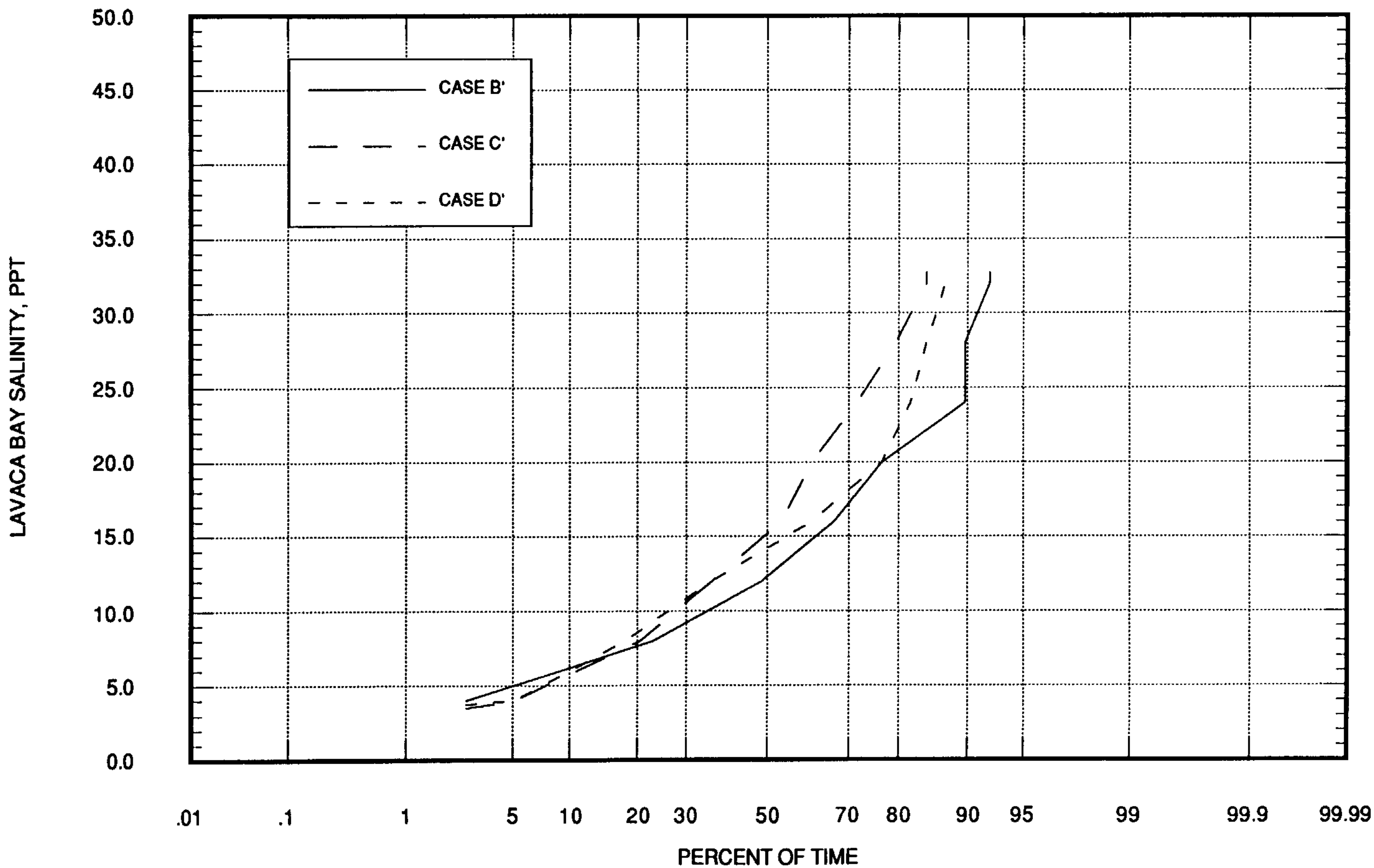


FIGURE 4-15 PERCENT OF TIME THAT AVERAGE MONTHLY SALINITIES DURING MARCH ARE LESS THAN A SPECIFIED VALUE BASED ON RIVER GAGE SITE REGRESSIONS

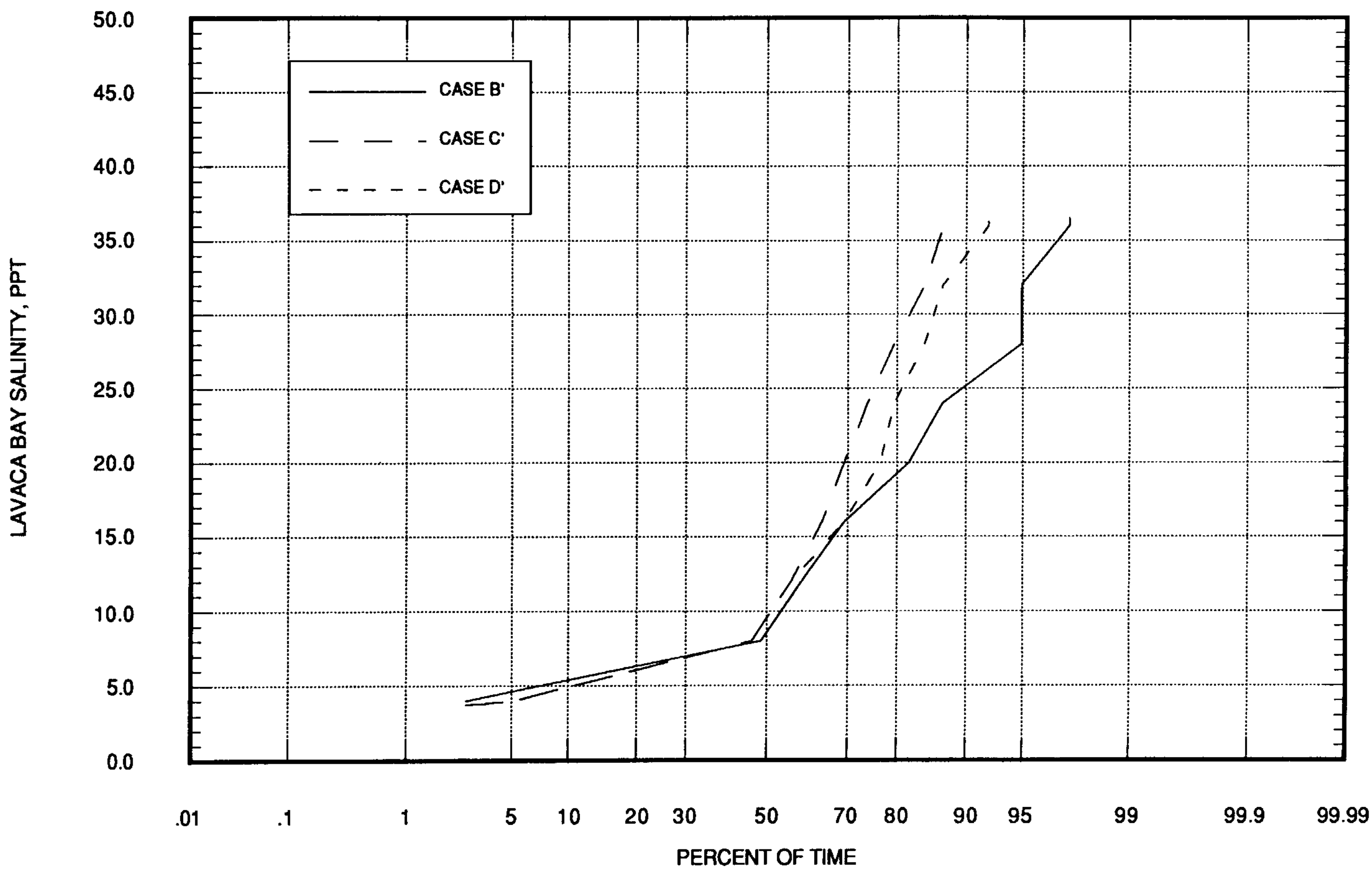


FIGURE 4-16 PERCENT OF TIME THAT AVERAGE MONTHLY SALINITIES DURING MAY ARE LESS THAN A SPECIFIED VALUE BASED ON RIVER GAGE SITE REGRESSIONS

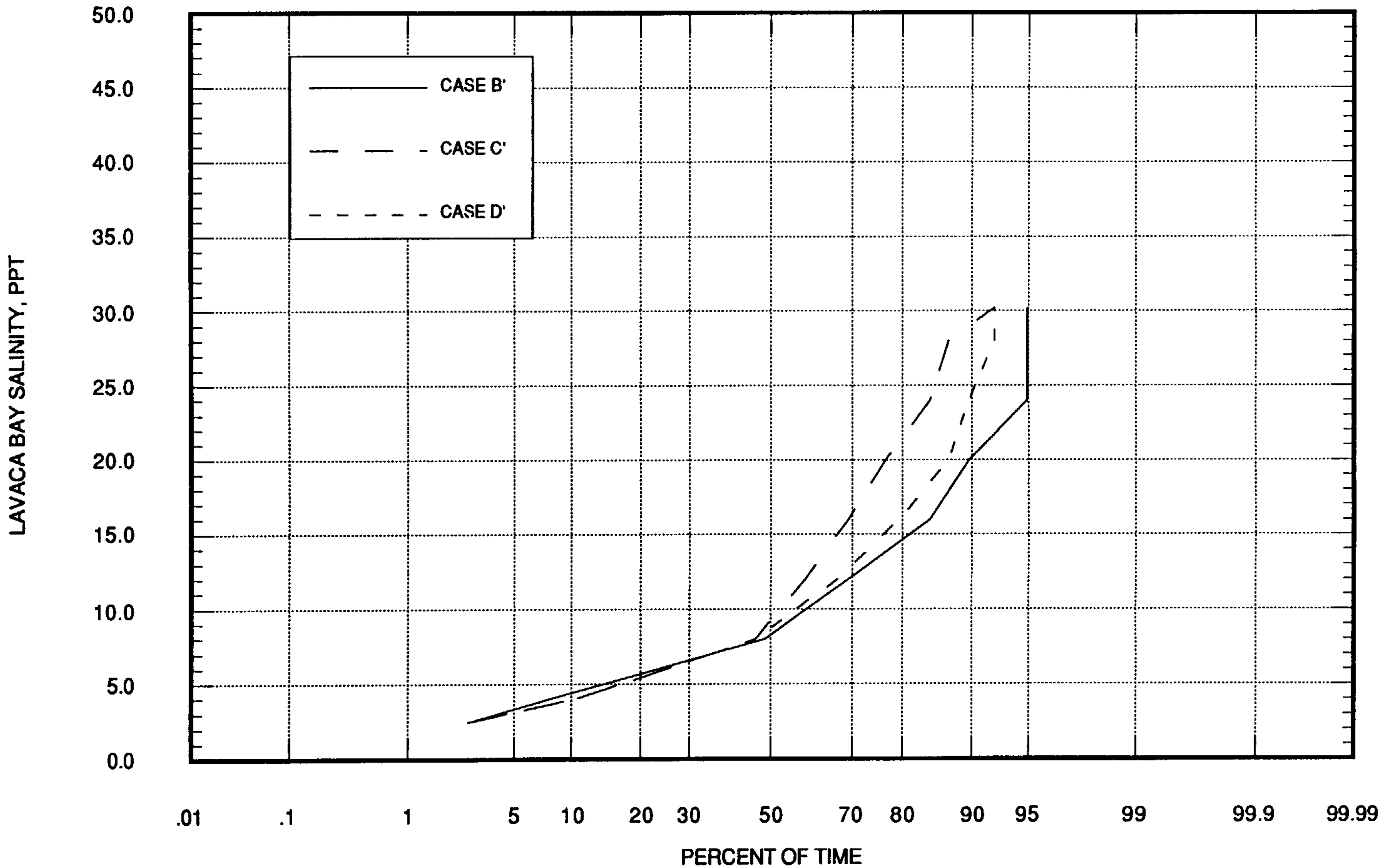


FIGURE 4-17 PERCENT OF TIME THAT AVERAGE MONTHLY SALINITIES DURING JUNE ARE LESS THAN A SPECIFIED VALUE BASED ON RIVER GAGE SITE REGRESSIONS

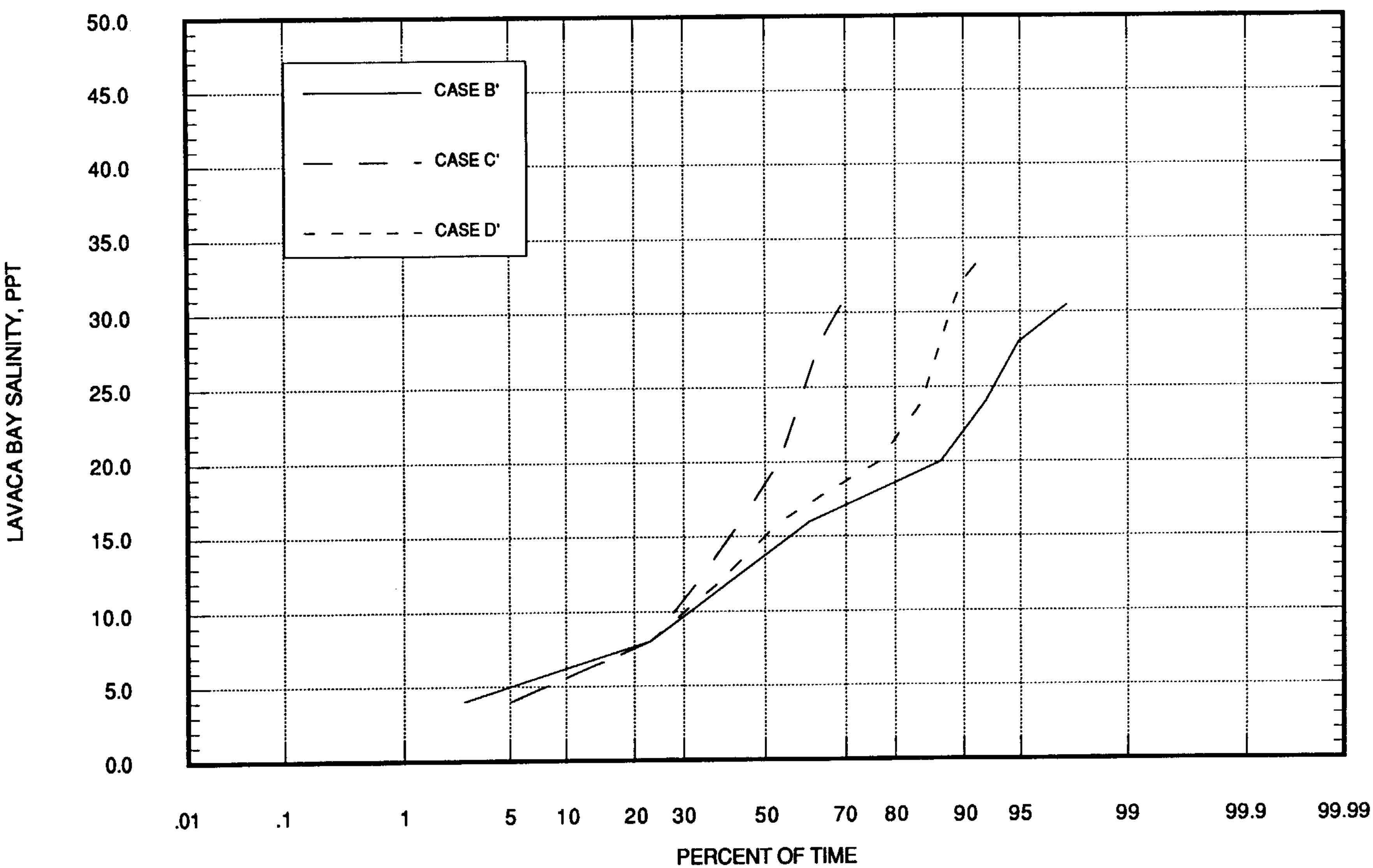


FIGURE 4-18 PERCENT OF TIME THAT AVERAGE MONTHLY SALINITIES DURING SEPTEMBER ARE LESS THAN A SPECIFIED VALUE BASED ON RIVER GAGE SITE REGRESSIONS

TABLE 4-6 PROBABILITIES THAT THE LOWER SALINITY VIABILITY LIMITS WILL BE VIOLATED

MONTH	LOWER SALINITY VIABILITY LIMIT	PROBABILITY THAT SALINITY IS LESS THAN THE INDICATED LOWER SALINITY VIABILITY LIMIT							
		TOTAL LAVACA BAY INFLOW CONDITION				LAVACA/NAVIDAD R. GAGE SITE FLOW CONDITION			
		CASE A	CASE B	CASE C	CASE D	CASE A'	CASE B'	CASE C'	CASE D'
JAN	10.0	0.154	0.128	0.128	0.128	0.385	0.385	0.385	0.308
FEB	10.0	0.282	0.282	0.282	0.256	0.385	0.385	0.359	0.359
MAR	10.0	0.205	0.205	0.205	0.179	0.333	0.333	0.256	0.256
APR	5.0	0.000	0.000	0.000	0.000	0.026	0.026	0.026	0.026
MAY	1.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
JUN	1.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
JUL	10.0	0.769	0.744	0.641	0.615	0.359	0.359	0.282	0.256
AUG	10.0	0.385	0.359	0.231	0.256	0.179	0.179	0.154	0.154
SEP	5.0	0.179	0.154	0.128	0.128	0.103	0.103	0.128	0.128
OCT	5.0	0.231	0.256	0.231	0.231	0.077	0.077	0.128	0.128
NOV	10.0	0.410	0.436	0.385	0.385	0.308	0.308	0.282	0.256
DEC	10.0	0.128	0.128	0.077	0.077	0.359	0.359	0.359	0.256
AVERAGES	- -	0.229	0.225	0.192	0.188	0.209	0.209	0.196	0.177

TABLE 4-7 PROBABILITIES THAT THE UPPER SALINITY VIABILITY LIMITS WILL BE VIOLATED

MONTH	UPPER SALINITY VIABILITY LIMIT	PROBABILITY THAT SALINITY IS GREATER THAN THE INDICATED UPPER SALINITY VIABILITY LIMIT							
		TOTAL LAVACA BAY INFLOW CONDITION				LAVACA/NAVIDAD R. GAGE SITE FLOW CONDITION			
		CASE A	CASE B	CASE C	CASE D	CASE A'	CASE B'	CASE C'	CASE D'
JAN	20.0	0.231	0.282	0.359	0.385	0.282	0.282	0.436	0.410
FEB	20.0	0.205	0.205	0.333	0.308	0.231	0.231	0.359	0.308
MAR	20.0	0.205	0.205	0.282	0.231	0.231	0.231	0.385	0.231
APR	15.0	0.436	0.231	0.590	0.564	0.436	0.436	0.538	0.462
MAY	15.0	0.282	0.179	0.333	0.333	0.333	0.333	0.385	0.333
JUN	15.0	0.154	0.128	0.256	0.231	0.256	0.231	0.333	0.256
JUL	20.0	0.103	0.103	0.231	0.154	0.154	0.179	0.590	0.308
AUG	20.0	0.205	0.308	0.462	0.462	0.333	0.359	0.667	0.436
SEP	15.0	0.308	0.282	0.615	0.513	0.410	0.385	0.615	0.487
OCT	15.0	0.385	0.256	0.538	0.513	0.538	0.538	0.641	0.590
NOV	20.0	0.359	0.385	0.538	0.538	0.410	0.410	0.564	0.538
DEC	20.0	0.333	0.385	0.487	0.487	0.359	0.359	0.564	0.487
AVERAGES	- -	0.267	0.246	0.418	0.393	0.331	0.332	0.508	0.404

In each table, the corresponding Lavaca Bay salinity viability limits from Table 4-5 are listed for each month of the year, and the probabilities that these viability limits will be violated are indicated based on the calculated monthly salinity values for each of the different freshwater inflow cases and salinity regression formulations. In reviewing the information presented in these tables, it important to consider first the probabilities that the salinity viability limits are violated under historical flow conditions (Cases A and A') and the baseline flow conditions without Lake Texana in operation (Cases B and B'). As indicated, violation probabilities for these cases in the 0.2 to 0.3 range are common, with the probabilities for violations of the upper viability limits during the fall and early winter months on the order of 0.4 to 0.5. Stated another way, this means that even with freshwater inflows to the bay under historical and baseline conditions, there is a 20- to 50-percent chance, depending on the month of the year, that the salinities in the bay will exceed the upper viability limits. Hence, even without Lake Texana in operation, significant violations of the salinity viability limits are to be expected.

The effectiveness of the TPWD/TWDB proposed Lake Texana release program for maintaining proper salinity levels in Lavaca Bay can be evaluated with the information in Tables 4-6 and 4-7 by comparing the viability limit violation probabilities for Cases D and D' (with Lake Texana in operation with the MLRS3 release program in effect) with those indicated for the baseline conditions (Cases B and B') and for the case with Lake Texana in the full capture mode without the release program in effect (Cases C and C'). Although the evaluation of violations of the lower viability limits is somewhat obscured by normal over-freshening of the bay during flood flow periods, it is interesting to note that the violation probabilities that result from the inflows associated with the proposed Lake Texana release program actually are less than the historical (Cases A and A') and baseline (Cases B and B') probability levels. This is because inflows to the bay during normally high-flow periods (when the lower salinities would occur) will be reduced with Lake Texana in operation, even with the release program in effect; consequently, salinities will be correspondingly higher. Under these high-flow conditions, if violations of the lower salinity viability limits normally would have occurred, the probabilities that these violations will continue to occur with Lake Texana in operation will be reduced. This is illustrated by the corresponding probabilities for Cases B and B' and Cases D and D' in Table 4-6.

At the other end of the salinity scale for the upper salinity viability limits (Table 4-7), the effect of having Lake Texana in operation with the proposed MLRS3 release program in effect generally will be to decrease the violation probabilities with respect to the case without the release program. With the release program in effect, lower probabilities of violations of the upper salinity viability limits are indicated for practically every month for both of the salinity regression formulations. For example, in September, the probabilities that the 15-ppt viability limit will be exceeded with the proposed MLRS3 release program in effect are 0.513 and 0.487 based on the salinity values calculated with the total inflow regressions (Case D) and the gage site regressions (Case D'), respectively. The corresponding violation probability with Lake Texana in operation without the TPWD/TWDB proposed release program in effect is 0.615 for both sets of regressions, i. e., Cases C and C'. Hence, the effect of the proposed releases during the month of September will be to reduce the periods of violations of the upper salinity viability limit by more than 10 percent. Instead of violations occurring over 60 percent of the time without the releases, they will occur about 50 percent of the time with the release program in effect. Considering all months, the proposed MLRS3 release program (Cases D and D') reduces the average monthly probabilities for violations of the upper salinity viability limits by 2.5 percent (Case C) and 10.4 percent (Case C') overall in comparison to the current full capture mode of operating Lake Texana without dedicated low-flow releases.

In considering the probabilities for violations of the monthly salinity viability limits as presented in Tables 4-6 and 4-7, it is important to recognize that the critical periods with regard to estuarine salinity conditions occur during the spring (March through May) and early fall months (September and October). TPWD staff have indicated that these are the times when proper amounts of freshwater inflows to the bay are essential in order to maintain acceptable salinity levels for indigenous and transient estuarine faunal species.

Another way to evaluate the effectiveness of the proposed Lake Texana release program is to consider the numbers of consecutive-month events during which certain salinity levels are exceeded (or less than) for the various cases of inflows to Lavaca

Bay. Considering the same sets of calculated monthly salinity values used to develop the probabilities of viability limit violations presented above (Cases A through D and Cases A' through D'), the specific numbers of consecutive-month events during which the calculated salinities are less 5.0 ppt and greater than 25.0 and 35.0 ppt are presented in Table 4-8. These figures have been derived based on the results from the entire 1941-1979 simulation period that was used for all of the analyses. Maximum numbers of events for various consecutive-month durations ranging from one month to 19 months are indicated based on the entire 39-year (468-month) simulation period. It should be pointed out that the numbers of consecutive-month events listed in the table are mutually exclusive, in that, none of the shorter-duration events that may be contained within longer-duration events are accounted for and included in the numbers of events specified for the shorter-duration consecutive-month periods.

Examination of the figures presented in Table 4-8 indicates trends similar to those exhibited by the violation probabilities in Tables 4-6 and 4-7. The numbers of consecutive-month events during which bay salinities exceed either the 25.0 ppt or the 35.0 ppt limit are less for the cases with the proposed Lake Texana release in effect (Cases D and D') than for the cases without the releases (Cases C and C'). These data also indicate that, with Lake Texana in operation, most of the higher numbers of consecutive-month events characterized by elevated salinities occur as short term events, i. e., only one or two months in duration. Generally, for consecutive-month events longer than three months, the numbers of events when salinities exceed 25.0 ppt for the case with the Lake Texana release in effect are about equal to the figures corresponding to the baseline case without Lake Texana in operation.

The basic question to be addressed with regard to the effectiveness of the TPWD/TWDB proposed Lake Texana MLRS3 release program is whether or not the proposed releases will adequately reduce the chances that the salinity viability limits for Lavaca Bay will be violated. For example, considering the salinity results in Table 4-7 derived with the gage site regression equations, is it acceptable to reduce the average percentage of time that the salinity levels in the bay will exceed the upper viability limits from 50.8 percent (with Lake Texana operated in the full capture mode)

As modified by RJBCO on May 2, 199?

TABLE 4-8 ANALYSIS OF VIOLATIONS OF SALINITY VIABILITY LIMITS FOR VARIOUS CONSECUTIVE-MONTH EVENTS DURING 1941-1979 SIMULATION PERIOD

NUMBER OF CONSECUTIVE-MONTH EVENTS WITH SALINITIES LESS THAN 5.0 PPT

CONSECUTIVE MONTHS	MAXIMUM NUMBER OF EVENTS	CASE A	CASE B	CASE C	CASE D	CASE A'	CASE B'	CASE C'	CASE D'
1	468	4	4	4	3	26	30	31	29
2	467	9	11	13	12	3	3	4	5
3	466	7	9	5	6	3	2	1	1
4	465	1	2	2	2	0	0	0	0
5	464	0	0	0	0	0	0	1	1
6	463	2	1	1	1	0	0	0	0
7	462	1	0	0	0	0	0	0	0

NUMBER OF CONSECUTIVE-MONTH EVENTS WITH SALINITIES GREATER THAN 25.0 PPT

CONSECUTIVE MONTHS	MAXIMUM NUMBER OF EVENTS	CASE A	CASE B	CASE C	CASE D	CASE A'	CASE B'	CASE C'	CASE D'
1	468	9	12	14	10	19	~~17~~ 18	28	~~17~~ 16
2	467	4	2	5	4	6	6	11	~~9~~ 10
3	466	4	2	4	0	2	3	7	4
4	465	0	1	3	2	1	1	3	1
5	464	0	1	0	1	2	2	1	0
6	463	0	2	3	1	1	1	1	2
7	462	0	0	0	0	0	0	4	1
8	461	0	0	2	2	1	1	0	1
9	460	1	1	1	1	0	0	0	1
10	459	0	0	0	1	0	0	0	1
11	458	0	0	2	1	0	0	1	0
12	457	0	0	0	0	0	0	1	0
13	456	0	0	0	0	0	0	0	0
14	455	1	1	0	1	0	0	0	0
15	454	1	1	1	0	0	0	0	0
16	453	0	0	0	0	1	1	1	0
17	452	0	0	0	0	0	0	0	0
18	451	0	0	0	0	0	0	1	~~0~~ 1
19	450	0	0	1	1	0	0	0	~~1~~ 0

TABLE 4-8 ANALYSIS OF VIOLATIONS OF SALINITY VIABILITY LIMITS FOR VARIOUS CONSECUTIVE-MONTH EVENTS DURING 1941-1979 SIMULATION PERIOD

REVISED : 5-2-91 RJBCO

NUMBER OF CONSECUTIVE-MONTH EVENTS WITH SALINITIES LESS THAN 5.0 PPT

CONSEC-UTIVE MONTHS	MAXIMUM NUMBER OF EVENTS	CASE A	CASE B	CASE C	CASE D	CASE A'	CASE B'	CASE C'	CASE D'
1	468	4	4	4	3	26	30	31	29
2	467	9	11	13	12	3	3	4	5
3	466	7	9	5	6	3	2	1	1
4	465	1	2	2	2	0	0	0	0
5	464	0	0	0	0	0	0	1	1
6	463	2	1	1	1	0	0	0	0
7	462	1	0	0	0	0	0	0	0

NUMBER OF CONSECUTIVE-MONTH EVENTS WITH SALINITIES GREATER THAN 25.0 PPT

CONSEC-UTIVE MONTHS	MAXIMUM NUMBER OF EVENTS	CASE A	CASE B	CASE C	CASE D	CASE A'	CASE B'	CASE C'	CASE D'
1	468	9	12	14	10	19	~~17~~ 18	28	~~17~~ 16
2	467	4	2	5	4	6	6	11	~~9~~ 10
3	466	4	2	4	0	2	3	7	4
4	465	0	1	3	2	1	1	3	1
5	464	0	1	0	1	2	2	1	0
6	463	0	2	3	1	1	1	1	2
7	462	0	0	0	0	0	0	4	1
8	461	0	0	2	2	1	1	0	1
9	460	1	1	1	1	0	0	0	1
10	459	0	0	0	1	0	0	0	1
11	458	0	0	2	1	0	0	1	0
12	457	0	0	0	0	0	0	1	0
13	456	0	0	0	0	0	0	0	0
14	455	1	1	0	1	0	0	0	0
15	454	1	1	1	0	0	0	0	0
16	453	0	0	0	0	1	1	1	0
17	452	0	0	0	0	0	0	0	0
18	451	0	0	0	0	0	0	1	~~0~~ 1
19	450	0	0	1	1	0	0	0	~~1~~ 0

TABLE 4-8 ANALYSIS OF VIOLATIONS OF SALINITY VIABILITY LIMITS FOR VARIOUS CONSECUTIVE-MONTH EVENTS DURING 1941-1979 SIMULATION PERIOD

REVISED: 5-2-91 RJBCO

NUMBER OF CONSECUTIVE-MONTH EVENTS WITH SALINITIES LESS THAN 5.0 PPT

CONSEC-UTIVE MONTHS	MAXIMUM NUMBER OF EVENTS	CASE A	CASE B	CASE C	CASE D	CASE A'	CASE B'	CASE C'	CASE D'
1	468	4	4	4	3	26	30	31	29
2	467	9	11	13	12	3	3	4	5
3	466	7	9	5	6	3	2	1	1
4	465	1	2	2	2	0	0	0	0
5	464	0	0	0	0	0	0	1	1
6	463	2	1	1	1	0	0	0	0
7	462	1	0	0	0	0	0	0	0

NUMBER OF CONSECUTIVE-MONTH EVENTS WITH SALINITIES GREATER THAN 25.0 PPT

CONSEC-UTIVE MONTHS	MAXIMUM NUMBER OF EVENTS	CASE A	CASE B	CASE C	CASE D	CASE A'	CASE B'	CASE C'	CASE D'
1	468	9	12	14	10	19	~~17~~ 18	28	~~17~~ 16
2	467	4	2	5	4	6	6	11	~~9~~ 10
3	466	4	2	4	0	2	3	7	4
4	465	0	1	3	2	1	1	3	1
5	464	0	1	0	1	2	2	1	0
6	463	0	2	3	1	1	1	1	2
7	462	0	0	0	0	0	0	4	1
8	461	0	0	2	2	1	1	0	1
9	460	1	1	1	1	0	0	0	1
10	459	0	0	0	1	0	0	0	1
11	458	0	0	2	1	0	0	1	0
12	457	0	0	0	0	0	0	1	0
13	456	0	0	0	0	0	0	0	0
14	455	1	1	0	1	0	0	0	0
15	454	1	1	1	0	0	0	0	0
16	453	0	0	0	0	1	1	1	0
17	452	0	0	0	0	0	0	0	0
18	451	0	0	0	0	0	0	1	~~0~~ 1
19	450	.0	0	1	1	0	0	0	~~1~~ 0

TABLE D-2 SIMULATED LAVACA BAY MONTHLY-AVERAGE SALINITIES FOR CASE B BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS

SUMMARY OF MONTHLY SALINITIES IN LAVACA BAY BASED ON TDWR LAKE TEXANA POST-IMPOUNDMENT S-Q REGRESSIONS IN PPT

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	12.20	9.69	8.87	7.60	3.25	2.80	1.82	4.24	7.14	7.16	6.09	12.46	6.85
1942	17.17	18.03	15.94	10.41	7.36	12.36	3.47	4.04	6.90	13.49	15.84	16.98	11.79
1943	17.01	17.11	14.10	14.13	15.27	15.64	12.01	19.50	20.95	28.39	9.66	10.65	16.21
1944	9.26	8.70	8.42	8.38	5.20	5.58	5.65	22.16	13.65	14.52	16.57	12.41	10.89
1945	11.59	12.37	15.72	9.50	6.22	10.92	17.84	8.19	9.04	14.07	27.10	21.77	13.70
1946	15.24	10.11	10.22	12.72	9.10	4.62	3.07	4.55	5.03	4.10	3.82	10.67	7.76
1947	11.30	10.75	15.55	14.76	7.23	7.10	7.61	27.80	22.71	28.92	41.46	18.78	17.88
1948	16.64	13.12	12.43	15.22	7.85	7.59	7.87	34.27	25.87	30.01	45.00	33.66	20.81
1949	28.66	14.70	13.34	9.71	6.27	10.66	15.04	20.51	17.72	5.18	4.76	11.90	13.28
1950	11.27	12.43	15.46	17.82	17.28	10.34	8.25	17.30	28.01	30.46	45.00	42.20	21.34
1951	36.06	33.32	27.21	26.97	45.00	10.39	8.04	17.27	17.33	15.48	28.47	33.38	25.05
1952	35.48	25.67	21.72	12.81	5.31	5.21	5.45	28.11	29.80	33.23	14.19	11.64	19.05
1953	13.39	19.54	21.22	26.38	7.36	6.85	7.50	9.13	7.11	9.49	22.90	26.89	14.83
1954	27.35	36.75	36.55	28.08	27.66	32.75	45.00	45.00	45.00	45.00	45.00	45.00	38.28
1955	43.15	11.75	12.46	30.89	10.06	8.73	9.43	25.51	17.23	19.38	45.00	45.00	23.30
1956	45.00	28.67	28.13	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	29.91	41.00
1957	30.74	23.75	11.17	8.09	4.32	4.55	4.27	12.38	15.60	4.52	3.24	9.96	10.98
1958	11.57	7.98	9.60	18.22	11.94	12.26	11.53	27.01	11.08	9.47	11.81	13.90	13.07
1959	14.28	8.20	8.00	8.33	5.00	6.46	6.96	10.43	11.85	6.96	5.95	11.57	8.79
1960	12.32	11.52	13.33	16.73	13.83	3.63	2.09	2.76	6.59	3.83	2.88	8.40	8.15
1961	8.71	7.09	8.34	16.35	19.27	4.71	2.42	3.74	3.30	3.71	4.66	10.47	7.82
1962	18.82	18.46	19.17	12.62	9.69	11.21	10.01	18.70	16.61	17.31	30.71	20.99	17.01
1963	17.24	14.05	15.63	27.02	38.34	35.54	15.67	22.20	24.32	42.24	41.21	19.51	26.12
1964	20.34	18.34	15.38	17.53	25.96	12.40	9.49	17.34	11.81	11.47	20.64	27.29	17.34
1965	13.67	9.55	11.43	21.23	5.50	4.32	3.76	12.87	22.50	17.76	6.74	9.88	11.60
1966	13.12	11.25	11.81	11.06	5.22	5.06	4.64	10.66	14.24	20.03	38.75	32.94	14.90
1967	28.69	29.67	30.27	23.18	22.66	25.24	24.90	20.41	3.85	3.58	5.22	22.35	19.99
1968	9.61	8.49	14.95	14.93	5.30	2.61	1.62	3.21	12.01	13.86	16.64	14.60	9.81
1969	14.26	8.79	8.40	8.19	3.78	4.38	4.87	25.70	20.05	14.67	16.10	14.17	11.98
1970	12.50	13.84	11.47	10.97	5.09	4.40	3.83	12.77	8.22	5.55	6.42	24.75	9.94
1971	26.94	26.52	25.50	26.13	32.07	27.55	23.10	9.13	4.47	4.41	6.48	11.95	18.66
1972	11.01	10.32	11.61	16.64	3.82	3.22	2.77	10.13	14.53	18.55	22.66	22.13	12.27
1973	20.45	13.90	9.37	6.80	3.60	2.11	1.23	2.10	5.13	3.86	4.04	14.20	7.25
1974	10.08	9.03	15.09	15.46	7.31	5.09	4.01	8.23	4.17	4.38	4.93	9.69	8.12
1975	13.13	14.30	16.43	12.71	4.38	3.61	2.75	6.13	10.55	14.69	22.60	14.61	11.31
1976	14.88	24.42	24.09	13.55	7.08	6.23	4.54	9.04	14.89	8.76	7.01	7.76	11.80
1977	8.23	9.22	10.29	9.81	6.28	7.19	6.59	13.45	21.90	20.10	14.80	16.46	12.03
1978	14.19	11.57	14.72	16.13	16.50	12.73	9.56	17.37	3.70	3.84	6.61	15.78	11.92
1979	9.09	7.26	9.77	9.05	3.66	3.30	2.68	7.07	4.57	4.94	9.78	21.09	7.70
AVERAGE	18.07	15.46	15.53	16.23	12.46	10.37	9.39	15.75	14.99	15.45	18.61	19.43	15.14
MAXIMUM	45.00	36.75	36.55	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	
MINIMUM	8.23	7.09	8.42	6.80	3.25	2.11	1.23	2.10	3.30	3.58	2.88	7.76	
STD DEV	7.50	7.37	6.72	8.03	11.44	9.82	10.07	10.81	10.22	11.94	14.74	10.19	

TABLE D-3 SIMULATED LAVACA BAY MONTHLY-AVERAGE SALINITIES FOR CASE C BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS

SUMMARY OF MONTHLY SALINITIES IN LAVACA BAY BASED ON TDWR LAKE TEXANA POST-IMPOUNDMENT S-Q REGRESSIONS IN PPT

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	12.40	9.88	8.96	7.64	3.28	2.83	1.86	3.43	7.85	7.59	6.39	13.10	7.09
1942	19.27	21.97	18.25	10.59	7.74	15.08	3.67	4.31	7.39	16.20	22.62	21.24	13.97
1943	19.15	19.26	15.10	15.20	20.54	22.87	19.73	37.73	39.36	45.00	12.24	11.38	23.17
1944	9.33	8.30	8.49	8.46	5.34	5.83	6.26	45.00	22.76	22.06	25.42	13.18	15.11
1945	11.89	13.00	17.25	9.65	6.41	12.20	31.80	10.37	10.68	19.06	45.00	35.23	18.58
1946	17.59	10.44	10.43	13.33	9.87	4.76	3.21	5.00	5.27	4.18	3.90	10.94	8.24
1947	11.56	11.07	17.28	16.38	7.57	7.45	8.67	45.00	45.00	45.00	45.00	30.01	24.23
1948	26.96	14.97	13.04	16.30	8.42	8.17	9.36	45.00	45.00	45.00	45.00	42.75	26.71
1949	34.66	23.03	21.58	10.12	6.63	12.09	27.43	45.00	39.56	5.39	4.90	12.39	20.25
1950	11.66	13.05	16.38	21.87	24.75	11.84	9.84	22.81	45.00	45.00	45.00	45.00	26.07
1951	42.98	43.10	38.21	41.14	45.00	23.40	21.63	45.00	40.99	33.39	45.00	43.54	38.59
1952	43.34	37.75	32.99	18.16	6.08	5.55	5.83	40.96	45.00	45.00	27.92	13.38	26.82
1953	14.39	25.11	29.24	31.45	7.94	7.46	8.66	12.50	8.18	10.46	27.00	40.76	18.54
1954	40.00	44.33	42.00	29.86	36.10	45.00	45.00	45.00	45.00	45.00	45.00	45.00	42.35
1955	45.00	15.93	16.11	37.35	15.14	13.78	16.79	44.11	33.87	45.00	45.00	45.00	31.20
1956	45.00	43.00	43.19	43.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	41.53	44.55
1957	40.01	31.55	16.81	9.68	5.02	4.83	4.46	13.42	35.98	4.83	3.34	10.16	14.89
1958	11.89	8.06	9.74	21.17	13.73	14.07	15.68	45.00	16.40	12.16	14.62	14.84	16.51
1959	14.99	8.30	8.99	8.97	5.17	6.94	8.22	14.61	16.40	7.48	6.27	12.03	9.88
1960	12.79	11.97	14.07	19.33	16.90	3.72	2.17	2.91	7.17	3.91	2.93	8.48	8.87
1961	8.78	7.14	8.95	19.95	26.72	4.89	2.53	4.04	3.38	3.79	4.85	10.77	8.83
1962	22.71	23.98	24.32	13.32	10.69	13.55	13.76	28.81	29.43	29.41	45.00	29.62	23.70
1963	25.83	17.56	18.01	31.86	45.00	45.00	45.00	45.00	45.00	45.00	45.00	34.51	37.00
1964	31.24	28.84	24.32	25.05	40.48	21.74	20.28	45.00	16.55	14.87	29.97	44.03	28.59
1965	15.08	9.98	11.69	25.51	5.72	4.51	4.09	17.16	45.00	41.94	7.65	10.15	16.55
1966	13.55	11.61	12.24	11.43	5.35	5.24	5.16	15.33	22.60	36.75	45.00	38.77	18.62
1967	36.04	38.43	35.34	29.45	42.08	45.00	45.00	45.00	4.26	3.80	5.56	26.85	29.76
1968	9.77	8.67	16.03	16.34	5.46	2.64	1.65	3.40	16.69	20.50	26.21	16.09	11.94
1969	15.24	8.93	8.57	8.29	3.85	4.52	5.27	45.00	45.00	32.22	35.95	16.07	19.11
1970	13.29	14.87	11.83	11.33	5.22	4.54	4.18	17.73	9.47	5.85	6.78	31.28	11.37
1971	32.31	33.53	31.13	33.41	45.00	43.18	45.00	17.06	5.16	4.74	6.99	12.47	25.81
1972	11.34	10.62	12.05	18.56	3.89	3.30	2.94	13.30	22.16	38.34	45.00	31.30	17.72
1973	27.75	15.38	9.85	6.92	3.66	2.13	1.25	2.19	5.48	3.94	4.18	15.60	8.17
1974	10.26	9.21	16.81	17.53	7.82	5.33	4.40	10.68	4.36	4.51	5.13	9.87	8.84
1975	13.72	15.61	18.39	13.78	4.50	3.70	2.89	7.21	13.25	21.19	38.72	16.00	14.03
1976	16.23	30.33	28.79	15.35	7.89	6.70	5.05	10.83	20.34	10.28	7.88	7.83	13.90
1977	8.29	9.40	10.53	10.05	6.59	7.82	8.00	18.16	42.42	43.97	27.95	20.75	17.85
1978	15.28	12.29	15.32	18.83	22.01	16.38	14.93	33.38	3.85	3.98	7.21	17.68	15.18
1979	9.18	7.32	9.94	9.20	3.71	3.37	2.81	8.34	4.80	5.11	10.78	28.02	8.58
AVERAGE	21.04	18.74	18.55	18.63	15.19	13.24	13.58	24.61	23.62	22.48	23.68	23.78	19.77
MAXIMUM	45.00	45.06	43.19	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	
MINIMUM	8.29	7.14	8.47	6.92	3.28	2.13	1.25	2.19	3.38	3.79	2.93	7.83	
STD DEV	11.93	11.47	9.78	9.88	14.32	13.40	14.21	16.97	16.37	16.99	17.20	13.03	

TABLE D-4 SIMULATED LAVACA BAY MONTHLY-AVERAGE SALINITIES FOR CASE D BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS

SUMMARY OF MONTHLY SALINITIES IN LAVACA BAY BASED ON TDWR LAKE TEXANA POST-IMPOUNDMENT S-Q REGRESSIONS IN PPT

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	12.40	9.68	8.96	7.64	3.28	2.83	1.85	3.38	7.47	7.72	6.59	13.05	7.07
1942	18.55	19.71	18.57	10.83	7.68	12.65	3.70	4.35	7.24	13.75	20.32	21.04	13.15
1943	20.50	20.42	16.24	16.45	16.67	15.75	13.14	23.55	27.93	44.73	18.36	12.44	20.52
1944	9.33	8.78	8.49	8.42	5.34	5.77	5.87	22.79	14.69	15.95	27.14	15.77	12.36
1945	12.88	13.07	17.31	9.65	6.33	11.03	17.88	11.32	11.49	15.89	27.45	27.51	15.17
1946	21.38	10.93	10.44	13.30	9.84	4.76	3.18	5.01	5.30	4.18	3.90	10.93	8.60
1947	11.57	10.93	17.03	16.27	7.61	7.43	8.08	31.27	25.39	32.73	45.00	29.06	20.24
1948	24.98	18.15	14.36	15.97	8.49	8.23	8.92	43.12	28.42	31.56	45.00	39.04	23.90
1949	32.93	22.69	19.87	16.50	6.93	11.38	16.79	25.84	20.44	5.67	5.28	12.39	15.88
1950	11.69	13.04	16.07	18.97	19.00	12.42	10.56	22.71	29.18	31.51	45.00	44.56	22.94
1951	39.00	39.45	35.59	38.20	45.00	22.76	20.84	45.00	39.03	32.32	45.00	39.65	36.81
1952	39.24	35.65	31.52	18.00	6.41	5.79	5.92	28.82	31.75	36.99	25.95	14.45	23.34
1953	15.54	21.79	23.88	26.92	8.11	7.59	8.55	12.88	8.17	10.07	23.26	29.22	16.29
1954	29.84	37.28	38.07	29.08	34.90	45.00	45.00	45.00	45.00	45.00	45.00	45.00	40.37
1955	45.00	15.88	16.04	35.38	15.03	13.68	16.49	42.18	32.65	45.00	45.00	45.00	30.72
1956	45.00	43.00	41.99	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	39.73	44.30
1957	39.34	31.21	16.75	9.86	5.11	4.81	4.38	12.74	21.01	4.87	3.41	10.12	13.53
1958	11.89	8.09	9.67	18.86	13.62	14.23	14.42	34.11	12.88	10.70	14.78	18.70	15.22
1959	17.21	8.30	8.99	8.96	5.17	6.99	7.95	14.72	14.75	7.44	6.37	12.10	9.93
1960	12.85	11.97	14.00	18.17	15.95	3.75	2.18	2.93	6.97	3.91	2.95	8.48	8.66
1961	8.78	7.14	8.93	17.69	19.78	4.96	2.59	4.02	3.37	3.78	4.90	10.87	8.08
1962	19.40	19.43	19.76	13.92	11.37	12.03	11.39	23.64	22.18	22.37	39.72	28.72	20.32
1963	24.45	17.84	18.13	27.51	45.00	45.00	43.90	45.00	45.00	45.00	45.00	32.85	36.33
1964	30.11	28.02	23.90	24.61	38.61	18.93	16.97	37.57	18.25	15.42	26.50	35.13	26.20
1965	16.39	10.72	12.19	21.50	5.76	4.51	3.95	13.36	26.50	23.80	8.56	10.73	13.16
1966	13.58	11.61	12.24	11.42	5.34	5.23	5.05	14.77	18.35	21.69	38.75	33.14	15.94
1967	32.26	36.02	33.41	28.59	40.12	45.00	45.00	45.00	4.39	3.87	5.54	22.98	28.54
1968	9.85	8.76	15.07	15.58	5.48	2.65	1.66	3.34	12.69	14.22	20.04	19.00	10.75
1969	18.18	9.07	8.61	8.29	3.84	4.43	4.93	27.74	30.94	27.01	28.91	18.01	15.86
1970	14.57	15.06	11.83	11.36	5.23	4.49	4.00	13.72	9.82	6.12	6.95	25.71	10.73
1971	26.94	26.89	26.17	30.30	45.00	40.97	42.38	15.35	5.26	4.85	6.97	12.45	23.63
1972	11.47	10.61	12.02	18.14	3.89	3.30	2.95	12.88	16.64	18.85	25.43	24.49	13.38
1973	23.19	17.97	10.42	6.98	3.66	2.13	1.25	2.19	5.47	3.94	4.20	15.54	8.03
1974	10.27	9.20	16.09	17.30	7.84	5.32	4.27	9.79	4.42	4.55	5.19	9.99	8.70
1975	13.65	15.15	17.09	13.82	4.55	3.70	2.89	7.19	12.09	15.17	22.62	19.63	12.26
1976	19.64	24.47	24.07	14.32	7.77	6.91	5.37	11.29	16.66	9.59	8.41	7.92	12.99
1977	8.29	9.38	10.42	10.05	6.51	7.79	7.64	16.10	22.97	23.96	25.16	20.83	14.10
1978	17.82	13.51	15.17	17.08	18.19	15.55	12.72	23.43	3.92	4.05	7.43	19.10	14.03
1979	9.18	7.33	9.94	9.20	3.71	3.34	2.81	7.97	4.83	5.12	10.22	22.28	8.01
AVERAGE	20.49	17.96	17.70	17.30	14.54	12.77	12.37	20.80	18.42	18.42	21.57	22.50	17.95
MAXIMUM	45.00	45.00	41.99	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	
MINIMUM	3.29	7.14	3.47	6.90	3.28	2.13	1.25	2.19	3.37	3.78	2.95	7.92	
STD DEV	10.59	10.14	8.61	9.04	13.02	13.12	13.41	14.30	12.37	14.13	15.55	11.20	

TABLE E-2 SIMULATED LAVACA BAY MONTHLY-AVERAGE SALINITIES FOR CASE B' BASED ON LAVACA AND NAVIDAD RIVER GAGE SITE REGRESSIONS

SUMMARY OF MONTHLY SALINITIES IN LAVACA BAY BASED ON TWDB LP 106 S-Q REGRESSIONS IN PPT

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	6.66	7.31	4.11	5.39	4.06	4.03	3.45	9.05	14.50	8.00	7.63	13.34	7.33
1942	19.91	17.41	13.54	6.45	17.25	13.21	2.72	15.21	10.87	16.21	12.34	18.03	13.60
1943	12.79	21.64	7.34	21.55	12.83	12.00	10.09	17.33	21.17	25.32	8.39	6.84	14.72
1944	5.34	10.42	3.56	16.14	5.88	11.11	16.00	17.89	11.52	22.17	10.82	6.72	11.46
1945	8.02	13.03	12.14	5.99	20.18	12.31	16.75	9.00	14.99	15.77	32.65	17.03	14.98
1946	10.37	6.24	7.02	13.77	8.78	4.42	7.77	7.39	5.57	5.13	5.14	11.53	7.78
1947	6.00	16.52	9.14	14.06	7.12	14.70	16.07	16.87	19.85	33.46	23.15	15.63	16.02
1948	14.09	9.27	8.49	22.20	6.31	15.66	13.22	29.98	18.53	37.71	36.04	40.04	21.00
1949	27.33	9.34	10.61	5.88	12.85	15.77	11.54	14.17	17.32	5.15	19.43	5.61	12.93
1950	10.55	11.36	19.24	13.81	18.81	6.96	17.62	29.63	18.66	38.57	39.35	40.04	22.16
1951	41.30	39.78	20.72	31.17	34.33	6.38	38.63	31.59	11.37	20.06	35.78	40.04	29.27
1952	41.30	21.60	22.09	8.59	5.42	9.42	21.60	25.72	20.31	38.57	8.51	6.36	19.19
1953	19.27	18.70	23.22	27.10	6.21	22.01	21.68	8.58	8.46	25.72	33.20	28.54	20.23
1954	41.30	39.78	32.84	23.81	19.03	30.29	38.63	36.31	28.91	28.57	39.35	40.04	34.06
1955	41.30	6.58	32.84	29.71	7.55	11.44	36.92	14.39	14.05	29.04	39.35	40.04	25.44
1956	41.30	25.55	32.84	38.76	36.54	30.29	38.63	36.31	30.58	38.57	39.35	30.34	34.97
1957	41.30	17.99	5.42	5.31	6.60	5.67	38.63	32.75	10.48	3.80	4.30	15.49	15.74
1958	6.31	4.81	11.44	20.40	8.93	20.13	10.47	22.86	8.82	10.55	13.71	9.68	12.37
1959	14.80	4.29	13.03	5.12	9.44	7.04	13.62	11.35	13.97	7.04	7.60	7.58	9.63
1960	9.39	8.48	13.45	14.07	11.90	3.77	5.48	5.91	13.52	3.42	4.59	4.80	8.22
1961	3.28	3.94	10.78	16.60	18.68	4.09	3.73	15.00	4.02	13.61	4.84	16.58	9.84
1962	17.21	16.82	16.04	8.24	15.75	8.73	10.88	23.98	12.52	21.44	30.80	15.80	16.53
1963	13.72	10.10	20.32	32.34	25.20	18.70	8.52	25.28	26.00	38.57	19.81	15.69	21.25
1964	26.20	13.60	12.39	23.70	24.71	7.66	16.66	19.26	10.15	17.45	27.24	40.04	19.99
1965	7.56	5.94	16.70	21.25	4.69	6.12	13.52	20.20	17.96	12.71	4.75	7.46	11.61
1966	11.57	7.82	9.25	7.73	5.73	8.24	9.53	12.46	16.66	21.51	39.35	40.04	15.87
1967	29.74	39.78	28.35	18.79	17.63	18.90	18.24	11.97	4.32	5.88	17.56	30.93	20.07
1968	4.40	12.50	10.37	12.46	5.08	3.23	5.92	15.99	12.16	13.58	14.98	8.48	9.91
1969	12.54	4.48	5.01	5.73	4.98	11.48	15.95	19.98	14.91	12.25	15.61	7.97	10.95
1970	9.32	21.06	5.68	16.22	5.15	6.99	9.97	18.47	7.31	6.26	21.24	34.57	13.46
1971	29.84	27.95	23.36	25.05	22.99	15.06	17.53	6.98	5.31	6.85	18.85	5.31	17.06
1972	8.77	6.64	9.34	22.18	3.71	6.87	7.50	13.09	16.24	10.88	20.20	34.96	14.05
1973	15.67	10.54	4.27	4.23	7.89	2.43	5.54	9.70	6.52	4.25	8.67	13.88	7.80
1974	4.83	11.09	11.73	12.92	7.17	5.56	11.29	11.49	4.28	11.26	4.77	7.52	8.66
1975	11.65	12.50	14.62	8.47	4.59	5.70	4.99	11.25	12.82	15.23	22.49	7.91	10.99
1976	23.68	27.76	19.84	8.82	6.82	6.75	5.48	22.85	16.18	6.30	7.83	2.34	12.84
1977	9.28	4.99	11.62	6.11	12.35	6.72	11.36	24.66	16.87	16.89	10.55	31.24	13.66
1978	8.74	10.16	15.11	12.28	25.76	8.24	13.50	27.74	3.95	12.22	11.15	18.53	14.03
1979	4.15	3.43	6.73	5.73	4.26	5.03	7.21	16.87	5.40	17.23	21.09	24.58	10.38
AVERAGE	17.25	14.46	14.24	15.35	12.39	10.59	14.79	18.45	13.57	17.83	19.04	19.53	15.64
MAXIMUM	41.30	39.78	32.84	38.76	36.54	30.29	38.63	36.31	30.58	38.57	39.35	40.04	
MINIMUM	4.15	3.94	3.56	4.23	3.71	2.43	2.72	5.91	3.95	3.42	4.30	2.34	
STD DEV	12.45	9.90	8.12	9.03	8.61	6.83	10.35	8.37	6.66	11.44	12.05	13.02	

TABLE E-3 SIMULATED LAVACA BAY MONTHLY-AVERAGE SALINITIES FOR CASE C' BASED ON LAVACA AND NAVIDAD RIVER GAGE SITE REGRESSIONS

SUMMARY OF MONTHLY SALINITIES IN LAVACA BAY BASED ON TWDB LF 106 S-Q REGRESSIONS IN PPT

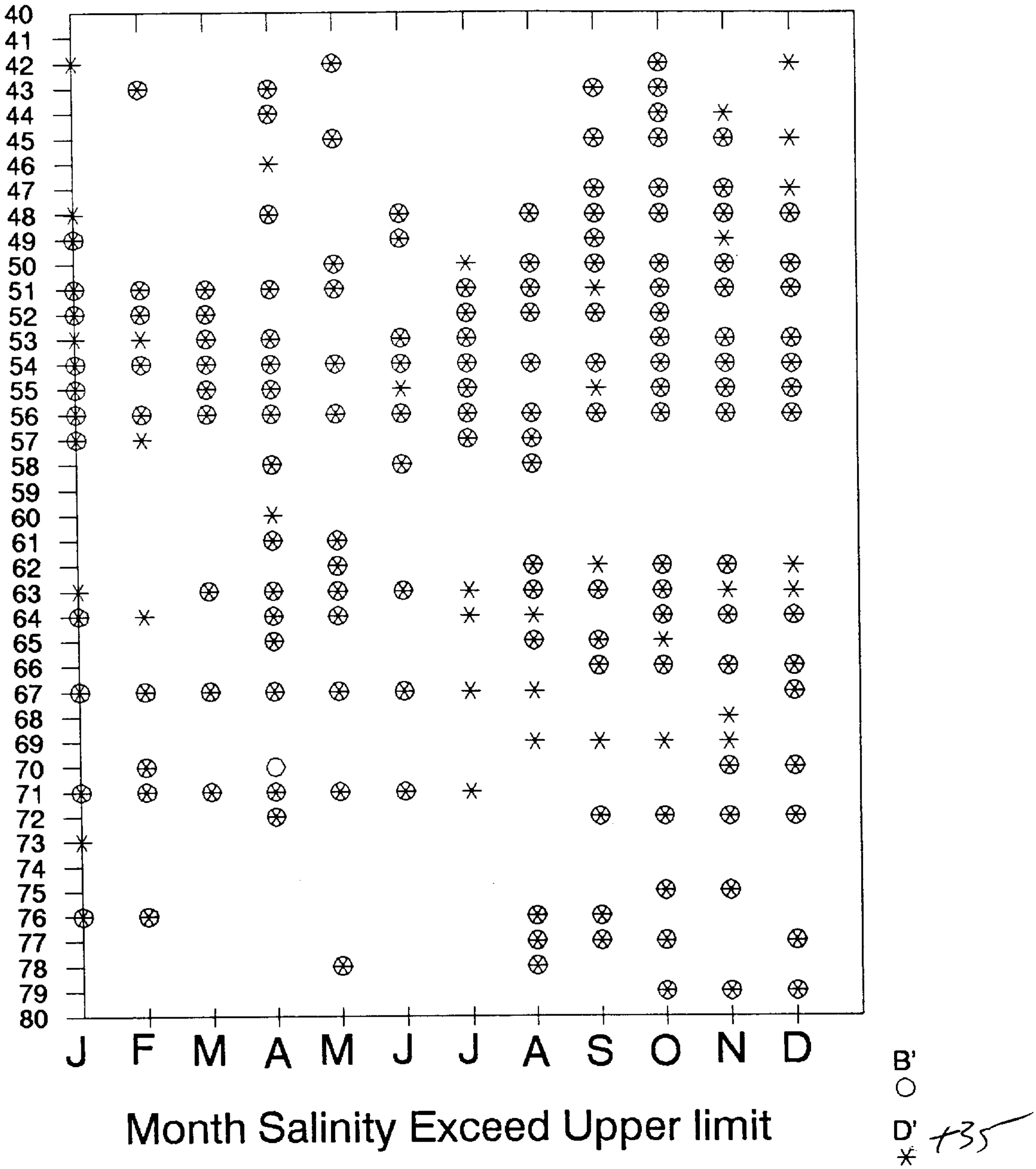
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	6.42	7.38	3.84	5.34	3.93	4.02	3.02	9.96	12.78	6.00	7.45	13.58	6.98
1942	27.45	19.31	12.62	6.54	23.23	22.43	2.35	24.06	11.77	22.35	15.76	29.92	18.18
1943	14.00	32.41	7.71	29.22	17.49	14.46	16.29	27.96	34.11	37.25	7.26	6.71	20.30
1944	4.62	11.22	3.27	20.12	5.29	13.68	28.15	29.30	14.75	32.08	14.64	6.57	15.32
1945	8.41	14.77	12.99	5.60	28.29	15.65	37.09	7.41	21.42	29.94	39.35	40.04	21.83
1946	11.38	5.91	6.95	15.57	8.39	4.19	9.13	7.98	5.52	4.51	5.09	13.69	8.22
1947	6.09	22.54	10.21	16.22	6.20	20.25	36.77	36.31	34.11	38.57	36.54	40.04	25.33
1948	29.74	9.64	8.52	33.58	6.55	19.45	29.23	36.31	34.11	38.57	39.35	40.04	27.14
1949	37.47	13.39	22.22	5.91	15.67	21.17	24.32	22.24	34.11	4.12	25.87	5.33	19.82
1950	10.30	10.52	27.79	17.38	24.43	7.27	38.63	36.31	34.11	38.57	39.35	40.04	27.22
1951	41.30	39.78	32.84	38.76	36.54	14.98	38.63	36.31	20.12	36.18	39.35	40.04	34.27
1952	41.30	39.78	32.84	12.91	5.22	10.22	38.63	36.31	34.11	38.57	13.09	7.03	25.85
1953	22.76	32.92	31.65	31.30	6.13	29.29	38.63	7.27	8.75	38.04	39.35	40.04	27.20
1954	41.30	39.78	32.84	25.21	25.83	30.29	38.63	36.31	34.11	38.57	39.35	40.04	35.18
1955	41.30	9.93	32.84	37.75	9.89	16.83	38.63	17.93	32.84	38.57	39.35	40.04	29.80
1956	41.30	39.78	32.84	38.76	36.54	30.29	38.63	36.31	34.11	38.57	39.35	40.04	37.21
1957	41.30	27.66	9.74	5.93	6.30	5.50	38.63	36.31	18.67	3.78	4.35	21.07	18.30
1958	6.20	4.41	13.65	26.46	9.64	27.82	17.11	36.31	11.15	10.97	14.96	8.62	15.65
1959	16.39	3.32	13.34	5.07	10.11	7.49	22.18	12.54	15.31	5.62	7.76	7.29	10.84
1960	9.81	8.54	16.09	16.86	13.30	3.29	5.54	5.95	16.96	3.29	4.44	3.88	8.98
1961	4.93	3.80	13.10	22.15	22.84	3.87	3.54	23.42	3.76	17.25	4.76	23.11	12.32
1962	24.05	25.69	22.07	8.56	18.39	10.72	14.73	36.31	19.42	26.56	36.19	35.79	23.20
1963	25.76	12.49	26.24	38.75	36.54	28.49	23.10	36.31	34.11	38.57	39.35	40.04	31.76
1964	37.73	29.44	20.13	26.67	36.30	10.82	38.63	36.31	10.92	20.99	39.35	40.04	29.02
1965	8.71	5.89	20.14	27.14	4.78	6.42	28.98	35.21	34.11	22.30	4.96	7.51	17.26
1966	11.89	7.15	10.44	7.52	5.50	7.60	15.81	14.53	28.11	38.57	39.35	40.04	18.95
1967	41.30	39.78	32.84	26.60	33.11	30.29	38.63	36.31	4.19	5.71	23.80	40.04	29.39
1968	4.38	13.23	11.73	14.00	4.79	2.98	6.34	24.99	16.49	17.16	21.20	9.40	12.20
1969	14.57	4.30	5.07	5.37	4.72	12.79	29.15	33.02	30.39	19.20	27.11	9.01	16.29
1970	9.37	29.36	5.26	15.42	4.74	6.96	18.82	30.56	7.43	5.50	31.96	40.04	17.04
1971	39.71	39.78	29.87	38.76	36.54	18.18	38.63	9.56	5.11	6.49	24.28	5.41	24.26
1972	8.71	6.85	10.56	28.36	3.60	7.33	9.73	16.14	31.55	31.69	33.96	40.04	19.04
1973	26.70	10.04	4.31	4.00	7.98	2.37	6.49	11.15	5.53	4.17	9.50	18.78	9.29
1974	4.84	12.74	14.77	14.34	6.45	5.40	25.12	15.09	4.32	12.83	4.68	7.45	10.69
1975	12.88	13.91	19.42	9.04	4.27	5.61	5.55	13.86	15.85	24.62	31.46	8.75	13.75
1976	32.61	38.47	25.33	10.32	7.05	7.08	6.35	31.83	27.09	6.84	8.16	2.31	16.88
1977	9.61	5.02	14.33	5.93	14.42	6.74	21.77	33.03	27.39	37.33	14.11	40.04	19.57
1978	9.64	10.08	18.62	14.86	31.65	9.26	31.31	36.31	3.90	13.96	11.82	22.20	17.90
1979	4.03	5.29	6.86	5.77	4.18	5.04	7.72	23.45	4.69	24.08	30.89	36.24	13.27
AVERAGE	20.25	18.27	17.39	18.42	15.05	12.87	23.43	25.59	19.93	22.51	23.31	24.36	20.15
MAXIMUM	41.30	39.78	32.84	38.76	36.54	30.29	38.63	36.31	34.11	38.57	39.35	40.04	
MINIMUM	4.03	3.80	3.27	4.00	3.60	2.37	2.35	5.95	3.76	3.29	4.35	2.31	
STD DEV	14.10	13.02	9.35	11.60	11.75	8.91	13.32	11.06	11.61	13.73	13.04	15.29	

TABLE E-4 SIMULATED LAVACA BAY MONTHLY-AVERAGE SALINITIES FOR CASE D' BASED ON LAVACA AND NAVIDAD RIVER GAGE SITE REGRESSIONS

SUMMARY OF MONTHLY SALINITIES IN LAVACA BAY BASED ON TWDR LP 106 S-Q REGRESSIONS IN PPT

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	6.42	7.58	3.84	5.34	3.93	4.02	3.00	9.51	11.60	6.32	7.32	14.07	6.90
1942	20.02	17.97	13.97	6.60	17.25	12.95	2.45	15.59	11.05	16.20	17.67	22.56	14.52
1943	18.06	22.10	9.22	21.55	12.94	11.93	11.99	19.63	33.77	34.59	10.39	6.71	17.69
1944	4.62	10.91	3.28	16.14	5.36	10.94	16.36	15.81	11.74	25.57	20.40	9.17	12.51
1945	8.52	14.59	13.35	5.67	20.18	12.27	16.85	8.36	17.28	15.20	32.65	31.40	16.37
1946	17.70	5.93	6.95	15.08	8.44	4.19	8.36	8.25	5.52	4.49	5.13	12.96	8.62
1947	6.14	16.55	11.31	14.18	6.33	14.55	17.87	18.30	21.40	38.57	34.23	40.04	19.97
1948	24.51	14.47	8.74	22.20	6.70	15.66	17.67	29.98	18.87	38.57	39.35	40.04	23.10
1949	35.33	18.65	16.12	6.29	12.85	15.73	14.51	15.94	18.14	4.38	21.36	5.41	15.36
1950	10.19	10.63	19.27	14.93	18.44	7.94	21.89	29.65	18.66	38.57	39.35	40.04	22.58
1951	41.30	39.78	32.84	38.76	36.54	10.84	38.63	36.31	19.83	34.18	39.35	40.04	34.06
1952	41.30	33.34	32.84	12.81	5.47	9.47	23.08	25.72	21.50	38.57	12.96	8.64	22.60
1953	20.12	23.51	23.33	27.18	6.27	19.94	27.98	8.32	8.48	25.72	33.36	36.60	21.72
1954	41.30	39.78	32.84	24.78	25.10	30.29	38.63	36.31	34.11	38.57	39.35	40.04	35.08
1955	41.30	9.90	32.84	35.86	9.87	16.54	38.63	17.72	31.39	38.57	39.35	40.04	29.48
1956	41.30	39.78	32.84	38.76	36.54	30.29	38.63	36.31	34.11	38.57	39.35	40.04	37.21
1957	41.30	27.20	9.69	6.11	6.26	5.44	36.63	32.75	13.12	3.88	4.36	17.25	17.19
1958	6.29	4.41	12.18	20.37	10.04	20.13	13.54	22.86	9.74	10.74	19.46	14.03	13.68
1959	15.48	3.83	13.98	5.07	10.15	7.55	14.61	14.06	12.55	5.77	7.70	7.54	9.93
1960	9.65	8.67	14.27	15.50	13.25	3.31	5.48	5.97	13.63	3.32	4.44	3.88	8.44
1961	4.93	3.80	12.19	16.52	18.68	3.94	3.56	15.02	3.78	13.61	4.92	17.32	9.93
1962	18.30	18.32	16.04	9.40	15.46	8.37	15.96	26.58	15.25	25.63	33.95	34.13	19.88
1963	22.88	13.28	20.32	34.74	34.51	27.19	22.22	36.31	34.11	38.57	39.35	40.04	30.39
1964	35.55	28.49	19.64	25.95	34.08	9.81	38.63	35.57	11.82	17.18	36.87	40.04	27.87
1965	10.01	6.46	16.11	21.24	4.84	6.21	14.34	20.20	22.92	16.12	5.60	7.56	12.67
1966	11.91	7.15	10.44	7.32	5.49	7.60	12.36	15.53	16.66	21.51	39.35	40.04	16.36
1967	41.30	39.78	31.92	25.90	31.66	30.29	38.63	36.31	4.29	5.67	18.71	30.93	27.94
1968	4.45	13.05	11.39	12.80	4.85	2.98	6.34	16.05	12.18	13.84	20.53	14.28	11.04
1969	17.66	4.35	5.07	5.37	4.70	10.66	16.71	22.45	25.60	17.58	20.81	12.42	13.67
1970	10.08	20.62	5.36	14.25	4.77	6.58	13.64	18.47	7.95	5.60	23.43	34.57	13.73
1971	29.84	28.99	24.64	36.37	36.54	17.80	38.63	9.02	5.26	6.47	18.42	5.53	21.42
1972	8.86	6.77	10.81	22.17	3.60	7.29	10.37	14.22	16.05	16.69	21.02	34.96	14.42
1973	20.01	14.76	4.49	4.08	7.79	2.37	6.25	11.23	5.54	4.17	9.79	16.54	8.91
1974	4.87	11.90	13.69	14.51	6.46	5.39	13.49	14.63	4.49	11.31	4.81	7.46	9.42
1975	12.51	13.11	14.93	9.37	4.29	5.51	5.72	13.64	12.82	15.07	22.56	14.86	12.02
1976	23.80	27.76	19.84	9.33	7.25	7.32	6.76	22.84	16.18	6.84	9.85	2.31	13.31
1977	9.61	5.01	12.18	6.00	12.29	6.99	13.49	24.65	16.88	23.69	15.15	30.81	14.85
1978	12.13	9.96	15.83	13.09	25.31	9.27	14.18	25.67	3.98	11.87	15.15	19.54	14.76
1979	4.05	5.29	6.86	5.78	4.18	4.97	8.77	14.86	4.75	16.60	21.97	22.34	10.08
AVERAGE	19.32	16.77	15.78	16.61	13.81	11.41	18.17	20.53	15.56	19.19	21.79	22.98	17.68
MAXIMUM	41.30	39.78	32.84	38.76	36.54	30.29	38.63	36.31	34.11	38.57	39.35	40.04	
MINIMUM	4.05	3.30	3.29	4.08	3.60	2.37	2.45	5.97	3.78	3.32	4.36	2.31	
STD DEV	13.09	11.40	8.89	10.33	10.78	7.24	11.91	9.28	9.01	12.68	12.57	13.68	

Salinity with Inflows B' & D'



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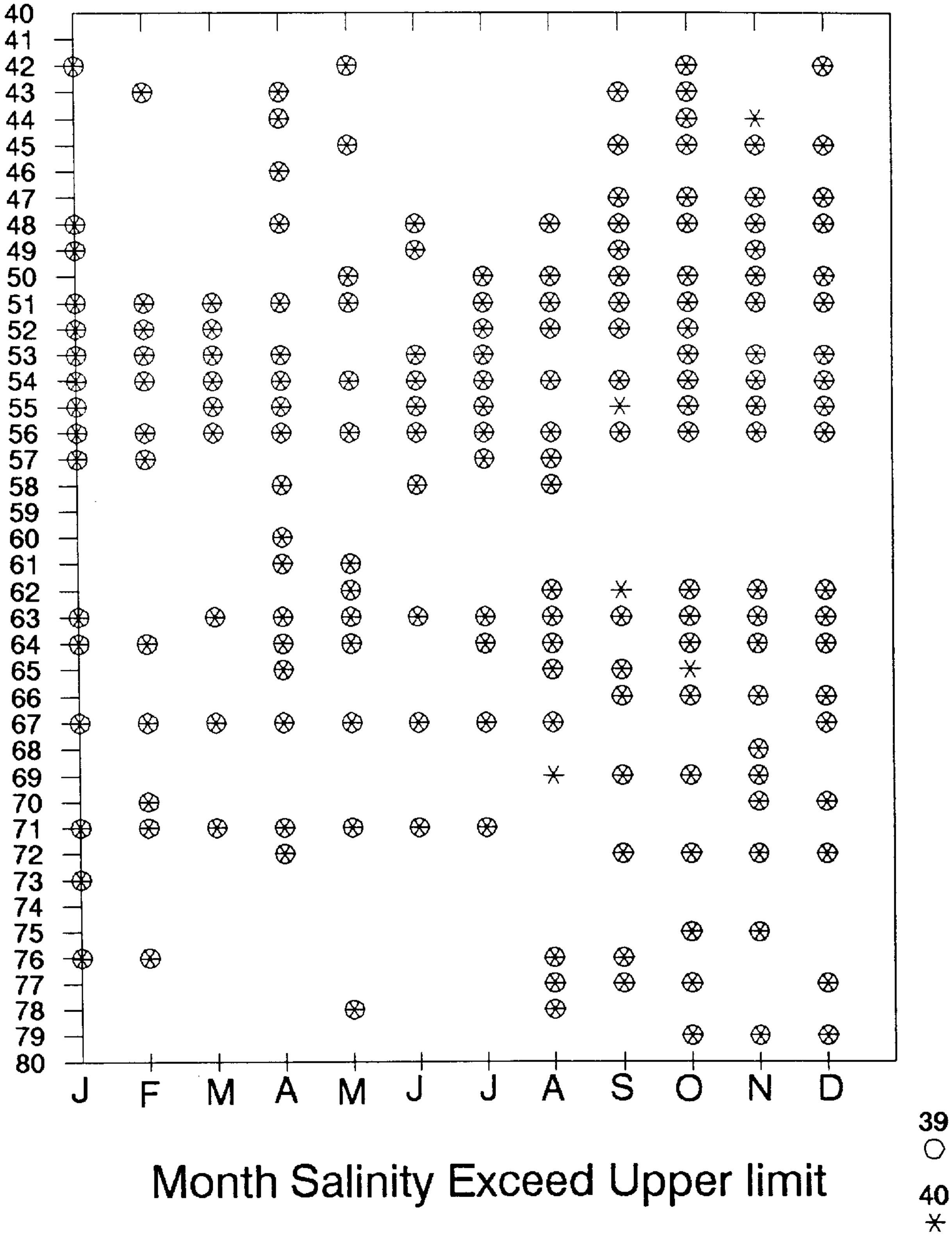
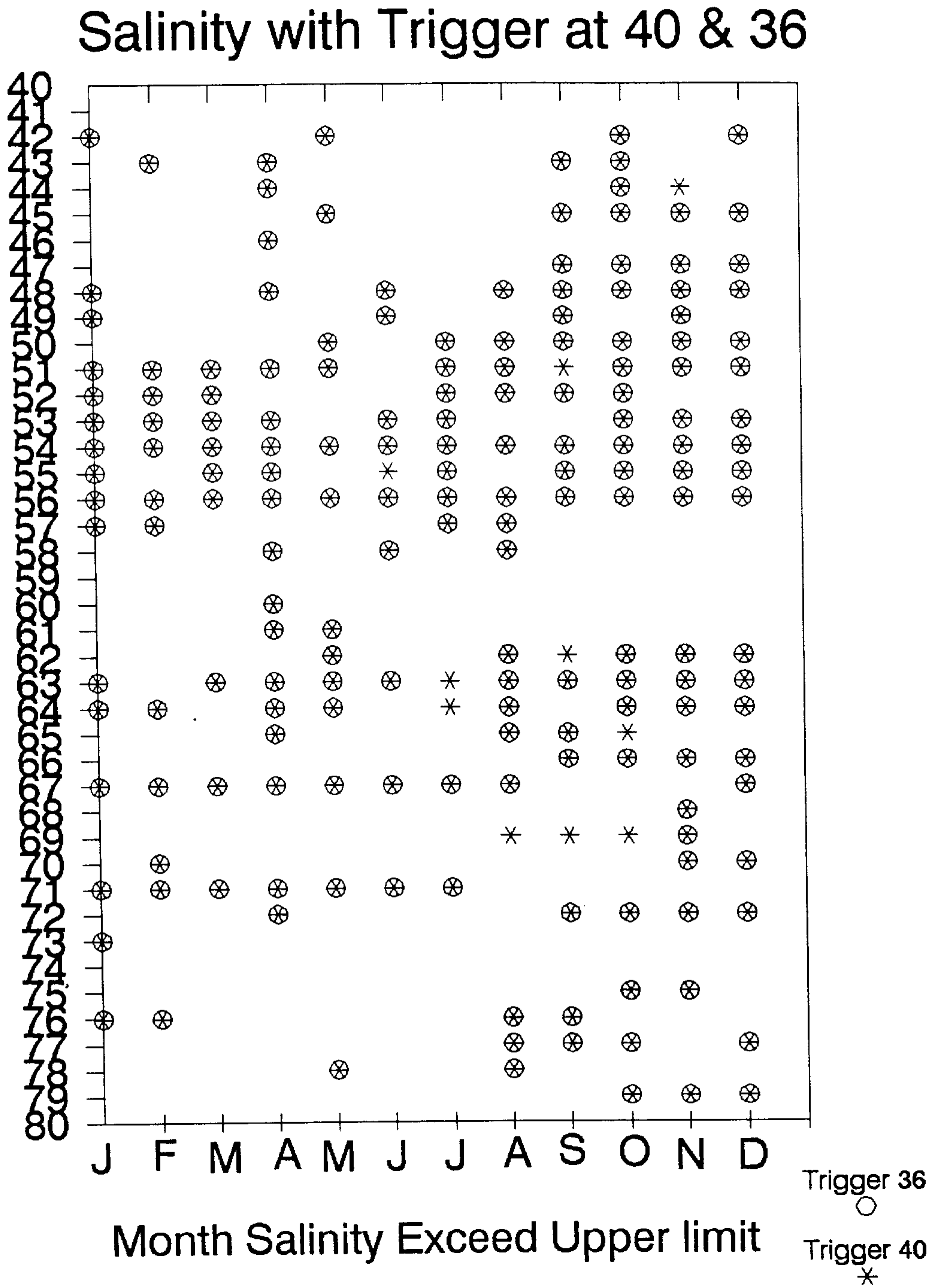
Effects on Salinity with Releases





Salinity with Trigger at 40 & 36
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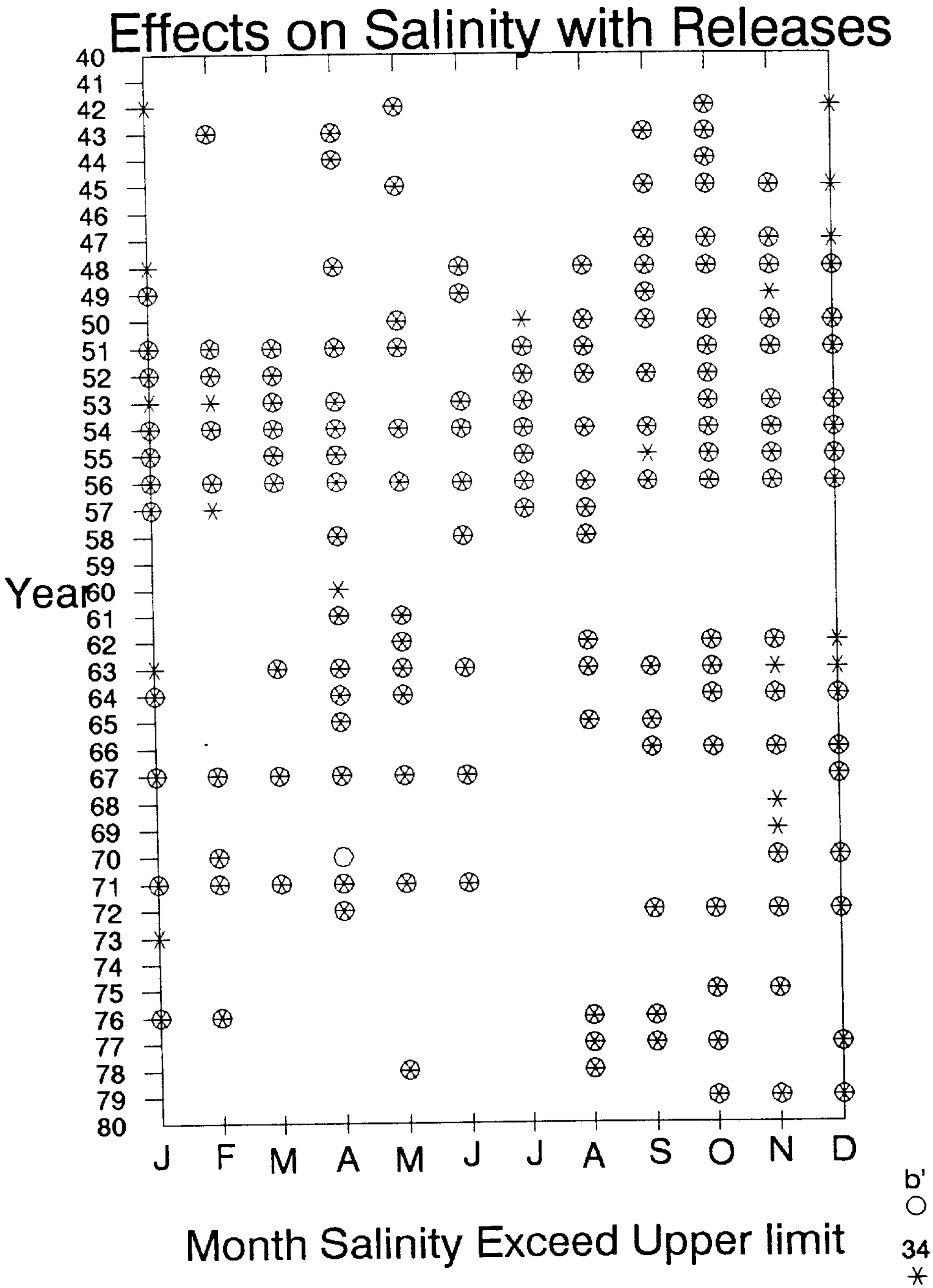
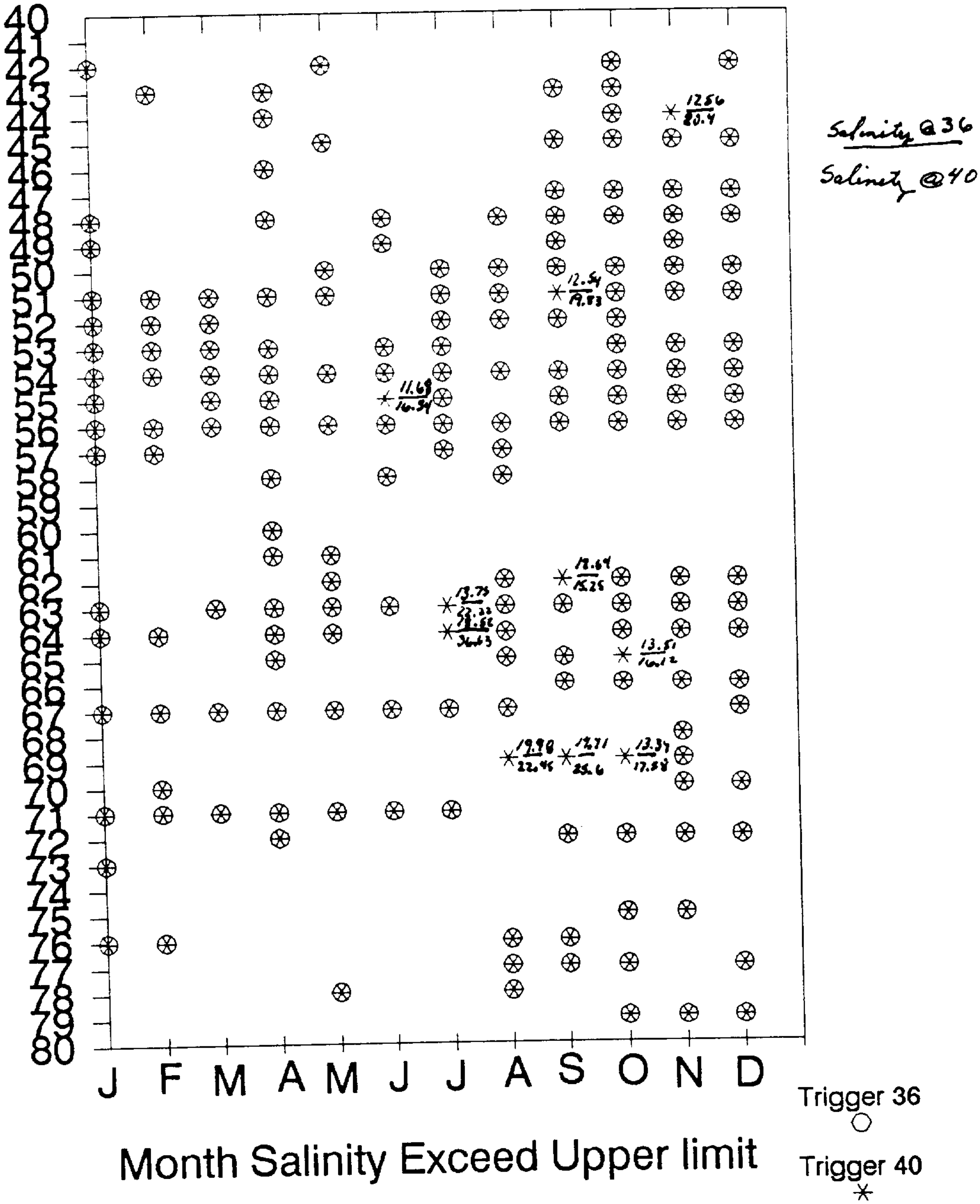
J F M A M J J A S O N D
Month Salinity Exceed Upper limit
Trigger 36
Trigger 40

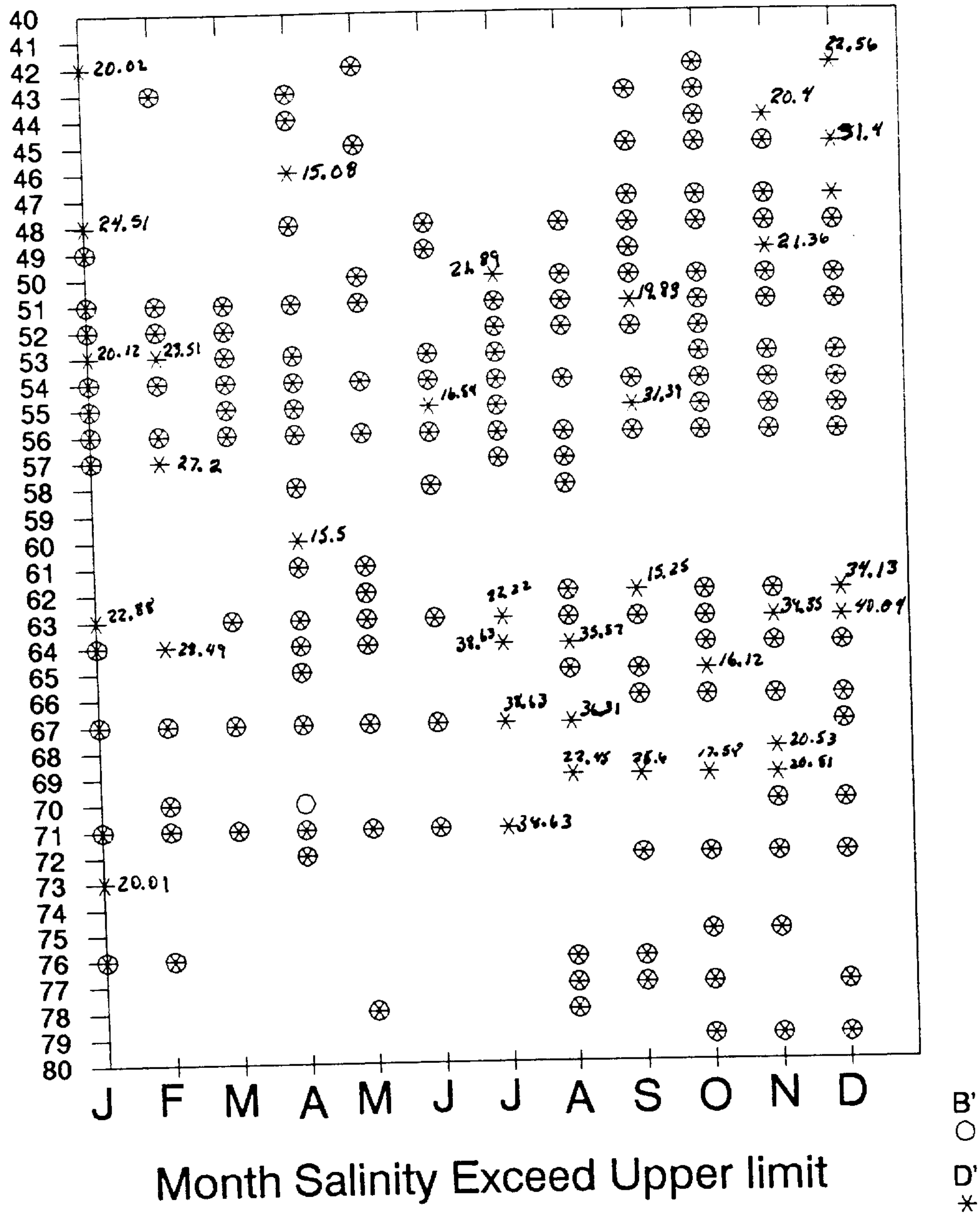


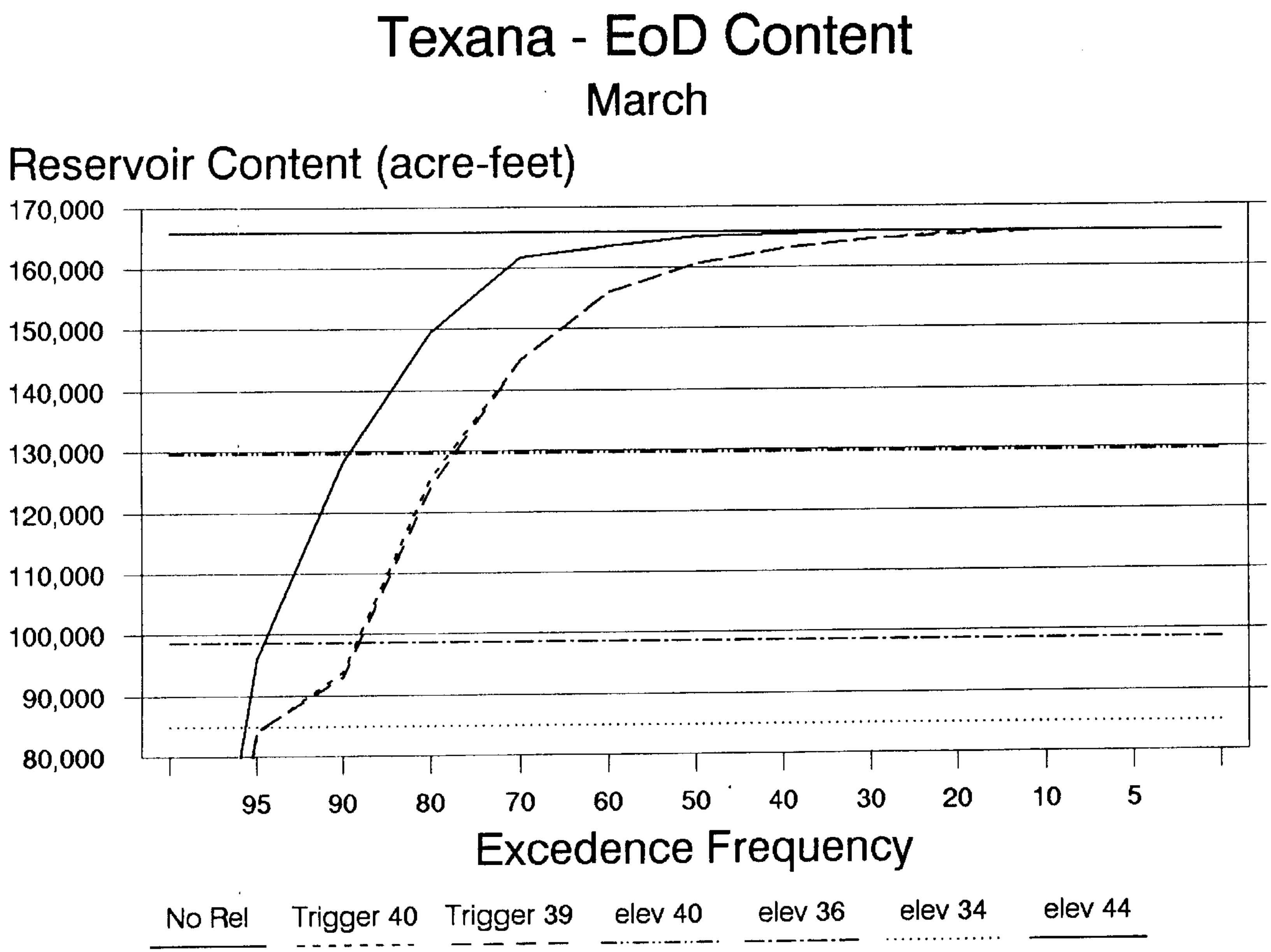
Effects on Salinity with Releases
Year
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
J F M A M J J A S O N D
Month Salinity Exceed Upper limit
b'
34

Salinity with Trigger at 40 & 36

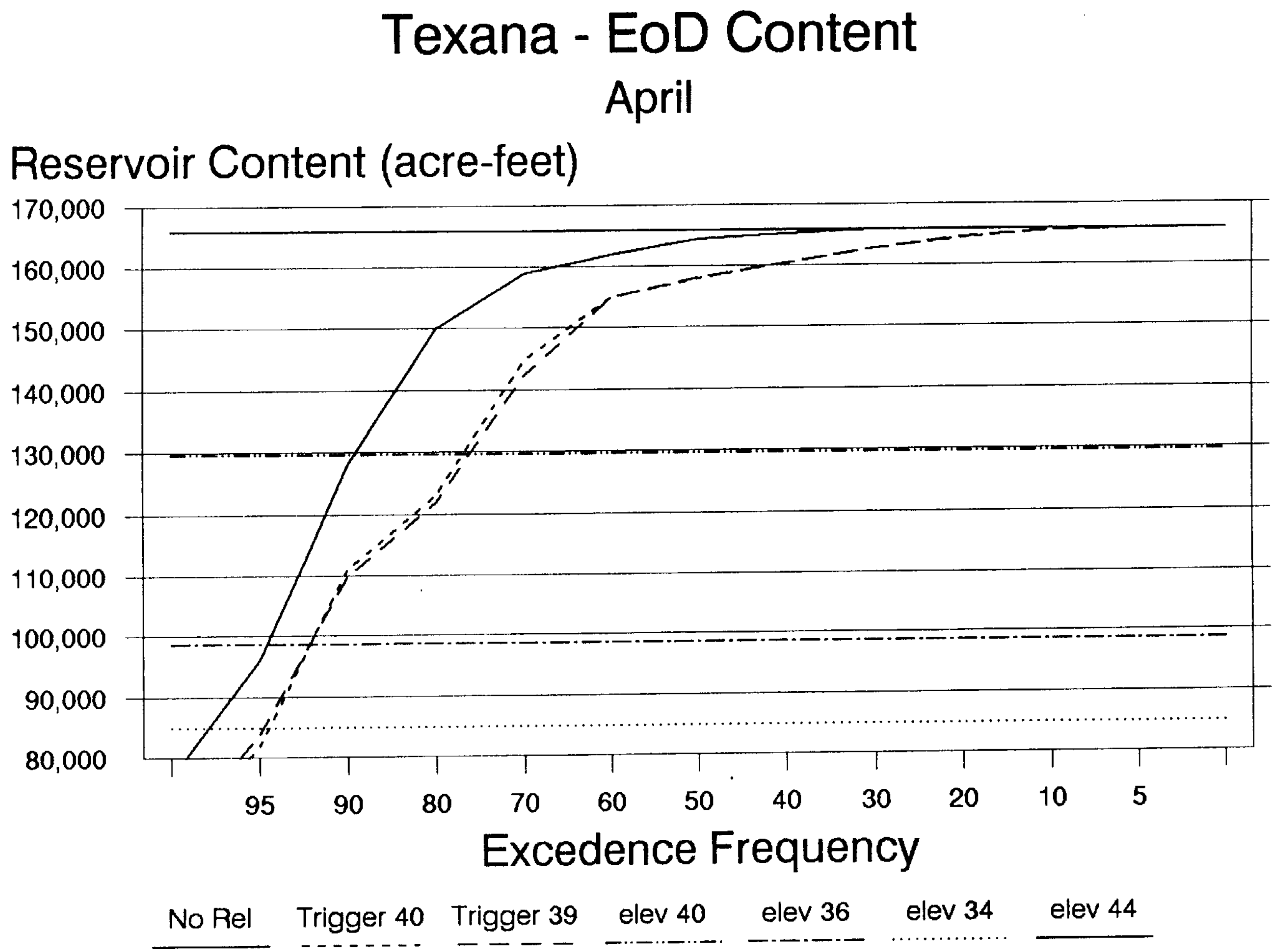


Salinity with Inflows B' & D'

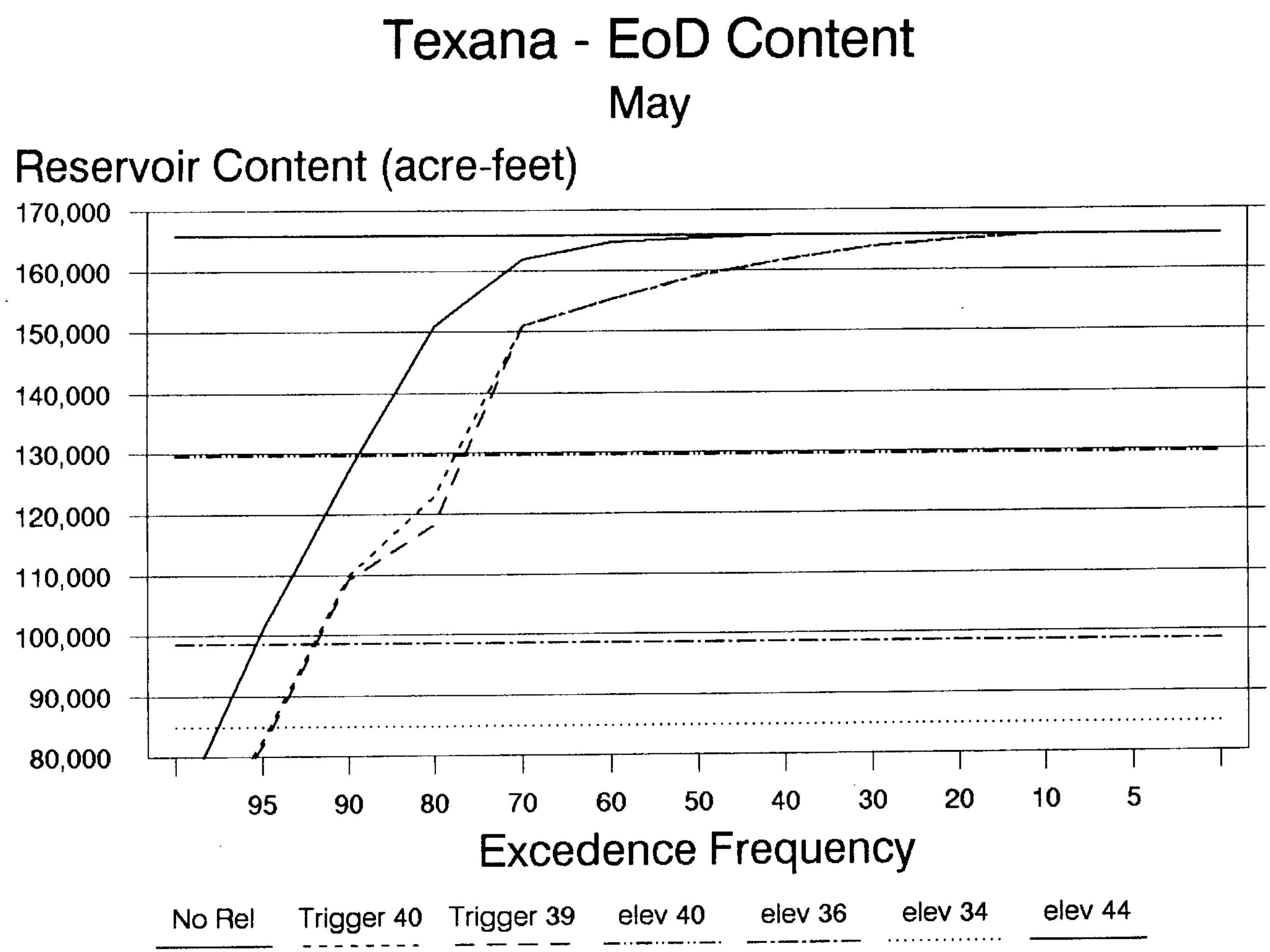




Texana - EoD Content
March
Reservoir Content (acre-feet)
170,000
160,000
150,000
140,000
130,000
120,000
110,000
100,000
90,000
80,000
95
90
80
70
60
50
40
30
20
10
5
Excedence Frequency
No Rel
Trigger 40
Trigger 39
elev 40
elev 36
elev 34
elev 44

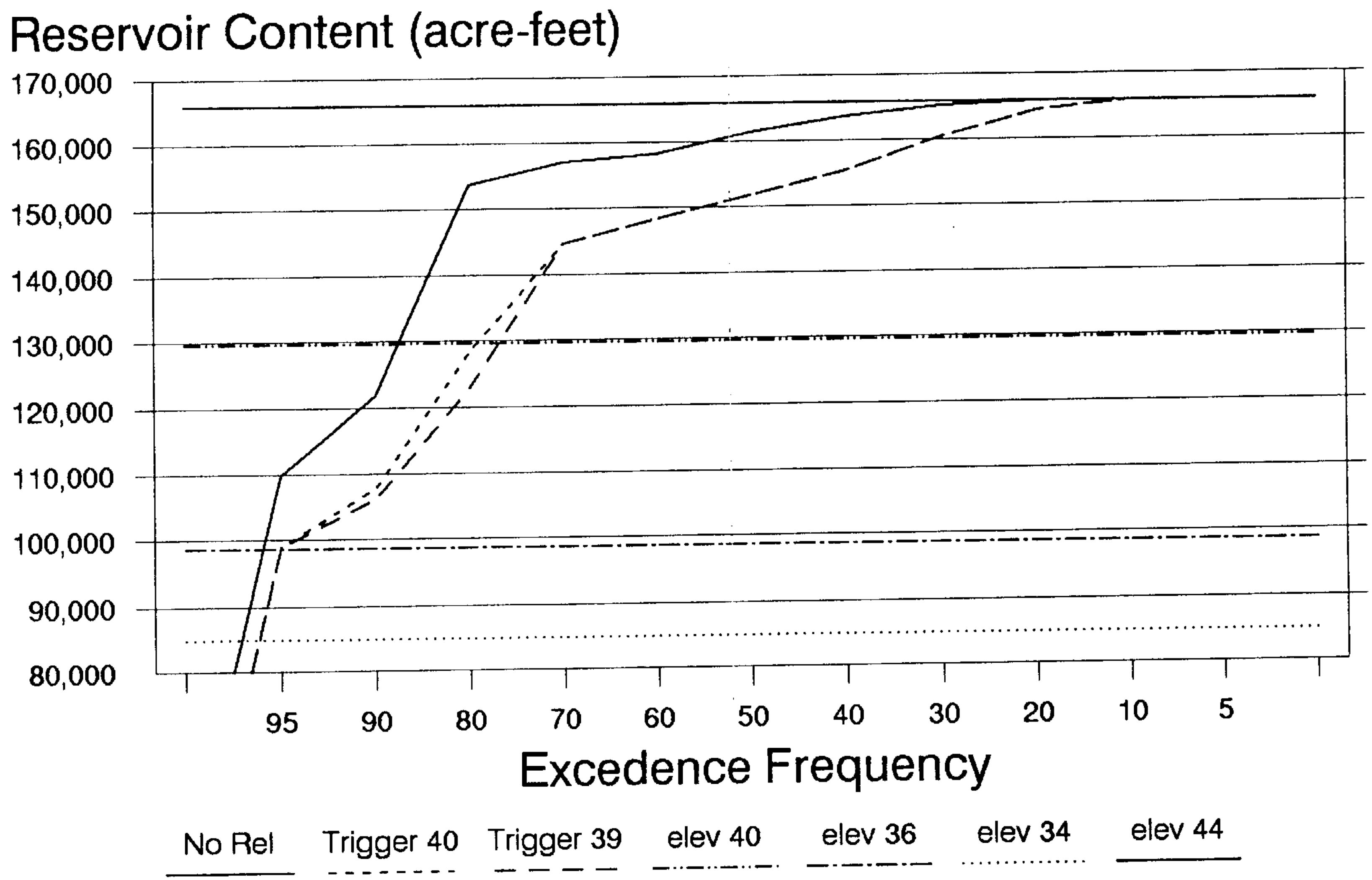


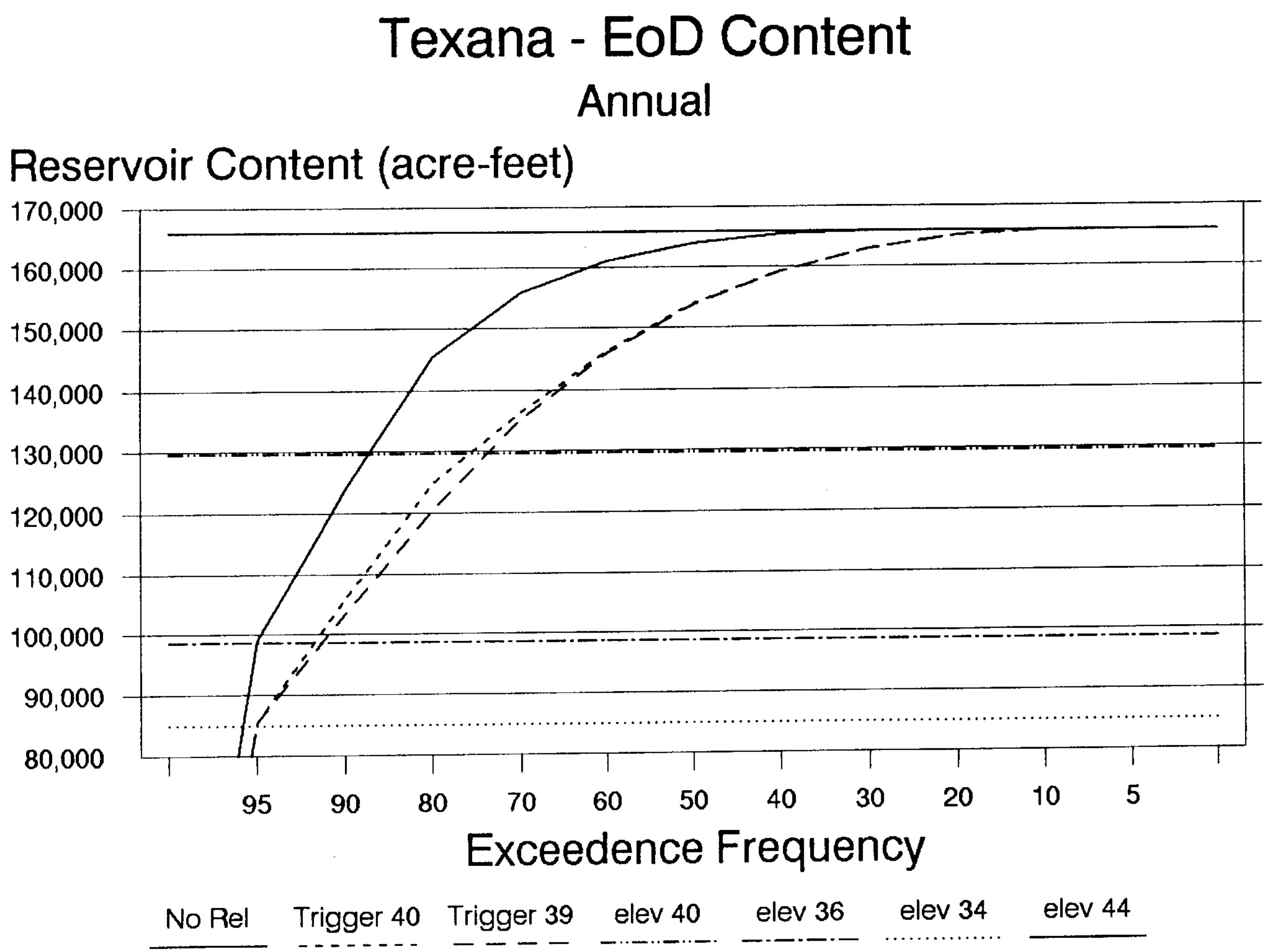
Texana - EoD Content
April
Reservoir Content (acre-feet)
170,000
160,000
150,000
140,000
130,000
120,000
110,000
100,000
90,000
80,000
95
90
80
70
60
50
40
30
20
10
5
Excedence Frequency
No Rel
Trigger 40
Trigger 39
elev 40
elev 36
elev 34
elev 44


Texana - EoD Content
May
Reservoir Content (acre-feet)
170,000
160,000
150,000
140,000
130,000
120,000
110,000
100,000
90,000
80,000
95
90
80
70
60
50
40
30
20
10
5
Excedence Frequency
No Rel
Trigger 40
Trigger 39
elev 40
elev 36
elev 34
elev 44

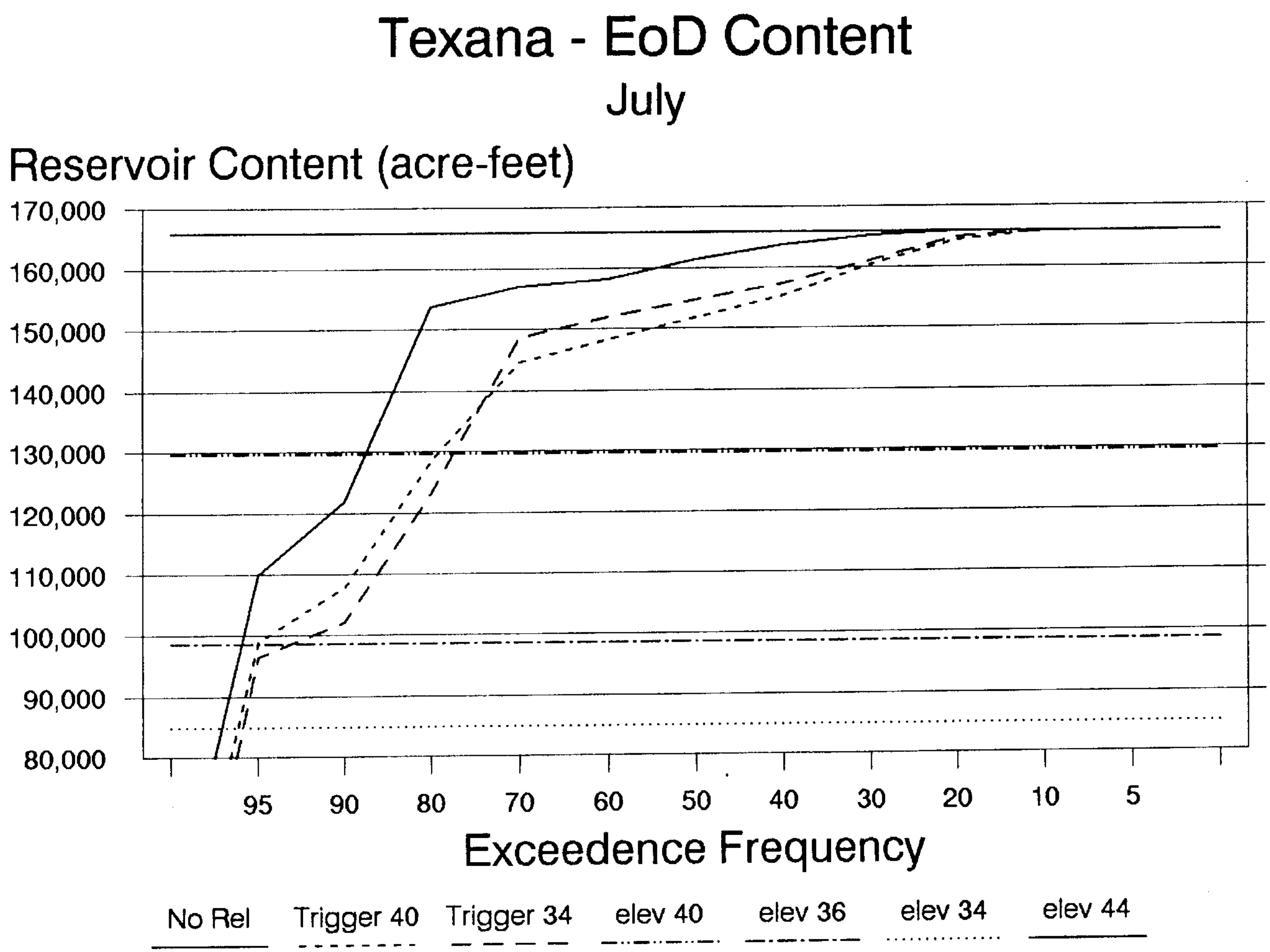
Texana - EoD Content

July





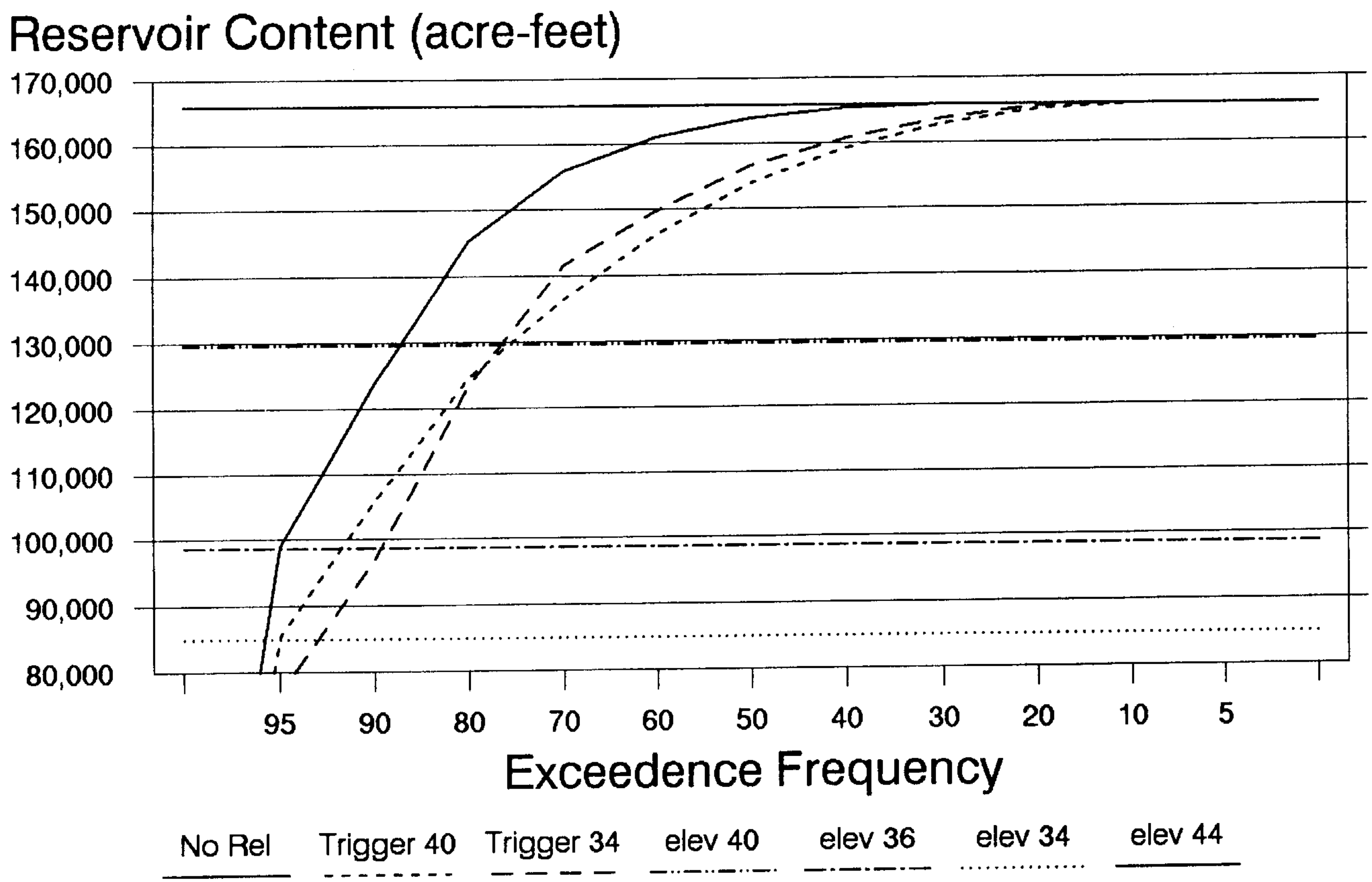
Texana - EoD Content
Annual
Reservoir Content (acre-feet)
170,000
160,000
150,000
140,000
130,000
120,000
110,000
100,000
90,000
80,000
95
90
80
70
60
50
40
30
20
10
5
Exceedence Frequency
No Rel
Trigger 40
Trigger 39
elev 40
elev 36
elev 34
elev 44



Texana - EoD Content
July
Reservoir Content (acre-feet)
170,000
160,000
150,000
140,000
130,000
120,000
110,000
100,000
90,000
80,000
95
90
80
70
60
50
40
30
20
10
5
Exceedence Frequency
No Rel
Trigger 40
Trigger 34
elev 40
elev 36
elev 34
elev 44

Texana - EoD Content

Annual



Texana - EoD Content

Annual

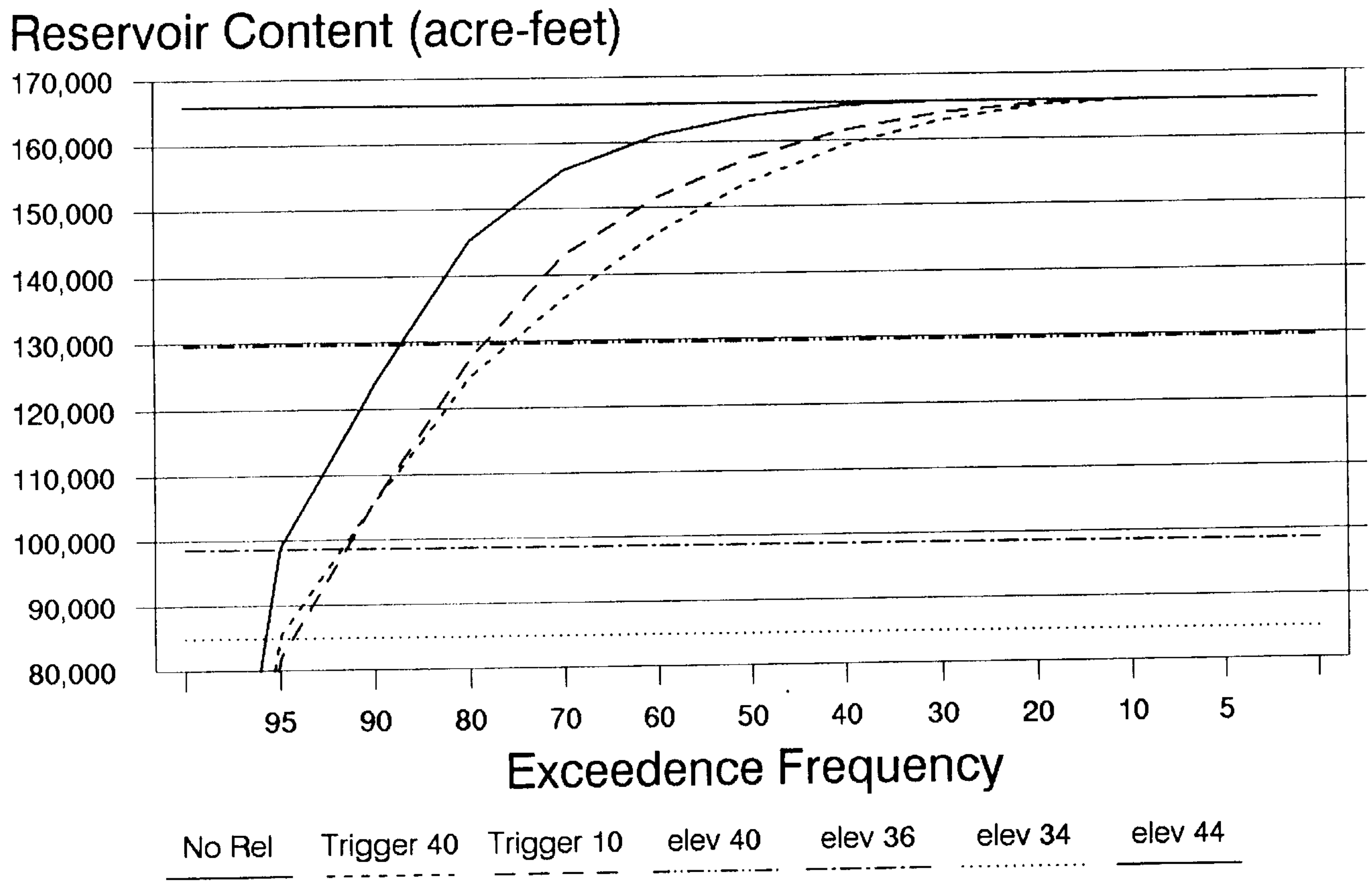


TABLE 4-8, Cont'd.

NUMBER OF CONSECUTIVE-MONTH EVENTS WITH SALINITIES GREATER THAN 35.0 PPT									
CONSEC-UTIVE MONTHS	MAXIMUM NUMBER OF EVENTS	CASE A	CASE B	CASE C	CASE D	CASE A'	CASE B'	CASE C'	CASE D'
1	468	6	5	11	12	9	8	19	8
2	467	3	3	7	3	7	6	16	9
3	466	2	1	3	1	3	3	2	1
4	465	0	1	4	2	1	1	4	6
5	464	0	0	1	0	1	1	6	2
6	463	0	0	1	0	0	0	0	0
7	462	0	1	1	2	0	0	0	0
8	461	1	1	0	1	0	0	0	0
9	460	0	0	2	0	0	0	0	0
10	459	0	0	0	0	0	0	0	0
11	458	0	0	0	0	0	0	0	0
12	457	0	0	0	0	0	0	0	0
13	456	0	0	0	0	0	0	0	0
14	455	0	0	0	0	0	0	0	0
15	454	0	0	0	0	0	0	0	0
16	453	0	0	1	1	0	0	0	0

to 40.4 percent (with the proposed release program in effect), considering that violations of the upper salinity viability limits probably have occurred historically about a third of the time? If such salinity reductions could be realized, what effect would they have on the overall estuarine ecosystem, particularly with regard to fish and shellfish resources? These are questions that estuarine biologists and ecologists will have to answer in order for the acceptability of the TPWD/TWDB proposed Lake Texana release program to be finally determined.

SECTION 5. ALTERNATIVE RELEASE PROGRAMS

The TPWD/TWDB proposed release program (MLRS3) for Lake Texana that has been described and evaluated in the previous sections provides for a two-phased release schedule that is dependent upon the daily stage of the reservoir. When the level of the reservoir is above elevation 40 feet MSL, releases are made to pass all inflows to the reservoir up to: (1) the daily equivalent of the historical monthly median flows in the Navidad River for the months of November through March and July, and (2) the daily equivalent of the historical monthly mean flows for the remaining months. For reservoir stages below elevation 40 feet MSL, all inflows up to the annual median daily flow in the river for the historical critical drought period from January, 1954, through December, 1956, or about 5.0 cfs, are released. The reservoir stage condition at elevation 40 feet MSL is referred to herein as the "trigger level" for the proposed MLRS3 release program.

To investigate the effect of varying the elevation of the trigger level on the low-flow releases from Lake Texana, on the firm annual yield of the reservoir and on salinity conditions in Lavaca Bay, analyses have been performed similar to those described in the previous sections for the TPWD/TWDB proposed release program (MLRS3). The SIMDLY reservoir daily operations model of Lake Texana has been operated by the TWDB to simulate the daily releases from the reservoir for stage trigger levels ranging from elevation 10 feet MSL up to elevation 42 feet MSL. For these simulations, the same inflows to Lake Texana (1941-1979 hydrologic conditions) that were used for the previous analyses of the TPWD/TWDB proposed release program (MLRS3) were specified as the inputs to the reservoir. For each trigger level analyzed, the firm annual yield of the reservoir was determined, and the resulting daily releases from the reservoir were summed by month over the entire 1941-1979 simulation period. Using the several sets of simulated monthly releases from the reservoir for the various trigger levels analyzed, the corresponding monthly salinity concentrations in Lavaca Bay then were determined using both the total inflow and the gage site monthly salinity-flow regression equations.

To assess the effect of varying the stage trigger level for the Lake Texana releases on salinity conditions in Lavaca Bay, the sets of calculated monthly salinities for the various trigger levels have been analyzed to determine the numbers of months during the 1941-1979 simulation period when the upper and the lower salinity viability limits listed in Table 4-5 for upper Lavaca Bay are violated. These results are listed in Table 5-1 for both sets of the salinity regression equations, together with the corresponding firm annual yield figures as determined by the TWDB.

The variations of the numbers of months with salinity viability limit violations over the specified range of stage trigger levels for the Lake Texana releases are illustrated by the graphs in Figure 5-1. For both the upper and the lower salinity viability limits, two curves are indicated; one based on the total inflow regression equations and the other based on the gage site regressions. Also plotted in this figure is the variation of the firm annual yield of the reservoir with changing trigger levels.

To understand and interpret the meaning of the various curves plotted in Figure 5-1, it is important to recognize that, in general, a decrease in the elevation of the stage trigger level results in a corresponding increase in the amount of water released from the reservoir during non-flood periods. Based on the general formulation of the TPWD/TWDB proposed release program, when the water surface elevation of the reservoir is above the specified stage trigger level, releases are made equal to the inflows to the reservoir up to either the 1940-1979 historical daily median inflow or the 1940-1979 historical daily mean inflow, depending on the month of the year. For reservoir elevations below the stage trigger level, releases are made at a rate of 5.0 cfs, which is the historical daily median flow condition that occurred during the drought of the 1950's. Since the 1940-1979 daily median and mean flows are significantly greater than 5.0 cfs (see tabulated flows in Section 2), considerably more water potentially can be released from the reservoir when the water surface elevation is above the specified stage trigger level. It follows, then, as the stage trigger level is lowered, more water can be released from the reservoir.

Higher releases of fresh water from the reservoir translate to lower salinities in Lavaca Bay, which, in turn, results in fewer violations of the upper salinity viability limits. This

TABLE 5-1 SUMMARY OF RESULTS FROM ANALYZING THE EFFECTS OF VARYING STAGE TRIGGER LEVELS ON RESERVOIR YIELD AND LAVACA BAY SALINITIES

STAGE TRIGGER LEVEL	FIRM ANNUAL YIELD	NUMBERS OF MONTHS WITH VIOLATIONS OF THE UPPER SALINITY VIABILITY LIMITS 1941-1979 PERIOD		NUMBERS OF MONTHS WITH VIOLATIONS OF THE LOWER SALINITY VIABILITY LIMITS 1941-1979 PERIOD	
FEET MSL	AC-FT/YR	TOTAL INFLOW REGRESSIONS CASE D	GAGE SITE REGRESSIONS CASE D'	TOTAL INFLOW REGRESSIONS CASE D	GAGE SITE REGRESSIONS CASE D'
10	50,500	174	171	89	87
14	51,000	175	171	89	87
19	51,500	175	171	89	87
24	52,850	177	171	89	86
29	53,500	177	171	89	86
30	54,000	177	171	89	86
34	57,000	177	173	89	86
35	62,500	180	178	88	85
36	66,200	181	179	88	84
37	68,800	181	179	88	84
38	70,555	181	182	88	84
39	74,100	183	185	88	83
40	74,400	184	189	88	83
41	74,600	185	193	88	85
42	75,300	191	200	87	87
44	80,984	196	237	90	92

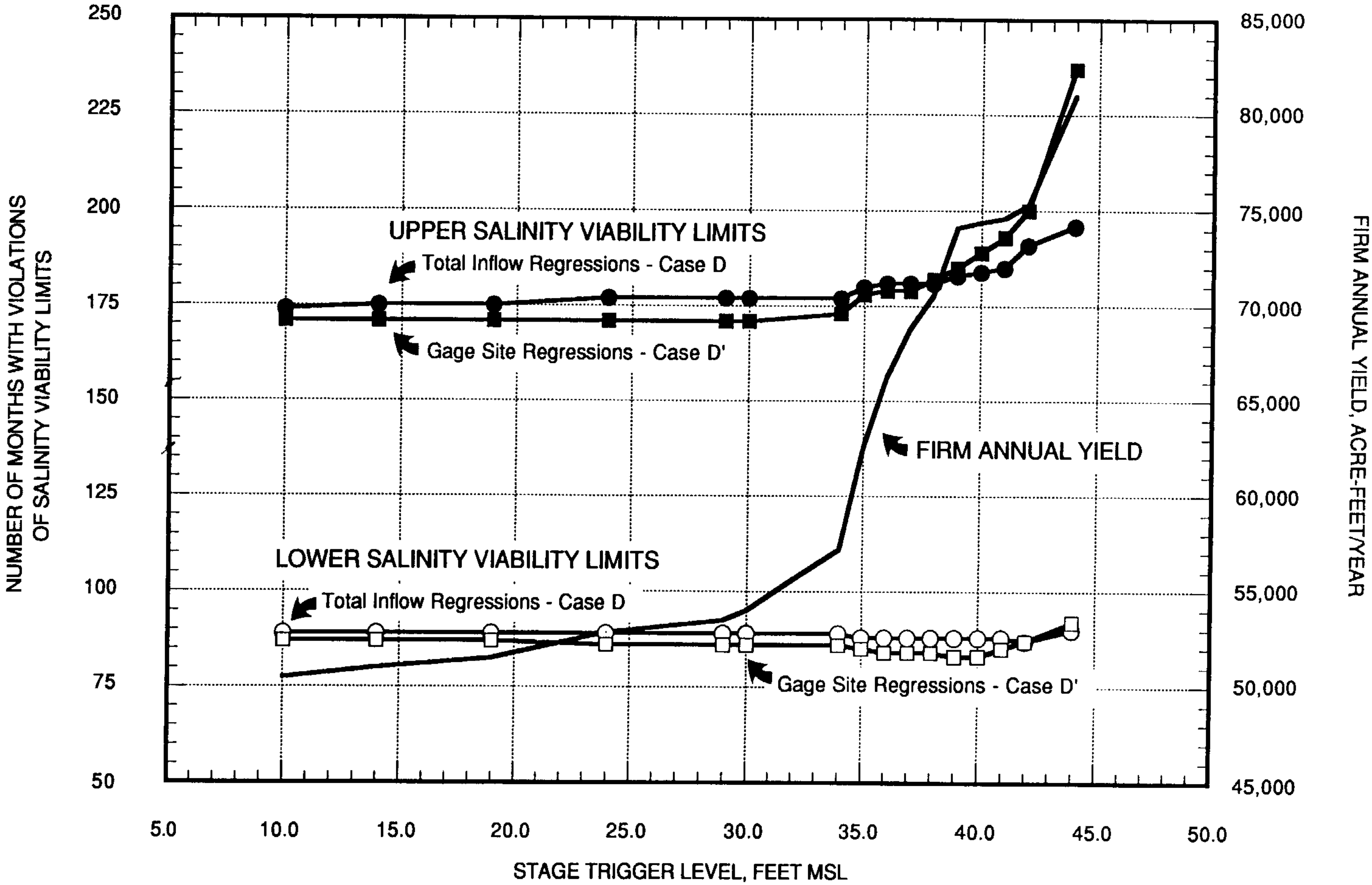


FIGURE 5-1 VARIATION OF RESERVOIR YIELD AND SALINITY VIABILITY LIMIT VIOLATIONS WITH RELEASE STAGE TRIGGER LEVEL BASED ON 1941-1979 SIMULATION PERIOD

trend is reflected by the curves in Figure 5-1 for the upper salinity viability limits. As the stage trigger level is lowered from elevation 44 feet MSL[1] , the numbers of months with violations of the upper salinity viability limits uniformly decrease from maximum values of 196 based on the total inflow regressions (Case D) and 237 based on the gage site regressions (Case D'). For the 1941-1979 simulation period, there is a total of 468 months when potential violations could occur. Hence, the maximum numbers of monthly violations that occur with the trigger level at elevation 44 feet MSL represent 41.9 percent and 50.6 percent, respectively, of the total number of possible violations.

The reductions in the numbers of violations of the upper salinity viability limits as the stage trigger level is decreased are directly attributable to corresponding increases in the releases from the reservoir. As indicated by the curves, this trend continues down to about elevation 34 feet MSL, below which the curves flatten and no pronounced decreases in violations occur. Below this trigger level, the numbers of violations of the upper salinity viability limits remain between about 170 and 175 for the two sets of regressions. These minimum numbers of monthly violations represent between 72 and 89 percent of the maximum numbers of monthly violations that occurred with the trigger level set at elevation 44 feet MSL. This is equivalent to reductions on the order of about 11.0 to 18.0 percent of the maximum trigger level condition, i. e., full capture mode without releases.

The flattening of the upper-limit salinity violation curves below about elevation 34 feet MSL suggests that no measureable benefits with respect to salinity may be realized by lowering the trigger level for the release program below this stage condition. As indicated by the firm annual yield curve in Figure 5-1, the yield of the reservoir at this threshhold trigger level condition is about 60,000 acre-feet. This magnitude of yield represents a reduction of approximately 20 percent in the currently-permitted authorized diversion for the reservoir (75,000 acre-feet/year) and a reduction of about 26 percent in the total yield of the reservoir when operated in the full capture mode without any releases for bay and estuary purposes (80,984 acre-feet/year).

[1] Since elevation 44 feet MSL is equal to the maximum conservation pool level of Lake Texana, this trigger level condition corresponds to a no-release condition whereby the reservoir is operated in the full capture mode.

The occurrence of the threshhold trigger level at elevation 34 feet MSL relates to the relative magnitudes of the required monthly release amounts, as dictated by the proposed release program, and the available monthly inflows to the reservoir during the 1941-1979 simulation period. It is apparent that the patterns of releases from the reservoir for trigger levels below this threshhold condition remain fairly consistent, with no appreciable difference in the overall inflows to the bay and no corresponding changes in violations of the upper salinity viability limits. At the lower trigger levels, this occurs because, under the general rules of the proposed release program, the releases from the reservoir are controlled more by the magnitude of the inflows to the reservoir, rather than by the required release amounts dictated by the release schedules. In other words, the inflows to the reservoir are much less than the required release amounts, and only these reservoir inflows are released to the bay. Hence, the predicted salinities in the bay based on the regression equations do not change appreciably as the trigger level is lowered.

The appropriate stage of the reservoir at which to set the release trigger level remains to be determined. It is apparent from the shape of the upper-limit salinity violation curves presented in Figure 5-1 that setting the trigger level below about elevation 34 feet MSL does not result in appreciable benefits to Lavaca Bay with respect to salinity. Furthermore, it is questionable whether setting the trigger level at elevation 34 feet MSL is reasonable considering that this operation results in reductions of only 11.0 to 18.0 percent in the numbers of monthly violations of the upper salinity viability limits, but causes the yield of the reservoir to be reduced to a level (60,000 acre-feet/year) that is approximately 20 percent below the currently-permitted authorized diversion for the reservoir (75,000 acre-feet/year) and about 26 percent below the total yield of the reservoir when operated in the full capture mode without any releases for bay and estuary purposes (80,984 acrfe-feet/year). Considering the shape of the yield curve in Figure 5-1, it appears that elevation 39 feet MSL may represent the optimum condition for the stage trigger level for releases from Lake Texana.

SECTION 6. SUMMARY AND CONCLUSIONS

The TPWD/TWDB proposed release program (MLRS3) for Lake Texana that has been described and evaluated in this study provides for a two-phased release schedule that is dependent upon the daily stage of the reservoir. When the level of the reservoir is above elevation 40 feet MSL, releases are made to pass all inflows to the reservoir up to: (1) the daily equivalent of the historical monthly median flows in the Navidad River for the months of November through March and July, and (2) the daily equivalent of the historical monthly mean flows for the remaining months. For reservoir stages below elevation 40 feet MSL, all inflows up to the annual median daily flow in the river for the historical critical drought period from January, 1954, through December, 1956, or about 5.0 cfs, are released. The reservoir stage condition at elevation 40 feet MSL has been referred to herein as the stage "trigger level" for the TPWD/TWDB proposed release program.

In effect, depending on the natural hydrologic conditions that may be occurring within the Navidad River Basin and on the amount of water stored in Lake Texana, the TPWD/TWDB proposed release program defines the specific rate of inflow that is to be maintained into Lavaca Bay from the Navidad River for each month of the year, such that historical hydrologic influences on the estuarine ecosystem are mimicked. The theory underlying this release program is that if the historical freshwater inflow regime is maintained, or at least approximated, then the estuarine ecosystem also will be preserved.

The effectiveness of the TPWD/TWDB proposed Lake Texana release program has been analyzed and evaluated with respect to its impacts on salinity conditions in Lavaca Bay. Projections of salinity levels in Lavaca Bay have been made using previously-developed salinity-flow regression relationships for the bay with different conditions of inflow. These inflow conditions have included: (1) historical flows; (2) a baseline case with historical flows from the Lavaca River and historical flows adjusted for senior water rights above Lake Texana; (3) inflows similar to the baseline case, but with Lake Texana in operation without any bay and estuary release program in effect;

and (4) inflows similar to the baseline case, but with Lake Texana in operation with the TPWD/TWDB proposed release program in effect. These salinity results indicate that violations of established salinity viability limits (upper and lower bounds) for estuarine organisms would occur in Lavaca Bay between 20- and 50-percent of the time even without Lake Texana in operation. With the TPWD/TWDB proposed release program in effect for Lake Texana, the impacts of the reservoir on the salinity levels in Lavaca Bay will be reduced, with the average percentage of time that the viability limits would be violated lowered by as much as 10 percent. It is apparent from the projected salinities, however, that salinity conditions in Lavaca Bay will be affected by Lake Texana, even with the TPWD/TWDB proposed release program in effect.

The basic question to be addressed with regard to the effectiveness of the TPWD/TWDB proposed Lake Texana release program is whether or not the projected salinity changes in Lavaca Bay with the release program in effect are acceptable relative to the salinity conditions that would occur in the bay both without Lake Texana in operation and with Lake Texana operating in the full capture mode, i. e., with no bay and estuary releases. For example, is it acceptable to reduce the average percentage of time that the salinity levels in the bay will exceed the upper salinity viability limits from 50.8 percent (with Lake Texana operated in the full capture mode) to 40.4 percent (with the proposed release program in effect), considering that violations of the upper salinity viability limits probably have occurred historically about a third of the time? If such salinity reductions could be realized, what effect would they have on the overall estuarine ecosystem, particularly with regard to fish and shellfish resources? These are questions that estuarine biologists and ecologists will have to answer in order for the acceptability of the TPWD/TWDB proposed Lake Texana release program ultimately to be determined. In this regard, the information describing salinity impacts developed in this study and presented in this report should provide much of the technical and supporting data needed.

Alternative release programs also have been considered in this study. Analyses have been performed to investigate the effect of varying the elevation of the trigger level on the low-flow releases from Lake Texana, on the firm annual yield of the reservoir and on salinity conditions in Lavaca Bay. Based on the simulated releases from the reservoir for different trigger levels, corresponding salinity conditions in Lavaca Bay have been projected and analyzed to determine the numbers of months during the 1941-1979 simulation period when the upper and the lower salinity viability limits for upper Lavaca Bay are violated. In general, a decrease in the elevation of the stage trigger level results in a corresponding increase in the amount of water released from the reservoir during non-flood periods, which, in turn, generally results in fewer violations of the salinity viability limits in Lavaca Bay. As the stage trigger level is lowered from elevation 44 feet MSL[1], the numbers of months with violations of the upper salinity viability limits uniformly decrease. This trend continues down to about elevation 34 feet MSL, below which no pronounced decreases in violations occur.

It is apparent from the results of these analyses that setting the trigger level below about elevation 34 feet MSL does not produce appreciable benefits to Lavaca Bay with respect to salinity. Furthermore, it is questionable whether setting the trigger level at elevation 34 feet MSL is reasonable considering that this mode of operation results in reductions of only 11.0 to 18.0 percent in the numbers of monthly violations of the upper salinity viability limits, but causes the yield of the reservoir to be reduced to a level (60,000 acre-feet/year) that is approximately 20 percent below the currently-permitted authorized diversion for the reservoir (75,000 acre-feet/year) and about 26 percent below the total yield of the reservoir when operated in the full capture mode without any releases for bay and estuary purposes (80,984 acrfe-feet/year). Considering the relationship between reservoir yield and the specified trigger level as developed in this study, it appears that elevation 39 feet MSL may represent the optimum condition for the stage trigger level for releases from Lake Texana.

[1] Since elevation 44 feet MSL is equal to the maximum conservation pool level of Lake Texana, this trigger level condition corresponds to a no-release condition whereby the reservoir is operated in the full capture mode.

LIST OF REFERENCES

[1] "Final Environmental Statement - Palmetto Bend Project, Texas"; Bureau of Reclamation, Southwest Region, U. S. Department of Interior; September, 1974.

[2] "Lavaca - Tres Palacios Estuary: A Study of the Influence of Freshwater Inflows"; Texas Department of Water Resources; Report LP-106; Austin, Texas; June, 1980.

[3] "Texas Bays and Estuaries Program: A Cooperative State Program for the Study of Freshwater Inflow Needs"; Draft Report compiled by the Texas Water Development Board; Austin, Texas; 1990.

[4] "Analysis of the Effects of Various Downstream Releases on the Yield of Lake Texana"; Draft Report prepared by the Texas Water Development Board; Austin, Texas; 1990.

[5] "Bay and Estuary Policy Issues"; Draft Statement prepared by the Texas Water Development Board; Austin, Texas; April,1990.

[6] "An Investigation of Environmental Quality Changes Associated with Construction of the Palmetto Bend Reservoir Project (Lake Texana)"; Volume II.; Draft Report prepared by the Texas Water Development Board; Austin, Texas; 1985.

[7] Browder, L., S. Densmore, M. Campbell and R. C. Mathews, Jr.; "SIMDLY/ RELEASE: A Modified Version of RESOP II for Simulation of Daily Reservoir Releases to Downstream Fish and Wildlife Habitats and Riparian Communities"; Technical Report; Texas Water Development Board; Austin, Texas; December, 1990 (In Press).

APPENDIX A.

1941-1979 MONTHLY FLOWS FOR VARIOUS LAVACA BAY DRAINAGE AREAS

TABLE A-1 HISTORICAL GAGED FLOWS AS MEASURED AT THE GAGE ON THE LAVACA RIVER NEAR EDNA [6]

GAGED FLOWS IN THE LAVACA RIVER NEAR EDNA IN CFS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	607.	457.	1341.	1267.	2783.	2028.	417.	197.	89.	159.	245.	96.	809.
1942	72.	79.	76.	920.	87.	53.	1075.	59.	280.	82.	88.	70.	245.
1943	97.	60.	208.	59.	112.	135.	132.	55.	36.	27.	133.	326.	116.
1944	632.	195.	1303.	130.	819.	135.	52.	47.	207.	35.	102.	161.	325.
1945	367.	113.	127.	617.	56.	132.	32.	43.	16.	42.	20.	32.	133.
1946	83.	500.	243.	107.	165.	827.	107.	713.	1623.	1413.	662.	176.	547.
1947	635.	122.	206.	171.	585.	69.	33.	26.	17.	17.	35.	44.	165.
1948	61.	179.	155.	43.	1189.	72.	48.	12.	20.	11.	14.	16.	153.
1949	37.	179.	71.	1044.	154.	62.	66.	86.	35.	386.	38.	441.	216.
1950	116.	107.	43.	112.	79.	135.	29.	6.	7.	5.	6.	11.	54.
1951	15.	18.	20.	16.	11.	322.	7.	2.	141.	29.	14.	14.	50.
1952	11.	37.	24.	240.	1295.	202.	29.	20.	17.	4.	287.	386.	214.
1953	50.	59.	33.	50.	682.	27.	18.	232.	112.	26.	18.	17.	111.
1954	16.	13.	12.	85.	69.	6.	2.	5.	8.	2.	0.	0.	18.
1955	10.	649.	16.	32.	695.	110.	12.	151.	44.	5.	2.	5.	141.
1956	6.	18.	7.	4.	8.	1.	17.	0.	0.	1.	0.	33.	8.
1957	0.	83.	447.	1424.	460.	310.	15.	5.	169.	1904.	1158.	120.	509.
1958	668.	1187.	166.	76.	387.	31.	121.	15.	387.	229.	67.	116.	282.
1959	60.	1169.	105.	1328.	342.	141.	59.	71.	75.	265.	234.	170.	327.
1960	187.	223.	82.	116.	85.	1084.	183.	639.	79.	3631.	852.	594.	650.
1961	951.	1148.	163.	116.	93.	1365.	564.	82.	2073.	157.	1097.	125.	652.
1962	96.	96.	73.	624.	96.	239.	55.	21.	154.	59.	36.	60.	133.
1963	83.	318.	49.	30.	30.	29.	72.	8.	7.	5.	20.	39.	56.
1964	36.	73.	89.	74.	30.	296.	18.	26.	193.	41.	11.	15.	74.
1965	595.	1006.	83.	71.	1621.	686.	49.	32.	21.	88.	819.	279.	442.
1966	123.	290.	150.	586.	734.	143.	87.	45.	35.	19.	19.	22.	187.
1967	25.	22.	27.	75.	38.	12.	4.	19.	1885.	841.	84.	46.	256.
1968	998.	134.	155.	222.	1361.	1930.	208.	62.	111.	45.	49.	202.	457.
1969	113.	1130.	719.	1403.	1424.	113.	49.	37.	53.	123.	64.	297.	456.
1970	270.	73.	363.	81.	1251.	440.	61.	45.	367.	264.	41.	35.	277.
1971	33.	37.	37.	30.	24.	90.	19.	645.	1399.	360.	81.	555.	276.
1972	357.	462.	227.	64.	3108.	397.	107.	107.	48.	39.	41.	35.	419.
1973	71.	171.	1063.	2581.	555.	5005.	385.	162.	243.	1793.	217.	128.	1028.
1974	1108.	239.	123.	79.	503.	854.	63.	107.	1519.	145.	636.	281.	472.
1975	170.	174.	96.	588.	1727.	485.	445.	98.	77.	57.	48.	207.	350.
1976	30.	43.	53.	530.	826.	286.	295.	41.	69.	896.	379.	2400.	493.
1977	346.	1093.	185.	934.	211.	296.	64.	37.	68.	27.	160.	47.	282.
1978	152.	168.	106.	256.	42.	142.	43.	20.	2842.	125.	134.	73.	338.
1979	1564.	809.	392.	1075.	2460.	1513.	167.	73.	831.	66.	49.	59.	753.
AVERAGE	280.	332.	227.	443.	672.	518.	134.	104.	394.	344.	204.	198.	320.
MAXIMUM	1564.	1187.	1341.	2581.	3108.	5005.	1075.	713.	2842.	3631.	1158.	2400.	
MINIMUM	0.	13.	7.	4.	8.	1.	2.	0.	0.	1.	0.	0.	
STD.DEV.	370.	384.	328.	571.	801.	903.	205.	173.	690.	717.	311.	392.	

TABLE A-2 HISTORICAL GAGED FLOWS AS MEASURED AT THE GAGE ON THE NAVIDAD RIVER NEAR GANADO [6]

GAGED FLOWS IN THE NAVIDAD RIVER NEAR GANADO IN CFS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	897.	579.	1642.	2313.	3032.	1957.	1396.	519.	176.	653.	607.	208.	1167.
1942	72.	121.	121.	1406.	92.	141.	1651.	159.	324.	101.	231.	121.	379.
1943	276.	76.	371.	62.	255.	114.	159.	102.	78.	40.	511.	626.	241.
1944	1675.	392.	2769.	124.	1499.	168.	83.	85.	309.	55.	324.	820.	699.
1945	660.	261.	140.	2121.	66.	107.	93.	607.	187.	149.	24.	177.	381.
1946	502.	1121.	669.	256.	722.	2274.	348.	438.	1399.	1003.	1281.	227.	846.
1947	1278.	112.	309.	179.	854.	73.	95.	138.	117.	16.	54.	190.	288.
1948	244.	557.	441.	72.	842.	42.	125.	15.	145.	13.	22.	12.	210.
1949	36.	358.	293.	1862.	212.	55.	173.	172.	160.	1919.	90.	871.	534.
1950	437.	369.	52.	248.	51.	871.	71.	20.	146.	18.	5.	10.	189.
1951	11.	15.	65.	33.	18.	947.	15.	35.	404.	84.	23.	15.	137.
1952	9.	100.	44.	908.	1601.	281.	49.	40.	121.	12.	398.	704.	356.
1953	106.	117.	33.	32.	1410.	32.	90.	549.	1012.	41.	24.	72.	295.
1954	14.	10.	9.	17.	79.	2.	3.	21.	48.	24.	0.	0.	19.
1955	14.	831.	3.	29.	619.	185.	23.	107.	288.	46.	0.	0.	174.
1956	9.	79.	0.	25.	1.	9.	0.	23.	40.	1.	1.	45.	19.
1957	0.	114.	1166.	1941.	1349.	1372.	18.	25.	502.	3109.	1660.	125.	951.
1958	1033.	1531.	150.	80.	512.	37.	157.	63.	616.	253.	189.	398.	411.
1959	214.	2212.	132.	2723.	446.	855.	132.	341.	234.	859.	637.	623.	769.
1960	540.	660.	135.	249.	375.	3474.	666.	1306.	287.	2680.	1591.	1060.	1084.
1961	1525.	2966.	178.	128.	83.	2435.	1062.	168.	4419.	119.	1101.	93.	1168.
1962	102.	129.	76.	668.	152.	357.	237.	73.	280.	42.	14.	177.	191.
1963	240.	307.	39.	30.	50.	69.	348.	79.	76.	20.	103.	202.	130.
1964	44.	272.	158.	38.	53.	494.	117.	115.	507.	114.	53.	14.	163.
1965	570.	804.	52.	74.	2552.	726.	151.	99.	175.	233.	1487.	550.	621.
1966	337.	727.	355.	895.	1801.	497.	262.	306.	190.	80.	10.	17.	455.
1967	36.	18.	17.	111.	125.	67.	100.	341.	3582.	983.	73.	31.	457.
1968	2723.	250.	226.	257.	2019.	4965.	530.	142.	367.	223.	166.	471.	1023.
1969	279.	2033.	1232.	1634.	2125.	170.	97.	94.	238.	206.	136.	443.	715.
1970	460.	69.	1077.	153.	1985.	542.	249.	101.	1204.	1259.	65.	29.	605.
1971	28.	44.	24.	64.	68.	54.	102.	683.	1922.	913.	52.	907.	407.
1972	476.	992.	261.	73.	4163.	667.	388.	210.	191.	79.	70.	28.	635.
1973	170.	387.	1730.	3840.	636.	9270.	463.	463.	1714.	2056.	450.	167.	1768.
1974	1946.	281.	179.	337.	948.	908.	188.	322.	4218.	272.	1630.	530.	977.
1975	288.	232.	87.	627.	2564.	1166.	553.	350.	346.	154.	47.	541.	583.
1976	50.	40.	41.	576.	889.	812.	550.	40.	175.	689.	443.	3410.	648.
1977	400.	1480.	120.	1697.	211.	800.	189.	50.	151.	138.	277.	28.	450.
1978	686.	441.	69.	242.	32.	495.	126.	21.	4023.	220.	256.	103.	553.
1979	2637.	1346.	620.	1761.	2757.	769.	355.	75.	2281.	92.	57.	49.	1064.
AVERAGE	539.	580.	393.	715.	955.	980.	293.	219.	837.	486.	363.	361.	558.
MAXIMUM	2723.	2966.	2769.	3840.	4163.	9270.	1651.	1306.	4419.	3109.	1660.	3410.	
MINIMUM	0.	10.	0.	17.	1.	2.	0.	15.	40.	1.	0.	0.	
STD.DEV.	700.	632.	594.	936.	1043.	1704.	364.	256.	1230.	762.	510.	584.	

TABLE A-3 TOTAL INFLOWS INTO LAKE TEXANA, RECOGNIZING SENIOR WATER RIGHTS AND INCLUDING RICE IRRIGATION RETURN FLOWS FROM WATER DIVERTED FROM THE COLORADO RIVER BASIN BY THE GARWOOD IRRIGATION COMPANY [4]

TWDB RESOP TOTAL ADJUDICATED INFLOWS INTO LAKE TEXANA IN CFS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	1142.	738.	2270.	2476.	3667.	2142.	2111.	553.	471.	1685.	787.	319.	1537.
1942	74.	222.	297.	1431.	95.	159.	2673.	163.	338.	99.	290.	121.	498.
1943	296.	76.	682.	66.	260.	126.	175.	110.	89.	38.	1241.	741.	326.
1944	2727.	411.	3812.	121.	2413.	190.	85.	165.	394.	54.	323.	947.	981.
1945	660.	275.	204.	2640.	70.	112.	94.	1406.	196.	172.	24.	178.	502.
1946	549.	1433.	804.	281.	970.	2927.	385.	458.	1577.	2076.	1425.	227.	1085.
1947	1295.	112.	310.	181.	1625.	90.	102.	149.	129.	17.	54.	265.	366.
1948	244.	656.	332.	74.	861.	60.	140.	35.	153.	15.	22.	12.	233.
1949	36.	556.	298.	1952.	216.	69.	172.	176.	167.	3895.	90.	1180.	737.
1950	584.	560.	55.	281.	76.	919.	87.	41.	152.	18.	5.	9.	229.
1951	11.	15.	64.	35.	24.	942.	18.	39.	411.	83.	22.	15.	139.
1952	9.	99.	85.	1034.	2036.	272.	52.	45.	124.	14.	506.	710.	418.
1953	105.	143.	32.	21.	1809.	44.	62.	1144.	1041.	37.	24.	72.	381.
1954	14.	10.	8.	13.	80.	14.	6.	20.	52.	23.	0.	0.	20.
1955	15.	899.	6.	34.	743.	182.	20.	101.	301.	43.	0.	0.	190.
1956	9.	79.	0.	15.	4.	6.	4.	25.	52.	12.	14.	47.	22.
1957	6.	114.	1552.	2513.	1697.	1652.	5.	33.	504.	3338.	1697.	125.	1105.
1958	1211.	2190.	133.	67.	502.	49.	160.	72.	644.	321.	250.	643.	510.
1959	215.	3372.	128.	3013.	437.	866.	120.	528.	363.	1891.	717.	811.	1017.
1960	374.	753.	176.	235.	360.	5755.	849.	1431.	288.	3432.	1898.	1964.	1474.
1961	2064.	3392.	194.	122.	58.	3290.	1403.	147.	5904.	114.	1335.	94.	1482.
1962	102.	129.	75.	707.	141.	341.	209.	57.	287.	37.	16.	177.	189.
1963	241.	324.	38.	17.	44.	55.	330.	61.	70.	16.	103.	203.	124.
1964	44.	279.	331.	25.	46.	581.	109.	104.	745.	130.	56.	41.	206.
1965	571.	916.	74.	58.	2587.	721.	133.	83.	165.	229.	1497.	610.	635.
1966	397.	1054.	351.	1123.	2193.	814.	245.	392.	186.	76.	10.	17.	568.
1967	37.	18.	15.	101.	135.	70.	104.	400.	4775.	1266.	74.	31.	583.
1968	2970.	300.	225.	234.	2702.	6795.	642.	136.	362.	249.	197.	471.	1274.
1969	278.	2436.	1306.	2333.	2793.	234.	88.	81.	237.	302.	136.	511.	884.
1970	576.	84.	1513.	309.	2898.	746.	245.	97.	1397.	2000.	65.	29.	838.
1971	28.	44.	24.	56.	67.	55.	98.	686.	2805.	1239.	79.	1022.	518.
1972	601.	1007.	276.	52.	4974.	652.	396.	207.	195.	131.	135.	28.	725.
1973	181.	550.	1787.	4612.	753.	10505.	454.	464.	2979.	2394.	480.	170.	2096.
1974	2023.	285.	173.	382.	1561.	1228.	186.	329.	4226.	294.	1835.	648.	1095.
1975	302.	267.	85.	616.	3606.	1419.	572.	349.	339.	158.	47.	616.	702.
1976	50.	40.	37.	564.	871.	820.	566.	45.	162.	685.	482.	3613.	667.
1977	433.	1563.	117.	2055.	201.	958.	181.	36.	147.	163.	384.	30.	510.
1978	850.	545.	63.	250.	30.	593.	217.	46.	4667.	267.	345.	155.	662.
1979	3027.	1570.	697.	2077.	3142.	932.	462.	162.	3941.	107.	70.	99.	1351.
AVERAGE	629.	705.	483.	826.	1199.	1215.	358.	271.	1053.	695.	429.	435.	689.
MAXIMUM	3027.	3392.	3812.	4612.	4974.	10505.	2673.	1431.	5904.	3895.	1898.	3613.	
MINIMUM	0.	10.	0.	13.	4.	6.	4.	20.	52.	12.	0.	0.	
STD.DEV.	839.	866.	777.	1115.	1314.	2118.	554.	355.	1579.	1075.	579.	671.	

TABLE A-4 INFLOWS TO LAKE TEXANA FROM THE MUSTANG CREEK WATERSHED, RECOGNIZING SENIOR WATER RIGHTS, AS DETERMINED BY TWDB AND TWC [6]

TWDB SIMULATED ADJUDICATED FLOWS IN MUSTANG CREEK IN CFS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	221.	143.	367.	145.	562.	154.	634.	18.	250.	930.	162.	100.	327.
1942	2.	90.	158.	20.	0.	10.	910.	0.	2.	0.	53.	0.	105.
1943	18.	0.	100.	0.	0.	4.	7.	0.	0.	0.	657.	103.	74.
1944	945.	17.	939.	0.	814.	17.	1.	62.	64.	0.	0.	114.	251.
1945	0.	12.	58.	466.	0.	2.	0.	708.	0.	21.	0.	1.	106.
1946	43.	261.	121.	19.	210.	572.	22.	7.	144.	965.	130.	0.	209.
1947	15.	0.	1.	0.	677.	4.	0.	0.	0.	0.	0.	68.	65.
1948	0.	89.	81.	0.	2.	0.	0.	0.	0.	0.	0.	0.	14.
1949	0.	0.	0.	74.	0.	1.	0.	1.	0.	1775.	0.	277.	181.
1950	131.	171.	0.	26.	7.	16.	0.	0.	0.	0.	0.	0.	28.
1951	0.	0.	0.	0.	0.	2.	0.	0.	1.	0.	0.	0.	0.
1952	0.	0.	37.	132.	388.	0.	0.	0.	3.	0.	98.	6.	56.
1953	0.	23.	0.	0.	368.	16.	0.	549.	27.	0.	0.	0.	83.
1954	0.	0.	0.	0.	5.	3.	0.	0.	0.	2.	0.	0.	1.
1955	1.	63.	0.	0.	109.	1.	0.	0.	11.	0.	0.	0.	16.
1956	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1957	0.	0.	354.	526.	319.	260.	0.	0.	0.	209.	34.	0.	142.
1958	160.	593.	7.	1.	0.	0.	0.	0.	15.	65.	55.	220.	90.
1959	1.	1044.	1.	250.	2.	20.	0.	164.	100.	931.	72.	169.	226.
1960	30.	83.	40.	0.	0.	2069.	176.	123.	1.	678.	276.	813.	356.
1961	435.	383.	0.	3.	0.	781.	316.	0.	1323.	0.	210.	1.	288.
1962	0.	0.	0.	44.	10.	6.	0.	0.	1.	0.	2.	0.	5.
1963	2.	15.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	2.
1964	0.	7.	158.	0.	0.	79.	0.	1.	211.	17.	3.	24.	42.
1965	1.	100.	22.	0.	37.	4.	0.	0.	0.	0.	9.	54.	18.
1966	54.	294.	0.	210.	355.	292.	0.	87.	0.	0.	0.	0.	106.
1967	0.	0.	0.	1.	0.	0.	0.	34.	1060.	256.	1.	0.	112.
1968	221.	45.	2.	5.	611.	1690.	101.	0.	1.	22.	28.	0.	226.
1969	0.	362.	70.	631.	600.	59.	0.	0.	0.	80.	0.	62.	153.
1970	103.	14.	397.	142.	821.	183.	0.	0.	169.	661.	0.	0.	210.
1971	0.	0.	0.	0.	0.	0.	0.	3.	782.	293.	24.	103.	100.
1972	112.	14.	12.	0.	738.	0.	4.	0.	7.	42.	58.	0.	83.
1973	10.	146.	54.	699.	112.	1102.	0.	3.	1129.	302.	27.	3.	295.
1974	68.	4.	0.	49.	561.	292.	2.	13.	2.	20.	184.	107.	109.
1975	12.	31.	0.	0.	946.	229.	14.	1.	0.	5.	0.	67.	110.
1976	0.	0.	0.	2.	0.	12.	4.	0.	0.	0.	34.	181.	20.
1977	29.	75.	0.	329.	5.	145.	0.	0.	0.	25.	96.	2.	58.
1978	149.	93.	0.	25.	3.	71.	78.	11.	572.	45.	78.	47.	97.
1979	350.	201.	73.	273.	357.	150.	96.	60.	1490.	14.	12.	45.	260.
AVERAGE	81.	113.	83.	106.	221.	211.	61.	47.	189.	189.	59.	66.	119.
MAXIMUM	945.	1044.	939.	699.	946.	2069.	910.	708.	1490.	1775.	657.	813.	
MINIMUM	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
STD.DEV.	177.	202.	185.	187.	299.	458.	181.	143.	400.	335.	119.	141.	

TABLE A-5 HISTORICAL INFLOWS TO LAKE TEXANA FROM THE MUSTANG CREEK WATERSHED AS SIMULATED BY THE TWDB [6]

TWDB SIMULATED HISTORICAL FLOWS IN MUSTANG CREEK IN CFS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	151.	69.	396.	74.	566.	590.	745.	26.	117.	653.	125.	71.	301.
1942	65.	223.	57.	65.	3.	50.	509.	0.	115.	11.	121.	138.	113.
1943	45.	23.	83.	18.	15.	12.	12.	0.	0.	11.	820.	72.	92.
1944	851.	79.	390.	20.	571.	53.	14.	214.	3.	15.	30.	266.	228.
1945	56.	132.	34.	470.	14.	5.	7.	304.	48.	12.	37.	67.	98.
1946	189.	179.	82.	47.	243.	89.	51.	36.	232.	478.	225.	27.	157.
1947	224.	27.	27.	15.	213.	37.	9.	21.	37.	1.	3.	111.	61.
1948	48.	98.	64.	12.	76.	2.	27.	3.	47.	2.	7.	1.	32.
1949	74.	107.	30.	1084.	2.	87.	218.	92.	47.	10.	10.	353.	175.
1950	81.	119.	12.	46.	13.	40.	42.	12.	45.	1.	1.	9.	34.
1951	15.	2.	15.	6.	2.	244.	8.	9.	62.	3.	2.	1.	31.
1952	12.	12.	2.	377.	420.	16.	5.	5.	16.	3.	82.	231.	99.
1953	22.	27.	27.	1.	370.	12.	16.	405.	31.	5.	10.	5.	79.
1954	3.	1.	1.	0.	2.	49.	4.	4.	154.	27.	0.	0.	20.
1955	2.	7.	0.	20.	78.	20.	91.	6.	189.	23.	0.	0.	36.
1956	13.	8.	0.	13.	3.	12.	6.	6.	5.	0.	0.	0.	6.
1957	0.	0.	2.	197.	316.	310.	4.	44.	19.	471.	218.	28.	135.
1958	156.	242.	52.	2.	31.	11.	0.	2.	56.	66.	56.	129.	66.
1959	89.	844.	47.	278.	7.	151.	15.	176.	53.	350.	165.	98.	184.
1960	356.	96.	72.	19.	86.	841.	84.	297.	113.	496.	382.	367.	269.
1961	279.	615.	87.	15.	34.	401.	73.	143.	1081.	70.	330.	36.	259.
1962	10.	14.	27.	92.	76.	1.	79.	25.	141.	1.	72.	58.	50.
1963	62.	19.	7.	0.	0.	0.	88.	21.	23.	13.	10.	52.	25.
1964	28.	36.	24.	0.	16.	104.	6.	0.	114.	39.	17.	10.	32.
1965	68.	118.	8.	19.	339.	78.	118.	20.	33.	23.	63.	129.	81.
1966	125.	310.	21.	244.	216.	174.	7.	61.	8.	15.	26.	56.	103.
1967	16.	20.	1.	1.	34.	31.	23.	155.	447.	105.	18.	16.	72.
1968	200.	105.	27.	26.	416.	1332.	135.	21.	59.	123.	50.	40.	210.
1969	26.	354.	202.	228.	292.	59.	25.	5.	37.	42.	87.	99.	120.
1970	150.	12.	374.	33.	159.	292.	65.	39.	332.	748.	17.	3.	187.
1971	13.	19.	2.	82.	27.	2.	12.	16.	253.	208.	15.	178.	69.
1972	110.	135.	7.	0.	368.	152.	105.	5.	48.	89.	18.	46.	91.
1973	36.	82.	405.	535.	306.	1522.	37.	369.	1457.	512.	289.	58.	465.
1974	269.	39.	33.	110.	454.	128.	45.	64.	358.	101.	150.	254.	172.
1975	64.	45.	8.	144.	36.	528.	19.	188.	187.	109.	66.	43.	119.
1976	6.	5.	3.	10.	51.	131.	596.	12.	8.	47.	163.	331.	115.
1977	143.	137.	44.	89.	30.	483.	72.	24.	102.	159.	22.	2.	108.
1978	105.	76.	3.	81.	4.	24.	304.	14.	198.	60.	146.	25.	86.
1979	876.	379.	111.	125.	255.	42.	18.	11.	300.	23.	4.	76.	184.
AVERAGE	129.	125.	77.	119.	158.	207.	95.	73.	168.	131.	99.	89.	122.
MAXIMUM	876.	844.	590.	1084.	571.	1522.	745.	405.	1457.	748.	820.	367.	
MINIMUM	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
STD.DEV.	193.	174.	134.	205.	176.	346.	167.	109.	285.	201.	153.	103.	

TABLE A-6 TOTAL INFLOWS TO LAVACA BAY FROM THE UNGAGED AREA BELOW THE GAGE ON THE LAVACA RIVER NEAR EDNA AND BELOW LAKE TEXANA [6]

UNGAGED RUNOFF BELOW LAVACA RIVER EDNA GAGE AND BELOW LAKE TEXANA IN CFS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	15.	14.	48.	12.	60.	46.	70.	5.	2.	52.	71.	8.	34.
1942	0.	7.	10.	2.	0.	1.	87.	0.	8.	0.	0.	0.	10.
1943	4.	0.	13.	0.	0.	0.	1.	0.	0.	0.	66.	12.	8.
1944	90.	6.	70.	1.	83.	2.	0.	0.	13.	0.	0.	13.	24.
1945	0.	3.	0.	68.	4.	4.	0.	48.	0.	1.	0.	2.	11.
1946	7.	42.	14.	1.	19.	66.	21.	1.	27.	59.	15.	0.	23.
1947	9.	0.	0.	0.	23.	1.	0.	0.	0.	0.	0.	12.	4.
1948	6.	42.	17.	1.	4.	0.	0.	0.	0.	0.	0.	0.	6.
1949	0.	2.	0.	36.	0.	0.	0.	1.	0.	133.	0.	19.	16.
1950	23.	9.	0.	7.	0.	15.	0.	0.	0.	0.	0.	0.	4.
1951	0.	0.	0.	0.	0.	2.	0.	0.	0.	3.	0.	0.	0.
1952	0.	0.	0.	14.	17.	0.	0.	0.	0.	0.	2.	4.	3.
1953	0.	0.	0.	0.	51.	0.	14.	14.	43.	0.	0.	0.	10.
1954	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1955	0.	2.	0.	0.	3.	6.	0.	0.	0.	0.	0.	0.	1.
1956	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1957	0.	1.	47.	88.	55.	25.	0.	0.	0.	30.	19.	0.	22.
1958	34.	52.	0.	2.	3.	0.	0.	0.	8.	1.	0.	0.	8.
1959	27.	77.	1.	29.	4.	14.	0.	6.	2.	35.	0.	1.	16.
1960	6.	20.	1.	0.	0.	194.	21.	17.	2.	41.	35.	38.	31.
1961	33.	37.	0.	1.	0.	50.	26.	0.	126.	0.	13.	0.	24.
1962	0.	0.	0.	0.	2.	4.	0.	0.	0.	0.	0.	0.	1.
1963	0.	0.	0.	0.	0.	0.	0.	0.	8.	0.	0.	0.	0.
1964	0.	0.	6.	0.	0.	1.	0.	0.	0.	1.	0.	1.	2.
1965	8.	2.	0.	0.	20.	5.	0.	0.	8.	0.	2.	2.	3.
1966	3.	25.	5.	42.	31.	8.	2.	12.	0.	0.	0.	0.	10.
1967	0.	0.	0.	0.	1.	0.	0.	0.	0.	25.	1.	0.	9.
1968	6.	6.	3.	3.	61.	167.	22.	0.	81.	5.	0.	1.	23.
1969	0.	29.	36.	46.	25.	1.	0.	0.	3.	0.	1.	4.	12.
1970	7.	0.	33.	16.	23.	45.	0.	0.	0.	76.	0.	0.	18.
1971	0.	0.	0.	1.	0.	0.	0.	0.	12.	25.	2.	8.	8.
1972	13.	13.	1.	0.	77.	0.	5.	0.	64.	0.	5.	0.	10.
1973	1.	23.	36.	78.	23.	111.	5.	0.	0.	169.	11.	0.	51.
1974	14.	3.	4.	0.	38.	17.	0.	5.	158.	0.	3.	7.	9.
1975	2.	2.	0.	0.	6.	113.	0.	0.	14.	0.	0.	0.	10.
1976	0.	0.	0.	0.	0.	6.	45.	0.	0.	8.	13.	44.	10.
1977	3.	9.	0.	7.	0.	11.	0.	0.	1.	2.	5.	0.	3.
1978	5.	19.	0.	2.	0.	0.	0.	0.	2.	0.	10.	1.	5.
1979	67.	52.	10.	8.	36.	15.	0.	0.	21.	0.	0.	6.	23.
									92.				
AVERAGE	10.	13.	9.	12.	17.	24.	8.	3.	18.	17.	7.	5.	12.
MAXIMUM	90.	77.	70.	88.	83.	194.	87.	48.	158.	169.	71.	44.	
MINIMUM	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
STD.DEV.	19.	19.	17.	23.	24.	46.	19.	8.	37.	37.	16.	10.	

TABLE A-7 FLOOD SPILLS FROM LAKE TEXANA AS SIMULATED BY THE TWDB USING THE RESOP-II MODEL WITH INFLOWS TO THE RESERVOIR FROM DATA SET NO. 3 AND WITH FIRM ANNUAL YIELD OPERATION AND NO BAY AND ESTUARY RELEASES [4]

TWDB RESOP SPILLS FROM LAKE TEXANA WITHOUT THE B&E RELEASE PROGRAM IN OPERATION IN CFS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	1049.	660.	2195.	2410.	3586.	2031.	1963.	389.	330.	1609.	670.	210.	1432.
1942	0.	92.	175.	1330.	2.	0.	2580.	19.	230.	5.	109.	12.	381.
1943	212.	0.	544.	1.	65.	26.	0.	0.	0.	0.	831.	669.	197.
1944	2689.	313.	3746.	17.	2311.	50.	0.	0.	90.	3.	127.	872.	863.
1945	559.	179.	108.	2549.	0.	0.	0.	1117.	105.	2.	0.	0.	384.
1946	399.	1341.	704.	167.	866.	2316.	250.	262.	1471.	1986.	1337.	126.	971.
1947	1219.	3.	197.	78.	1545.	0.	0.	0.	0.	0.	0.	0.	258.
1948	0.	510.	446.	0.	681.	4.	0.	0.	0.	0.	0.	0.	136.
1949	0.	0.	0.	1838.	76.	0.	0.	0.	0.	3787.	33.	1021.	568.
1950	482.	472.	0.	98.	0.	774.	0.	0.	0.	0.	0.	0.	149.
1951	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1952	0.	0.	0.	172.	1926.	184.	0.	0.	0.	0.	0.	536.	239.
1953	59.	0.	0.	0.	1507.	0.	0.	748.	924.	0.	0.	0.	272.
1954	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1955	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1956	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1957	0.	0.	0.	1433.	1595.	1531.	0.	0.	0.	3194.	1607.	27.	785.
1958	1121.	2121.	45.	0.	352.	0.	0.	0.	194.	215.	152.	539.	384.
1959	160.	3252.	53.	2859.	316.	704.	19.	274.	197.	1789.	608.	697.	889.
1960	478.	636.	61.	111.	256.	5596.	655.	1280.	134.	3335.	1793.	1899.	1352.
1961	1980.	3316.	68.	1.	0.	3082.	1245.	0.	5768.	0.	1196.	0.	1360.
1962	0.	0.	0.	549.	60.	146.	102.	0.	0.	0.	0.	0.	71.
1963	0.	92.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.
1964	0.	0.	0.	0.	0.	39.	0.	0.	417.	60.	0.	0.	42.
1965	264.	844.	6.	0.	2369.	556.	0.	0.	0.	0.	1291.	546.	487.
1966	316.	965.	232.	1017.	2110.	671.	52.	241.	28.	0.	0.	0.	462.
1967	0.	0.	0.	0.	0.	0.	0.	0.	4139.	1134.	0.	0.	437.
1968	2773.	211.	131.	133.	2603.	6680.	458.	9.	117.	114.	58.	365.	1136.
1969	170.	2355.	1190.	2224.	2678.	107.	0.	0.	0.	0.	0.	311.	742.
1970	463.	1.	1394.	200.	2812.	574.	42.	0.	1165.	1887.	5.	0.	720.
1971	0.	0.	0.	0.	0.	0.	0.	0.	2349.	1113.	0.	875.	362.
1972	502.	905.	147.	0.	4776.	495.	212.	87.	0.	0.	0.	0.	597.
1973	6.	463.	1675.	4503.	609.	10377.	254.	290.	2858.	2275.	339.	50.	1960.
1974	1938.	154.	54.	235.	1437.	1066.	0.	119.	4082.	165.	1735.	554.	957.
1975	200.	157.	0.	440.	3493.	1266.	392.	176.	173.	13.	0.	431.	566.
1976	0.	0.	0.	213.	743.	686.	370.	0.	0.	411.	379.	3530.	533.
1977	350.	1458.	4.	1925.	70.	804.	0.	0.	0.	0.	86.	0.	379.
1978	641.	463.	0.	52.	0.	354.	0.	0.	4333.	131.	221.	61.	514.
1979	2951.	1487.	583.	1973.	3029.	777.	307.	9.	3775.	8.	0.	0.	1235.
AVERAGE	538.	376.	353.	681.	1074.	1061.	228.	128.	844.	596.	322.	342.	560.
MAXIMUM	2951.	3316.	3746.	4503.	4776.	10377.	2580.	1280.	5768.	3787.	1793.	3530.	
MINIMUM	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
STD.DEV.	829.	878.	755.	1079.	1306.	2119.	544.	294.	1547.	1065.	551.	663.	

TABLE A-8 FLOOD SPILLS AND RELEASES FROM LAKE TEXANA AS SIMULATED BY THE TWDB USING THE SIMDLY MODEL WITH INFLOWS TO THE RESERVOIR FROM DATA SET NO. 3, WITH FIRM ANNUAL YIELD OPERATION AND WITH DAILY RELEASES ACCORDING TO THE TPWD/TWDB PROPOSED RELEASE PROGRAM [4]

TWDB RESOP SPILLS AND RELEASES FROM LAKE TEXANA WITH THE B&E RELEASE PROGRAM IN OPERATION IN CFS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	1049.	660.	2193.	2410.	3586.	2030.	1990.	455.	440.	1412.	704.	192.	1433.
1942	71.	119.	124.	1283.	95.	159.	2329.	151.	313.	99.	68.	61.	408.
1943	81.	70.	297.	66.	252.	126.	91.	69.	5.	5.	329.	669.	173.
1944	2689.	342.	3719.	121.	2211.	190.	79.	154.	306.	29.	14.	430.	867.
1945	533.	187.	95.	2565.	70.	112.	92.	835.	137.	168.	24.	43.	408.
1946	104.	1330.	705.	189.	851.	2823.	308.	191.	1491.	2013.	1309.	155.	947.
1947	1189.	111.	115.	173.	1445.	90.	80.	119.	105.	5.	5.	5.	290.
1948	31.	126.	413.	74.	583.	60.	66.	35.	145.	5.	5.	5.	130.
1949	5.	5.	74.	1434.	216.	69.	95.	113.	146.	3242.	67.	988.	543.
1950	497.	459.	55.	192.	76.	594.	51.	41.	162.	6.	5.	5.	176.
1951	5.	5.	5.	4.	4.	11.	5.	5.	5.	4.	5.	5.	5.
1952	5.	5.	5.	200.	1587.	266.	43.	46.	103.	4.	6.	266.	213.
1953	91.	57.	32.	21.	1392.	44.	34.	654.	1005.	37.	24.	42.	283.
1954	14.	7.	5.	4.	5.	4.	2.	2.	5.	3.	0.	0.	4.
1955	2.	5.	5.	4.	4.	5.	5.	5.	5.	4.	0.	0.	4.
1956	2.	2.	0.	1.	3.	1.	0.	3.	4.	3.	3.	2.	2.
1957	0.	3.	5.	1234.	1626.	1580.	5.	33.	224.	2887.	1586.	85.	774.
1958	1063.	2121.	106.	67.	282.	39.	60.	72.	415.	237.	61.	173.	380.
1959	189.	3219.	93.	2343.	310.	685.	100.	194.	363.	1664.	622.	649.	890.
1960	563.	630.	109.	162.	259.	5496.	671.	1265.	280.	3194.	1794.	1898.	1353.
1961	1979.	3316.	108.	122.	58.	2883.	1228.	146.	5648.	114.	1050.	78.	1367.
1962	77.	93.	75.	309.	141.	312.	82.	40.	121.	5.	5.	5.	105.
1963	24.	44.	33.	9.	5.	4.	5.	5.	5.	5.	5.	5.	13.
1964	5.	5.	5.	5.	5.	132.	6.	5.	312.	118.	24.	5.	52.
1965	42.	532.	63.	50.	2256.	666.	115.	83.	84.	97.	824.	537.	446.
1966	314.	965.	233.	1021.	2121.	671.	125.	166.	186.	76.	10.	16.	488.
1967	5.	5.	5.	5.	4.	5.	5.	3.	3831.	1173.	54.	31.	425.
1968	2647.	221.	151.	219.	2493.	6677.	458.	134.	359.	216.	66.	79.	1141.
1969	74.	2275.	1190.	2224.	2726.	234.	78.	53.	27.	28.	46.	58.	740.
1970	357.	77.	1320.	259.	2748.	728.	118.	97.	936.	1801.	46.	29.	717.
1971	28.	38.	20.	5.	5.	5.	5.	91.	2106.	1127.	62.	822.	360.
1972	471.	941.	128.	52.	4751.	506.	179.	152.	195.	131.	68.	28.	636.
1973	72.	121.	1435.	4511.	676.	10312.	297.	283.	2857.	2264.	306.	92.	1922.
1974	1895.	212.	87.	227.	1428.	1083.	120.	134.	3887.	269.	1609.	553.	957.
1975	224.	198.	76.	334.	3438.	1346.	349.	186.	349.	158.	47.	55.	568.
1976	49.	40.	39.	374.	639.	607.	302.	46.	169.	411.	136.	3530.	533.
1977	350.	1472.	87.	1847.	201.	707.	118.	36.	147.	49.	53.	30.	413.
1978	269.	477.	45.	162.	30.	352.	124.	46.	3999.	246.	80.	93.	487.
1979	2918.	1487.	583.	1972.	3047.	855.	214.	161.	3633.	107.	50.	74.	1252.
AVERAGE	511.	564.	355.	687.	1067.	1089.	257.	162.	886.	600.	286.	302.	562.
MAXIMUM	2918.	3316.	3719.	4511.	4751.	10312.	2329.	1265.	5648.	3242.	1794.	3530.	
MINIMUM	0.	2.	0.	1.	3.	1.	0.	2.	4.	3.	0.	0.	
STD.DEV.	816.	366.	730.	1048.	1271.	2086.	503.	249.	1436.	965.	507.	649.	

APPENDIX B.

1941-1979 MONTHLY TOTAL INFLOWS TO LAVACA BAY FOR CASES A, B, C AND D

TABLE B-1 MONTHLY TOTAL INFLOWS TO LAVACA BAY FOR CASE A

SUMMARY OF TOTAL INFLOWS INTO LAVACA BAY IN CFS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	1670.	1119.	3427.	3668.	6442.	4620.	2628.	747.	383.	1516.	1048.	382.	2313.
1942	210.	431.	265.	2393.	182.	245.	3321.	218.	728.	195.	439.	328.	746.
1943	422.	159.	376.	139.	382.	262.	303.	157.	114.	78.	1531.	1037.	457.
1944	3298.	672.	4731.	275.	2971.	359.	149.	348.	533.	105.	456.	1260.	1276.
1945	1083.	510.	302.	3276.	140.	249.	132.	1002.	251.	204.	81.	279.	623.
1946	781.	1843.	1008.	411.	1149.	3256.	527.	1187.	3283.	2953.	2183.	430.	1574.
1947	2146.	260.	542.	364.	1674.	180.	137.	185.	171.	35.	92.	358.	518.
1948	359.	876.	678.	127.	2111.	116.	200.	30.	211.	26.	43.	29.	401.
1949	147.	845.	399.	4026.	369.	203.	458.	352.	243.	2448.	138.	1685.	941.
1950	657.	603.	108.	413.	143.	1060.	142.	39.	198.	24.	12.	30.	282.
1951	41.	34.	29.	54.	32.	1515.	30.	46.	408.	119.	39.	30.	219.
1952	32.	148.	70.	1539.	3333.	499.	84.	66.	155.	19.	769.	1324.	672.
1953	177.	203.	94.	82.	2513.	72.	139.	1197.	1198.	72.	52.	93.	495.
1954	32.	24.	22.	102.	150.	57.	9.	30.	210.	52.	1.	1.	57.
1955	25.	1489.	21.	81.	1395.	321.	127.	264.	521.	74.	2.	5.	353.
1956	28.	105.	7.	44.	13.	21.	23.	29.	45.	2.	1.	77.	32.
1957	0.	198.	1661.	3651.	2180.	2018.	37.	74.	697.	5515.	3054.	274.	1617.
1958	1891.	3011.	368.	159.	932.	79.	279.	80.	1067.	549.	311.	644.	767.
1959	390.	4302.	285.	4337.	799.	1162.	206.	594.	344.	1509.	1036.	892.	1296.
1960	1089.	998.	310.	385.	546.	5594.	955.	2259.	480.	6848.	2860.	2060.	2034.
1961	2789.	4766.	449.	260.	210.	4251.	1725.	392.	7697.	346.	2541.	254.	2102.
1962	208.	239.	176.	1393.	326.	602.	371.	119.	575.	102.	121.	296.	375.
1963	384.	644.	76.	60.	79.	99.	509.	108.	105.	38.	133.	293.	210.
1964	108.	381.	277.	112.	99.	894.	140.	142.	818.	195.	81.	40.	271.
1965	1241.	1731.	143.	165.	4532.	1445.	319.	151.	229.	344.	2370.	960.	1147.
1966	587.	1352.	531.	1767.	2782.	822.	358.	423.	235.	114.	55.	95.	756.
1967	78.	60.	45.	187.	198.	110.	128.	535.	5995.	1954.	176.	93.	794.
1968	3927.	515.	421.	508.	3857.	8333.	894.	225.	539.	396.	265.	714.	1715.
1969	417.	3546.	2189.	3311.	3866.	343.	171.	132.	327.	371.	288.	842.	1301.
1970	887.	154.	1849.	302.	3418.	1320.	375.	184.	1915.	2347.	123.	67.	1088.
1971	73.	100.	63.	170.	119.	147.	133.	1345.	3637.	1507.	150.	1648.	761.
1972	956.	1602.	496.	144.	7716.	1217.	606.	322.	287.	207.	133.	109.	1155.
1973	277.	664.	3233.	7034.	1519.	15908.	891.	994.	3572.	4530.	967.	353.	3312.
1974	3337.	613.	339.	546.	1944.	1907.	296.	497.	6108.	519.	2419.	1072.	1629.
1975	524.	454.	192.	1361.	4332.	2293.	1017.	637.	410.	321.	160.	792.	1062.
1976	106.	88.	97.	1124.	1767.	1235.	1486.	92.	253.	1641.	998.	6185.	1266.
1977	871.	2719.	348.	2727.	452.	1590.	326.	111.	322.	325.	465.	77.	843.
1978	947.	704.	178.	580.	78.	661.	474.	55.	7084.	404.	546.	202.	982.
1979	5145.	2587.	1133.	2768.	5507.	2340.	540.	180.	3503.	180.	111.	190.	2025.
AVERAGE	958.	1050.	706.	1289.	1801.	1728.	529.	399.	1417.	979.	673.	654.	1012.
MAXIMUM	5145.	4766.	4731.	7034.	7716.	15908.	3321.	2259.	7697.	6848.	3054.	6185.	
MINIMUM	0.	24.	7.	44.	13.	21.	9.	29.	45.	2.	1.	1.	
STD.DEV.	1223.	1207.	1051.	1645.	1965.	2916.	698.	473.	2081.	1587.	902.	1053.	

TABLE B-2 MONTHLY TOTAL INFLOWS TO LAVACA BAY FOR CASE B

SUMMARY OF TOTAL INFLOWS INTO LAVACA BAY IN CFS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	1764.	1209.	3659.	3755.	6510.	4216.	2598.	754.	561.	1895.	1103.	423.	2380.
1942	147.	308.	383.	2333.	182.	213.	3834.	222.	626.	182.	377.	190.	754.
1943	397.	136.	904.	125.	372.	261.	307.	164.	125.	65.	1440.	1080.	450.
1944	3498.	612.	5183.	232.	3315.	327.	137.	214.	615.	89.	425.	1121.	1330.
1945	1027.	391.	332.	3326.	129.	248.	126.	1498.	212.	215.	44.	213.	645.
1946	639.	1975.	1050.	389.	1153.	3820.	513.	1172.	3250.	3548.	2102.	403.	1657.
1947	1939.	234.	516.	352.	2232.	159.	135.	175.	146.	35.	89.	322.	534.
1948	311.	877.	703.	117.	2054.	132.	189.	47.	172.	26.	36.	28.	392.
1949	73.	736.	369.	3033.	371.	130.	238.	263.	203.	4414.	128.	1640.	969.
1950	723.	675.	98.	400.	155.	1069.	115.	48.	169.	24.	11.	20.	288.
1951	26.	33.	84.	51.	35.	1266.	25.	41.	552.	115.	36.	29.	189.
1952	20.	137.	110.	1308.	3348.	474.	81.	66.	141.	18.	796.	1100.	635.
1953	155.	201.	65.	71.	2543.	72.	95.	1389.	1196.	63.	43.	88.	503.
1954	30.	23.	20.	78.	149.	20.	8.	26.	59.	24.	0.	0.	38.
1955	25.	1550.	22.	66.	1440.	298.	32.	252.	344.	48.	2.	5.	332.
1956	15.	97.	7.	20.	13.	7.	20.	26.	52.	13.	14.	80.	30.
1957	0.	198.	2046.	4025.	2213.	1987.	21.	38.	673.	5273.	2874.	245.	1636.
1958	1913.	3429.	320.	145.	891.	70.	282.	87.	1039.	551.	316.	760.	800.
1959	302.	4619.	234.	4370.	784.	1022.	179.	605.	440.	2190.	951.	982.	1360.
1960	767.	995.	237.	331.	445.	7033.	1054.	2087.	369.	7105.	2785.	2596.	2155.
1961	3049.	4577.	357.	239.	151.	4705.	1993.	229.	8103.	271.	2444.	220.	2157.
1962	198.	226.	148.	1340.	239.	584.	264.	78.	441.	96.	51.	237.	323.
1963	324.	643.	87.	47.	73.	84.	403.	69.	77.	21.	123.	242.	180.
1964	80.	352.	426.	99.	77.	877.	127.	130.	946.	172.	67.	58.	282.
1965	1174.	1925.	157.	129.	4228.	1412.	182.	116.	186.	317.	2317.	891.	1080.
1966	522.	1368.	307.	1731.	2959.	965.	333.	449.	222.	95.	29.	39.	765.
1967	61.	40.	42.	175.	174.	82.	109.	419.	6740.	2131.	159.	77.	847.
1968	3974.	460.	394.	479.	4123.	8892.	872.	198.	475.	299.	246.	674.	1756.
1969	391.	3595.	2061.	3782.	4242.	348.	137.	118.	290.	425.	201.	812.	1351.
1970	853.	157.	1913.	406.	4172.	1232.	306.	142.	1776.	2340.	106.	64.	1133.
1971	60.	81.	61.	88.	91.	145.	116.	1332.	4267.	1625.	161.	1585.	803.
1972	971.	1483.	303.	116.	8159.	1050.	509.	313.	243.	170.	181.	63.	1153.
1973	253.	745.	2886.	7272.	1331.	15621.	845.	627.	3380.	4356.	708.	298.	3175.
1974	3145.	328.	300.	481.	2103.	2099.	249.	441.	5758.	439.	2475.	936.	1576.
1975	473.	443.	181.	1204.	5338.	2018.	1017.	447.	416.	215.	95.	824.	1062.
1976	99.	82.	92.	1094.	1697.	1113.	946.	87.	239.	1589.	874.	6058.	1170.
1977	781.	2666.	302.	2996.	412.	1266.	245.	73.	217.	192.	549.	78.	795.
1978	1006.	732.	169.	313.	73.	735.	260.	67.	7530.	392.	489.	229.	1004.
1979	4658.	2432.	1099.	3159.	5638.	2460.	629.	235.	4863.	172.	120.	164.	2128.
AVERAGE	919.	1050.	720.	1281.	1887.	1757.	500.	378.	1464.	1057.	640.	638.	1021.
MAXIMUM	4658.	4619.	5185.	7272.	8159.	15621.	3834.	2087.	8103.	7105.	2874.	6058.	
MINIMUM	0.	23.	7.	20.	13.	7.	8.	26.	52.	13.	0.	0.	
STD.DEV.	1203.	1240.	1104.	1688.	2095.	2990.	763.	482.	2242.	1707.	877.	1056.	

TABLE B-3 MONTHLY TOTAL INFLOWS TO LAVACA BAY FOR CASE C

SUMMARY OF TOTAL INFLOWS INTO LAVACA BAY IN CFS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	1671.	1131.	3384.	3689.	6429.	4105.	2450.	591.	420.	1819.	986.	313.	2275.
1942	72.	178.	261.	2251.	89.	54.	3742.	77.	518.	87.	196.	82.	636.
1943	312.	61.	766.	60.	177.	161.	132.	55.	36.	27.	1030.	1008.	321.
1944	3460.	514.	5119.	148.	3214.	187.	52.	49.	312.	38.	229.	1046.	1212.
1945	926.	295.	236.	3233.	60.	136.	32.	1208.	122.	45.	20.	35.	527.
1946	490.	1883.	960.	275.	1049.	3709.	377.	976.	3144.	3458.	2014.	302.	1542.
1947	1863.	125.	403.	249.	2153.	70.	33.	26.	17.	17.	35.	57.	427.
1948	67.	731.	618.	44.	1874.	76.	48.	12.	20.	11.	14.	16.	295.
1949	37.	180.	71.	2913.	230.	62.	66.	87.	35.	4305.	71.	1482.	801.
1950	621.	587.	43.	217.	79.	923.	29.	6.	7.	5.	6.	11.	207.
1951	15.	18.	20.	16.	11.	324.	7.	2.	141.	32.	14.	14.	51.
1952	11.	37.	24.	446.	3238.	386.	29.	20.	18.	4.	290.	925.	456.
1953	108.	59.	33.	50.	2240.	28.	33.	994.	1079.	26.	18.	17.	394.
1954	16.	13.	12.	85.	69.	6.	2.	5.	8.	2.	0.	0.	18.
1955	10.	651.	16.	32.	697.	115.	12.	151.	44.	5.	2.	5.	142.
1956	6.	18.	7.	4.	8.	1.	17.	0.	0.	1.	0.	33.	8.
1957	0.	84.	494.	2943.	2111.	1866.	15.	5.	169.	5128.	2784.	147.	1316.
1958	1823.	3360.	211.	78.	742.	31.	121.	15.	588.	445.	219.	655.	674.
1959	246.	4498.	159.	4215.	662.	859.	78.	351.	274.	2088.	842.	868.	1232.
1960	671.	899.	147.	226.	341.	6874.	859.	1936.	215.	7007.	2680.	2531.	2033.
1961	2964.	4501.	231.	118.	93.	4497.	1835.	82.	7967.	158.	2305.	126.	2035.
1962	96.	96.	73.	1182.	158.	390.	157.	21.	154.	59.	36.	60.	205.
1963	83.	410.	49.	30.	30.	29.	72.	8.	7.	5.	20.	39.	63.
1964	36.	74.	95.	74.	30.	335.	18.	26.	618.	102.	11.	16.	118.
1965	867.	1853.	87.	71.	4010.	1247.	49.	32.	21.	88.	2111.	827.	932.
1966	441.	1279.	388.	1645.	2876.	822.	141.	258.	64.	19.	19.	22.	660.
1967	25.	22.	27.	73.	39.	12.	4.	19.	6105.	2000.	85.	46.	701.
1968	3777.	371.	299.	358.	4024.	8777.	688.	71.	231.	164.	107.	568.	1618.
1969	283.	3514.	1943.	3673.	4127.	220.	49.	37.	56.	123.	65.	612.	1209.
1970	741.	74.	1792.	297.	4086.	1059.	103.	45.	1544.	2227.	46.	35.	1015.
1971	33.	37.	37.	31.	24.	90.	19.	646.	3811.	1499.	83.	1439.	647.
1972	872.	1380.	375.	64.	7961.	892.	324.	194.	48.	40.	45.	35.	1026.
1973	77.	658.	2773.	7163.	1187.	15493.	645.	453.	3259.	4237.	567.	178.	3038.
1974	3060.	397.	181.	335.	1979.	1937.	63.	231.	5614.	310.	2375.	842.	1440.
1975	371.	333.	96.	1020.	5225.	1865.	837.	275.	250.	70.	48.	639.	926.
1976	50.	43.	53.	745.	1569.	978.	710.	41.	70.	1316.	771.	5975.	1036.
1977	698.	2561.	139.	2863.	281.	1112.	64.	37.	69.	28.	252.	47.	664.
1978	797.	650.	106.	309.	42.	496.	43.	20.	7196.	256.	365.	135.	856.
1979	4582.	2349.	983.	3033.	5525.	2306.	475.	82.	4698.	73.	49.	65.	2012.
AVERAGE	828.	921.	589.	1136.	1762.	1603.	370.	234.	1255.	957.	534.	545.	891.
MAXIMUM	4582.	4501.	5119.	7163.	7961.	15493.	3742.	1936.	7967.	7007.	2784.	5975.	
MINIMUM	0.	13.	7.	4.	8.	1.	2.	0.	0.	1.	0.	0.	
STD.DEV.	1192.	1245.	1079.	1543.	2082.	2990.	752.	411.	2206.	1695.	850.	1048.	

TABLE B-4 MONTHLY TOTAL INFLOWS TO LAVACA BAY FOR CASE D

SUMMARY OF TOTAL INFLOWS INTO LAVACA BAY IN CFS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	1671.	1131.	3384.	3689.	6429.	4104.	2477.	657.	530.	1622.	1020.	296.	2276.
1942	143.	205.	210.	2204.	182.	213.	3490.	210.	601.	182.	155.	131.	663.
1943	132.	130.	518.	123.	364.	261.	224.	123.	41.	32.	528.	1008.	297.
1944	3460.	543.	5091.	252.	3113.	327.	131.	203.	527.	64.	116.	604.	1216.
1945	900.	303.	222.	3250.	129.	248.	125.	927.	204.	211.	44.	78.	551.
1946	194.	1872.	961.	297.	1035.	3717.	436.	905.	3143.	3485.	1986.	331.	1519.
1947	1833.	233.	321.	344.	2053.	159.	113.	145.	122.	22.	40.	62.	459.
1948	99.	347.	586.	117.	1776.	132.	115.	47.	164.	16.	19.	21.	288.
1949	42.	185.	146.	2513.	371.	130.	161.	200.	181.	3761.	105.	1449.	776.
1950	636.	575.	98.	311.	155.	743.	79.	48.	169.	12.	10.	16.	234.
1951	20.	23.	23.	20.	16.	335.	12.	7.	146.	36.	19.	19.	56.
1952	16.	42.	29.	454.	2899.	468.	73.	66.	121.	8.	296.	655.	430.
1953	141.	115.	64.	71.	2125.	72.	67.	900.	1160.	63.	42.	58.	410.
1954	30.	21.	17.	89.	74.	10.	4.	7.	12.	5.	0.	0.	22.
1955	12.	656.	20.	36.	701.	120.	17.	156.	49.	9.	2.	5.	146.
1956	7.	21.	7.	6.	11.	2.	17.	4.	4.	4.	3.	35.	10.
1957	0.	87.	497.	2746.	2142.	1915.	21.	38.	393.	4821.	2763.	205.	1305.
1958	1765.	3360.	272.	145.	672.	70.	181.	87.	810.	467.	127.	290.	670.
1959	275.	4465.	201.	4200.	656.	841.	159.	271.	440.	1964.	856.	820.	1232.
1960	696.	872.	192.	277.	344.	6774.	875.	1922.	361.	6866.	2681.	2530.	2033.
1961	2964.	4501.	272.	239.	151.	4297.	1817.	228.	7847.	271.	2160.	203.	2042.
1962	173.	190.	148.	942.	239.	555.	137.	61.	274.	64.	41.	65.	239.
1963	107.	362.	87.	39.	34.	33.	77.	13.	12.	10.	25.	44.	68.
1964	41.	79.	100.	79.	35.	428.	24.	31.	514.	160.	34.	21.	128.
1965	644.	1541.	146.	129.	3897.	1357.	164.	116.	104.	184.	1644.	818.	891.
1966	440.	1279.	388.	1649.	2886.	822.	214.	223.	222.	95.	29.	38.	686.
1967	30.	27.	32.	80.	43.	17.	9.	22.	5796.	2039.	139.	77.	689.
1968	3650.	381.	319.	444.	3914.	8773.	688.	196.	473.	265.	114.	282.	1623.
1969	187.	3434.	1945.	3673.	4175.	348.	126.	91.	80.	151.	112.	358.	1207.
1970	634.	150.	1718.	356.	4022.	1213.	179.	142.	1315.	2141.	87.	64.	1012.
1971	60.	76.	57.	36.	29.	95.	24.	737.	3568.	1512.	144.	1385.	645.
1972	842.	1416.	356.	116.	7936.	903.	292.	259.	243.	170.	113.	63.	1065.
1973	144.	316.	2533.	7170.	1254.	15428.	687.	445.	3258.	4227.	533.	220.	3001.
1974	3017.	455.	214.	326.	1969.	1953.	182.	245.	5420.	414.	2248.	841.	1437.
1975	395.	374.	173.	942.	5171.	1944.	794.	285.	416.	215.	94.	263.	928.
1976	98.	82.	92.	903.	1464.	899.	642.	87.	239.	1316.	529.	5975.	1037.
1977	678.	2575.	272.	2788.	412.	1014.	182.	73.	217.	78.	218.	78.	698.
1978	425.	664.	151.	420.	73.	494.	167.	67.	6862.	371.	223.	167.	829.
1979	4549.	2349.	985.	3034.	5542.	2384.	382.	234.	4555.	172.	99.	139.	2029.
AVERAGE	801.	909.	591.	1142.	1756.	1631.	399.	269.	1297.	962.	497.	505.	893.
MAXIMUM	4549.	4501.	5091.	7170.	7936.	15428.	3490.	1922.	7847.	6866.	2763.	5975.	
MINIMUM	0.	21.	7.	6.	11.	2.	4.	4.	4.	4.	0.	0.	
STD.DEV.	1178.	1230.	1053.	1609.	2047.	2959.	708.	373.	2092.	1612.	803.	1036.	

APPENDIX C.

1941-1979 MONTHLY TOTAL FLOWS AT LAVACA AND NAVIDAD RIVER GAGE SITES FOR CASES A', B', C' AND D'

TABLE C-1 MONTHLY TOTAL INFLOWS TO LAVACA BAY FOR CASE A'

SUMMARY OF TOTAL EFFECTIVE FLOWS AT THE LOWER GAGE SITES ON THE LAVACA AND NAVIDAD RIVERS IN CFS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	1504.	1036.	2982.	3582.	5815.	3985.	1313.	717.	265.	811.	852.	304.	1978.
1942	144.	200.	198.	2326.	179.	195.	2726.	218.	604.	183.	318.	190.	624.
1943	373.	136.	779.	121.	367.	250.	291.	157.	114.	67.	645.	953.	357.
1944	2357.	587.	4071.	254.	2318.	303.	135.	134.	516.	90.	426.	981.	1024.
1945	1027.	375.	268.	2738.	122.	239.	125.	650.	203.	192.	44.	210.	514.
1946	565.	1622.	912.	364.	886.	3101.	455.	1151.	3022.	2416.	1943.	403.	1395.
1947	1913.	234.	514.	347.	1438.	142.	128.	164.	134.	34.	89.	234.	453.
1948	305.	735.	597.	114.	2032.	114.	173.	26.	164.	24.	36.	28.	363.
1949	73.	736.	369.	2906.	366.	116.	239.	258.	196.	2305.	128.	1312.	750.
1950	553.	476.	95.	360.	130.	1006.	100.	27.	153.	23.	11.	20.	243.
1951	26.	33.	83.	48.	29.	1269.	22.	37.	545.	113.	37.	29.	188.
1952	20.	137.	68.	1148.	2896.	482.	78.	60.	138.	16.	685.	1089.	570.
1953	135.	176.	67.	82.	2092.	59.	108.	731.	1123.	67.	43.	88.	406.
1954	30.	23.	21.	102.	149.	8.	5.	26.	56.	25.	0.	1.	37.
1955	24.	1430.	21.	61.	1314.	294.	36.	258.	332.	51.	2.	5.	315.
1956	15.	97.	7.	29.	9.	10.	17.	23.	40.	2.	1.	77.	27.
1957	0.	197.	1612.	3368.	1809.	1682.	34.	31.	679.	5014.	2817.	245.	1460.
1958	1701.	2717.	316.	156.	899.	68.	279.	78.	1003.	482.	255.	515.	693.
1959	274.	3380.	237.	4031.	788.	996.	191.	412.	309.	1124.	871.	793.	1095.
1960	727.	883.	218.	364.	460.	4558.	849.	1945.	366.	6312.	2443.	1654.	1734.
1961	2476.	4114.	351.	244.	176.	3800.	1626.	250.	6472.	276.	2198.	219.	1817.
1962	198.	225.	149.	1292.	249.	596.	292.	94.	433.	101.	49.	238.	324.
1963	323.	625.	89.	60.	79.	99.	421.	87.	82.	25.	123.	241.	185.
1964	80.	345.	247.	112.	83.	790.	135.	142.	700.	155.	64.	29.	238.
1965	1165.	1811.	133.	143.	4173.	1412.	200.	131.	196.	321.	2305.	828.	1063.
1966	460.	1017.	505.	1482.	2536.	640.	349.	351.	226.	99.	29.	39.	642.
1967	61.	40.	41.	186.	163.	79.	104.	380.	5467.	1824.	157.	77.	712.
1968	3721.	404.	391.	480.	3380.	6835.	738.	203.	478.	268.	215.	673.	1482.
1969	391.	3163.	1951.	3037.	3549.	283.	146.	127.	291.	329.	201.	740.	1170.
1970	730.	142.	1442.	233.	3236.	983.	310.	145.	1572.	1523.	106.	64.	882.
1971	60.	81.	51.	94.	92.	145.	121.	1528.	3320.	1274.	133.	1462.	683.
1972	833.	1454.	488.	137.	7271.	1065.	495.	317.	239.	118.	111.	63.	1054.
1973	241.	558.	2792.	6421.	1191.	14275.	848.	625.	1957.	3849.	666.	295.	2795.
1974	3055.	520.	302.	436.	1452.	1762.	251.	428.	5737.	418.	2266.	811.	1449.
1975	438.	406.	184.	1217.	4290.	1651.	998.	447.	423.	212.	95.	748.	933.
1976	99.	82.	94.	1106.	1715.	1098.	845.	80.	244.	1586.	822.	5811.	1141.
1977	745.	2573.	303.	2631.	421.	1096.	254.	87.	218.	165.	437.	75.	732.
1978	837.	609.	175.	497.	74.	637.	169.	42.	6865.	345.	390.	176.	891.
1979	4202.	2156.	1012.	2833.	5217.	2283.	522.	169.	3111.	158.	107.	108.	1818.
AVERAGE	819.	912.	620.	1158.	1627.	1498.	476.	323.	1231.	831.	567.	560.	878.
MAXIMUM	4202.	4114.	4071.	6421.	7271.	14275.	2726.	1945.	6865.	6312.	2817.	5811.	
MINIMUM	0.	23.	7.	29.	9.	8.	5.	23.	40.	2.	0.	1.	
STD.DEV.	1056.	1045.	910.	1471.	1823.	2566.	557.	403.	1883.	1422.	808.	970.	

TABLE C-2 MONTHLY TOTAL INFLOWS TO LAVACA BAY FOR CASE B'

SUMMARY OF TOTAL EFFECTIVE FLOWS AT THE LOWER GAGE SITES ON THE LAVACA AND NAVIDAD RIVERS IN CFS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	1529.	1052.	3044.	3598.	5888.	4016.	1895.	731.	310.	914.	870.	315.	2019.
1942	145.	210.	213.	2331.	182.	202.	2837.	222.	616.	182.	325.	190.	637.
1943	375.	136.	790.	125.	372.	258.	300.	164.	125.	65.	717.	964.	369.
1944	2463.	389.	4176.	231.	2419.	312.	136.	153.	537.	89.	425.	994.	1055.
1945	1027.	376.	274.	2792.	125.	242.	126.	741.	212.	194.	44.	209.	528.
1946	389.	1653.	923.	370.	924.	3183.	469.	1164.	3056.	2523.	1958.	402.	1425.
1947	1915.	234.	514.	352.	1532.	154.	135.	175.	146.	35.	89.	242.	465.
1948	305.	745.	607.	115.	2049.	132.	189.	47.	172.	26.	36.	28.	372.
1949	73.	735.	369.	2923.	370.	179.	238.	261.	203.	2506.	128.	1344.	773.
1950	568.	495.	78.	367.	148.	1038.	115.	48.	169.	24.	11.	20.	255.
1951	26.	33.	83.	51.	35.	1263.	25.	41.	551.	112.	36.	29.	189.
1952	20.	136.	72.	1163.	2943.	474.	81.	66.	138.	18.	696.	1090.	577.
1953	155.	178.	65.	71.	2124.	56.	81.	827.	1124.	63.	43.	88.	409.
1954	30.	23.	20.	78.	144.	17.	8.	26.	59.	23.	0.	0.	37.
1955	24.	1484.	22.	57.	1329.	291.	32.	252.	334.	48.	2.	5.	315.
1956	15.	97.	7.	20.	13.	7.	20.	26.	52.	13.	14.	80.	30.
1957	0.	197.	1644.	3411.	1838.	1703.	21.	38.	673.	5034.	2821.	245.	1472.
1958	1719.	2784.	313.	142.	888.	70.	282.	87.	1017.	485.	261.	539.	702.
1959	274.	3497.	232.	4073.	777.	987.	179.	434.	338.	1224.	879.	812.	1118.
1960	730.	892.	218.	331.	445.	4770.	856.	1947.	366.	6386.	2474.	1745.	1767.
1961	2531.	4157.	357.	235.	150.	3873.	1650.	229.	6653.	271.	2221.	219.	1845.
1962	198.	225.	148.	1287.	227.	574.	264.	78.	440.	96.	50.	237.	316.
1963	323.	627.	87.	47.	73.	84.	401.	69.	77.	21.	123.	240.	178.
1964	80.	345.	262.	99.	77.	797.	127.	129.	727.	153.	64.	32.	238.
1965	1165.	1822.	135.	129.	4170.	1403.	182.	116.	186.	317.	2307.	835.	1058.
1966	466.	1050.	302.	1300.	2573.	664.	331.	350.	222.	95.	29.	39.	649.
1967	61.	40.	42.	174.	173.	82.	109.	385.	5600.	1850.	157.	77.	726.
1968	3747.	409.	339.	471.	3451.	7035.	749.	198.	472.	272.	218.	673.	1507.
1969	391.	3205.	1956.	3106.	3617.	288.	137.	118.	290.	345.	200.	747.	1186.
1970	742.	143.	1484.	248.	3328.	1004.	306.	142.	1525.	1603.	106.	64.	905.
1971	60.	81.	61.	86.	91.	145.	116.	1329.	3422.	1306.	136.	1474.	695.
1972	846.	1436.	491.	115.	7344.	1049.	500.	313.	236.	128.	118.	63.	1060.
1973	242.	575.	2796.	6495.	1196.	14408.	839.	623.	2093.	3884.	669.	295.	2828.
1974	3063.	520.	295.	432.	1503.	1791.	247.	423.	5742.	419.	2287.	823.	1458.
1975	459.	409.	181.	1204.	4386.	1676.	1003.	444.	416.	210.	95.	757.	942.
1976	99.	82.	92.	1071.	1697.	1095.	856.	87.	238.	1581.	827.	5833.	1141.
1977	749.	2582.	302.	2660.	407.	1110.	245.	73.	215.	165.	448.	76.	734.
1978	853.	620.	169.	488.	70.	664.	182.	56.	6937.	347.	400.	182.	903.
1979	4241.	2178.	1016.	2859.	5245.	2295.	533.	175.	3282.	158.	108.	113.	1845.
AVERAGE	828.	925.	627.	1164.	1649.	1522.	431.	328.	1257.	851.	574.	567.	891.
MAXIMUM	4241.	4157.	4176.	6495.	7344.	14408.	2837.	1947.	6937.	6386.	2821.	5833.	
MINIMUM	0.	23.	7.	20.	13.	7.	8.	26.	52.	13.	0.	0.	
STD.DEV.	1069.	1063.	927.	1510.	1848.	2604.	578.	407.	1917.	1445.	813.	977.	

TABLE C-3 MONTHLY TOTAL INFLOWS TO LAVACA BAY FOR CASE C'

SUMMARY OF TOTAL EFFECTIVE FLOWS AT THE LOWER GAGE SITES ON THE LAVACA AND NAVIDAD RIVERS IN CFS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	1656.	1116.	3536.	3677.	6369.	4059.	2380.	587.	419.	1768.	915.	306.	2241.
1942	72.	171.	251.	2249.	89.	53.	3655.	77.	511.	87.	196.	81.	627.
1943	309.	60.	752.	60.	176.	161.	132.	55.	36.	27.	965.	996.	313.
1944	3370.	308.	5049.	147.	3131.	185.	52.	49.	297.	38.	229.	1033.	1188.
1945	926.	292.	236.	3167.	56.	132.	32.	1160.	122.	45.	20.	32.	516.
1946	432.	1341.	947.	274.	1030.	3643.	356.	973.	3115.	3399.	1999.	302.	1520.
1947	1855.	125.	403.	249.	2130.	69.	33.	26.	17.	17.	35.	44.	423.
1948	61.	639.	601.	43.	1870.	76.	48.	12.	20.	11.	14.	16.	289.
1949	37.	179.	71.	2882.	229.	62.	66.	86.	35.	4172.	71.	1463.	785.
1950	598.	379.	43.	210.	79.	909.	29.	6.	7.	5.	6.	11.	203.
1951	15.	18.	20.	16.	11.	322.	7.	2.	141.	29.	14.	14.	50.
1952	11.	37.	24.	433.	3221.	386.	29.	20.	17.	4.	287.	921.	453.
1953	106.	59.	33.	50.	2189.	27.	18.	980.	1036.	26.	18.	17.	384.
1954	16.	13.	12.	85.	69.	6.	2.	5.	8.	2.	0.	0.	18.
1955	10.	649.	16.	32.	695.	110.	12.	151.	44.	5.	2.	5.	141.
1956	6.	18.	7.	4.	8.	1.	17.	0.	0.	1.	0.	33.	8.
1957	0.	83.	447.	2858.	2055.	1841.	15.	5.	169.	5098.	2765.	147.	1293.
1958	1739.	3307.	211.	76.	739.	31.	121.	15.	581.	444.	219.	655.	666.
1959	220.	4421.	158.	4187.	658.	845.	78.	346.	272.	2053.	842.	867.	1216.
1960	665.	879.	146.	226.	341.	6680.	838.	1920.	213.	6966.	2645.	2493.	2002.
1961	2931.	4464.	231.	117.	93.	4447.	1809.	82.	7841.	158.	2293.	126.	2012.
1962	96.	96.	73.	1174.	156.	386.	157.	21.	154.	59.	36.	60.	204.
1963	83.	410.	49.	30.	30.	29.	72.	8.	7.	5.	20.	39.	63.
1964	36.	73.	89.	74.	30.	334.	18.	26.	610.	101.	11.	15.	117.
1965	859.	1851.	89.	71.	3990.	1242.	49.	32.	21.	88.	2110.	825.	929.
1966	439.	1255.	383.	1600.	2845.	814.	139.	246.	64.	19.	19.	22.	649.
1967	25.	22.	27.	75.	38.	12.	4.	19.	6024.	1975.	84.	46.	692.
1968	3771.	365.	296.	355.	3963.	8610.	666.	71.	228.	159.	107.	567.	1595.
1969	283.	3485.	1909.	3627.	4102.	219.	49.	37.	53.	123.	64.	609.	1197.
1970	733.	74.	1752.	281.	4063.	1014.	103.	45.	1532.	2151.	46.	35.	997.
1971	33.	37.	37.	30.	24.	90.	19.	645.	3748.	1474.	81.	1430.	638.
1972	839.	1367.	374.	64.	7884.	892.	319.	193.	48.	39.	41.	35.	1016.
1973	77.	635.	2738.	7085.	1165.	15382.	640.	453.	3101.	4068.	555.	178.	2987.
1974	3046.	393.	177.	333.	1940.	1920.	63.	226.	5600.	310.	2372.	835.	1431.
1975	369.	330.	96.	1028.	5220.	1751.	837.	275.	250.	70.	48.	639.	916.
1976	30.	43.	33.	748.	1569.	972.	665.	41.	69.	1308.	758.	5931.	1026.
1977	695.	2552.	189.	2859.	280.	1101.	64.	37.	68.	27.	247.	47.	661.
1978	793.	631.	106.	307.	42.	495.	43.	20.	7174.	256.	354.	134.	852.
1979	4515.	2297.	975.	3048.	5489.	2290.	475.	82.	4606.	73.	49.	59.	1989.
AVERAGE	818.	908.	380.	1124.	1745.	1579.	362.	232.	1237.	940.	527.	540.	880.
MAXIMUM	4515.	4464.	5049.	7085.	7884.	15382.	3655.	1920.	7841.	6966.	2765.	5931.	
MINIMUM	0.	13.	7.	4.	8.	1.	2.	0.	0.	1.	0.	0.	
STD.DEV.	1178.	1230.	1064.	1627.	2065.	2954.	734.	405.	2179.	1669.	843.	1039.	

TABLE C-4 MONTHLY TOTAL INFLOWS TO LAVACA BAY FOR CASE D'

SUMMARY OF TOTAL EFFECTIVE FLOWS AT THE LOWER GAGE SITES ON THE LAVACA AND NAVIDAD RIVERS IN CFS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	1656.	1116.	3536.	3677.	6369.	4058.	2407.	652.	528.	1571.	949.	288.	2242.
1942	143.	197.	200.	2202.	182.	212.	3403.	210.	593.	182.	155.	131.	653.
1943	178.	130.	505.	125.	364.	261.	223.	123.	41.	32.	462.	996.	289.
1944	3370.	537.	5022.	251.	3030.	325.	131.	203.	513.	64.	116.	591.	1192.
1945	900.	300.	222.	3182.	125.	243.	125.	878.	204.	211.	44.	75.	540.
1946	186.	1830.	947.	297.	1016.	3651.	415.	904.	3114.	3425.	1971.	331.	1496.
1947	1824.	233.	321.	344.	2030.	158.	113.	145.	122.	22.	40.	49.	455.
1948	92.	305.	569.	116.	1773.	132.	115.	47.	164.	16.	19.	21.	282.
1949	42.	184.	146.	2472.	370.	130.	161.	199.	181.	3627.	105.	1430.	760.
1950	613.	566.	98.	304.	155.	728.	79.	48.	169.	12.	10.	16.	230.
1951	20.	23.	23.	20.	16.	333.	12.	7.	146.	33.	19.	19.	55.
1952	16.	42.	29.	441.	2883.	468.	73.	66.	121.	8.	294.	652.	427.
1953	141.	115.	64.	71.	2074.	72.	52.	886.	1117.	63.	42.	58.	397.
1954	30.	21.	17.	89.	74.	10.	4.	7.	12.	5.	0.	0.	22.
1955	12.	653.	20.	36.	698.	115.	17.	156.	49.	9.	2.	5.	145.
1956	7.	21.	7.	6.	11.	2.	17.	4.	4.	4.	3.	35.	10.
1957	0.	86.	432.	2658.	2086.	1890.	21.	38.	393.	4791.	2744.	205.	1283.
1958	1731.	3307.	272.	143.	669.	70.	181.	87.	803.	466.	127.	289.	662.
1959	249.	4388.	200.	4171.	652.	826.	159.	265.	438.	1929.	856.	819.	1217.
1960	689.	852.	191.	277.	344.	6580.	854.	1905.	359.	6826.	2646.	2492.	2002.
1961	2931.	4464.	271.	238.	151.	4247.	1792.	228.	7721.	271.	2147.	203.	2019.
1962	173.	190.	148.	934.	237.	551.	137.	61.	274.	64.	41.	65.	238.
1963	107.	362.	87.	32.	34.	33.	77.	13.	12.	10.	25.	44.	68.
1964	41.	78.	94.	79.	35.	427.	24.	31.	505.	159.	34.	20.	126.
1965	637.	1539.	146.	129.	3877.	1352.	164.	116.	104.	184.	1643.	815.	888.
1966	438.	1255.	383.	1607.	2855.	814.	212.	211.	222.	95.	29.	38.	675.
1967	30.	27.	32.	80.	42.	17.	9.	22.	5716.	2014.	138.	77.	680.
1968	3645.	375.	316.	442.	3853.	8607.	666.	196.	470.	261.	114.	281.	1600.
1969	187.	3405.	1909.	3627.	4151.	347.	126.	71.	80.	151.	111.	355.	1195.
1970	627.	150.	1685.	340.	3999.	1168.	179.	142.	1303.	2065.	87.	64.	994.
1971	60.	76.	37.	35.	29.	75.	24.	736.	3504.	1487.	143.	1377.	636.
1972	829.	1403.	355.	116.	7859.	903.	286.	259.	243.	170.	109.	63.	1055.
1973	143.	293.	2497.	7092.	1231.	15317.	682.	445.	3100.	4057.	522.	220.	2950.
1974	3003.	451.	210.	326.	1931.	1937.	182.	240.	5406.	414.	2245.	834.	1428.
1975	394.	372.	173.	942.	5165.	1831.	794.	285.	416.	215.	94.	263.	917.
1976	98.	82.	92.	903.	1464.	894.	596.	87.	238.	1308.	515.	5931.	1027.
1977	675.	2566.	272.	2781.	412.	1003.	182.	73.	215.	76.	213.	78.	695.
1978	420.	645.	151.	418.	73.	493.	167.	67.	6841.	371.	213.	166.	824.
1979	4482.	2297.	973.	3046.	5507.	2369.	382.	234.	4464.	172.	99.	133.	2006.
AVERAGE	791.	896.	582.	1130.	1739.	1607.	391.	266.	1280.	945.	490.	501.	882.
MAXIMUM	4482.	4464.	5022.	7092.	7859.	15317.	3403.	1905.	7721.	6826.	2744.	5931.	
MINIMUM	0.	21.	7.	6.	11.	2.	4.	4.	4.	4.	0.	0.	
STD.DEV.	1164.	1215.	1038.	1592.	2030.	2923.	690.	368.	2065.	1585.	797.	1028.	

APPENDIX D.

1941-1979 SIMULATED LAVACA BAY MONTHLY-AVERAGE SALINITIES BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS FOR CASES A, B, C AND D

TABLE D-1 SIMULATED LAVACA BAY MONTHLY-AVERAGE SALINITIES FOR CASE A BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS

SUMMARY OF MONTHLY SALINITIES IN LAVACA BAY BASED ON TDWR LAKE TEXANA POST-IMPOUNDMENT S-Q REGRESSIONS IN PPT

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	12.40	9.89	9.06	7.70	3.28	2.76	1.76	3.14	7.43	8.19	6.78	12.72	7.08
1942	16.97	16.10	15.91	10.50	7.34	12.06	3.80	4.49	7.15	12.58	14.55	15.45	11.37
1943	15.82	16.63	14.12	14.24	15.07	15.45	11.99	19.81	21.60	28.46	9.28	10.59	16.09
1944	9.42	8.80	8.60	8.60	5.48	5.87	5.91	17.74	13.15	14.89	16.15	12.01	10.56
1945	11.30	11.91	15.18	9.56	6.27	10.93	17.46	10.70	10.81	15.13	25.30	19.58	13.69
1946	14.28	10.09	10.42	12.81	9.08	4.96	3.34	4.83	4.98	4.29	4.02	10.53	7.80
1947	10.98	10.39	15.24	14.76	8.19	8.21	8.80	26.53	21.51	27.08	40.19	18.26	17.53
1948	16.04	12.96	12.30	15.32	7.73	7.51	7.76	35.55	24.59	27.55	45.00	32.39	20.42
1949	24.28	13.93	13.36	8.94	5.44	9.31	11.05	13.92	14.39	6.96	6.80	11.79	11.68
1950	11.30	12.87	15.80	17.58	17.25	10.43	8.20	17.04	26.15	28.40	45.00	38.58	20.74
1951	31.81	32.67	26.08	25.85	44.00	9.37	7.07	14.97	16.32	14.74	27.23	32.82	23.55
1952	33.01	24.48	22.51	12.31	5.18	5.16	5.42	27.28	28.80	31.76	14.43	11.29	18.47
1953	12.89	19.14	20.53	24.75	7.38	6.89	7.40	9.97	7.39	9.62	22.24	26.01	14.47
1954	26.87	35.92	35.91	27.68	27.33	29.35	40.74	45.00	30.08	26.07	45.00	45.00	34.58
1955	42.76	12.11	12.60	29.38	10.18	8.79	8.86	20.98	14.14	15.69	35.39	45.00	21.39
1956	40.10	27.11	27.33	36.65	45.00	45.00	45.00	45.00	45.00	45.00	45.00	31.61	39.87
1957	30.97	23.73	11.84	8.44	4.51	4.60	4.24	11.76	14.75	4.41	3.14	9.76	10.94
1958	11.56	8.21	9.70	17.51	11.55	11.88	11.26	27.31	10.98	9.40	11.81	14.43	13.02
1959	14.39	8.33	9.03	8.81	4.99	6.27	6.46	9.93	12.34	8.33	6.82	11.58	8.95
1960	11.87	10.89	13.16	16.05	12.66	4.08	2.41	3.00	6.27	3.86	2.91	8.64	7.98
1961	9.11	7.11	8.69	15.95	17.26	4.95	2.62	3.98	3.38	3.79	4.62	10.31	7.66
1962	18.26	18.13	18.37	12.41	9.22	10.57	8.91	15.62	13.83	15.11	24.40	18.70	15.29
1963	16.29	13.76	15.61	25.72	35.39	32.87	13.43	17.98	20.31	33.83	36.40	18.58	23.37
1964	19.05	17.60	16.17	19.28	26.05	12.08	9.22	16.68	12.56	12.08	20.49	27.53	17.41
1965	13.51	9.48	11.46	20.76	5.28	4.17	3.54	11.18	18.60	16.41	6.60	9.76	10.89
1966	12.77	11.16	11.80	11.00	5.31	5.29	4.91	11.19	14.25	19.40	33.22	25.73	13.84
1967	24.44	26.80	28.07	22.70	21.46	22.80	21.62	16.89	4.07	3.80	5.54	21.45	18.28
1968	9.63	8.48	14.55	14.64	5.45	2.71	1.69	3.33	11.38	12.48	14.79	14.32	9.44
1969	14.02	8.81	8.45	8.35	4.00	4.64	5.09	23.67	18.49	14.81	15.49	13.69	11.65
1970	12.36	13.71	11.58	11.23	5.66	4.77	4.00	10.98	7.74	5.43	6.34	23.92	9.80
1971	25.99	24.81	24.59	22.44	24.53	24.73	21.54	9.03	4.79	4.74	6.94	11.84	17.13
1972	10.95	10.18	11.42	16.46	3.93	3.28	2.76	9.10	13.53	16.99	22.64	22.16	11.94
1973	19.26	14.17	9.48	6.85	3.59	2.08	1.21	2.01	4.81	3.73	3.84	13.04	6.98
1974	9.88	8.82	14.48	14.37	7.45	5.34	4.21	8.20	4.01	4.21	4.85	9.62	7.99
1975	12.66	14.00	16.27	12.45	4.73	3.82	2.83	5.58	9.09	11.82	17.14	14.44	10.37
1976	15.00	23.92	23.67	13.43	6.94	6.00	3.84	6.81	12.15	8.59	6.71	7.67	11.18
1977	8.14	9.08	10.19	10.03	6.51	6.71	5.61	10.89	17.50	15.50	13.96	17.23	10.95
1978	14.43	11.77	14.81	15.61	15.52	13.18	8.70	14.60	3.80	3.97	6.68	15.58	11.57
1979	8.85	7.06	9.62	9.16	3.73	3.37	2.77	7.69	5.55	5.89	11.55	20.71	8.01
AVERAGE	17.27	15.00	15.35	15.66	12.05	10.06	8.91	14.73	13.79	14.23	17.67	18.83	14.46
MAXIMUM	42.76	35.92	35.91	36.65	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	
MINIMUM	8.14	7.06	8.45	6.85	3.28	2.08	1.21	2.01	3.38	3.73	2.91	7.67	
STD DEV	8.69	7.30	6.40	6.92	10.79	9.18	9.41	10.53	8.80	10.08	13.66	9.80	

TABLE D-2 SIMULATED LAVACA BAY MONTHLY-AVERAGE SALINITIES FOR CASE B BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS

SUMMARY OF MONTHLY SALINITIES IN LAVACA BAY BASED ON TDWR LAKE TEXANA POST-IMPOUNDMENT S-Q REGRESSIONS IN PPT

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	12.20	9.69	8.87	7.60	3.25	2.80	1.82	3.24	7.14	7.16	6.09	12.46	6.85
1942	17.17	18.03	15.94	10.41	7.36	12.36	3.47	4.04	6.90	13.49	15.84	16.98	11.79
1943	17.01	17.11	14.10	14.13	15.27	15.64	12.01	19.50	20.95	28.39	9.66	10.65	16.21
1944	9.26	8.70	8.42	8.38	5.20	5.58	5.65	22.16	13.65	14.52	16.57	12.41	10.89
1945	11.59	12.37	15.72	9.50	6.22	10.92	17.84	8.19	9.04	14.07	27.10	21.77	13.70
1946	15.24	10.11	10.22	12.72	9.10	4.62	3.07	4.55	5.03	4.10	3.82	10.67	7.76
1947	11.30	10.75	15.35	14.93	7.23	7.10	7.61	27.80	22.71	28.92	41.66	18.78	17.88
1948	16.64	13.12	12.43	15.22	7.85	7.59	7.87	34.27	25.87	30.01	45.00	33.66	20.81
1949	28.66	14.70	13.84	9.71	6.27	10.66	15.04	20.51	17.72	5.18	4.76	11.90	13.28
1950	11.27	12.43	15.46	17.82	17.28	10.34	8.25	17.30	28.01	30.46	45.00	42.20	21.34
1951	36.06	35.52	27.21	26.97	45.00	10.39	8.04	17.27	17.33	15.48	28.47	33.38	25.05
1952	35.48	25.67	21.72	12.81	5.31	5.21	5.45	28.11	29.80	33.23	14.19	11.64	19.05
1953	13.59	19.54	21.22	26.80	7.36	6.85	7.50	9.18	7.11	9.49	22.90	26.89	14.83
1954	27.35	36.75	36.55	28.08	27.66	32.75	45.00	45.00	45.00	45.00	45.00	45.00	38.28
1955	43.15	11.95	12.46	30.89	10.06	8.73	9.43	25.51	17.23	19.38	45.00	45.00	23.30
1956	45.00	28.67	28.13	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	29.91	41.00
1957	30.74	23.75	11.19	8.09	4.32	4.55	4.27	12.38	15.40	4.52	3.24	9.96	10.98
1958	11.57	7.98	9.60	18.22	11.94	12.26	11.53	27.01	11.08	9.47	11.81	13.90	13.07
1959	14.28	8.20	8.88	8.83	5.00	6.46	6.96	10.43	11.85	6.96	5.95	11.57	8.79
1960	12.32	11.52	13.33	16.73	13.83	3.63	2.09	2.76	6.59	3.83	2.88	8.40	8.15
1961	8.71	7.09	8.84	16.85	19.27	4.71	2.42	3.74	3.30	3.71	4.66	10.47	7.82
1962	18.82	18.46	19.17	12.62	9.69	11.21	10.01	18.70	16.61	17.31	30.71	20.99	17.01
1963	17.24	14.05	15.68	27.02	38.34	35.54	15.67	22.20	24.32	42.24	41.21	19.51	26.12
1964	20.34	18.34	15.38	17.53	25.96	12.40	9.49	17.34	11.81	11.47	20.64	27.29	17.34
1965	13.67	9.55	11.45	21.23	5.50	4.32	3.76	12.87	22.58	17.76	6.74	9.88	11.60
1966	13.12	11.25	11.81	11.06	5.22	5.06	4.64	10.66	14.24	20.03	38.75	32.94	14.90
1967	28.69	29.67	30.27	23.18	22.66	25.24	24.90	20.44	3.85	3.58	5.22	22.35	19.99
1968	9.61	8.49	14.95	14.93	5.30	2.61	1.62	3.21	12.01	13.86	16.64	14.60	9.81
1969	14.26	8.79	8.48	8.19	3.78	4.38	4.87	25.70	20.05	14.67	16.10	14.17	11.98
1970	12.50	13.84	11.47	10.97	5.09	4.40	3.83	12.27	8.22	5.55	6.42	24.75	9.94
1971	26.94	26.52	25.50	26.13	32.07	27.55	23.10	9.18	4.47	4.41	6.48	11.95	18.66
1972	11.01	10.32	11.61	16.64	3.82	3.22	2.77	10.13	14.53	18.55	22.66	22.13	12.27
1973	20.45	13.90	9.67	6.80	3.60	2.11	1.23	2.10	5.18	3.86	4.04	14.20	7.25
1974	10.08	9.03	15.09	15.46	7.31	5.09	4.01	8.23	4.17	4.38	4.93	9.69	8.12
1975	13.13	14.30	16.43	12.71	4.38	3.61	2.75	6.18	10.55	14.69	22.60	14.61	11.31
1976	14.88	24.42	24.09	13.55	7.08	6.23	4.54	9.04	14.89	8.76	7.01	7.76	11.80
1977	8.23	9.22	10.29	9.81	6.28	7.19	6.59	13.45	21.90	20.10	14.80	16.46	12.03
1978	14.19	11.57	14.72	16.13	16.50	12.73	9.56	17.37	3.70	3.84	6.61	15.78	11.92
1979	9.09	7.26	9.77	9.05	3.66	3.30	2.68	7.07	4.59	4.94	9.78	21.09	7.70
AVERAGE	18.07	15.46	15.53	16.23	12.46	10.37	9.39	15.75	14.99	15.45	18.61	19.43	15.14
MAXIMUM	45.00	36.75	36.55	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	
MINIMUM	8.23	7.09	8.42	6.80	3.25	2.11	1.23	2.10	3.30	3.58	2.88	7.76	
STD DEV	9.60	7.87	6.72	8.03	11.44	9.82	10.07	10.81	10.22	11.94	14.74	10.19	

TABLE D-3 SIMULATED LAVACA BAY MONTHLY-AVERAGE SALINITIES FOR CASE C BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS

SUMMARY OF MONTHLY SALINITIES IN LAVACA BAY BASED ON TDWR LAKE TEXANA POST-IMPOUNDMENT S-Q REGRESSIONS IN PPT

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	12.40	9.88	8.96	7.64	3.28	2.83	1.86	3.43	7.85	7.59	6.39	13.10	7.09
1942	19.27	21.97	18.25	10.59	7.74	15.08	3.67	4.31	7.39	16.20	22.62	21.24	13.97
1943	19.15	19.26	15.10	15.20	20.54	22.87	19.73	37.73	39.36	45.00	12.24	11.38	23.17
1944	9.33	8.80	8.49	8.46	5.34	5.83	6.26	45.00	22.76	22.06	25.42	13.18	15.11
1945	11.69	13.00	17.25	9.65	6.41	17.20	31.80	10.37	10.68	19.06	45.00	35.23	18.58
1946	17.59	10.44	10.43	13.38	9.87	4.76	3.21	5.00	5.27	4.18	3.90	10.94	8.24
1947	11.56	11.07	17.28	16.38	7.57	7.45	8.67	45.00	45.00	45.00	45.00	30.01	24.23
1948	26.96	14.97	13.04	16.30	8.42	8.17	9.36	45.00	45.00	45.00	45.00	42.75	26.71
1949	34.66	23.03	21.58	10.12	6.63	12.09	27.43	45.00	39.56	5.39	4.90	12.39	20.25
1950	11.66	13.05	16.38	21.37	24.75	11.84	9.84	22.81	45.00	45.00	45.00	45.00	26.07
1951	42.98	43.10	38.21	41.14	45.00	23.40	21.63	45.00	40.99	33.39	45.00	43.54	38.59
1952	43.34	37.95	32.99	18.15	6.08	5.55	5.83	40.96	45.00	45.00	27.92	13.38	26.82
1953	14.39	25.11	29.24	31.45	7.94	7.46	8.66	12.50	8.18	10.46	27.00	40.76	18.54
1954	40.00	44.33	42.00	29.86	36.10	45.00	45.00	45.00	45.00	45.00	45.00	45.00	42.35
1955	45.00	15.93	16.11	37.35	15.14	13.78	16.79	44.11	33.87	45.00	45.00	45.00	31.20
1956	45.00	45.00	43.19	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	41.53	44.55
1957	40.01	31.55	16.81	9.68	5.02	4.83	4.46	13.42	35.98	4.83	3.34	10.16	14.89
1958	11.89	8.06	9.74	21.17	13.73	14.07	15.68	45.00	16.40	12.16	14.62	14.84	16.51
1959	14.99	8.30	8.99	8.97	5.17	6.94	8.22	14.61	16.40	7.48	6.27	12.03	9.88
1960	12.79	11.97	14.07	19.33	16.90	3.72	2.17	2.91	7.12	3.91	2.93	8.48	8.87
1961	8.78	7.14	8.95	19.95	26.72	4.89	2.53	4.04	3.38	3.79	4.85	10.77	8.83
1962	22.71	23.98	24.32	13.32	10.69	13.55	13.76	28.81	29.43	29.41	45.00	29.62	23.70
1963	25.83	17.56	18.01	31.86	45.00	45.00	45.00	45.00	45.00	45.00	45.00	34.51	37.00
1964	31.24	28.84	24.32	25.05	40.48	21.74	20.28	45.00	16.55	14.87	29.97	44.03	28.59
1965	15.08	9.98	11.69	25.51	5.72	4.51	4.09	17.16	45.00	41.94	7.65	10.15	16.55
1966	13.55	11.61	12.24	11.43	5.35	5.24	5.16	15.33	22.60	36.75	45.00	38.77	18.62
1967	36.04	38.43	35.34	29.45	42.08	45.00	45.00	45.00	4.26	3.80	5.56	26.85	29.76
1968	9.77	8.67	16.08	16.34	5.46	2.64	1.65	3.40	16.69	20.50	26.21	16.09	11.94
1969	15.24	8.93	8.57	8.29	3.85	4.52	5.27	45.00	45.00	32.22	35.95	16.07	19.11
1970	13.29	14.87	11.83	11.33	5.22	4.54	4.18	17.73	9.47	5.85	6.78	31.28	11.37
1971	32.31	33.53	31.13	33.41	45.00	43.18	45.00	17.06	5.16	4.74	6.99	12.47	25.81
1972	11.34	10.62	12.05	18.36	3.89	3.30	2.94	13.30	22.16	38.34	45.00	31.30	17.72
1973	27.75	15.38	9.85	6.92	3.66	2.13	1.25	2.19	5.48	3.94	4.18	15.60	8.17
1974	10.26	9.21	16.81	17.63	7.82	5.33	4.40	10.68	4.36	4.51	5.13	9.87	8.84
1975	13.72	15.61	18.39	13.78	4.50	3.70	2.89	7.21	13.25	21.19	38.72	16.00	14.03
1976	16.23	30.33	28.79	15.36	7.89	6.70	5.05	10.83	20.34	10.28	7.88	7.83	13.90
1977	8.29	9.40	10.53	10.05	6.59	7.82	8.00	18.16	42.42	43.97	27.95	20.75	17.85
1978	15.28	12.29	15.52	18.83	22.01	16.38	14.93	33.38	3.83	3.98	7.21	17.68	15.18
1979	9.18	7.32	9.94	9.20	3.71	3.37	2.81	8.34	4.80	5.11	10.78	28.02	8.58
AVERAGE	21.04	18.74	18.55	18.68	15.19	13.24	13.58	24.61	23.62	22.48	23.68	23.78	19.77
MAXIMUM	45.00	45.00	43.19	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	
MINIMUM	8.29	7.14	8.49	6.92	3.28	2.13	1.25	2.19	3.38	3.79	2.93	7.83	
STD DEV	11.93	11.47	9.78	9.88	14.32	13.40	14.21	16.97	16.37	16.99	17.20	13.03	

TABLE D-4 SIMULATED LAVACA BAY MONTHLY-AVERAGE SALINITIES FOR CASE D BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS

SUMMARY OF MONTHLY SALINITIES IN LAVACA BAY BASED ON TDWR LAKE TEXANA POST-IMPOUNDMENT S-Q REGRESSIONS IN PPT

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	12.40	9.88	8.96	7.64	3.28	2.83	1.85	3.38	7.47	7.72	6.59	13.05	7.07
1942	18.55	19.71	13.57	10.83	7.68	12.65	3.70	4.35	7.24	13.75	20.32	21.04	13.15
1943	20.50	20.42	16.24	16.45	16.67	15.75	13.14	23.55	27.93	44.73	18.36	12.44	20.52
1944	9.33	8.78	8.49	8.42	5.34	5.77	5.87	22.79	14.69	15.95	27.14	15.77	12.36
1945	12.68	13.07	17.31	9.65	6.33	11.03	17.88	11.32	11.49	15.89	27.45	27.51	15.17
1946	21.38	10.93	10.44	13.30	9.84	4.76	3.18	5.01	5.30	4.18	3.90	10.93	8.60
1947	11.57	10.93	17.03	16.27	7.61	7.43	8.08	31.27	25.39	32.73	45.00	29.06	20.24
1948	24.98	18.15	14.36	15.99	8.49	8.23	8.92	43.12	28.42	31.56	45.00	39.04	23.90
1949	32.93	22.69	19.87	10.50	6.93	11.38	16.79	25.84	20.44	5.67	5.28	12.39	15.88
1950	11.69	13.04	16.07	18.97	19.00	12.42	10.56	22.73	29.18	31.51	45.00	44.56	22.94
1951	39.00	39.45	35.59	38.20	45.00	22.76	20.84	45.00	39.03	32.32	45.00	39.65	36.81
1952	39.24	35.65	31.52	18.00	6.41	5.79	5.92	28.82	31.75	36.99	25.95	14.45	23.34
1953	15.54	21.79	23.88	26.92	8.11	7.59	8.55	12.88	8.17	10.07	23.26	29.22	16.29
1954	29.84	37.28	38.09	29.08	34.90	45.00	45.00	45.00	45.00	45.00	45.00	45.00	40.37
1955	45.00	15.88	16.04	35.38	15.03	13.68	16.49	42.18	32.65	45.00	45.00	45.00	30.72
1956	45.00	45.00	41.99	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	39.73	44.30
1957	39.34	31.21	16.75	9.86	5.11	4.81	4.38	12.74	21.01	4.87	3.41	10.12	13.53
1958	11.89	8.09	9.69	18.86	13.62	14.23	14.42	34.11	13.88	10.70	14.78	18.70	15.22
1959	17.21	8.30	8.99	8.96	5.17	6.99	7.95	14.72	14.75	7.44	6.37	12.10	9.93
1960	12.85	11.97	14.00	18.17	15.95	3.75	2.18	2.93	6.97	3.91	2.95	8.48	8.66
1961	8.78	7.14	8.93	17.69	19.78	4.96	2.59	4.02	3.37	3.78	4.90	10.87	8.08
1962	19.40	19.43	19.76	13.92	11.37	12.03	11.39	23.64	22.18	22.37	39.72	28.72	20.32
1963	24.45	17.84	18.13	27.51	45.00	45.00	43.90	45.00	45.00	45.00	45.00	32.85	36.33
1964	30.11	28.02	23.90	24.61	38.61	18.93	16.97	37.57	18.23	15.42	26.50	35.13	26.20
1965	16.39	10.72	12.19	21.50	5.76	4.51	3.95	13.36	26.50	23.80	8.56	10.73	13.16
1966	13.58	11.61	12.24	11.42	5.34	5.23	5.05	14.77	18.35	21.69	38.75	33.14	15.94
1967	32.26	36.02	33.41	28.59	40.12	45.00	45.00	45.00	4.39	3.87	5.54	22.98	28.54
1968	9.85	8.76	15.87	15.58	5.48	2.65	1.66	3.34	12.69	14.22	20.04	19.00	10.75
1969	18.18	9.07	8.61	8.29	3.84	4.43	4.93	27.74	30.94	27.01	28.91	18.01	15.86
1970	14.57	15.06	11.83	11.36	5.23	4.49	4.00	13.72	9.82	6.12	6.95	25.71	10.73
1971	26.94	26.89	26.17	30.30	45.00	40.97	42.38	15.35	5.26	4.85	6.97	12.45	23.63
1972	11.47	10.61	12.02	18.14	3.89	3.30	2.95	12.88	16.44	18.85	25.43	24.49	13.38
1973	23.19	17.97	10.42	6.98	3.66	2.13	1.25	2.19	5.47	3.94	4.20	15.54	8.03
1974	10.27	9.20	16.09	17.38	7.84	5.32	4.27	9.79	4.42	4.55	5.19	9.99	8.70
1975	13.65	15.15	17.09	13.82	4.55	3.70	2.89	7.19	12.09	15.17	22.62	19.63	12.26
1976	19.64	24.47	24.09	14.32	7.77	6.91	5.37	11.29	16.66	9.59	8.41	7.92	12.99
1977	8.29	9.38	10.42	10.05	6.51	7.79	7.64	16.10	22.97	23.96	25.16	20.83	14.10
1978	17.82	13.51	15.17	17.08	18.19	15.55	12.72	23.43	3.92	4.05	7.43	19.10	14.03
1979	9.18	7.33	9.94	9.20	3.71	3.34	2.81	7.97	4.83	5.12	10.22	22.28	8.01
AVERAGE	20.49	17.96	17.70	17.30	14.54	12.77	12.37	20.80	18.42	18.42	21.57	22.50	17.95
MAXIMUM	45.00	45.00	41.99	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	
MINIMUM	8.29	7.14	8.49	6.98	3.28	2.13	1.25	2.19	3.37	3.78	2.95	7.92	
STD DEV	10.59	10.14	8.61	9.04	13.82	13.12	13.41	14.30	12.37	14.13	15.55	11.20	

APPENDIX E.

1941-1979 SIMULATED LAVACA BAY MONTHLY-AVERAGE SALINITIES BASED ON LAVACA AND NAVICAD RIVER GAGE SITE REGRESSIONS FOR CASES A', B', C' AND D'

TABLE E-1 SIMULATED LAVACA BAY MONTHLY-AVERAGE SALINITIES FOR CASE A' BASED ON LAVACA AND NAVIDAD RIVER GAGE SITE REGRESSIONS

SUMMARY OF MONTHLY SALINITIES IN LAVACA BAY BASED ON TWDR LP 106 S-Q REGRESSIONS IN PPT

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	6.72	7.87	4.15	5.40	4.09	4.04	3.53	9.13	15.48	8.43	7.71	13.63	7.51
1942	19.92	17.33	14.06	6.45	17.39	13.41	2.79	15.34	10.96	16.14	12.46	18.03	13.73
1943	12.82	21.64	7.58	21.83	12.89	12.15	10.27	17.69	22.05	25.08	8.83	6.89	14.91
1944	5.45	10.44	3.60	16.07	5.99	11.24	16.09	18.93	11.71	21.99	10.81	6.77	11.59
1945	8.02	13.05	12.27	6.04	20.39	12.36	16.83	9.53	17.29	15.84	32.65	17.02	15.10
1946	10.41	6.29	7.07	13.86	8.93	4.47	7.92	7.43	5.59	5.23	5.16	11.53	7.84
1947	6.01	16.52	9.14	14.10	7.30	15.19	16.61	17.32	20.60	33.87	23.15	15.93	16.29
1948	14.08	9.33	8.55	22.34	6.33	16.60	13.89	36.31	18.90	38.57	35.99	40.04	21.79
1949	27.33	9.33	10.61	5.89	12.91	16.44	11.51	14.23	17.57	5.34	19.42	5.69	13.03
1950	10.68	11.59	19.52	13.93	19.88	6.99	19.13	36.31	19.45	38.57	39.35	40.04	23.08
1951	41.30	39.78	20.59	31.83	36.54	6.37	38.63	33.20	11.45	19.94	35.72	40.04	29.62
1952	41.30	21.38	22.76	8.63	5.46	9.35	22.07	26.79	20.32	38.57	8.58	6.36	19.38
1953	19.25	19.05	22.86	25.65	6.25	21.48	18.27	8.80	8.46	25.07	33.21	28.51	19.72
1954	41.30	39.78	32.84	23.43	18.79	30.29	38.63	36.31	29.63	38.29	39.35	40.04	34.05
1955	41.30	6.59	32.84	28.98	7.58	11.38	34.91	14.24	14.08	28.25	39.35	40.04	25.13
1956	41.30	25.54	32.84	38.76	36.54	30.29	38.63	36.31	34.11	38.57	39.35	30.86	35.31
1957	41.30	17.97	5.47	5.54	6.64	5.70	36.01	36.01	10.45	3.80	4.31	15.49	15.81
1958	6.34	4.87	11.39	19.66	8.88	20.31	10.53	23.95	8.87	10.59	13.87	9.95	12.46
1959	14.79	4.37	12.96	5.14	9.38	7.01	13.13	11.62	14.50	7.31	7.63	7.69	9.68
1960	9.41	8.52	13.47	13.86	11.74	3.83	5.50	5.91	13.53	3.44	4.62	4.96	8.22
1961	5.33	3.96	10.72	16.35	17.52	4.12	3.77	14.44	4.06	13.51	4.86	16.60	9.67
1962	17.21	16.81	15.99	8.22	15.16	8.60	10.26	22.06	12.60	20.95	30.84	15.79	16.22
1963	13.72	10.12	20.15	29.12	24.41	17.57	8.29	22.87	25.26	38.27	19.79	15.66	20.49
1964	26.20	13.61	12.72	22.33	23.91	7.69	16.09	18.48	10.31	17.39	27.29	40.04	19.75
1965	7.56	5.96	16.70	20.23	4.69	6.11	12.77	19.10	17.57	12.64	4.75	7.49	11.33
1966	11.64	7.94	9.22	7.77	5.77	8.36	9.25	12.46	16.53	21.15	39.35	40.04	15.83
1967	29.70	39.78	27.61	18.28	18.09	19.20	18.67	12.03	4.37	5.92	17.56	30.93	20.07
1968	4.41	12.38	10.34	12.37	5.12	3.26	5.97	15.79	12.09	13.67	15.09	8.48	9.91
1969	12.54	4.51	5.02	5.78	5.02	11.55	15.36	19.39	14.89	12.50	15.60	8.02	10.89
1970	9.39	21.19	5.73	16.65	5.21	7.05	9.90	18.28	7.35	6.40	21.24	34.57	13.52
1971	29.84	27.94	23.86	24.19	22.96	15.09	17.17	6.98	5.38	6.92	19.05	5.34	16.98
1972	8.83	6.65	9.36	20.75	3.72	6.83	7.53	13.02	16.17	19.58	20.82	34.96	14.04
1973	15.71	10.70	4.27	4.25	7.90	2.44	5.50	9.69	6.71	4.27	8.69	13.88	7.84
1974	4.83	11.09	11.63	12.87	7.28	5.59	11.20	11.42	4.28	11.27	4.79	7.59	8.65
1975	11.66	12.55	14.53	8.43	4.64	5.74	5.01	11.19	12.72	15.16	22.49	7.96	10.98
1976	23.68	27.76	19.64	8.77	6.79	6.75	5.52	23.64	16.01	6.29	7.85	2.34	12.87
1977	9.30	5.00	11.57	6.13	12.17	6.75	11.12	22.86	16.78	16.91	10.67	31.38	13.49
1978	8.81	10.25	14.36	12.19	25.11	8.38	14.08	31.50	3.97	12.25	11.29	18.86	14.39
1979	4.17	5.46	6.74	5.95	4.27	5.05	7.31	17.12	5.53	17.24	21.23	25.25	10.50
AVERAGE	17.27	14.51	14.24	15.00	12.40	10.64	14.61	18.92	13.78	17.82	19.10	19.61	15.68
MAXIMUM	41.30	39.78	32.84	38.76	36.54	30.29	38.63	36.31	34.11	38.57	39.35	40.04	
MINIMUM	4.17	3.96	3.60	4.25	3.72	2.44	2.79	5.91	3.97	3.44	4.31	2.34	
STD DEV	12.44	9.88	8.07	8.72	8.67	6.83	10.07	9.20	6.98	11.39	12.02	13.01	

TABLE E-2 SIMULATED LAVACA BAY MONTHLY-AVERAGE SALINITIES FOR CASE B' BASED ON LAVACA AND NAVIDAD RIVER GAGE SITE REGRESSIONS

SUMMARY OF MONTHLY SALINITIES IN LAVACA BAY BASED ON TWDB LP 106 S-Q REGRESSIONS IN PPT

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	6.66	7.81	4.11	5.39	4.06	4.03	3.45	9.05	14.50	8.00	7.63	13.34	7.33
1942	19.91	17.41	13.54	6.45	17.25	13.21	2.72	15.71	10.87	16.21	12.34	18.03	13.60
1943	12.79	21.64	7.34	21.55	12.83	13.00	10.09	17.33	21.17	25.32	8.39	6.84	14.72
1944	5.34	10.42	3.56	16.14	5.88	11.11	16.00	17.89	11.52	22.17	10.82	6.72	11.46
1945	8.02	13.03	12.14	5.99	20.18	12.31	16.75	9.00	16.92	15.77	32.65	17.03	14.98
1946	10.37	6.24	7.02	13.77	8.78	4.42	7.77	7.39	5.57	5.13	5.14	11.53	7.78
1947	6.00	16.52	9.14	14.06	7.12	14.70	16.07	16.87	19.85	33.46	23.15	15.63	16.02
1948	14.09	9.27	8.49	22.20	6.31	15.66	13.22	29.98	18.53	37.71	36.04	40.04	21.00
1949	27.33	9.34	10.61	5.88	12.85	15.77	11.54	14.17	17.32	5.15	19.43	5.61	12.93
1950	10.55	11.36	19.24	13.81	18.81	6.90	17.62	29.63	18.66	38.57	39.35	40.04	22.16
1951	41.30	39.78	20.72	31.17	34.33	6.38	38.63	31.59	11.37	20.06	35.78	40.04	29.27
1952	41.30	21.60	22.09	8.59	5.42	9.42	21.60	25.72	20.31	38.57	8.51	6.36	19.19
1953	19.27	18.90	23.22	27.18	6.21	22.01	21.68	8.58	8.46	25.72	33.20	28.54	20.23
1954	41.30	39.78	32.84	23.81	19.03	30.29	38.63	36.31	28.91	38.57	39.35	40.04	34.06
1955	41.30	6.58	32.84	29.71	7.55	11.44	36.92	14.39	14.05	29.04	39.35	40.04	25.44
1956	41.30	25.55	32.84	38.76	36.54	30.29	38.63	36.31	30.58	38.57	39.35	30.34	34.97
1957	41.30	17.99	5.42	5.31	6.60	5.67	38.63	32.75	10.48	3.80	4.30	15.49	15.74
1958	6.31	4.81	11.44	20.40	8.93	20.13	10.47	22.86	8.82	10.55	13.71	9.68	12.37
1959	14.80	4.29	13.03	5.12	9.44	7.04	13.62	11.35	13.97	7.04	7.60	7.58	9.63
1960	9.39	8.48	13.45	14.07	11.90	3.77	5.48	5.91	13.52	3.42	4.59	4.80	8.22
1961	5.28	3.94	10.78	16.60	18.68	4.09	3.73	15.00	4.02	13.61	4.84	16.58	9.84
1962	17.21	16.82	16.04	8.24	15.75	8.73	10.88	23.98	12.52	21.44	30.80	15.80	16.53
1963	13.72	10.10	20.32	32.34	25.20	18.70	8.52	25.28	26.00	38.57	19.81	15.69	21.25
1964	26.20	13.60	12.39	23.70	24.71	7.66	16.66	19.26	10.15	17.45	27.24	40.04	19.99
1965	7.56	5.94	16.70	21.25	4.69	6.12	13.52	20.20	17.96	12.71	4.75	7.46	11.61
1966	11.57	7.82	9.25	7.73	5.73	8.24	9.53	12.46	16.66	21.51	39.35	40.04	15.87
1967	29.74	39.78	28.35	18.79	17.63	18.90	18.24	11.97	4.32	5.88	17.56	30.93	20.07
1968	4.40	12.50	10.37	12.46	5.08	3.23	5.92	15.99	12.16	13.58	14.98	8.48	9.91
1969	12.54	4.48	5.01	5.73	4.98	11.48	15.95	19.98	14.91	12.25	15.61	7.97	10.95
1970	9.32	21.06	5.68	16.22	5.15	6.99	9.97	18.47	7.31	6.26	21.24	34.57	13.46
1971	29.84	27.95	23.86	25.06	22.99	15.06	17.53	6.98	5.31	6.85	18.85	5.31	17.06
1972	8.77	6.64	9.34	22.18	3.71	6.87	7.50	13.09	16.24	18.88	20.20	34.96	14.05
1973	15.67	10.54	4.27	4.23	7.89	2.43	5.54	9.70	6.52	4.25	8.67	13.88	7.80
1974	4.83	11.09	11.73	12.92	7.17	5.56	11.29	11.49	4.28	11.26	4.77	7.52	8.66
1975	11.65	12.50	14.62	8.47	4.59	5.70	4.99	11.25	12.82	15.23	22.49	7.91	10.99
1976	23.68	27.76	19.84	8.82	6.82	6.75	5.48	22.85	16.18	6.30	7.83	2.34	12.84
1977	9.28	4.99	11.62	6.11	12.35	6.72	11.36	24.66	16.89	16.89	10.55	31.24	13.66
1978	8.74	10.16	15.11	12.28	25.76	8.24	13.50	27.74	3.95	12.22	11.15	18.53	14.03
1979	4.15	5.43	6.73	5.93	4.26	5.03	7.21	16.87	5.40	17.23	21.09	24.58	10.38
AVERAGE	17.25	14.46	14.24	15.35	12.39	10.59	14.79	18.45	13.57	17.83	19.04	19.53	15.64
MAXIMUM	41.30	39.78	32.84	38.76	36.54	30.29	38.63	36.31	30.58	38.57	39.35	40.04	
MINIMUM	4.15	3.94	3.56	4.23	3.71	2.43	2.72	5.91	3.95	3.42	4.30	2.34	
STD DEV	12.45	9.90	8.12	9.03	8.61	6.83	10.35	8.37	6.66	11.44	12.05	13.02	

TABLE E-3 SIMULATED LAVACA BAY MONTHLY-AVERAGE SALINITIES FOR CASE C' BASED ON LAVACA AND NAVIDAD RIVER GAGE SITE REGRESSIONS

SUMMARY OF MONTHLY SALINITIES IN LAVACA BAY BASED ON TWDB LP 106 S-Q REGRESSIONS IN PPT

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	6.42	7.58	3.84	5.34	3.93	4.02	3.02	9.96	12.78	6.00	7.45	13.58	6.98
1942	27.45	19.31	12.62	6.54	23.23	22.43	2.35	24.06	11.77	22.35	15.76	29.92	18.18
1943	14.00	32.41	7.71	29.22	17.49	14.46	16.29	27.96	34.11	37.25	7.26	6.71	20.30
1944	4.62	11.22	3.27	20.12	5.29	13.68	28.15	29.30	14.75	32.08	14.64	6.57	15.32
1945	8.41	14.77	12.99	5.58	28.29	15.65	37.09	7.41	21.42	29.94	39.35	40.04	21.83
1946	11.38	5.91	6.95	15.57	8.39	4.19	9.13	7.98	5.52	4.51	5.09	13.69	8.22
1947	6.09	22.54	10.21	16.22	6.20	20.25	36.77	36.31	34.11	38.57	36.54	40.04	25.33
1948	29.74	9.64	8.52	33.58	6.55	19.45	29.23	36.31	34.11	38.57	39.35	40.04	27.14
1949	37.47	13.89	22.22	5.91	15.67	21.17	24.32	22.94	34.11	4.12	25.87	5.33	19.82
1950	10.30	10.52	27.79	17.38	24.43	7.27	38.63	36.31	34.11	38.57	39.35	40.04	27.22
1951	41.30	39.78	32.84	38.76	36.54	10.98	38.63	36.31	20.12	36.18	39.35	40.04	34.27
1952	41.30	39.78	32.84	12.91	5.22	10.22	38.63	36.31	34.11	38.57	13.09	7.03	25.85
1953	22.76	32.92	31.55	31.38	6.13	29.29	38.63	7.97	8.75	38.04	39.35	40.04	27.20
1954	41.30	39.78	32.84	25.21	25.83	30.29	38.63	36.31	34.11	38.57	39.35	40.04	35.18
1955	41.30	9.93	32.84	37.75	9.89	16.83	38.63	17.98	32.84	38.57	39.35	40.04	29.80
1956	41.30	39.78	32.84	38.76	36.54	30.29	38.63	36.31	34.11	38.57	39.35	40.04	37.21
1957	41.30	27.66	9.74	5.93	6.30	5.50	38.63	36.31	18.67	3.78	4.35	21.07	18.30
1958	6.20	4.41	13.65	26.46	9.64	27.82	17.11	36.31	11.15	10.97	14.96	8.62	15.65
1959	16.39	3.82	15.34	5.07	10.11	7.49	22.18	12.54	15.31	5.62	7.76	7.29	10.84
1960	9.81	8.54	16.09	16.86	13.30	3.29	5.54	5.95	16.96	3.29	4.44	3.88	8.98
1961	4.93	3.80	13.10	22.15	22.84	3.87	3.54	23.42	3.76	17.25	4.76	23.11	12.32
1962	24.09	25.69	22.07	8.56	18.39	10.22	14.73	36.31	19.42	26.56	36.19	35.79	23.20
1963	25.76	12.49	26.24	38.76	36.54	28.49	23.10	36.31	34.11	38.57	39.35	40.04	31.76
1964	37.73	29.44	20.13	26.67	36.30	10.82	38.63	36.31	10.92	20.99	39.35	40.04	29.02
1965	8.71	5.89	20.14	27.14	4.78	6.42	28.98	35.21	34.11	22.30	4.96	7.51	17.26
1966	11.89	7.15	10.44	7.52	5.50	7.60	15.81	14.53	28.11	38.57	39.35	40.04	18.95
1967	41.30	39.78	32.84	26.60	33.11	30.29	38.63	36.31	4.19	5.71	23.80	40.04	29.39
1968	4.38	13.23	11.73	14.00	4.79	2.98	6.34	24.99	16.49	17.16	21.20	9.40	12.20
1969	14.57	4.30	5.07	5.37	4.72	12.79	29.15	33.02	30.39	19.20	27.11	9.01	16.29
1970	9.37	29.36	5.26	15.42	4.74	6.96	18.82	30.56	7.43	5.50	31.96	40.04	17.04
1971	39.71	39.78	29.87	38.76	36.54	18.18	38.63	9.56	5.11	6.49	24.28	5.41	24.26
1972	8.71	6.85	10.56	28.36	3.60	7.33	9.73	16.14	31.55	31.69	33.96	40.04	19.04
1973	26.70	10.04	4.31	4.08	7.98	2.37	6.49	11.15	5.53	4.17	9.50	18.78	9.29
1974	4.84	12.74	14.77	14.34	6.45	5.40	25.12	15.09	4.32	12.83	4.68	7.45	10.69
1975	12.88	13.91	19.42	9.04	4.27	5.61	5.55	13.86	15.85	24.62	31.46	8.75	13.75
1976	32.61	38.47	25.33	10.32	7.05	7.08	6.35	31.83	27.09	6.84	8.16	2.31	16.88
1977	9.61	5.02	14.33	5.93	14.42	6.74	24.77	33.03	27.39	37.33	14.11	40.04	19.57
1978	9.04	10.08	18.62	14.86	31.65	9.26	31.31	36.31	3.90	13.96	11.82	22.20	17.90
1979	4.03	5.29	6.86	5.77	4.18	5.04	7.72	23.45	4.69	24.08	30.89	36.24	13.27
AVERAGE	20.25	18.27	17.39	18.42	15.05	12.87	23.43	25.59	19.93	22.51	23.31	24.36	20.15
MAXIMUM	41.30	39.78	32.84	38.76	36.54	30.29	38.63	36.31	34.11	38.57	39.35	40.04	
MINIMUM	4.03	3.80	3.27	4.08	3.60	2.37	2.35	5.95	3.76	3.29	4.35	2.31	
STD DEV	14.10	13.02	9.85	11.60	11.75	8.91	13.32	11.06	11.61	13.73	13.84	15.29	

TABLE E-4 SIMULATED LAVACA BAY MONTHLY-AVERAGE SALINITIES FOR CASE D' BASED ON LAVACA AND NAVIDAD RIVER GAGE SITE REGRESSIONS

SUMMARY OF MONTHLY SALINITIES IN LAVACA BAY BASED ON TWDR LP 106 S-Q REGRESSIONS IN PPT

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1941	6.42	7.58	3.84	5.34	3.93	4.02	3.00	9.51	11.60	6.32	7.32	14.07	6.90
1942	20.02	17.97	13.97	6.60	17.25	12.95	2.45	15.59	11.05	16.20	17.67	22.56	14.52
1943	18.06	22.10	9.22	21.55	12.94	11.93	11.99	19.63	33.77	34.59	10.39	6.71	17.69
1944	4.62	10.91	3.28	16.14	5.36	10.94	16.36	15.81	11.74	25.57	20.40	9.17	12.51
1945	8.52	14.59	13.35	5.67	20.18	12.27	16.85	8.36	17.28	15.20	32.65	31.40	16.37
1946	17.70	5.93	6.75	15.03	8.44	4.19	8.36	8.25	5.52	4.49	5.13	12.96	8.62
1947	6.14	16.55	11.31	14.18	6.33	14.55	17.87	18.30	21.40	38.57	34.23	40.04	19.97
1948	24.51	14.47	8.74	22.20	6.70	15.66	17.67	29.93	18.87	38.57	39.35	40.04	23.10
1949	35.33	18.63	16.12	6.29	12.85	15.73	14.51	15.94	18.14	4.38	21.36	5.41	15.36
1950	10.19	10.63	19.27	14.93	18.44	7.94	21.89	29.63	18.66	38.57	39.35	40.04	22.58
1951	41.30	39.78	32.84	38.76	36.54	10.84	38.63	36.31	19.83	34.18	39.35	40.04	34.06
1952	41.30	33.34	32.84	12.81	5.47	9.47	23.08	25.72	21.50	38.57	12.96	8.64	22.60
1953	20.12	23.51	23.33	27.18	6.27	19.94	27.98	8.32	8.48	25.72	33.36	36.60	21.72
1954	41.30	39.78	32.84	24.70	25.10	30.29	38.63	36.31	34.11	38.57	39.35	40.04	35.08
1955	41.30	9.90	32.84	35.86	9.87	16.54	38.63	17.72	31.39	38.57	39.35	40.04	29.48
1956	41.30	39.78	32.84	38.76	36.54	30.29	38.63	36.31	34.11	38.57	39.35	40.04	37.21
1957	41.30	27.20	9.69	6.11	6.26	5.44	38.63	32.75	13.12	3.88	4.36	17.25	17.19
1958	6.29	4.41	12.18	20.37	10.04	20.13	13.54	22.86	9.74	10.74	19.46	14.03	13.68
1959	15.40	3.83	13.98	5.07	10.15	7.55	14.61	14.06	12.55	5.77	7.70	7.54	9.93
1960	9.65	8.67	14.27	15.50	13.25	3.31	5.48	5.97	13.63	3.32	4.44	3.88	8.44
1961	4.93	3.80	12.19	16.52	18.68	3.94	3.56	15.02	3.78	13.61	4.92	17.32	9.93
1962	18.30	18.32	16.04	9.40	15.46	8.87	15.96	26.68	15.25	25.63	33.95	34.13	19.88
1963	22.88	13.28	20.32	34.74	34.51	27.19	22.22	36.31	34.11	38.57	39.35	40.04	30.39
1964	35.55	28.49	19.64	25.96	34.08	9.81	38.63	35.57	11.82	17.18	36.87	40.04	27.87
1965	10.01	6.46	16.11	21.24	4.84	6.21	14.34	20.20	22.92	16.12	5.60	7.56	12.67
1966	11.91	7.15	10.44	7.32	5.49	7.60	12.36	15.53	16.66	21.51	39.35	40.04	16.36
1967	41.30	39.78	31.92	25.90	31.66	30.29	38.63	36.31	4.29	5.67	18.71	30.93	27.94
1968	4.45	13.05	11.39	12.80	4.85	2.98	6.34	16.05	12.18	13.84	20.53	14.28	11.04
1969	17.66	4.35	5.07	5.37	4.70	10.66	16.71	22.45	25.60	17.58	20.81	12.42	13.67
1970	10.08	20.62	5.36	14.26	4.77	6.58	13.64	18.47	7.95	5.60	23.43	34.57	13.73
1971	29.84	28.99	24.64	36.37	36.54	17.80	38.63	9.02	5.26	6.47	18.42	5.53	21.42
1972	8.86	6.77	10.81	22.17	3.60	7.29	10.37	14.22	16.05	16.69	21.02	34.96	14.42
1973	20.01	14.76	4.49	4.08	7.79	2.37	6.25	11.23	5.54	4.17	9.79	16.54	8.91
1974	4.87	11.90	13.69	14.51	6.46	5.39	13.49	14.68	4.49	11.31	4.81	7.46	9.42
1975	12.51	13.11	14.93	9.37	4.29	5.51	5.72	13.64	12.82	15.07	22.56	14.86	12.02
1976	23.80	27.76	19.84	9.33	7.25	7.32	6.76	22.84	16.18	6.84	9.85	2.31	13.31
1977	9.61	5.01	12.18	6.00	12.29	6.99	13.49	24.65	16.88	23.69	15.15	30.81	14.85
1978	12.13	9.96	15.88	13.09	25.31	9.27	14.18	25.67	3.98	11.87	15.15	19.54	14.76
1979	4.05	5.29	6.86	5.78	4.18	4.97	8.77	14.86	4.75	16.60	21.97	22.34	10.08
AVERAGE	19.32	16.77	15.78	16.61	13.81	11.41	18.17	20.53	15.56	19.19	21.79	22.98	17.68
MAXIMUM	41.30	39.78	32.84	38.76	36.54	30.29	38.63	36.31	34.11	38.57	39.35	40.04	
MINIMUM	4.05	3.80	3.28	4.08	3.60	2.37	2.45	5.97	3.78	3.32	4.36	2.31	
STD DEV	13.09	11.40	8.89	10.33	10.78	7.74	11.91	9.28	9.01	12.68	12.57	13.68	

APPENDIX F.

RESULTS FROM FREQUENCY-DURATION ANALYSES OF LAVACA BAY SALINITIES FOR DIFFERENT CASES OF FRESHWATER INFLOWS

TABLE F-1 SALINITY FREQUENCY-DURATION RESULTS FOR CASE A BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS

RANGE NO.	UPPER RANGE VALUE	PROBABILITY THAT MONTHLY SALINITY IS LESS THAN THE INDICATED VALUE												
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1	.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
2	.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3	.50	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
4	.75	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5	1.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
6	1.25	.000	.000	.000	.000	.000	.000	.026	.000	.000	.000	.000	.000	.002
7	1.50	.000	.000	.000	.000	.000	.000	.026	.000	.000	.000	.000	.000	.002
8	1.75	.000	.000	.000	.000	.000	.000	.051	.000	.000	.000	.000	.000	.004
9	2.00	.000	.000	.000	.000	.000	.000	.077	.000	.000	.000	.000	.000	.006
10	2.25	.000	.000	.000	.000	.000	.026	.077	.026	.000	.000	.000	.000	.011
11	2.50	.000	.000	.000	.000	.000	.026	.103	.026	.000	.000	.000	.000	.013
12	2.75	.000	.000	.000	.000	.000	.051	.128	.026	.000	.000	.000	.000	.017
13	3.00	.000	.000	.000	.000	.000	.077	.205	.051	.000	.000	.026	.000	.030
14	3.25	.000	.000	.000	.000	.000	.077	.205	.077	.000	.000	.051	.000	.034
15	3.50	.000	.000	.000	.000	.026	.128	.231	.103	.026	.000	.051	.000	.047
16	3.75	.000	.000	.000	.000	.077	.128	.256	.103	.026	.026	.051	.000	.056
17	4.00	.000	.000	.000	.000	.103	.154	.308	.128	.051	.128	.077	.000	.079
18	4.25	.000	.000	.000	.000	.128	.205	.385	.128	.103	.154	.103	.000	.100
19	4.50	.000	.000	.000	.000	.128	.205	.385	.154	.103	.205	.103	.000	.107
20	4.75	.000	.000	.000	.000	.179	.256	.385	.154	.103	.231	.128	.000	.120
21	5.00	.000	.000	.000	.000	.205	.333	.410	.179	.179	.231	.154	.000	.141
22	5.25	.000	.000	.000	.000	.231	.359	.436	.179	.179	.231	.154	.000	.147
23	5.50	.000	.000	.000	.000	.359	.410	.462	.179	.179	.256	.154	.000	.167
24	5.75	.000	.000	.000	.000	.385	.410	.487	.205	.205	.256	.179	.000	.177
25	6.00	.000	.000	.000	.000	.385	.462	.513	.205	.205	.282	.179	.000	.186
26	6.25	.000	.000	.000	.000	.385	.462	.513	.205	.205	.282	.179	.000	.186
27	6.50	.000	.000	.000	.000	.410	.487	.538	.205	.231	.282	.205	.000	.197
28	6.75	.000	.000	.000	.000	.436	.513	.538	.205	.231	.282	.282	.000	.207
29	7.00	.000	.000	.000	.026	.462	.538	.538	.231	.231	.308	.385	.000	.226
30	7.25	.000	.051	.000	.026	.462	.538	.564	.231	.256	.308	.385	.000	.233
31	7.50	.000	.051	.000	.026	.538	.538	.590	.231	.308	.308	.385	.000	.248
32	7.75	.000	.051	.000	.051	.564	.564	.590	.256	.333	.308	.385	.026	.261
33	8.00	.000	.051	.000	.051	.564	.564	.615	.256	.333	.308	.385	.026	.263
34	8.25	.026	.077	.000	.051	.590	.590	.641	.282	.333	.333	.385	.026	.278
35	8.50	.026	.128	.026	.103	.590	.590	.641	.282	.333	.359	.385	.026	.291
36	8.75	.026	.128	.077	.128	.590	.590	.667	.282	.333	.385	.385	.051	.303
37	9.00	.051	.205	.077	.179	.590	.615	.744	.282	.333	.385	.385	.051	.325
38	9.25	.077	.231	.128	.205	.641	.615	.769	.333	.359	.385	.385	.051	.348
39	9.50	.103	.256	.154	.205	.641	.667	.769	.333	.359	.410	.410	.051	.363
40	9.75	.128	.256	.179	.231	.641	.667	.769	.333	.359	.436	.410	.077	.374
41	10.00	.154	.282	.205	.231	.641	.667	.769	.385	.359	.436	.410	.128	.389
42	10.25	.154	.333	.231	.256	.667	.667	.769	.385	.359	.436	.410	.128	.400
43	10.50	.154	.359	.256	.256	.667	.692	.769	.385	.359	.436	.410	.154	.408
44	10.75	.154	.359	.256	.282	.667	.718	.769	.410	.359	.436	.410	.205	.419
45	11.00	.205	.385	.256	.308	.667	.744	.769	.462	.410	.436	.410	.205	.438
46	11.25	.205	.410	.256	.333	.667	.744	.795	.513	.410	.436	.410	.205	.449
47	11.50	.256	.410	.308	.333	.667	.744	.821	.513	.436	.436	.410	.231	.464
48	11.75	.282	.410	.333	.333	.692	.744	.821	.513	.436	.436	.436	.256	.474
49	12.00	.308	.462	.385	.333	.692	.769	.846	.538	.436	.462	.462	.308	.500
50	12.25	.308	.487	.385	.333	.692	.821	.846	.538	.462	.487	.462	.333	.513
51	12.50	.359	.487	.410	.410	.692	.821	.846	.538	.487	.513	.462	.333	.530
52	12.75	.385	.487	.436	.410	.718	.821	.846	.538	.513	.538	.462	.359	.543
53	13.00	.436	.538	.436	.436	.718	.821	.846	.538	.513	.538	.462	.359	.553
54	13.25	.436	.538	.462	.436	.718	.846	.846	.538	.538	.538	.462	.385	.562
55	13.50	.436	.538	.487	.462	.718	.846	.872	.538	.538	.538	.462	.385	.568

56	13.75	.462	.564	.487	.462	.718	.846	.872	.538	.564	.538	.462	.410	.577
57	14.00	.462	.641	.487	.462	.718	.846	.872	.564	.590	.538	.487	.410	.590
58	14.25	.487	.667	.513	.487	.718	.846	.872	.564	.615	.538	.487	.410	.600
59	14.50	.564	.667	.538	.487	.718	.846	.872	.564	.667	.538	.513	.487	.622
60	14.75	.564	.667	.564	.513	.718	.846	.872	.590	.667	.564	.538	.487	.632
61	15.00	.564	.667	.590	.564	.718	.846	.872	.615	.692	.615	.564	.487	.650
62	15.25	.590	.667	.641	.564	.744	.846	.872	.615	.692	.667	.564	.487	.662
63	15.50	.590	.667	.641	.590	.744	.872	.872	.615	.692	.667	.590	.513	.671
64	15.75	.590	.667	.667	.615	.769	.872	.872	.641	.692	.718	.590	.538	.686
65	16.00	.615	.667	.718	.641	.769	.872	.872	.641	.692	.718	.590	.538	.694
66	16.25	.641	.692	.744	.667	.769	.872	.872	.641	.692	.718	.615	.538	.705
67	16.50	.667	.692	.769	.692	.769	.872	.872	.641	.718	.744	.615	.538	.716
68	16.75	.667	.718	.769	.692	.769	.872	.872	.667	.718	.744	.615	.538	.720
69	17.00	.692	.718	.769	.692	.769	.872	.872	.692	.718	.769	.615	.538	.726
70	17.25	.692	.718	.769	.692	.795	.872	.872	.718	.718	.769	.641	.564	.735
71	17.50	.692	.718	.769	.692	.821	.872	.897	.718	.718	.769	.641	.564	.739
72	17.75	.692	.744	.769	.744	.821	.872	.897	.744	.744	.769	.641	.564	.750
73	18.00	.692	.744	.769	.744	.821	.872	.897	.769	.744	.769	.641	.564	.752
74	18.25	.692	.769	.769	.744	.821	.872	.897	.769	.744	.769	.641	.564	.754
75	18.50	.718	.769	.769	.744	.821	.872	.897	.769	.769	.769	.641	.590	.761
76	18.75	.718	.769	.795	.744	.821	.872	.897	.769	.795	.769	.641	.641	.769
77	19.00	.718	.769	.795	.744	.821	.872	.897	.769	.795	.769	.641	.641	.769
78	19.25	.744	.795	.795	.744	.821	.872	.897	.769	.795	.769	.641	.641	.774
79	19.50	.769	.795	.795	.769	.821	.872	.897	.769	.795	.795	.641	.641	.780
80	19.75	.769	.795	.795	.769	.821	.872	.897	.769	.795	.795	.641	.667	.782
81	20.00	.769	.795	.795	.769	.821	.872	.897	.795	.795	.795	.641	.667	.784
82	20.25	.769	.795	.795	.769	.821	.872	.897	.795	.795	.795	.641	.667	.784
83	20.50	.769	.795	.795	.769	.821	.872	.897	.795	.821	.795	.667	.667	.788
84	20.75	.769	.795	.821	.769	.821	.872	.897	.795	.821	.795	.667	.692	.793
85	21.00	.769	.795	.821	.795	.821	.872	.897	.821	.821	.795	.667	.692	.797
86	21.25	.769	.795	.821	.795	.821	.872	.897	.821	.821	.795	.667	.692	.797
87	21.50	.769	.795	.821	.795	.846	.872	.897	.821	.821	.795	.667	.718	.801
88	21.75	.769	.795	.821	.795	.846	.872	.949	.821	.872	.795	.667	.718	.810
89	22.00	.769	.795	.821	.795	.846	.872	.949	.821	.872	.795	.667	.718	.810
90	22.25	.769	.795	.821	.795	.846	.872	.949	.821	.872	.795	.692	.744	.814
91	22.50	.769	.795	.821	.821	.846	.872	.949	.821	.872	.795	.692	.744	.816
92	22.75	.769	.795	.846	.846	.846	.872	.949	.821	.872	.795	.718	.744	.823
93	23.00	.769	.795	.846	.846	.846	.897	.949	.821	.872	.795	.718	.744	.825
94	23.25	.769	.795	.846	.846	.846	.897	.949	.821	.872	.795	.718	.744	.825
95	23.50	.769	.795	.846	.846	.846	.897	.949	.821	.872	.795	.718	.744	.825
96	23.75	.769	.821	.872	.846	.846	.897	.949	.846	.872	.795	.718	.744	.831
97	24.00	.769	.846	.872	.846	.846	.897	.949	.846	.872	.795	.718	.769	.835
98	24.25	.769	.846	.872	.846	.846	.897	.949	.846	.872	.795	.718	.769	.835
99	24.50	.821	.872	.872	.846	.846	.897	.949	.846	.872	.795	.744	.769	.844
100	24.75	.821	.872	.897	.872	.872	.923	.949	.846	.897	.795	.744	.769	.855
101	25.00	.821	.897	.897	.872	.872	.923	.949	.846	.897	.795	.744	.769	.857
102	25.25	.821	.897	.897	.872	.872	.923	.949	.846	.897	.795	.744	.769	.857
103	25.50	.821	.897	.897	.872	.872	.923	.949	.846	.897	.795	.769	.769	.859
104	25.75	.821	.897	.897	.897	.872	.923	.949	.846	.897	.795	.769	.795	.863
105	26.00	.846	.897	.897	.923	.872	.923	.949	.846	.897	.795	.769	.795	.868
106	26.25	.846	.897	.923	.923	.897	.923	.949	.846	.923	.821	.769	.821	.878
107	26.50	.846	.897	.923	.923	.897	.923	.949	.846	.923	.821	.769	.821	.878
108	26.75	.846	.897	.923	.923	.897	.923	.949	.872	.923	.821	.769	.821	.880
109	27.00	.872	.923	.923	.923	.897	.923	.949	.872	.923	.821	.769	.821	.885
110	27.25	.872	.949	.923	.923	.897	.923	.949	.872	.923	.846	.795	.821	.891
111	27.50	.872	.949	.923	.923	.923	.923	.949	.923	.923	.846	.795	.821	.897
112	27.75	.872	.949	.949	.949	.923	.923	.949	.923	.923	.872	.795	.846	.906
113	28.00	.872	.949	.949	.949	.923	.923	.949	.923	.923	.872	.795	.846	.906
114	28.25	.872	.949	.974	.949	.923	.923	.949	.923	.923	.872	.795	.846	.908
115	28.50	.872	.949	.974	.949	.923	.923	.949	.923	.923	.923	.795	.846	.912

116	28.75	.872	.949	.974	.949	.923	.923	.949	.923	.923	.923	.795	.846	.912
117	29.00	.872	.949	.974	.949	.923	.923	.949	.923	.949	.923	.795	.846	.915
118	29.25	.872	.949	.974	.949	.923	.923	.949	.923	.949	.923	.795	.846	.915
119	29.50	.872	.949	.974	.974	.923	.949	.949	.923	.949	.923	.795	.846	.919
120	29.75	.872	.949	.974	.974	.923	.949	.949	.923	.949	.923	.795	.846	.919
121	30.00	.872	.949	.974	.974	.923	.949	.949	.923	.949	.923	.795	.846	.919
122	30.25	.872	.949	.974	.974	.923	.949	.949	.923	.974	.923	.795	.846	.921
123	30.50	.872	.949	.974	.974	.923	.949	.949	.923	.974	.923	.795	.846	.921
124	30.75	.872	.949	.974	.974	.923	.949	.949	.923	.974	.923	.795	.846	.921
125	31.00	.897	.949	.974	.974	.923	.949	.949	.923	.974	.923	.795	.846	.923
126	31.25	.897	.949	.974	.974	.923	.949	.949	.923	.974	.923	.795	.846	.923
127	31.50	.897	.949	.974	.974	.923	.949	.949	.923	.974	.923	.795	.846	.923
128	31.75	.897	.949	.974	.974	.923	.949	.949	.923	.974	.923	.795	.872	.925
129	32.00	.923	.949	.974	.974	.923	.949	.949	.923	.974	.949	.795	.872	.929
130	32.25	.923	.949	.974	.974	.923	.949	.949	.923	.974	.949	.795	.872	.929
131	32.50	.923	.949	.974	.974	.923	.949	.949	.923	.974	.949	.795	.897	.932
132	32.75	.923	.974	.974	.974	.923	.949	.949	.923	.974	.949	.795	.897	.934
133	33.00	.923	.974	.974	.974	.923	.974	.949	.923	.974	.949	.795	.923	.938
134	33.25	.949	.974	.974	.974	.923	.974	.949	.923	.974	.949	.821	.923	.942
135	33.50	.949	.974	.974	.974	.923	.974	.949	.923	.974	.949	.821	.923	.942
136	33.75	.949	.974	.974	.974	.923	.974	.949	.923	.974	.949	.821	.923	.942
137	34.00	.949	.974	.974	.974	.923	.974	.949	.923	.974	.974	.821	.923	.944
138	34.25	.949	.974	.974	.974	.923	.974	.949	.923	.974	.974	.821	.923	.944
139	34.50	.949	.974	.974	.974	.923	.974	.949	.923	.974	.974	.821	.923	.944
140	34.75	.949	.974	.974	.974	.923	.974	.949	.923	.974	.974	.821	.923	.944
141	35.00	.949	.974	.974	.974	.923	.974	.949	.923	.974	.974	.821	.923	.944
142	35.25	.949	.974	.974	.974	.923	.974	.949	.923	.974	.974	.821	.923	.944
143	35.50	.949	.974	.974	.974	.949	.974	.949	.923	.974	.974	.846	.923	.949
144	35.75	.949	.974	.974	.974	.949	.974	.949	.949	.974	.974	.846	.923	.951
145	36.00	.949	1.000	1.000	.974	.949	.974	.949	.949	.974	.974	.846	.923	.955
146	36.25	.949	1.000	1.000	.974	.949	.974	.949	.949	.974	.974	.846	.923	.955
147	36.50	.949	1.000	1.000	.974	.949	.974	.949	.949	.974	.974	.872	.923	.957
148	36.75	.949	1.000	1.000	1.000	.949	.974	.949	.949	.974	.974	.872	.923	.959
149	37.00	.949	1.000	1.000	1.000	.949	.974	.949	.949	.974	.974	.872	.923	.959
150	37.25	.949	1.000	1.000	1.000	.949	.974	.949	.949	.974	.974	.872	.923	.959
151	37.50	.949	1.000	1.000	1.000	.949	.974	.949	.949	.974	.974	.872	.923	.959
152	37.75	.949	1.000	1.000	1.000	.949	.974	.949	.949	.974	.974	.872	.923	.959
153	38.00	.949	1.000	1.000	1.000	.949	.974	.949	.949	.974	.974	.872	.923	.959
154	38.25	.949	1.000	1.000	1.000	.949	.974	.949	.949	.974	.974	.872	.923	.959
155	38.50	.949	1.000	1.000	1.000	.949	.974	.949	.949	.974	.974	.872	.923	.959
156	38.75	.949	1.000	1.000	1.000	.949	.974	.949	.949	.974	.974	.872	.949	.962
157	39.00	.949	1.000	1.000	1.000	.949	.974	.949	.949	.974	.974	.872	.949	.962
158	39.25	.949	1.000	1.000	1.000	.949	.974	.949	.949	.974	.974	.872	.949	.962
159	39.50	.949	1.000	1.000	1.000	.949	.974	.949	.949	.974	.974	.872	.949	.962
160	39.75	.949	1.000	1.000	1.000	.949	.974	.949	.949	.974	.974	.872	.949	.962
161	40.00	.949	1.000	1.000	1.000	.949	.974	.949	.949	.974	.974	.872	.949	.962
162	40.25	.974	1.000	1.000	1.000	.949	.974	.949	.949	.974	.974	.897	.949	.966
163	40.50	.974	1.000	1.000	1.000	.949	.974	.949	.949	.974	.974	.897	.949	.966
164	40.75	.974	1.000	1.000	1.000	.949	.974	.974	.949	.974	.974	.897	.949	.968
165	41.00	.974	1.000	1.000	1.000	.949	.974	.974	.949	.974	.974	.897	.949	.968
166	41.25	.974	1.000	1.000	1.000	.949	.974	.974	.949	.974	.974	.897	.949	.968
167	41.50	.974	1.000	1.000	1.000	.949	.974	.974	.949	.974	.974	.897	.949	.968
168	41.75	.974	1.000	1.000	1.000	.949	.974	.974	.949	.974	.974	.897	.949	.968
169	42.00	.974	1.000	1.000	1.000	.949	.974	.974	.949	.974	.974	.897	.949	.968
170	42.25	.974	1.000	1.000	1.000	.949	.974	.974	.949	.974	.974	.897	.949	.968
171	42.50	.974	1.000	1.000	1.000	.949	.974	.974	.949	.974	.974	.897	.949	.968
172	42.75	.974	1.000	1.000	1.000	.949	.974	.974	.949	.974	.974	.897	.949	.968
173	43.00	1.000	1.000	1.000	1.000	.949	.974	.974	.949	.974	.974	.897	.949	.970
174	43.25	1.000	1.000	1.000	1.000	.949	.974	.974	.949	.974	.974	.897	.949	.970
175	43.50	1.000	1.000	1.000	1.000	.949	.974	.974	.949	.974	.974	.897	.949	.970

176	43.75	1.000	1.000	1.000	1.000	.949	.974	.974	.949	.974	.974	.897	.949	.970
177	44.00	1.000	1.000	1.000	1.000	.974	.974	.974	.949	.974	.974	.897	.949	.972
178	44.25	1.000	1.000	1.000	1.000	.974	.974	.974	.949	.974	.974	.897	.949	.972
179	44.50	1.000	1.000	1.000	1.000	.974	.974	.974	.949	.974	.974	.897	.949	.972
180	44.75	1.000	1.000	1.000	1.000	.974	.974	.974	.949	.974	.974	.897	.949	.972
181	45.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
182	45.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
183	45.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
184	45.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
185	46.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
186	.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

TABLE F-2 SALINITY FREQUENCY-DURATION RESULTS FOR CASE B BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS

RANGE NO.	UPPER RANGE VALUE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
		PROBABILITY THAT MONTHLY SALINITY IS LESS THAN THE INDICATED VALUE												
1	.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
2	.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3	.50	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
4	.75	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5	1.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
6	1.25	.000	.000	.000	.000	.000	.000	.026	.000	.000	.000	.000	.000	.002
7	1.50	.000	.000	.000	.000	.000	.000	.026	.000	.000	.000	.000	.000	.002
8	1.75	.000	.000	.000	.000	.000	.000	.051	.000	.000	.000	.000	.000	.004
9	2.00	.000	.000	.000	.000	.000	.000	.077	.000	.000	.000	.000	.000	.006
10	2.25	.000	.000	.000	.000	.000	.026	.103	.026	.000	.000	.000	.000	.013
11	2.50	.000	.000	.000	.000	.000	.026	.128	.026	.000	.000	.000	.000	.015
12	2.75	.000	.000	.000	.000	.000	.051	.179	.026	.000	.000	.000	.000	.021
13	3.00	.000	.000	.000	.000	.000	.077	.205	.051	.000	.000	.026	.000	.030
14	3.25	.000	.000	.000	.000	.026	.103	.231	.103	.000	.000	.051	.000	.043
15	3.50	.000	.000	.000	.000	.026	.128	.256	.103	.026	.000	.051	.000	.049
16	3.75	.000	.000	.000	.000	.077	.179	.256	.128	.051	.051	.051	.000	.066
17	4.00	.000	.000	.000	.000	.128	.179	.308	.128	.077	.128	.077	.000	.085
18	4.25	.000	.000	.000	.000	.128	.179	.333	.154	.103	.154	.103	.000	.096
19	4.50	.000	.000	.000	.000	.179	.256	.359	.154	.128	.205	.103	.000	.115
20	4.75	.000	.000	.000	.000	.179	.333	.410	.179	.154	.231	.128	.000	.135
21	5.00	.000	.000	.000	.000	.205	.333	.436	.179	.154	.256	.179	.000	.145
22	5.25	.000	.000	.000	.000	.282	.410	.436	.179	.205	.282	.205	.000	.167
23	5.50	.000	.000	.000	.000	.333	.410	.462	.179	.205	.282	.205	.000	.173
24	5.75	.000	.000	.000	.000	.359	.436	.487	.179	.205	.308	.205	.000	.182
25	6.00	.000	.000	.000	.000	.359	.436	.487	.179	.205	.308	.231	.000	.184
26	6.25	.000	.000	.000	.000	.385	.462	.487	.205	.205	.308	.256	.000	.192
27	6.50	.000	.000	.000	.000	.436	.487	.487	.205	.205	.308	.308	.000	.203
28	6.75	.000	.000	.000	.000	.436	.487	.513	.205	.231	.308	.359	.000	.212
29	7.00	.000	.000	.000	.026	.436	.513	.538	.205	.256	.333	.359	.000	.222
30	7.25	.000	.026	.000	.026	.487	.564	.538	.231	.308	.359	.385	.000	.244
31	7.50	.000	.051	.000	.026	.564	.564	.538	.231	.308	.359	.385	.000	.252
32	7.75	.000	.051	.000	.051	.564	.590	.590	.231	.308	.359	.385	.000	.261
33	8.00	.000	.077	.000	.051	.590	.590	.615	.231	.308	.359	.385	.026	.269
34	8.25	.026	.103	.000	.103	.590	.590	.641	.282	.333	.359	.385	.026	.286
35	8.50	.026	.128	.051	.128	.590	.590	.667	.282	.333	.359	.385	.051	.299
36	8.75	.051	.154	.051	.128	.590	.615	.667	.282	.333	.359	.385	.051	.306
37	9.00	.051	.179	.128	.154	.590	.615	.667	.282	.333	.385	.385	.051	.318
38	9.25	.077	.231	.128	.179	.615	.615	.667	.359	.359	.385	.385	.051	.338
39	9.50	.103	.231	.128	.205	.615	.615	.718	.359	.359	.436	.385	.051	.350
40	9.75	.128	.282	.179	.231	.641	.615	.744	.359	.359	.436	.410	.077	.372
41	10.00	.128	.282	.205	.256	.641	.615	.744	.359	.359	.436	.436	.128	.382
42	10.25	.154	.308	.231	.256	.667	.615	.769	.385	.359	.436	.436	.128	.375
43	10.50	.154	.333	.256	.282	.667	.667	.769	.410	.359	.436	.436	.154	.410
44	10.75	.154	.359	.256	.282	.667	.692	.769	.436	.385	.436	.436	.205	.423
45	11.00	.154	.359	.256	.308	.667	.718	.769	.436	.385	.436	.436	.205	.427
46	11.25	.179	.359	.282	.333	.667	.744	.769	.436	.410	.436	.436	.205	.438
47	11.50	.231	.385	.333	.333	.667	.744	.769	.436	.410	.462	.436	.205	.451
48	11.75	.282	.436	.359	.333	.667	.744	.795	.436	.410	.462	.436	.256	.468
49	12.00	.282	.462	.385	.333	.692	.744	.795	.436	.462	.462	.462	.308	.485
50	12.25	.308	.462	.385	.333	.692	.744	.821	.436	.487	.462	.462	.308	.491
51	12.50	.359	.513	.436	.333	.692	.821	.821	.487	.487	.462	.462	.359	.519
52	12.75	.359	.513	.436	.385	.692	.846	.821	.487	.487	.462	.462	.359	.526
53	13.00	.359	.513	.436	.436	.692	.846	.821	.513	.487	.462	.462	.359	.532
54	13.25	.410	.538	.436	.436	.692	.846	.821	.513	.487	.462	.462	.359	.532
55	13.50	.410	.538	.462	.436	.692	.846	.821	.538	.487	.487	.462	.359	.545

56	13.75	.462	.538	.462	.462	.692	.846	.821	.538	.513	.487	.462	.359	.553
57	14.00	.462	.590	.487	.462	.718	.846	.821	.538	.513	.513	.462	.385	.566
58	14.25	.487	.615	.513	.487	.718	.846	.821	.538	.538	.538	.487	.436	.585
59	14.50	.538	.641	.513	.487	.718	.846	.821	.538	.538	.538	.487	.436	.592
60	14.75	.538	.641	.538	.487	.718	.846	.821	.538	.564	.615	.487	.487	.607
61	15.00	.564	.667	.564	.538	.718	.846	.821	.538	.590	.615	.513	.487	.622
62	15.25	.590	.667	.590	.564	.718	.846	.846	.538	.590	.615	.513	.487	.630
63	15.50	.590	.667	.641	.590	.744	.846	.846	.538	.590	.641	.513	.487	.641
64	15.75	.590	.667	.718	.590	.744	.872	.872	.538	.615	.641	.513	.487	.654
65	16.00	.590	.667	.744	.590	.744	.872	.872	.538	.615	.641	.538	.513	.660
66	16.25	.590	.667	.744	.615	.744	.872	.872	.538	.615	.641	.564	.513	.665
67	16.50	.590	.667	.769	.615	.769	.872	.872	.538	.615	.641	.564	.538	.671
68	16.75	.615	.667	.769	.667	.769	.872	.872	.538	.641	.641	.615	.538	.684
69	17.00	.615	.667	.769	.692	.769	.872	.872	.538	.641	.641	.615	.564	.688
70	17.25	.692	.692	.769	.692	.769	.872	.872	.538	.667	.641	.615	.564	.699
71	17.50	.692	.692	.769	.692	.795	.872	.872	.641	.692	.667	.615	.564	.714
72	17.75	.692	.692	.769	.718	.795	.872	.872	.641	.718	.667	.615	.564	.718
73	18.00	.692	.692	.769	.744	.795	.872	.897	.641	.718	.692	.615	.564	.724
74	18.25	.692	.718	.769	.769	.795	.872	.897	.641	.718	.692	.615	.564	.729
75	18.50	.692	.769	.769	.769	.795	.872	.897	.641	.718	.692	.615	.564	.733
76	18.75	.692	.769	.769	.769	.795	.872	.897	.667	.718	.718	.615	.564	.737
77	19.00	.718	.769	.769	.769	.795	.872	.897	.667	.718	.718	.615	.590	.741
78	19.25	.718	.769	.795	.769	.795	.872	.897	.667	.718	.718	.615	.590	.744
79	19.50	.718	.769	.795	.769	.821	.872	.897	.692	.718	.744	.615	.590	.750
80	19.75	.718	.795	.795	.769	.821	.872	.897	.692	.718	.744	.615	.615	.754
81	20.00	.718	.795	.795	.769	.821	.872	.897	.692	.718	.744	.615	.615	.754
82	20.25	.718	.795	.795	.769	.821	.872	.897	.692	.744	.795	.615	.615	.761
83	20.50	.769	.795	.795	.769	.821	.872	.897	.718	.744	.795	.615	.615	.767
84	20.75	.769	.795	.795	.769	.821	.872	.897	.744	.744	.795	.641	.615	.771
85	21.00	.769	.795	.795	.769	.821	.872	.897	.744	.769	.795	.641	.641	.776
86	21.25	.769	.795	.821	.795	.821	.872	.897	.744	.769	.795	.641	.667	.782
87	21.50	.769	.795	.821	.795	.821	.872	.897	.744	.769	.795	.641	.667	.782
88	21.75	.769	.795	.846	.795	.821	.872	.897	.744	.769	.795	.641	.667	.784
89	22.00	.769	.795	.846	.795	.821	.872	.897	.744	.795	.795	.641	.692	.788
90	22.25	.769	.795	.846	.795	.821	.872	.897	.795	.795	.795	.641	.718	.795
91	22.50	.769	.795	.846	.795	.821	.872	.897	.795	.795	.795	.641	.744	.797
92	22.75	.769	.795	.846	.795	.846	.872	.897	.795	.846	.795	.692	.744	.808
93	23.00	.769	.795	.846	.795	.846	.872	.897	.795	.846	.795	.718	.744	.810
94	23.25	.769	.795	.846	.821	.846	.872	.923	.795	.846	.795	.718	.744	.814
95	23.50	.769	.795	.846	.821	.846	.872	.923	.795	.846	.795	.718	.744	.814
96	23.75	.769	.795	.846	.821	.846	.872	.923	.795	.846	.795	.718	.744	.814
97	24.00	.769	.821	.846	.821	.846	.872	.923	.795	.846	.795	.718	.744	.816
98	24.25	.769	.821	.872	.821	.846	.872	.923	.795	.846	.795	.718	.744	.818
99	24.50	.769	.846	.872	.821	.846	.872	.923	.795	.872	.795	.718	.744	.823
100	24.75	.769	.846	.872	.821	.846	.872	.923	.795	.872	.795	.718	.744	.823
101	25.00	.769	.846	.872	.821	.846	.872	.949	.795	.872	.795	.718	.769	.827
102	25.25	.769	.846	.872	.821	.846	.897	.949	.795	.872	.795	.718	.769	.829
103	25.50	.769	.846	.872	.821	.846	.897	.949	.795	.872	.795	.718	.769	.829
104	25.75	.769	.872	.897	.821	.846	.897	.949	.846	.872	.795	.718	.769	.838
105	26.00	.769	.872	.897	.821	.872	.897	.949	.846	.897	.795	.718	.769	.842
106	26.25	.769	.872	.897	.846	.872	.897	.949	.846	.897	.795	.718	.769	.844
107	26.50	.769	.872	.897	.846	.872	.897	.949	.846	.897	.795	.718	.769	.844
108	26.75	.769	.897	.897	.846	.872	.897	.949	.846	.897	.795	.718	.795	.846
109	27.00	.795	.897	.897	.897	.872	.897	.949	.846	.897	.795	.718	.795	.855
110	27.25	.795	.897	.923	.923	.872	.897	.949	.872	.897	.795	.744	.795	.863
111	27.50	.821	.897	.923	.923	.872	.897	.949	.872	.897	.795	.744	.821	.868
112	27.75	.821	.897	.923	.923	.897	.923	.949	.872	.897	.795	.744	.821	.872
113	28.00	.821	.897	.923	.923	.897	.923	.949	.897	.897	.795	.744	.821	.874
114	28.25	.821	.897	.949	.949	.897	.923	.949	.923	.923	.795	.744	.821	.882
115	28.50	.821	.897	.949	.949	.897	.923	.949	.923	.923	.821	.769	.821	.887

116	28.75	.872	.923	.949	.949	.897	.923	.949	.923	.923	.821	.769	.821	.893
117	29.00	.872	.923	.949	.949	.897	.923	.949	.923	.923	.846	.769	.821	.895
118	29.25	.872	.923	.949	.949	.897	.923	.949	.923	.923	.846	.769	.821	.895
119	29.50	.872	.923	.949	.949	.897	.923	.949	.923	.923	.846	.769	.821	.895
120	29.75	.872	.949	.949	.949	.897	.923	.949	.923	.923	.846	.769	.821	.897
121	30.00	.872	.949	.949	.949	.897	.923	.949	.923	.949	.846	.769	.846	.902
122	30.25	.872	.949	.949	.949	.897	.923	.949	.923	.949	.872	.769	.846	.904
123	30.50	.872	.949	.974	.949	.897	.923	.949	.923	.949	.897	.769	.846	.908
124	30.75	.897	.949	.974	.949	.897	.923	.949	.923	.949	.897	.795	.846	.912
125	31.00	.897	.949	.974	.974	.897	.923	.949	.923	.949	.897	.795	.846	.915
126	31.25	.897	.949	.974	.974	.897	.923	.949	.923	.949	.897	.795	.846	.915
127	31.50	.897	.949	.974	.974	.897	.923	.949	.923	.949	.897	.795	.846	.915
128	31.75	.897	.949	.974	.974	.897	.923	.949	.923	.949	.897	.795	.846	.915
129	32.00	.897	.949	.974	.974	.897	.923	.949	.923	.949	.897	.795	.846	.915
130	32.25	.897	.949	.974	.974	.923	.923	.949	.923	.949	.897	.795	.846	.917
131	32.50	.897	.949	.974	.974	.923	.923	.949	.923	.949	.897	.795	.846	.917
132	32.75	.897	.949	.974	.974	.923	.923	.949	.923	.949	.897	.795	.846	.917
133	33.00	.897	.949	.974	.974	.923	.949	.949	.923	.949	.897	.795	.872	.921
134	33.25	.897	.949	.974	.974	.923	.949	.949	.923	.949	.923	.795	.872	.923
135	33.50	.897	.949	.974	.974	.923	.949	.949	.923	.949	.923	.795	.897	.925
136	33.75	.897	.949	.974	.974	.923	.949	.949	.923	.949	.923	.795	.923	.927
137	34.00	.897	.949	.974	.974	.923	.949	.949	.923	.949	.923	.795	.923	.927
138	34.25	.897	.949	.974	.974	.923	.949	.949	.923	.949	.923	.795	.923	.927
139	34.50	.897	.949	.974	.974	.923	.949	.949	.949	.949	.923	.795	.923	.929
140	34.75	.897	.949	.974	.974	.923	.949	.949	.949	.949	.923	.795	.923	.929
141	35.00	.897	.949	.974	.974	.923	.949	.949	.949	.949	.923	.795	.923	.929
142	35.25	.897	.949	.974	.974	.923	.949	.949	.949	.949	.923	.795	.923	.929
143	35.50	.923	.949	.974	.974	.923	.949	.949	.949	.949	.923	.795	.923	.932
144	35.75	.923	.974	.974	.974	.923	.974	.949	.949	.949	.923	.795	.923	.936
145	36.00	.923	.974	.974	.974	.923	.974	.949	.949	.949	.923	.795	.923	.936
146	36.25	.949	.974	.974	.974	.923	.974	.949	.949	.949	.923	.795	.923	.938
147	36.50	.949	.974	.974	.974	.923	.974	.949	.949	.949	.923	.795	.923	.938
148	36.75	.949	.974	1.000	.974	.923	.974	.949	.949	.949	.923	.795	.923	.940
149	37.00	.949	1.000	1.000	.974	.923	.974	.949	.949	.949	.923	.795	.923	.942
150	37.25	.949	1.000	1.000	.974	.923	.974	.949	.949	.949	.923	.795	.923	.942
151	37.50	.949	1.000	1.000	.974	.923	.974	.949	.949	.949	.923	.795	.923	.942
152	37.75	.949	1.000	1.000	.974	.923	.974	.949	.949	.949	.923	.795	.923	.942
153	38.00	.949	1.000	1.000	.974	.923	.974	.949	.949	.949	.923	.795	.923	.942
154	38.25	.949	1.000	1.000	.974	.923	.974	.949	.949	.949	.923	.795	.923	.942
155	38.50	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.923	.795	.923	.944
156	38.75	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.923	.795	.923	.944
157	39.00	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.923	.821	.923	.947
158	39.25	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.923	.821	.923	.947
159	39.50	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.923	.821	.923	.947
160	39.75	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.923	.821	.923	.947
161	40.00	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.923	.821	.923	.947
162	40.25	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.923	.821	.923	.947
163	40.50	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.923	.821	.923	.947
164	40.75	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.923	.821	.923	.947
165	41.00	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.923	.821	.923	.947
166	41.25	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.923	.846	.923	.949
167	41.50	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.923	.846	.923	.949
168	41.75	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.923	.872	.923	.951
169	42.00	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.923	.872	.923	.951
170	42.25	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.949	.872	.949	.955
171	42.50	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.949	.872	.949	.955
172	42.75	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.949	.872	.949	.955
173	43.00	.949	1.000	1.000	.974	.949	.974	.949	.949	.949	.949	.872	.949	.955
174	43.25	.974	1.000	1.000	.974	.949	.974	.949	.949	.949	.949	.872	.949	.957
175	43.50	.974	1.000	1.000	.974	.949	.974	.949	.949	.949	.949	.872	.949	.957

176	43.75	.974	1.000	1.000	.974	.949	.974	.949	.949	.949	.949	.872	.949	.957
177	44.00	.974	1.000	1.000	.974	.949	.974	.949	.949	.949	.949	.872	.949	.957
178	44.25	.974	1.000	1.000	.974	.949	.974	.949	.949	.949	.949	.872	.949	.957
179	44.50	.974	1.000	1.000	.974	.949	.974	.949	.949	.949	.949	.872	.949	.957
180	44.75	.974	1.000	1.000	.974	.949	.974	.949	.949	.949	.949	.872	.949	.957
181	45.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
182	45.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
183	45.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
184	45.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
185	46.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
186	.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

TABLE F-3 SALINITY FREQUENCY-DURATION RESULTS FOR CASE C BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS

RANGE NO.	UPPER RANGE VALUE	PROBABILITY THAT MONTHLY SALINITY IS LESS THAN THE INDICATED VALUE JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1	.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
2	.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3	.50	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
4	.75	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5	1.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
6	1.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
7	1.50	.000	.000	.000	.000	.000	.000	.026	.000	.000	.000	.000	.000	.002
8	1.75	.000	.000	.000	.000	.000	.000	.051	.000	.000	.000	.000	.000	.004
9	2.00	.000	.000	.000	.000	.000	.000	.077	.000	.000	.000	.000	.000	.006
10	2.25	.000	.000	.000	.000	.000	.026	.103	.026	.000	.000	.000	.000	.013
11	2.50	.000	.000	.000	.000	.000	.026	.103	.026	.000	.000	.000	.000	.013
12	2.75	.000	.000	.000	.000	.000	.051	.128	.026	.000	.000	.000	.000	.017
13	3.00	.000	.000	.000	.000	.000	.077	.205	.051	.000	.000	.026	.000	.030
14	3.25	.000	.000	.000	.000	.000	.077	.231	.051	.000	.000	.026	.000	.032
15	3.50	.000	.000	.000	.000	.026	.128	.231	.103	.026	.000	.051	.000	.047
16	3.75	.000	.000	.000	.000	.077	.179	.256	.103	.026	.000	.051	.000	.058
17	4.00	.000	.000	.000	.000	.128	.179	.256	.103	.051	.128	.077	.000	.077
18	4.25	.000	.000	.000	.000	.128	.179	.308	.128	.051	.154	.103	.000	.088
19	4.50	.000	.000	.000	.000	.128	.179	.359	.154	.103	.154	.103	.000	.098
20	4.75	.000	.000	.000	.000	.154	.256	.359	.154	.103	.205	.103	.000	.111
21	5.00	.000	.000	.000	.000	.154	.333	.359	.179	.128	.231	.154	.000	.128
22	5.25	.000	.000	.000	.000	.231	.359	.410	.179	.154	.256	.179	.000	.147
23	5.50	.000	.000	.000	.000	.308	.385	.436	.179	.205	.282	.179	.000	.165
24	5.75	.000	.000	.000	.000	.333	.410	.436	.179	.205	.282	.205	.000	.171
25	6.00	.000	.000	.000	.000	.333	.436	.462	.179	.205	.308	.205	.000	.177
26	6.25	.000	.000	.000	.000	.359	.436	.462	.179	.205	.308	.205	.000	.179
27	6.50	.000	.000	.000	.000	.385	.436	.487	.179	.205	.308	.256	.000	.188
28	6.75	.000	.000	.000	.000	.436	.462	.487	.179	.205	.308	.256	.000	.194
29	7.00	.000	.000	.000	.026	.436	.487	.487	.179	.205	.308	.308	.000	.203
30	7.25	.000	.026	.000	.026	.436	.487	.487	.205	.231	.308	.333	.000	.212
31	7.50	.000	.051	.000	.026	.436	.538	.487	.205	.256	.333	.333	.000	.222
32	7.75	.000	.051	.000	.051	.487	.538	.487	.205	.256	.359	.359	.000	.233
33	8.00	.000	.051	.000	.051	.564	.564	.487	.205	.282	.359	.385	.026	.248
34	8.25	.000	.077	.000	.051	.564	.590	.538	.205	.308	.359	.385	.026	.257
35	8.50	.026	.103	.026	.103	.590	.590	.538	.231	.308	.359	.385	.051	.276
36	8.75	.026	.128	.051	.103	.590	.590	.590	.231	.308	.359	.385	.051	.284
37	9.00	.051	.179	.128	.128	.590	.590	.590	.231	.308	.359	.385	.051	.299
38	9.25	.077	.205	.128	.154	.590	.590	.590	.231	.308	.359	.385	.051	.306
39	9.50	.103	.231	.128	.154	.590	.590	.615	.231	.333	.359	.385	.051	.314
40	9.75	.103	.231	.154	.205	.590	.590	.615	.231	.333	.359	.385	.051	.321
41	10.00	.128	.282	.205	.205	.615	.590	.641	.231	.333	.359	.385	.077	.338
42	10.25	.128	.282	.205	.256	.615	.590	.641	.231	.333	.359	.385	.128	.346
43	10.50	.154	.308	.231	.256	.615	.590	.641	.256	.333	.410	.385	.128	.359
44	10.75	.154	.333	.256	.282	.641	.590	.641	.282	.359	.410	.385	.128	.372
45	11.00	.154	.333	.256	.282	.641	.590	.641	.308	.359	.410	.410	.179	.380
46	11.25	.154	.359	.256	.282	.641	.590	.641	.308	.359	.410	.410	.179	.382
47	11.50	.179	.359	.256	.333	.641	.590	.641	.308	.359	.410	.410	.205	.391
48	11.75	.231	.385	.282	.333	.641	.590	.641	.308	.359	.410	.410	.205	.400
49	12.00	.282	.410	.308	.333	.641	.615	.641	.308	.359	.410	.410	.205	.410
50	12.25	.282	.410	.359	.333	.641	.667	.641	.308	.359	.436	.436	.231	.425
51	12.50	.308	.436	.359	.333	.641	.667	.641	.333	.359	.436	.436	.282	.436
52	12.75	.308	.436	.359	.333	.641	.667	.641	.333	.359	.436	.436	.282	.436
53	13.00	.333	.436	.359	.333	.641	.667	.641	.333	.359	.436	.436	.282	.438
54	13.25	.333	.487	.385	.333	.641	.667	.641	.333	.385	.436	.436	.333	.451
55	13.50	.359	.487	.385	.385	.641	.667	.641	.385	.385	.436	.436	.359	.464

56	13.75	.410	.487	.385	.385	.667	.692	.641	.385	.385	.436	.436	.359	.472
57	14.00	.410	.487	.385	.410	.667	.718	.667	.385	.385	.436	.436	.359	.479
58	14.25	.410	.487	.410	.410	.667	.744	.667	.385	.385	.436	.436	.359	.483
59	14.50	.436	.487	.410	.410	.667	.744	.667	.385	.385	.436	.436	.359	.485
60	14.75	.436	.487	.410	.410	.667	.744	.667	.410	.385	.436	.462	.359	.489
61	15.00	.462	.538	.410	.410	.667	.744	.692	.410	.385	.462	.462	.385	.502
62	15.25	.513	.538	.436	.436	.692	.769	.692	.410	.385	.462	.462	.385	.515
63	15.50	.538	.564	.436	.462	.692	.769	.692	.436	.385	.462	.462	.385	.524
64	15.75	.538	.590	.462	.462	.692	.769	.718	.436	.385	.462	.462	.410	.532
65	16.00	.538	.615	.462	.462	.692	.769	.718	.436	.385	.462	.462	.436	.536
66	16.25	.564	.615	.513	.462	.692	.769	.718	.436	.385	.487	.462	.487	.549
67	16.50	.564	.615	.538	.538	.692	.795	.718	.436	.436	.487	.462	.487	.564
68	16.75	.564	.615	.538	.538	.692	.795	.718	.436	.487	.487	.462	.487	.568
69	17.00	.564	.615	.590	.538	.718	.795	.744	.436	.487	.487	.462	.487	.577
70	17.25	.564	.615	.615	.538	.718	.795	.744	.487	.487	.487	.462	.487	.583
71	17.50	.564	.615	.641	.538	.718	.795	.744	.487	.487	.487	.462	.487	.585
72	17.75	.590	.641	.641	.564	.718	.795	.744	.513	.487	.487	.462	.513	.596
73	18.00	.590	.641	.641	.564	.718	.795	.744	.513	.487	.487	.462	.513	.596
74	18.25	.590	.641	.667	.590	.718	.795	.744	.538	.487	.487	.462	.513	.603
75	18.50	.590	.641	.718	.590	.718	.795	.744	.538	.487	.487	.462	.513	.607
76	18.75	.590	.641	.718	.615	.718	.795	.744	.538	.487	.487	.462	.513	.609
77	19.00	.590	.641	.718	.641	.718	.795	.744	.538	.487	.487	.462	.513	.611
78	19.25	.615	.641	.718	.641	.718	.795	.744	.538	.487	.513	.462	.513	.615
79	19.50	.641	.667	.718	.641	.718	.795	.744	.538	.487	.513	.462	.513	.620
80	19.75	.641	.667	.718	.667	.718	.795	.769	.538	.487	.513	.462	.513	.624
81	20.00	.641	.667	.718	.692	.718	.795	.769	.538	.487	.513	.462	.513	.626
82	20.25	.641	.667	.718	.692	.718	.795	.769	.538	.487	.513	.462	.513	.626
83	20.50	.641	.667	.718	.692	.718	.795	.795	.538	.513	.538	.462	.513	.632
84	20.75	.641	.667	.718	.692	.744	.795	.795	.538	.513	.538	.462	.538	.637
85	21.00	.641	.667	.718	.692	.744	.795	.795	.538	.513	.538	.462	.538	.637
86	21.25	.641	.667	.718	.718	.744	.795	.795	.538	.513	.564	.462	.564	.643
87	21.50	.641	.667	.718	.718	.744	.795	.795	.538	.513	.564	.462	.564	.643
88	21.75	.641	.667	.744	.718	.744	.821	.821	.538	.513	.564	.462	.564	.650
89	22.00	.641	.692	.744	.744	.744	.821	.821	.538	.513	.564	.462	.564	.654
90	22.25	.641	.692	.744	.744	.769	.821	.821	.538	.538	.590	.462	.564	.660
91	22.50	.641	.692	.744	.744	.769	.821	.821	.538	.538	.590	.462	.564	.660
92	22.75	.667	.692	.744	.744	.769	.821	.821	.538	.564	.590	.487	.564	.667
93	23.00	.667	.692	.744	.744	.769	.846	.821	.564	.590	.590	.487	.564	.673
94	23.25	.667	.718	.744	.744	.769	.846	.821	.564	.590	.590	.487	.564	.675
95	23.50	.667	.718	.744	.744	.769	.872	.821	.564	.590	.590	.487	.564	.677
96	23.75	.667	.718	.744	.744	.769	.872	.821	.564	.590	.590	.487	.564	.677
97	24.00	.667	.744	.744	.744	.769	.872	.821	.564	.590	.590	.487	.564	.679
98	24.25	.667	.744	.744	.744	.769	.872	.821	.564	.590	.590	.487	.564	.679
99	24.50	.667	.744	.795	.744	.769	.872	.821	.564	.590	.590	.487	.564	.684
100	24.75	.667	.744	.795	.744	.769	.872	.821	.564	.590	.590	.487	.564	.684
101	25.00	.667	.744	.795	.744	.795	.872	.821	.564	.590	.590	.487	.564	.686
102	25.25	.667	.769	.795	.769	.795	.872	.821	.564	.590	.590	.487	.564	.690
103	25.50	.667	.769	.795	.769	.795	.872	.821	.564	.590	.590	.513	.564	.692
104	25.75	.667	.769	.795	.795	.795	.872	.821	.564	.590	.590	.513	.564	.694
105	26.00	.692	.769	.795	.795	.795	.872	.821	.564	.590	.590	.513	.564	.697
106	26.25	.692	.769	.795	.795	.795	.872	.821	.564	.590	.590	.538	.564	.699
107	26.50	.692	.769	.795	.795	.795	.872	.821	.564	.590	.590	.538	.564	.699
108	26.75	.692	.769	.795	.795	.821	.872	.821	.564	.590	.590	.538	.564	.701
109	27.00	.718	.769	.795	.795	.821	.872	.821	.564	.590	.590	.538	.590	.705
110	27.25	.718	.769	.795	.795	.821	.872	.821	.564	.590	.590	.564	.590	.707
111	27.50	.718	.769	.795	.795	.821	.872	.846	.564	.590	.590	.564	.590	.709
112	27.75	.744	.769	.795	.795	.821	.872	.846	.564	.590	.590	.564	.590	.712
113	28.00	.744	.769	.795	.795	.821	.872	.846	.564	.590	.590	.615	.590	.716
114	28.25	.744	.769	.795	.795	.821	.872	.846	.564	.590	.590	.615	.615	.718
115	28.50	.744	.769	.795	.795	.821	.872	.846	.564	.590	.590	.615	.615	.718

116	28.75	.744	.769	.795	.795	.821	.872	.846	.564	.590	.590	.615	.615	.718
117	29.00	.744	.795	.821	.795	.821	.872	.846	.590	.590	.590	.615	.615	.724
118	29.25	.744	.795	.846	.795	.821	.872	.846	.590	.590	.590	.615	.615	.726
119	29.50	.744	.795	.846	.821	.821	.872	.846	.590	.615	.615	.615	.615	.733
120	29.75	.744	.795	.846	.821	.821	.872	.846	.590	.615	.615	.615	.641	.735
121	30.00	.744	.795	.846	.846	.821	.872	.846	.590	.615	.615	.641	.641	.739
122	30.25	.744	.795	.846	.846	.821	.872	.846	.590	.615	.615	.641	.667	.741
123	30.50	.744	.795	.846	.846	.821	.872	.846	.590	.615	.615	.641	.667	.741
124	30.75	.744	.821	.846	.846	.821	.872	.846	.590	.615	.615	.641	.667	.744
125	31.00	.744	.821	.846	.846	.821	.872	.846	.590	.615	.615	.641	.667	.744
126	31.25	.769	.821	.872	.846	.821	.872	.846	.590	.615	.615	.641	.667	.748
127	31.50	.769	.821	.872	.872	.821	.872	.846	.590	.615	.615	.641	.718	.754
128	31.75	.769	.846	.872	.872	.821	.872	.846	.590	.615	.615	.641	.718	.756
129	32.00	.769	.846	.872	.897	.821	.872	.872	.590	.615	.615	.641	.718	.761
130	32.25	.769	.846	.872	.897	.821	.872	.872	.590	.615	.641	.641	.718	.763
131	32.50	.795	.846	.872	.897	.821	.872	.872	.590	.615	.641	.641	.718	.765
132	32.75	.795	.846	.872	.897	.821	.872	.872	.590	.615	.641	.641	.718	.765
133	33.00	.795	.846	.897	.897	.821	.872	.872	.590	.615	.641	.641	.718	.767
134	33.25	.795	.846	.897	.897	.821	.872	.872	.590	.615	.641	.641	.718	.767
135	33.50	.795	.846	.897	.923	.821	.872	.872	.615	.615	.667	.641	.718	.774
136	33.75	.795	.872	.897	.923	.821	.872	.872	.615	.615	.667	.641	.718	.776
137	34.00	.795	.872	.897	.923	.821	.872	.872	.615	.641	.667	.641	.718	.778
138	34.25	.795	.872	.897	.923	.821	.872	.872	.615	.641	.667	.641	.718	.778
139	34.50	.795	.872	.897	.923	.821	.872	.872	.615	.641	.667	.641	.718	.778
140	34.75	.821	.872	.897	.923	.821	.872	.872	.615	.641	.667	.641	.744	.782
141	35.00	.821	.872	.897	.923	.821	.872	.872	.615	.641	.667	.641	.744	.782
142	35.25	.821	.872	.897	.923	.821	.872	.872	.615	.641	.667	.641	.769	.784
143	35.50	.821	.872	.923	.923	.821	.872	.872	.615	.641	.667	.641	.769	.786
144	35.75	.821	.872	.923	.923	.821	.872	.872	.615	.641	.667	.641	.769	.786
145	36.00	.821	.872	.923	.923	.821	.872	.872	.615	.667	.667	.667	.769	.791
146	36.25	.846	.872	.923	.923	.846	.872	.872	.615	.667	.667	.667	.769	.795
147	36.50	.846	.872	.923	.923	.846	.872	.872	.615	.667	.667	.667	.769	.795
148	36.75	.846	.872	.923	.923	.846	.872	.872	.615	.667	.692	.667	.769	.797
149	37.00	.846	.872	.923	.923	.846	.872	.872	.615	.667	.692	.667	.769	.797
150	37.25	.846	.872	.923	.923	.846	.872	.872	.615	.667	.692	.667	.769	.797
151	37.50	.846	.872	.923	.949	.846	.872	.872	.615	.667	.692	.667	.769	.799
152	37.75	.846	.872	.923	.949	.846	.872	.872	.641	.667	.692	.667	.769	.801
153	38.00	.846	.897	.923	.949	.846	.872	.872	.641	.667	.692	.667	.769	.803
154	38.25	.846	.897	.949	.949	.846	.872	.872	.641	.667	.692	.667	.769	.806
155	38.50	.846	.923	.949	.949	.846	.872	.872	.641	.667	.718	.667	.769	.810
156	38.75	.846	.923	.949	.949	.846	.872	.872	.641	.667	.718	.692	.769	.812
157	39.00	.846	.923	.949	.949	.846	.872	.872	.641	.667	.718	.692	.795	.814
158	39.25	.846	.923	.949	.949	.846	.872	.872	.641	.667	.718	.692	.795	.814
159	39.50	.846	.923	.949	.949	.846	.872	.872	.641	.692	.718	.692	.795	.816
160	39.75	.846	.923	.949	.949	.846	.872	.872	.641	.718	.718	.692	.795	.818
161	40.00	.872	.923	.949	.949	.846	.872	.872	.641	.718	.718	.692	.795	.821
162	40.25	.897	.923	.949	.949	.846	.872	.872	.641	.718	.718	.692	.795	.823
163	40.50	.897	.923	.949	.949	.872	.872	.872	.641	.718	.718	.692	.795	.825
164	40.75	.897	.923	.949	.949	.872	.872	.872	.641	.718	.718	.692	.795	.825
165	41.00	.897	.923	.949	.949	.872	.872	.872	.667	.744	.718	.692	.821	.831
166	41.25	.897	.923	.949	.974	.872	.872	.872	.667	.744	.718	.692	.821	.833
167	41.50	.897	.923	.949	.974	.872	.872	.872	.667	.744	.718	.692	.821	.833
168	41.75	.897	.923	.949	.974	.872	.872	.872	.667	.744	.718	.692	.846	.835
169	42.00	.897	.923	.949	.974	.872	.872	.872	.667	.744	.744	.692	.846	.838
170	42.25	.897	.923	.949	.974	.897	.872	.872	.667	.744	.744	.692	.846	.840
171	42.50	.897	.923	.949	.974	.897	.872	.872	.667	.769	.744	.692	.846	.842
172	42.75	.897	.923	.949	.974	.897	.872	.872	.667	.769	.744	.692	.872	.844
173	43.00	.923	.923	.974	.974	.897	.872	.872	.667	.769	.744	.692	.872	.848
174	43.25	.923	.949	1.000	.974	.897	.897	.872	.667	.769	.744	.692	.872	.855
175	43.50	.949	.949	1.000	.974	.897	.897	.872	.667	.769	.744	.692	.872	.857

176	43.75	.949	.949	1.000	.974	.897	.897	.872	.667	.769	.744	.692	.897	.857
177	44.00	.949	.949	1.000	.974	.897	.897	.872	.667	.769	.769	.692	.897	.861
178	44.25	.949	.949	1.000	.974	.897	.897	.872	.692	.769	.769	.692	.923	.865
179	44.50	.949	.949	1.000	.974	.897	.897	.872	.692	.769	.769	.692	.923	.865
180	44.75	.949	.974	1.000	.974	.897	.897	.872	.692	.769	.769	.692	.923	.868
181	45.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
182	45.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
183	45.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
184	45.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
185	46.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
186	.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

TABLE F-4 SALINITY FREQUENCY-DURATION RESULTS FOR CASE D BASED ON TOTAL LAVACA BAY INFLOW REGRESSIONS

RANGE NO.	UPPER RANGE VALUE	PROBABILITY THAT MONTHLY SALINITY IS LESS THAN THE INDICATED VALUE JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1	.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
2	.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3	.50	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
4	.75	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5	1.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
6	1.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
7	1.50	.000	.000	.000	.000	.000	.000	.026	.000	.000	.000	.000	.000	.002
8	1.75	.000	.000	.000	.000	.000	.000	.051	.000	.000	.000	.000	.000	.004
9	2.00	.000	.000	.000	.000	.000	.000	.077	.000	.000	.000	.000	.000	.006
10	2.25	.000	.000	.000	.000	.000	.026	.103	.026	.000	.000	.000	.000	.013
11	2.50	.000	.000	.000	.000	.000	.026	.103	.026	.000	.000	.000	.000	.013
12	2.75	.000	.000	.000	.000	.000	.051	.128	.026	.000	.000	.000	.000	.017
13	3.00	.000	.000	.000	.000	.000	.077	.205	.051	.000	.000	.026	.000	.030
14	3.25	.000	.000	.000	.000	.000	.077	.231	.051	.000	.000	.026	.000	.032
15	3.50	.000	.000	.000	.000	.026	.128	.231	.103	.026	.000	.051	.000	.047
16	3.75	.000	.000	.000	.000	.077	.179	.256	.103	.026	.000	.051	.000	.058
17	4.00	.000	.000	.000	.000	.128	.179	.282	.103	.051	.103	.077	.000	.077
18	4.25	.000	.000	.000	.000	.128	.179	.308	.128	.051	.154	.103	.000	.088
19	4.50	.000	.000	.000	.000	.128	.231	.359	.154	.103	.154	.103	.000	.103
20	4.75	.000	.000	.000	.000	.154	.256	.359	.154	.103	.179	.103	.000	.109
21	5.00	.000	.000	.000	.000	.154	.333	.385	.154	.128	.231	.128	.000	.126
22	5.25	.000	.000	.000	.000	.231	.359	.410	.179	.128	.256	.154	.000	.143
23	5.50	.000	.000	.000	.000	.308	.385	.436	.179	.205	.256	.179	.000	.162
24	5.75	.000	.000	.000	.000	.308	.385	.436	.179	.205	.282	.205	.000	.167
25	6.00	.000	.000	.000	.000	.333	.436	.487	.179	.205	.282	.205	.000	.177
26	6.25	.000	.000	.000	.000	.333	.436	.487	.179	.205	.308	.205	.000	.177
27	6.50	.000	.000	.000	.000	.385	.436	.487	.179	.205	.308	.231	.000	.186
28	6.75	.000	.000	.000	.000	.410	.436	.487	.179	.205	.308	.256	.000	.190
29	7.00	.000	.000	.000	.026	.436	.487	.487	.179	.231	.308	.308	.000	.205
30	7.25	.000	.026	.000	.026	.436	.487	.487	.205	.256	.308	.308	.000	.212
31	7.50	.000	.051	.000	.026	.436	.513	.487	.205	.282	.333	.333	.000	.222
32	7.75	.000	.051	.000	.051	.487	.538	.513	.205	.282	.359	.333	.000	.233
33	8.00	.000	.051	.000	.051	.538	.564	.538	.231	.282	.359	.333	.026	.248
34	8.25	.000	.077	.000	.051	.564	.590	.564	.231	.308	.359	.333	.026	.259
35	8.50	.026	.103	.026	.103	.590	.590	.564	.231	.308	.359	.359	.051	.276
36	8.75	.026	.103	.051	.103	.590	.590	.590	.231	.308	.359	.385	.051	.282
37	9.00	.051	.154	.128	.128	.590	.590	.615	.231	.308	.359	.385	.051	.299
38	9.25	.077	.205	.128	.154	.590	.590	.615	.231	.308	.359	.385	.051	.308
39	9.50	.103	.231	.128	.154	.590	.590	.615	.231	.308	.359	.385	.051	.312
40	9.75	.103	.231	.154	.179	.590	.590	.615	.231	.308	.385	.385	.051	.318
41	10.00	.128	.256	.179	.205	.615	.590	.615	.256	.333	.385	.385	.077	.335
42	10.25	.128	.256	.179	.231	.615	.590	.615	.256	.333	.410	.410	.103	.344
43	10.50	.154	.256	.256	.256	.615	.590	.615	.256	.333	.410	.410	.103	.355
44	10.75	.154	.308	.256	.256	.615	.590	.641	.256	.333	.436	.410	.128	.365
45	11.00	.154	.359	.256	.282	.615	.590	.641	.256	.333	.436	.410	.179	.376
46	11.25	.154	.359	.256	.282	.615	.615	.641	.256	.333	.436	.410	.179	.378
47	11.50	.179	.359	.256	.333	.641	.641	.667	.308	.359	.436	.410	.179	.397
48	11.75	.231	.385	.256	.333	.641	.641	.667	.308	.359	.436	.410	.179	.404
49	12.00	.256	.410	.282	.333	.641	.641	.667	.308	.359	.436	.410	.179	.410
50	12.25	.256	.410	.359	.333	.641	.667	.667	.308	.385	.436	.410	.205	.423
51	12.50	.282	.410	.359	.333	.641	.692	.667	.308	.385	.436	.410	.282	.434
52	12.75	.282	.410	.359	.333	.641	.718	.692	.333	.410	.436	.410	.282	.442
53	13.00	.333	.410	.359	.333	.641	.718	.692	.385	.436	.436	.410	.282	.455
54	13.25	.333	.462	.359	.333	.641	.718	.718	.385	.436	.436	.410	.308	.462
55	13.50	.333	.462	.359	.359	.641	.718	.718	.410	.436	.436	.410	.308	.466

56	13.75	.385	.487	.359	.359	.667	.744	.718	.436	.436	.462	.410	.308	.481
57	14.00	.385	.487	.385	.410	.667	.744	.718	.436	.436	.462	.410	.308	.487
58	14.25	.385	.487	.385	.410	.667	.769	.718	.436	.436	.487	.410	.308	.491
59	14.50	.385	.487	.385	.436	.667	.769	.744	.436	.436	.487	.410	.333	.498
60	14.75	.410	.487	.410	.436	.667	.769	.744	.462	.487	.487	.410	.333	.502
61	15.00	.410	.487	.410	.436	.667	.769	.744	.487	.487	.487	.436	.333	.513
62	15.25	.410	.538	.436	.436	.692	.769	.744	.487	.487	.513	.436	.333	.524
63	15.50	.410	.538	.436	.436	.692	.769	.744	.513	.487	.538	.436	.333	.528
64	15.75	.436	.538	.436	.462	.692	.795	.744	.513	.487	.538	.436	.359	.536
65	16.00	.436	.564	.462	.487	.718	.821	.744	.513	.487	.590	.436	.385	.553
66	16.25	.436	.564	.564	.487	.718	.821	.744	.538	.487	.590	.436	.385	.564
67	16.50	.462	.564	.564	.538	.718	.821	.769	.538	.487	.590	.436	.385	.573
68	16.75	.462	.564	.590	.538	.744	.821	.769	.538	.538	.590	.436	.385	.581
69	17.00	.462	.564	.590	.538	.744	.821	.821	.538	.538	.590	.436	.385	.585
70	17.25	.487	.564	.641	.564	.744	.821	.821	.538	.538	.590	.436	.385	.594
71	17.50	.487	.564	.667	.590	.744	.821	.821	.538	.538	.590	.436	.385	.598
72	17.75	.487	.564	.667	.615	.744	.821	.821	.538	.538	.590	.436	.385	.600
73	18.00	.513	.615	.667	.641	.744	.821	.846	.538	.538	.590	.436	.385	.611
74	18.25	.538	.641	.692	.692	.769	.821	.846	.538	.564	.590	.436	.410	.628
75	18.50	.538	.641	.692	.692	.769	.821	.846	.538	.590	.590	.462	.410	.632
76	18.75	.564	.641	.718	.692	.769	.821	.846	.538	.590	.590	.462	.436	.637
77	19.00	.564	.641	.718	.744	.795	.846	.846	.538	.590	.615	.462	.436	.650
78	19.25	.564	.641	.718	.744	.795	.846	.846	.538	.590	.615	.462	.487	.654
79	19.50	.590	.667	.718	.744	.795	.846	.846	.538	.590	.615	.462	.487	.658
80	19.75	.615	.692	.718	.744	.795	.846	.846	.538	.590	.615	.462	.513	.665
81	20.00	.615	.692	.769	.744	.821	.846	.846	.538	.590	.615	.462	.513	.671
82	20.25	.615	.692	.769	.744	.821	.846	.846	.538	.590	.615	.487	.513	.673
83	20.50	.641	.718	.769	.744	.821	.846	.846	.538	.615	.615	.513	.513	.682
84	20.75	.641	.718	.769	.744	.821	.846	.846	.538	.615	.615	.513	.513	.682
85	21.00	.641	.718	.769	.744	.821	.846	.872	.538	.615	.615	.513	.538	.686
86	21.25	.641	.718	.769	.744	.821	.846	.872	.538	.641	.615	.513	.564	.690
87	21.50	.667	.718	.769	.744	.821	.846	.872	.538	.641	.615	.513	.564	.692
88	21.75	.667	.718	.769	.769	.821	.846	.872	.538	.641	.641	.513	.564	.697
89	22.00	.667	.744	.769	.769	.821	.846	.872	.538	.641	.641	.513	.564	.699
90	22.25	.667	.744	.769	.769	.821	.846	.872	.538	.667	.641	.513	.564	.701
91	22.50	.667	.744	.769	.769	.821	.846	.872	.538	.667	.667	.513	.590	.705
92	22.75	.667	.769	.769	.769	.821	.846	.872	.564	.667	.667	.538	.590	.712
93	23.00	.667	.769	.769	.769	.821	.872	.872	.590	.692	.667	.538	.615	.720
94	23.25	.692	.769	.769	.769	.821	.872	.872	.590	.692	.667	.538	.615	.722
95	23.50	.692	.769	.769	.769	.821	.872	.872	.615	.692	.667	.564	.615	.726
96	23.75	.692	.769	.769	.769	.821	.872	.872	.667	.692	.667	.564	.615	.731
97	24.00	.692	.769	.821	.769	.821	.872	.872	.667	.692	.718	.564	.615	.739
98	24.25	.692	.769	.846	.769	.821	.872	.872	.667	.692	.718	.564	.615	.741
99	24.50	.718	.795	.846	.769	.821	.872	.872	.667	.692	.718	.564	.641	.748
100	24.75	.718	.795	.846	.795	.821	.872	.872	.667	.692	.718	.564	.641	.750
101	25.00	.744	.795	.846	.795	.821	.872	.872	.667	.692	.718	.564	.641	.752
102	25.25	.744	.795	.846	.795	.821	.872	.872	.667	.692	.718	.590	.641	.754
103	25.50	.744	.795	.846	.795	.821	.872	.872	.667	.718	.718	.615	.641	.759
104	25.75	.744	.795	.846	.795	.821	.872	.872	.667	.718	.718	.615	.667	.761
105	26.00	.744	.795	.846	.795	.821	.872	.872	.692	.718	.718	.641	.667	.765
106	26.25	.744	.795	.872	.795	.821	.872	.872	.692	.718	.718	.641	.667	.767
107	26.50	.744	.795	.872	.795	.821	.872	.872	.692	.744	.718	.641	.667	.769
108	26.75	.744	.795	.872	.795	.821	.872	.872	.692	.744	.718	.667	.667	.771
109	27.00	.769	.821	.872	.821	.821	.872	.872	.692	.744	.718	.667	.667	.778
110	27.25	.769	.821	.872	.821	.821	.872	.872	.692	.744	.744	.692	.667	.782
111	27.50	.769	.821	.872	.821	.821	.872	.872	.692	.744	.744	.718	.667	.784
112	27.75	.769	.821	.872	.846	.821	.872	.872	.718	.744	.744	.718	.692	.791
113	28.00	.769	.821	.872	.846	.821	.872	.872	.718	.769	.744	.718	.692	.793
114	28.25	.769	.846	.872	.846	.821	.872	.872	.718	.769	.744	.718	.692	.795
115	28.50	.769	.846	.872	.846	.821	.872	.872	.718	.795	.744	.718	.692	.797

116	28.75	.769	.846	.872	.872	.821	.872	.872	.718	.795	.744	.718	.718	.801
117	29.00	.769	.846	.872	.872	.821	.872	.872	.744	.795	.744	.744	.718	.806
118	29.25	.769	.846	.872	.897	.821	.872	.872	.744	.821	.744	.744	.769	.814
119	29.50	.769	.846	.872	.897	.821	.872	.872	.744	.821	.744	.744	.769	.814
120	29.75	.769	.846	.872	.897	.821	.872	.872	.744	.821	.744	.744	.769	.814
121	30.00	.795	.846	.872	.897	.821	.872	.872	.744	.821	.744	.744	.769	.816
122	30.25	.821	.846	.872	.897	.821	.872	.872	.744	.821	.744	.744	.769	.818
123	30.50	.821	.846	.872	.923	.821	.872	.872	.744	.821	.744	.744	.769	.821
124	30.75	.821	.846	.872	.923	.821	.872	.872	.744	.821	.744	.744	.769	.821
125	31.00	.821	.846	.872	.923	.821	.872	.872	.744	.846	.744	.744	.769	.823
126	31.25	.821	.872	.872	.923	.821	.872	.872	.744	.846	.744	.744	.769	.825
127	31.50	.821	.872	.872	.923	.821	.872	.872	.769	.846	.744	.744	.769	.827
128	31.75	.821	.872	.897	.923	.821	.872	.872	.769	.846	.795	.744	.769	.833
129	32.00	.821	.872	.897	.923	.821	.872	.872	.769	.872	.795	.744	.769	.835
130	32.25	.821	.872	.897	.923	.821	.872	.872	.769	.872	.795	.744	.769	.835
131	32.50	.846	.872	.897	.923	.821	.872	.872	.769	.872	.821	.744	.769	.840
132	32.75	.846	.872	.897	.923	.821	.872	.872	.769	.897	.846	.744	.769	.844
133	33.00	.872	.872	.897	.923	.821	.872	.872	.769	.897	.846	.744	.795	.848
134	33.25	.872	.872	.897	.923	.821	.872	.872	.769	.897	.846	.744	.821	.850
135	33.50	.872	.872	.923	.923	.821	.872	.872	.769	.897	.846	.744	.821	.853
136	33.75	.872	.872	.923	.923	.821	.872	.872	.769	.897	.846	.744	.821	.853
137	34.00	.872	.872	.923	.923	.821	.872	.872	.769	.897	.846	.744	.821	.853
138	34.25	.872	.872	.923	.923	.821	.872	.872	.795	.897	.846	.744	.821	.855
139	34.50	.872	.872	.923	.923	.821	.872	.872	.795	.897	.846	.744	.821	.855
140	34.75	.872	.872	.923	.923	.821	.872	.872	.795	.897	.846	.744	.821	.855
141	35.00	.872	.872	.923	.923	.846	.872	.872	.795	.897	.846	.744	.821	.857
142	35.25	.872	.872	.923	.923	.846	.872	.872	.795	.897	.846	.744	.846	.859
143	35.50	.872	.872	.923	.949	.846	.872	.872	.795	.897	.846	.744	.846	.861
144	35.75	.872	.897	.949	.949	.846	.872	.872	.795	.897	.846	.744	.846	.865
145	36.00	.872	.897	.949	.949	.846	.872	.872	.795	.897	.846	.744	.846	.865
146	36.25	.872	.923	.949	.949	.846	.872	.872	.795	.897	.846	.744	.846	.868
147	36.50	.872	.923	.949	.949	.846	.872	.872	.795	.897	.846	.744	.846	.868
148	36.75	.872	.923	.949	.949	.846	.872	.872	.795	.897	.846	.744	.846	.868
149	37.00	.872	.923	.949	.949	.846	.872	.872	.795	.897	.872	.744	.846	.870
150	37.25	.872	.923	.949	.949	.846	.872	.872	.795	.897	.872	.744	.846	.870
151	37.50	.872	.949	.949	.949	.846	.872	.872	.795	.897	.872	.744	.846	.872
152	37.75	.872	.949	.949	.949	.846	.872	.872	.821	.897	.872	.744	.846	.874
153	38.00	.872	.949	.949	.949	.846	.872	.872	.821	.897	.872	.744	.846	.874
154	38.25	.872	.949	.974	.974	.846	.872	.872	.821	.897	.872	.744	.846	.878
155	38.50	.872	.949	.974	.974	.846	.872	.872	.821	.897	.872	.744	.846	.878
156	38.75	.872	.949	.974	.974	.872	.872	.872	.821	.897	.872	.744	.846	.880
157	39.00	.872	.949	.974	.974	.872	.872	.872	.821	.897	.872	.769	.846	.882
158	39.25	.923	.949	.974	.974	.872	.872	.872	.821	.923	.872	.769	.872	.891
159	39.50	.949	.974	.974	.974	.872	.872	.872	.821	.923	.872	.769	.872	.895
160	39.75	.949	.974	.974	.974	.872	.872	.872	.821	.923	.872	.795	.923	.902
161	40.00	.949	.974	.974	.974	.872	.872	.872	.821	.923	.872	.795	.923	.902
162	40.25	.949	.974	.974	.974	.897	.872	.872	.821	.923	.872	.795	.923	.904
163	40.50	.949	.974	.974	.974	.897	.872	.872	.821	.923	.872	.795	.923	.904
164	40.75	.949	.974	.974	.974	.897	.872	.872	.821	.923	.872	.795	.923	.904
165	41.00	.949	.974	.974	.974	.897	.897	.872	.821	.923	.872	.795	.923	.906
166	41.25	.949	.974	.974	.974	.897	.897	.872	.821	.923	.872	.795	.923	.906
167	41.50	.949	.974	.974	.974	.897	.897	.872	.821	.923	.872	.795	.923	.906
168	41.75	.949	.974	.974	.974	.897	.897	.872	.821	.923	.872	.795	.923	.906
169	42.00	.949	.974	1.000	.974	.897	.897	.872	.821	.923	.872	.795	.923	.908
170	42.25	.949	.974	1.000	.974	.897	.897	.872	.846	.923	.872	.795	.923	.910
171	42.50	.949	.974	1.000	.974	.897	.897	.897	.846	.923	.872	.795	.923	.912
172	42.75	.949	.974	1.000	.974	.897	.897	.897	.846	.923	.872	.795	.923	.912
173	43.00	.949	.974	1.000	.974	.897	.897	.897	.846	.923	.872	.795	.923	.912
174	43.25	.949	.974	1.000	.974	.897	.897	.897	.872	.923	.872	.795	.923	.915
175	43.50	.949	.974	1.000	.974	.897	.897	.897	.872	.923	.872	.795	.923	.915

176	43.75	.949	.974	1.000	.974	.897	.897	.897	.872	.923	.872	.795	.923	.915
177	44.00	.949	.974	1.000	.974	.897	.897	.923	.872	.923	.872	.795	.923	.917
178	44.25	.949	.974	1.000	.974	.897	.897	.923	.872	.923	.872	.795	.923	.917
179	44.50	.949	.974	1.000	.974	.897	.897	.923	.872	.923	.872	.795	.923	.917
180	44.75	.949	.974	1.000	.974	.897	.897	.923	.872	.923	.897	.795	.949	.921
181	45.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
182	45.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
183	45.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
184	45.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
185	46.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
186	.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

TABLE F-5 SALINITY FREQUENCY-DURATION RESULTS FOR CASE A' BASED ON LAVACA AND NAVIDAD RIVER GAGE SITE REGRESSIONS

RANGE NO.	UPPER RANGE VALUE	PROBABILITY THAT MONTHLY SALINITY IS LESS THAN THE INDICATED VALUE												
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1	.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
2	.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3	.50	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
4	.75	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5	1.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
6	1.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
7	1.50	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
8	1.75	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
9	2.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
10	2.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
11	2.50	.000	.000	.000	.000	.000	.026	.000	.000	.000	.000	.000	.026	.004
12	2.75	.000	.000	.000	.000	.000	.026	.000	.000	.000	.000	.000	.026	.004
13	3.00	.000	.000	.000	.000	.000	.026	.026	.000	.000	.000	.000	.026	.006
14	3.25	.000	.000	.000	.000	.000	.026	.026	.000	.000	.000	.000	.026	.006
15	3.50	.000	.000	.000	.000	.000	.051	.026	.000	.000	.026	.000	.026	.011
16	3.75	.000	.000	.026	.000	.026	.051	.051	.000	.000	.026	.000	.026	.017
17	4.00	.000	.026	.026	.000	.026	.077	.077	.000	.026	.051	.000	.026	.028
18	4.25	.026	.026	.051	.026	.051	.128	.077	.000	.051	.051	.000	.026	.043
19	4.50	.051	.051	.077	.026	.077	.154	.077	.000	.103	.077	.026	.026	.062
20	4.75	.051	.077	.077	.026	.128	.154	.077	.000	.103	.077	.077	.026	.073
21	5.00	.077	.103	.077	.026	.128	.154	.077	.000	.103	.077	.128	.051	.083
22	5.25	.077	.128	.103	.051	.205	.179	.103	.000	.103	.103	.154	.051	.105
23	5.50	.128	.154	.128	.077	.231	.179	.103	.000	.128	.128	.154	.077	.124
24	5.75	.128	.154	.154	.103	.231	.256	.179	.000	.179	.128	.154	.103	.147
25	6.00	.128	.179	.154	.179	.282	.256	.205	.026	.179	.154	.154	.103	.167
26	6.25	.154	.179	.154	.231	.282	.282	.205	.026	.179	.154	.154	.103	.175
27	6.50	.179	.205	.154	.256	.333	.308	.205	.026	.179	.205	.154	.128	.194
28	6.75	.205	.256	.179	.256	.359	.333	.205	.026	.205	.205	.154	.128	.209
29	7.00	.205	.256	.179	.256	.385	.410	.205	.051	.205	.231	.154	.179	.226
30	7.25	.205	.256	.205	.256	.385	.462	.205	.051	.205	.231	.154	.179	.233
31	7.50	.205	.256	.205	.256	.436	.462	.231	.077	.231	.256	.154	.205	.248
32	7.75	.231	.256	.231	.256	.462	.487	.256	.077	.231	.256	.205	.256	.267
33	8.00	.231	.308	.231	.282	.487	.487	.282	.077	.231	.256	.231	.282	.282
34	8.25	.256	.308	.231	.308	.487	.487	.282	.077	.231	.256	.231	.308	.288
35	8.50	.256	.308	.231	.333	.487	.538	.308	.077	.256	.282	.231	.333	.303
36	8.75	.256	.333	.256	.359	.487	.564	.308	.077	.256	.282	.282	.333	.316
37	9.00	.308	.333	.256	.385	.538	.564	.308	.103	.282	.282	.308	.333	.333
38	9.25	.308	.333	.308	.385	.538	.564	.333	.128	.282	.282	.308	.333	.342
39	9.50	.385	.385	.333	.385	.564	.590	.333	.128	.282	.282	.308	.333	.359
40	9.75	.385	.385	.333	.385	.564	.590	.333	.179	.282	.282	.308	.333	.363
41	10.00	.385	.385	.333	.385	.564	.590	.359	.179	.282	.282	.308	.359	.368
42	10.25	.385	.410	.333	.385	.564	.590	.359	.179	.282	.282	.308	.359	.370
43	10.50	.410	.462	.359	.385	.564	.590	.410	.179	.333	.282	.308	.359	.387
44	10.75	.436	.487	.410	.385	.564	.590	.436	.179	.333	.308	.333	.359	.402
45	11.00	.436	.487	.410	.385	.564	.590	.436	.179	.359	.308	.359	.359	.406
46	11.25	.436	.513	.410	.385	.564	.615	.487	.205	.359	.308	.359	.359	.417
47	11.50	.436	.513	.436	.385	.564	.641	.487	.231	.385	.333	.385	.359	.429
48	11.75	.487	.538	.487	.385	.590	.667	.513	.256	.410	.333	.385	.385	.453
49	12.00	.487	.538	.487	.385	.590	.667	.513	.256	.410	.333	.385	.385	.453
50	12.25	.487	.538	.487	.410	.615	.692	.513	.282	.436	.333	.385	.385	.464
51	12.50	.487	.538	.513	.436	.615	.718	.513	.308	.436	.385	.410	.385	.479
52	12.75	.513	.590	.538	.436	.615	.718	.513	.308	.487	.410	.410	.385	.494
53	13.00	.538	.590	.564	.462	.667	.718	.538	.308	.487	.410	.410	.385	.506
54	13.25	.538	.615	.564	.462	.667	.718	.564	.333	.487	.410	.410	.385	.513
55	13.50	.538	.615	.590	.462	.667	.744	.564	.333	.487	.410	.410	.385	.517

56	13.75	.564	.641	.590	.462	.667	.744	.564	.333	.513	.462	.410	.410	.530
57	14.00	.564	.641	.590	.538	.667	.744	.590	.333	.513	.462	.436	.436	.543
58	14.25	.590	.641	.615	.564	.667	.744	.615	.385	.538	.462	.436	.436	.558
59	14.50	.590	.641	.615	.564	.667	.744	.615	.410	.538	.462	.436	.436	.560
60	14.75	.590	.641	.641	.564	.667	.744	.615	.410	.564	.462	.436	.436	.564
61	15.00	.615	.641	.667	.564	.667	.744	.615	.410	.590	.462	.436	.436	.571
62	15.25	.615	.641	.667	.564	.692	.795	.615	.410	.590	.487	.462	.436	.581
63	15.50	.615	.641	.667	.564	.692	.795	.641	.436	.615	.487	.462	.462	.590
64	15.75	.641	.641	.667	.564	.692	.795	.641	.436	.615	.487	.487	.487	.596
65	16.00	.641	.641	.692	.564	.692	.795	.641	.462	.615	.513	.487	.538	.607
66	16.25	.641	.641	.692	.590	.692	.795	.692	.462	.667	.538	.487	.538	.620
67	16.50	.641	.641	.692	.615	.692	.821	.692	.462	.667	.538	.487	.538	.624
68	16.75	.641	.667	.718	.641	.692	.846	.718	.462	.692	.538	.487	.564	.639
69	17.00	.641	.692	.718	.641	.692	.846	.744	.462	.718	.564	.487	.564	.647
70	17.25	.667	.692	.718	.641	.692	.846	.769	.487	.718	.590	.487	.590	.658
71	17.50	.667	.692	.718	.641	.718	.846	.769	.513	.744	.615	.487	.590	.667
72	17.75	.667	.692	.718	.641	.744	.872	.769	.538	.795	.615	.513	.590	.679
73	18.00	.667	.744	.718	.641	.744	.872	.769	.538	.795	.615	.513	.590	.684
74	18.25	.667	.744	.718	.641	.769	.872	.769	.538	.795	.615	.513	.615	.688
75	18.50	.667	.744	.718	.667	.769	.872	.795	.590	.795	.615	.513	.615	.697
76	18.75	.667	.744	.718	.667	.769	.872	.821	.590	.795	.615	.513	.615	.699
77	19.00	.667	.744	.718	.667	.795	.872	.821	.615	.821	.615	.513	.641	.707
78	19.25	.667	.769	.718	.667	.795	.897	.846	.641	.821	.615	.538	.641	.718
79	19.50	.692	.769	.718	.667	.795	.897	.846	.667	.846	.615	.564	.641	.726
80	19.75	.692	.769	.769	.692	.795	.897	.846	.667	.846	.641	.564	.641	.735
81	20.00	.718	.769	.769	.692	.821	.897	.846	.667	.846	.667	.590	.641	.744
82	20.25	.718	.769	.795	.718	.821	.897	.846	.667	.846	.667	.590	.641	.748
83	20.50	.718	.769	.795	.718	.846	.923	.846	.667	.872	.667	.590	.641	.754
84	20.75	.718	.769	.821	.744	.846	.923	.846	.667	.897	.667	.590	.641	.761
85	21.00	.718	.769	.821	.744	.846	.923	.846	.667	.897	.692	.615	.641	.765
86	21.25	.718	.795	.821	.744	.846	.923	.846	.667	.897	.718	.667	.641	.774
87	21.50	.718	.795	.821	.744	.846	.949	.846	.667	.897	.718	.667	.641	.776
88	21.75	.718	.846	.821	.744	.846	.949	.846	.667	.897	.718	.667	.641	.780
89	22.00	.718	.846	.821	.769	.846	.949	.846	.667	.897	.744	.667	.641	.784
90	22.25	.718	.846	.821	.769	.846	.949	.872	.692	.923	.744	.667	.641	.791
91	22.50	.718	.846	.821	.795	.846	.949	.872	.692	.923	.744	.692	.641	.795
92	22.75	.718	.846	.821	.821	.846	.949	.872	.692	.923	.744	.692	.641	.797
93	23.00	.718	.846	.872	.821	.872	.949	.872	.744	.923	.744	.692	.641	.808
94	23.25	.718	.846	.872	.821	.872	.949	.872	.744	.923	.744	.718	.641	.810
95	23.50	.718	.846	.872	.846	.872	.949	.872	.744	.923	.744	.718	.641	.812
96	23.75	.744	.846	.872	.846	.872	.949	.872	.769	.923	.744	.718	.641	.816
97	24.00	.744	.846	.897	.846	.897	.949	.872	.795	.923	.744	.718	.641	.823
98	24.25	.744	.846	.897	.872	.897	.949	.872	.795	.923	.744	.718	.641	.825
99	24.50	.744	.846	.897	.872	.923	.949	.872	.795	.923	.744	.718	.641	.827
100	24.75	.744	.846	.897	.872	.923	.949	.872	.795	.923	.744	.718	.641	.827
101	25.00	.744	.846	.897	.872	.923	.949	.872	.795	.923	.744	.718	.641	.827
102	25.25	.744	.846	.897	.872	.949	.949	.872	.795	.923	.795	.718	.641	.833
103	25.50	.744	.846	.897	.872	.949	.949	.872	.795	.949	.795	.718	.667	.838
104	25.75	.744	.872	.897	.897	.949	.949	.872	.795	.949	.795	.718	.667	.842
105	26.00	.744	.872	.897	.897	.949	.949	.872	.795	.949	.795	.718	.667	.842
106	26.25	.769	.872	.897	.897	.949	.949	.872	.795	.949	.795	.718	.667	.844
107	26.50	.769	.872	.897	.897	.949	.949	.872	.795	.949	.795	.718	.667	.844
108	26.75	.769	.872	.897	.897	.949	.949	.872	.795	.949	.795	.718	.667	.844
109	27.00	.769	.872	.897	.897	.949	.949	.872	.821	.949	.795	.718	.667	.846
110	27.25	.769	.872	.897	.897	.949	.949	.872	.821	.949	.795	.718	.667	.846
111	27.50	.795	.872	.897	.897	.949	.949	.872	.821	.949	.795	.744	.667	.850
112	27.75	.795	.872	.923	.897	.949	.949	.872	.821	.949	.795	.744	.667	.853
113	28.00	.795	.923	.923	.897	.949	.949	.872	.821	.949	.795	.744	.667	.857
114	28.25	.795	.923	.923	.897	.949	.949	.872	.821	.949	.795	.744	.667	.857
115	28.50	.795	.923	.923	.897	.949	.949	.872	.821	.949	.821	.744	.667	.859

116	28.75	.795	.923	.923	.897	.949	.949	.872	.821	.949	.821	.744	.692	.861
117	29.00	.795	.923	.923	.923	.949	.949	.872	.821	.949	.821	.744	.692	.863
118	29.25	.795	.923	.923	.949	.949	.949	.872	.821	.949	.821	.744	.692	.865
119	29.50	.795	.923	.923	.949	.949	.949	.872	.821	.949	.821	.744	.692	.865
120	29.75	.821	.923	.923	.949	.949	.949	.872	.821	.974	.821	.744	.692	.870
121	30.00	.846	.923	.923	.949	.949	.949	.872	.821	.974	.821	.744	.692	.872
122	30.25	.846	.923	.923	.949	.949	.949	.872	.821	.974	.821	.744	.692	.872
123	30.50	.846	.923	.923	.949	.949	1.000	.872	.821	.974	.821	.744	.692	.876
124	30.75	.846	.923	.923	.949	.949	1.000	.872	.821	.974	.821	.744	.692	.876
125	31.00	.846	.923	.923	.949	.949	1.000	.872	.821	.974	.821	.769	.744	.882
126	31.25	.846	.923	.923	.949	.949	1.000	.872	.821	.974	.821	.769	.744	.882
127	31.50	.846	.923	.923	.949	.949	1.000	.872	.821	.974	.821	.769	.769	.885
128	31.75	.846	.923	.923	.949	.949	1.000	.872	.846	.974	.821	.769	.769	.887
129	32.00	.846	.923	.923	.974	.949	1.000	.872	.846	.974	.821	.769	.769	.889
130	32.25	.846	.923	.923	.974	.949	1.000	.872	.846	.974	.821	.769	.769	.887
131	32.50	.846	.923	.923	.974	.949	1.000	.872	.846	.974	.821	.769	.769	.889
132	32.75	.846	.923	.923	.974	.949	1.000	.872	.846	.974	.821	.795	.769	.891
133	33.00	.846	.923	1.000	.974	.949	1.000	.872	.846	.974	.821	.795	.769	.897
134	33.25	.846	.923	1.000	.974	.949	1.000	.872	.872	.974	.821	.821	.769	.902
135	33.50	.846	.923	1.000	.974	.949	1.000	.872	.872	.974	.821	.821	.769	.902
136	33.75	.846	.923	1.000	.974	.949	1.000	.872	.872	.974	.821	.821	.769	.902
137	34.00	.846	.923	1.000	.974	.949	1.000	.872	.872	.974	.846	.821	.769	.904
138	34.25	.846	.923	1.000	.974	.949	1.000	.872	.872	1.000	.846	.821	.769	.906
139	34.50	.846	.923	1.000	.974	.949	1.000	.872	.872	1.000	.846	.821	.769	.906
140	34.75	.846	.923	1.000	.974	.949	1.000	.872	.872	1.000	.846	.821	.795	.908
141	35.00	.846	.923	1.000	.974	.949	1.000	.897	.872	1.000	.846	.821	.821	.912
142	35.25	.846	.923	1.000	.974	.949	1.000	.897	.872	1.000	.846	.821	.821	.912
143	35.50	.846	.923	1.000	.974	.949	1.000	.897	.872	1.000	.846	.821	.821	.912
144	35.75	.846	.923	1.000	.974	.949	1.000	.897	.872	1.000	.846	.846	.821	.915
145	36.00	.846	.923	1.000	.974	.949	1.000	.897	.872	1.000	.846	.872	.821	.917
146	36.25	.846	.923	1.000	.974	.949	1.000	.923	.897	1.000	.846	.872	.821	.921
147	36.50	.846	.923	1.000	.974	.949	1.000	.923	1.000	1.000	.846	.872	.821	.929
148	36.75	.846	.923	1.000	.974	1.000	1.000	.923	1.000	1.000	.846	.872	.821	.934
149	37.00	.846	.923	1.000	.974	1.000	1.000	.923	1.000	1.000	.846	.872	.821	.934
150	37.25	.846	.923	1.000	.974	1.000	1.000	.923	1.000	1.000	.846	.872	.821	.934
151	37.50	.846	.923	1.000	.974	1.000	1.000	.923	1.000	1.000	.846	.872	.821	.934
152	37.75	.846	.923	1.000	.974	1.000	1.000	.923	1.000	1.000	.846	.872	.821	.934
153	38.00	.846	.923	1.000	.974	1.000	1.000	.923	1.000	1.000	.846	.872	.821	.934
154	38.25	.846	.923	1.000	.974	1.000	1.000	.923	1.000	1.000	.846	.872	.821	.934
155	38.50	.846	.923	1.000	.974	1.000	1.000	.923	1.000	1.000	.897	.872	.821	.938
156	38.75	.846	.923	1.000	.974	1.000	1.000	1.000	1.000	1.000	1.000	.872	.821	.953
157	39.00	.846	.923	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.872	.821	.955
158	39.25	.846	.923	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.872	.821	.955
159	39.50	.846	.923	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.821	.966
160	39.75	.846	.923	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.821	.966
161	40.00	.846	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.821	.972
162	40.25	.846	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.987
163	40.50	.846	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.987
164	40.75	.846	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.987
165	41.00	.846	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.987
166	41.25	.846	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.987
167	41.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
168	41.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
169	42.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
170	42.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
171	42.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
172	42.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
173	43.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
174	43.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
175	43.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

176	43.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
177	44.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
178	44.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
179	44.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
180	44.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
181	45.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
182	45.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
183	45.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
184	45.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
185	46.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
186	.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

TABLE F-6 SALINITY FREQUENCY-DURATION RESULTS FOR CASE B' BASED ON LAVACA AND NAVIDAD RIVER GAGE SITE REGRESSIONS

RANGE NO.	UPPER RANGE VALUE	PROBABILITY THAT MONTHLY SALINITY IS LESS THAN THE INDICATED VALUE												
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1	.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
2	.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3	.50	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
4	.75	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5	1.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
6	1.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
7	1.50	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
8	1.75	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
9	2.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
10	2.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
11	2.50	.000	.000	.000	.000	.000	.026	.000	.000	.000	.000	.000	.026	.004
12	2.75	.000	.000	.000	.000	.000	.026	.026	.000	.000	.000	.000	.026	.006
13	3.00	.000	.000	.000	.000	.000	.026	.026	.000	.000	.000	.000	.026	.006
14	3.25	.000	.000	.000	.000	.000	.051	.026	.000	.000	.000	.000	.026	.009
15	3.50	.000	.000	.000	.000	.000	.051	.051	.000	.000	.026	.000	.026	.013
16	3.75	.000	.000	.026	.000	.026	.051	.077	.000	.000	.026	.000	.026	.019
17	4.00	.000	.026	.026	.000	.026	.077	.077	.000	.026	.051	.000	.026	.028
18	4.25	.026	.026	.051	.026	.051	.128	.077	.000	.051	.051	.000	.026	.043
19	4.50	.051	.077	.077	.026	.077	.154	.077	.000	.103	.077	.026	.026	.064
20	4.75	.051	.077	.077	.026	.128	.154	.077	.000	.103	.077	.077	.026	.073
21	5.00	.077	.128	.077	.026	.154	.154	.103	.000	.103	.077	.128	.051	.090
22	5.25	.077	.128	.103	.051	.205	.179	.103	.000	.103	.128	.154	.051	.107
23	5.50	.128	.154	.128	.077	.231	.179	.154	.000	.154	.128	.154	.077	.130
24	5.75	.128	.154	.154	.128	.256	.256	.179	.000	.179	.128	.154	.103	.152
25	6.00	.128	.179	.154	.205	.282	.256	.205	.026	.179	.154	.154	.103	.169
26	6.25	.154	.205	.154	.231	.308	.282	.205	.026	.179	.154	.154	.103	.179
27	6.50	.179	.205	.154	.256	.333	.308	.205	.026	.179	.205	.154	.128	.194
28	6.75	.205	.256	.179	.256	.359	.333	.205	.026	.205	.205	.154	.154	.212
29	7.00	.205	.256	.179	.256	.385	.436	.205	.051	.205	.231	.154	.179	.229
30	7.25	.205	.256	.205	.256	.436	.462	.231	.051	.205	.256	.154	.179	.241
31	7.50	.205	.256	.205	.256	.436	.462	.256	.077	.231	.256	.154	.205	.250
32	7.75	.231	.256	.231	.282	.462	.487	.256	.077	.231	.256	.205	.256	.267
33	8.00	.231	.308	.231	.282	.487	.487	.282	.077	.231	.256	.231	.308	.284
34	8.25	.256	.308	.231	.308	.487	.538	.282	.077	.231	.282	.231	.308	.295
35	8.50	.256	.333	.256	.333	.487	.538	.282	.077	.256	.282	.256	.333	.308
36	8.75	.282	.333	.256	.359	.487	.564	.308	.103	.256	.282	.308	.333	.323
37	9.00	.308	.333	.256	.385	.538	.564	.308	.128	.282	.282	.308	.333	.335
38	9.25	.308	.333	.308	.385	.538	.564	.308	.154	.282	.282	.308	.333	.342
39	9.50	.385	.385	.333	.385	.564	.590	.308	.154	.282	.282	.308	.333	.359
40	9.75	.385	.385	.333	.385	.564	.590	.333	.179	.282	.282	.308	.359	.365
41	10.00	.385	.385	.333	.385	.564	.590	.359	.179	.282	.282	.308	.359	.368
42	10.25	.385	.436	.333	.385	.564	.590	.385	.179	.308	.282	.308	.359	.376
43	10.50	.410	.462	.359	.385	.564	.590	.410	.179	.333	.282	.308	.359	.387
44	10.75	.436	.487	.385	.385	.564	.590	.410	.179	.333	.308	.333	.359	.397
45	11.00	.436	.487	.410	.385	.564	.590	.436	.179	.359	.308	.359	.359	.406
46	11.25	.436	.513	.410	.385	.564	.615	.436	.205	.359	.308	.385	.359	.415
47	11.50	.436	.538	.436	.385	.564	.667	.487	.256	.385	.333	.385	.359	.436
48	11.75	.487	.538	.487	.385	.564	.667	.513	.256	.410	.333	.385	.385	.451
49	12.00	.487	.538	.487	.385	.590	.692	.513	.282	.410	.333	.385	.385	.457
50	12.25	.487	.538	.513	.385	.590	.692	.513	.282	.436	.359	.385	.385	.464
51	12.50	.487	.564	.538	.436	.615	.718	.513	.308	.436	.385	.410	.385	.483
52	12.75	.513	.590	.538	.436	.615	.718	.513	.308	.462	.410	.410	.385	.491
53	13.00	.538	.590	.538	.462	.667	.718	.513	.308	.487	.410	.410	.385	.502
54	13.25	.538	.615	.564	.462	.667	.744	.538	.333	.487	.410	.410	.385	.513
55	13.50	.538	.615	.590	.462	.667	.744	.538	.333	.487	.410	.410	.410	.517

56	13.75	.564	.641	.615	.462	.667	.744	.615	.333	.513	.462	.436	.410	.538
57	14.00	.564	.641	.615	.513	.667	.744	.615	.333	.538	.462	.436	.436	.547
58	14.25	.590	.641	.615	.564	.667	.744	.615	.359	.564	.462	.436	.436	.558
59	14.50	.590	.641	.615	.564	.667	.744	.615	.385	.564	.462	.436	.436	.560
60	14.75	.590	.641	.641	.564	.667	.769	.615	.385	.590	.462	.436	.436	.566
61	15.00	.615	.641	.641	.564	.667	.769	.615	.410	.615	.462	.462	.436	.575
62	15.25	.615	.641	.667	.564	.667	.795	.615	.436	.615	.487	.462	.436	.583
63	15.50	.615	.641	.667	.564	.667	.795	.615	.436	.615	.487	.462	.462	.585
64	15.75	.641	.641	.667	.564	.667	.821	.615	.436	.615	.487	.487	.513	.596
65	16.00	.641	.641	.667	.564	.692	.846	.667	.462	.615	.513	.487	.538	.611
66	16.25	.641	.641	.692	.615	.692	.846	.692	.462	.667	.538	.487	.538	.626
67	16.50	.641	.641	.692	.615	.692	.846	.692	.462	.667	.538	.487	.538	.626
68	16.75	.641	.667	.718	.641	.692	.846	.744	.462	.692	.538	.487	.564	.641
69	17.00	.641	.692	.718	.641	.692	.846	.744	.513	.744	.564	.487	.564	.654
70	17.25	.667	.692	.718	.641	.718	.846	.744	.513	.744	.590	.487	.590	.662
71	17.50	.667	.718	.718	.641	.718	.846	.744	.538	.769	.615	.487	.590	.671
72	17.75	.667	.718	.718	.641	.744	.846	.795	.538	.769	.615	.513	.590	.679
73	18.00	.667	.744	.718	.641	.744	.846	.795	.564	.795	.615	.513	.590	.686
74	18.25	.667	.744	.718	.641	.744	.846	.821	.564	.795	.615	.513	.615	.690
75	18.50	.667	.744	.718	.641	.744	.846	.821	.590	.795	.615	.513	.615	.692
76	18.75	.667	.744	.718	.641	.769	.872	.821	.590	.846	.615	.513	.641	.703
77	19.00	.667	.769	.718	.667	.795	.897	.821	.590	.846	.641	.538	.641	.716
78	19.25	.667	.769	.744	.667	.821	.897	.821	.590	.846	.641	.538	.641	.720
79	19.50	.692	.769	.744	.667	.821	.897	.821	.615	.846	.641	.564	.641	.726
80	19.75	.692	.769	.744	.667	.821	.897	.821	.615	.846	.641	.564	.641	.726
81	20.00	.718	.769	.769	.667	.821	.897	.821	.641	.872	.641	.590	.641	.737
82	20.25	.718	.769	.769	.667	.846	.923	.821	.667	.872	.667	.615	.641	.748
83	20.50	.718	.769	.795	.692	.846	.923	.821	.667	.897	.667	.615	.641	.754
84	20.75	.718	.769	.821	.692	.846	.923	.821	.667	.897	.667	.615	.641	.756
85	21.00	.718	.769	.821	.692	.846	.923	.821	.667	.897	.667	.615	.641	.756
86	21.25	.718	.795	.821	.692	.846	.923	.821	.667	.923	.667	.667	.641	.765
87	21.50	.718	.795	.821	.718	.846	.923	.821	.667	.923	.692	.667	.641	.769
88	21.75	.718	.846	.821	.744	.846	.923	.872	.667	.923	.718	.667	.641	.782
89	22.00	.718	.846	.821	.744	.846	.923	.872	.667	.923	.718	.667	.641	.782
90	22.25	.718	.846	.846	.795	.846	.949	.872	.667	.923	.744	.667	.641	.793
91	22.50	.718	.846	.846	.795	.846	.949	.872	.667	.923	.744	.692	.641	.795
92	22.75	.718	.846	.846	.795	.846	.949	.872	.667	.923	.744	.692	.641	.795
93	23.00	.718	.846	.846	.795	.872	.949	.872	.718	.923	.744	.692	.641	.801
94	23.25	.718	.846	.872	.795	.872	.949	.872	.718	.923	.744	.718	.641	.806
95	23.50	.718	.846	.872	.795	.872	.949	.872	.718	.923	.744	.718	.641	.806
96	23.75	.744	.846	.872	.821	.872	.949	.872	.718	.923	.744	.718	.641	.810
97	24.00	.744	.846	.897	.846	.872	.949	.872	.744	.923	.744	.718	.641	.816
98	24.25	.744	.846	.897	.846	.872	.949	.872	.744	.923	.744	.718	.641	.816
99	24.50	.744	.846	.897	.846	.872	.949	.872	.744	.923	.744	.718	.641	.816
100	24.75	.744	.846	.897	.846	.897	.949	.872	.769	.923	.744	.718	.667	.823
101	25.00	.744	.846	.897	.846	.897	.949	.872	.769	.923	.744	.718	.667	.823
102	25.25	.744	.846	.897	.872	.923	.949	.872	.769	.923	.744	.718	.667	.827
103	25.50	.744	.846	.897	.872	.923	.949	.872	.795	.923	.769	.718	.667	.831
104	25.75	.744	.872	.897	.872	.923	.949	.872	.821	.923	.795	.718	.667	.838
105	26.00	.744	.872	.897	.872	.949	.949	.872	.821	.949	.795	.718	.667	.842
106	26.25	.769	.872	.897	.872	.949	.949	.872	.821	.949	.795	.718	.667	.844
107	26.50	.769	.872	.897	.872	.949	.949	.872	.821	.949	.795	.718	.667	.844
108	26.75	.769	.872	.897	.872	.949	.949	.872	.821	.949	.795	.718	.667	.844
109	27.00	.769	.872	.897	.872	.949	.949	.872	.821	.949	.795	.718	.667	.844
110	27.25	.769	.872	.897	.897	.949	.949	.872	.821	.949	.795	.744	.667	.848
111	27.50	.795	.872	.897	.897	.949	.949	.872	.821	.949	.795	.744	.667	.850
112	27.75	.795	.872	.897	.897	.949	.949	.872	.846	.949	.795	.744	.667	.853
113	28.00	.795	.923	.897	.897	.949	.949	.872	.846	.949	.795	.744	.667	.857
114	28.25	.795	.923	.897	.897	.949	.949	.872	.846	.949	.795	.744	.667	.857
115	28.50	.795	.923	.923	.897	.949	.949	.872	.846	.949	.795	.744	.667	.859

116	28.75	.795	.923	.923	.897	.949	.949	.872	.846	.949	.795	.744	.692	.861
117	29.00	.795	.923	.923	.897	.949	.949	.872	.846	.974	.795	.744	.692	.863
118	29.25	.795	.923	.923	.897	.949	.949	.872	.846	.974	.821	.744	.692	.865
119	29.50	.795	.923	.923	.897	.949	.949	.872	.846	.974	.821	.744	.692	.865
120	29.75	.821	.923	.923	.923	.949	.949	.872	.872	.974	.821	.744	.692	.872
121	30.00	.846	.923	.923	.923	.949	.949	.872	.897	.974	.821	.744	.692	.876
122	30.25	.846	.923	.923	.923	.949	.949	.872	.897	.974	.821	.744	.692	.876
123	30.50	.846	.923	.923	.923	.949	1.000	.872	.897	.974	.821	.744	.718	.882
124	30.75	.846	.923	.923	.923	.949	1.000	.872	.897	1.000	.821	.744	.718	.885
125	31.00	.846	.923	.923	.923	.949	1.000	.872	.897	1.000	.821	.769	.744	.889
126	31.25	.846	.923	.923	.949	.949	1.000	.872	.897	1.000	.821	.769	.769	.893
127	31.50	.846	.923	.923	.949	.949	1.000	.872	.897	1.000	.821	.769	.769	.893
128	31.75	.846	.923	.923	.949	.949	1.000	.872	.923	1.000	.821	.769	.769	.895
129	32.00	.846	.923	.923	.949	.949	1.000	.872	.923	1.000	.821	.769	.769	.895
130	32.25	.846	.923	.923	.949	.949	1.000	.872	.923	1.000	.821	.769	.769	.895
131	32.50	.846	.923	.923	.974	.949	1.000	.872	.923	1.000	.821	.769	.769	.897
132	32.75	.846	.923	.923	.974	.949	1.000	.872	.949	1.000	.821	.795	.769	.902
133	33.00	.846	.923	1.000	.974	.949	1.000	.872	.949	1.000	.821	.795	.769	.908
134	33.25	.846	.923	1.000	.974	.949	1.000	.872	.949	1.000	.821	.821	.769	.910
135	33.50	.846	.923	1.000	.974	.949	1.000	.872	.949	1.000	.846	.821	.769	.912
136	33.75	.846	.923	1.000	.974	.949	1.000	.872	.949	1.000	.846	.821	.769	.912
137	34.00	.846	.923	1.000	.974	.949	1.000	.872	.949	1.000	.846	.821	.769	.912
138	34.25	.846	.923	1.000	.974	.949	1.000	.872	.949	1.000	.846	.821	.769	.912
139	34.50	.846	.923	1.000	.974	.974	1.000	.872	.949	1.000	.846	.821	.769	.915
140	34.75	.846	.923	1.000	.974	.974	1.000	.872	.949	1.000	.846	.821	.795	.917
141	35.00	.846	.923	1.000	.974	.974	1.000	.872	.949	1.000	.846	.821	.821	.919
142	35.25	.846	.923	1.000	.974	.974	1.000	.872	.949	1.000	.846	.821	.821	.919
143	35.50	.846	.923	1.000	.974	.974	1.000	.872	.949	1.000	.846	.821	.821	.919
144	35.75	.846	.923	1.000	.974	.974	1.000	.872	.949	1.000	.846	.821	.821	.919
145	36.00	.846	.923	1.000	.974	.974	1.000	.872	.949	1.000	.846	.846	.821	.921
146	36.25	.846	.923	1.000	.974	.974	1.000	.872	.949	1.000	.846	.872	.821	.923
147	36.50	.846	.923	1.000	.974	.974	1.000	.872	1.000	1.000	.846	.872	.821	.927
148	36.75	.846	.923	1.000	.974	1.000	1.000	.872	1.000	1.000	.846	.872	.821	.927
149	37.00	.846	.923	1.000	.974	1.000	1.000	.897	1.000	1.000	.846	.872	.821	.932
150	37.25	.846	.923	1.000	.974	1.000	1.000	.897	1.000	1.000	.846	.872	.821	.932
151	37.50	.846	.923	1.000	.974	1.000	1.000	.897	1.000	1.000	.846	.872	.821	.932
152	37.75	.846	.923	1.000	.974	1.000	1.000	.897	1.000	1.000	.872	.872	.821	.934
153	38.00	.846	.923	1.000	.974	1.000	1.000	.897	1.000	1.000	.872	.872	.821	.934
154	38.25	.846	.923	1.000	.974	1.000	1.000	.897	1.000	1.000	.872	.872	.821	.934
155	38.50	.846	.923	1.000	.974	1.000	1.000	.897	1.000	1.000	.872	.872	.821	.934
156	38.75	.846	.923	1.000	.974	1.000	1.000	1.000	1.000	1.000	1.000	.872	.821	.953
157	39.00	.846	.923	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.872	.821	.955
158	39.25	.846	.923	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.872	.821	.955
159	39.50	.846	.923	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.821	.966
160	39.75	.846	.923	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.821	.966
161	40.00	.846	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.821	.972
162	40.25	.846	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.987
163	40.50	.846	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.987
164	40.75	.846	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.987
165	41.00	.846	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.987
166	41.25	.846	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.987
167	41.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
168	41.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
169	42.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
170	42.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
171	42.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
172	42.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
173	43.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
174	43.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
175	43.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

176	43.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
177	44.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
178	44.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
179	44.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
180	44.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
181	45.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
182	45.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
183	45.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
184	45.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
185	46.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
186	.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

TABLE F-7 SALINITY FREQUENCY-DURATION RESULTS FOR CASE C' BASED ON LAVACA AND NAVIDAD RIVER GAGE SITE REGRESSIONS

RANGE NO.	UPPER RANGE VALUE	PROBABILITY THAT MONTHLY SALINITY IS LESS THAN THE INDICATED VALUE												
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1	.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
2	.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3	.50	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
4	.75	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5	1.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
6	1.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
7	1.50	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
8	1.75	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
9	2.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
10	2.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
11	2.50	.000	.000	.000	.000	.000	.026	.026	.000	.000	.000	.000	.026	.006
12	2.75	.000	.000	.000	.000	.000	.026	.026	.000	.000	.000	.000	.026	.006
13	3.00	.000	.000	.000	.000	.000	.051	.026	.000	.000	.000	.000	.026	.009
14	3.25	.000	.000	.000	.000	.000	.051	.051	.000	.000	.000	.000	.026	.011
15	3.50	.000	.000	.026	.000	.000	.077	.051	.000	.000	.026	.000	.026	.017
16	3.75	.000	.000	.026	.000	.026	.077	.077	.000	.000	.026	.000	.026	.021
17	4.00	.000	.051	.051	.000	.051	.103	.077	.000	.051	.051	.000	.051	.041
18	4.25	.026	.051	.051	.026	.077	.154	.077	.000	.077	.103	.000	.051	.058
19	4.50	.051	.103	.077	.026	.103	.154	.077	.000	.103	.103	.051	.051	.075
20	4.75	.077	.103	.077	.026	.154	.154	.077	.000	.128	.128	.077	.051	.088
21	5.00	.128	.103	.077	.026	.205	.154	.077	.000	.128	.128	.128	.051	.100
22	5.25	.128	.128	.103	.051	.231	.179	.077	.000	.154	.128	.154	.051	.115
23	5.50	.128	.154	.128	.103	.282	.231	.077	.000	.154	.128	.154	.103	.137
24	5.75	.128	.154	.128	.128	.282	.256	.128	.000	.205	.205	.154	.103	.156
25	6.00	.128	.205	.128	.231	.282	.256	.128	.026	.205	.231	.154	.103	.173
26	6.25	.179	.205	.128	.231	.333	.256	.128	.026	.205	.231	.154	.103	.182
27	6.50	.205	.205	.128	.231	.385	.282	.205	.026	.205	.256	.154	.103	.199
28	6.75	.205	.205	.128	.256	.410	.308	.205	.026	.205	.256	.154	.154	.209
29	7.00	.205	.231	.179	.256	.410	.333	.205	.026	.205	.282	.154	.154	.220
30	7.25	.205	.256	.179	.256	.436	.359	.205	.026	.205	.282	.154	.179	.229
31	7.50	.205	.256	.179	.256	.436	.436	.205	.051	.231	.282	.205	.231	.248
32	7.75	.205	.282	.205	.282	.436	.462	.231	.051	.231	.282	.205	.256	.261
33	8.00	.205	.282	.205	.282	.462	.462	.231	.103	.231	.282	.231	.256	.269
34	8.25	.205	.282	.205	.282	.462	.462	.231	.103	.231	.282	.256	.256	.271
35	8.50	.231	.282	.205	.282	.487	.462	.231	.103	.231	.282	.256	.256	.276
36	8.75	.282	.308	.231	.308	.487	.462	.231	.103	.231	.282	.256	.308	.291
37	9.00	.282	.308	.231	.308	.487	.462	.231	.103	.256	.282	.256	.308	.293
38	9.25	.308	.308	.231	.333	.487	.462	.256	.103	.256	.282	.256	.333	.301
39	9.50	.333	.308	.231	.333	.487	.487	.256	.103	.256	.282	.282	.359	.310
40	9.75	.359	.333	.256	.333	.513	.487	.282	.128	.256	.282	.282	.359	.323
41	10.00	.385	.359	.256	.333	.538	.487	.282	.154	.256	.282	.282	.359	.331
42	10.25	.385	.410	.282	.333	.564	.538	.282	.154	.256	.282	.282	.359	.344
43	10.50	.410	.410	.308	.359	.564	.538	.282	.154	.256	.282	.282	.359	.350
44	10.75	.410	.436	.333	.359	.564	.538	.282	.154	.256	.282	.282	.359	.355
45	11.00	.410	.436	.333	.359	.564	.590	.282	.154	.282	.308	.282	.359	.363
46	11.25	.410	.462	.333	.359	.564	.590	.282	.179	.308	.308	.282	.359	.370
47	11.50	.436	.462	.333	.359	.564	.590	.282	.179	.308	.308	.282	.359	.372
48	11.75	.436	.462	.359	.359	.564	.590	.282	.179	.308	.308	.282	.359	.374
49	12.00	.462	.462	.359	.359	.564	.590	.282	.179	.333	.308	.308	.359	.380
50	12.25	.462	.462	.359	.359	.564	.590	.282	.179	.333	.308	.308	.359	.380
51	12.50	.462	.487	.359	.359	.564	.590	.282	.179	.333	.308	.308	.359	.382
52	12.75	.462	.513	.385	.359	.564	.590	.282	.205	.333	.308	.308	.359	.389
53	13.00	.487	.513	.410	.385	.564	.615	.282	.205	.359	.333	.308	.359	.402
54	13.25	.487	.538	.436	.385	.564	.615	.282	.205	.359	.333	.333	.359	.400
55	13.50	.487	.538	.436	.385	.590	.615	.282	.205	.359	.333	.333	.359	.410

56	13.75	.487	.538	.462	.385	.590	.641	.282	.205	.359	.333	.333	.410	.419
57	14.00	.487	.564	.462	.385	.590	.641	.282	.231	.359	.359	.333	.410	.425
58	14.25	.513	.564	.462	.410	.590	.641	.282	.231	.359	.359	.359	.410	.432
59	14.50	.513	.564	.487	.436	.615	.667	.282	.231	.359	.359	.359	.410	.440
60	14.75	.538	.564	.487	.436	.615	.667	.308	.256	.385	.359	.385	.410	.451
61	15.00	.538	.590	.513	.462	.615	.667	.308	.256	.385	.359	.410	.410	.459
62	15.25	.538	.590	.513	.462	.615	.667	.308	.282	.385	.359	.410	.410	.462
63	15.50	.538	.590	.513	.487	.615	.667	.308	.282	.410	.359	.410	.410	.466
64	15.75	.538	.590	.538	.513	.641	.692	.308	.282	.410	.359	.410	.410	.474
65	16.00	.538	.590	.538	.513	.641	.692	.333	.282	.436	.359	.436	.410	.481
66	16.25	.538	.590	.564	.538	.641	.692	.333	.308	.436	.359	.436	.410	.487
67	16.50	.564	.590	.564	.538	.641	.692	.359	.308	.462	.359	.436	.410	.494
68	16.75	.564	.590	.564	.538	.641	.692	.359	.308	.462	.359	.436	.410	.494
69	17.00	.564	.590	.564	.564	.641	.718	.359	.308	.487	.359	.436	.410	.500
70	17.25	.564	.590	.564	.564	.641	.718	.385	.308	.487	.410	.436	.410	.506
71	17.50	.564	.590	.564	.590	.667	.718	.385	.308	.487	.410	.436	.410	.511
72	17.75	.564	.590	.564	.590	.667	.718	.385	.308	.487	.410	.436	.410	.511
73	18.00	.564	.590	.564	.590	.667	.718	.385	.333	.487	.410	.436	.410	.513
74	18.25	.564	.590	.564	.590	.667	.744	.385	.333	.487	.410	.436	.410	.515
75	18.50	.564	.590	.564	.590	.692	.744	.385	.333	.487	.410	.436	.410	.517
76	18.75	.564	.590	.590	.590	.692	.744	.385	.333	.513	.410	.436	.410	.521
77	19.00	.564	.615	.590	.590	.692	.744	.410	.333	.513	.410	.436	.436	.528
78	19.25	.564	.615	.590	.590	.692	.744	.410	.333	.513	.436	.436	.436	.530
79	19.50	.564	.641	.615	.590	.692	.769	.410	.333	.538	.436	.436	.436	.538
80	19.75	.564	.641	.615	.590	.692	.769	.410	.333	.538	.436	.436	.436	.538
81	20.00	.564	.641	.615	.590	.692	.769	.410	.333	.538	.436	.436	.436	.538
82	20.25	.564	.641	.667	.615	.692	.795	.410	.333	.564	.436	.436	.436	.549
83	20.50	.564	.641	.667	.615	.692	.795	.410	.333	.564	.436	.436	.436	.549
84	20.75	.564	.641	.667	.615	.692	.795	.410	.333	.564	.436	.436	.436	.549
85	21.00	.564	.641	.667	.615	.692	.795	.410	.333	.564	.462	.436	.436	.551
86	21.25	.564	.641	.667	.615	.692	.821	.410	.333	.564	.462	.462	.462	.558
87	21.50	.564	.641	.667	.615	.692	.821	.410	.333	.590	.462	.462	.462	.560
88	21.75	.564	.641	.667	.615	.692	.821	.410	.333	.590	.462	.462	.462	.560
89	22.00	.564	.641	.667	.615	.692	.821	.410	.333	.590	.462	.462	.462	.560
90	22.25	.564	.641	.718	.641	.692	.821	.436	.333	.590	.462	.462	.487	.571
91	22.50	.564	.641	.718	.641	.692	.846	.436	.333	.590	.513	.462	.487	.577
92	22.75	.564	.667	.718	.641	.692	.846	.436	.333	.590	.513	.462	.487	.579
93	23.00	.590	.667	.718	.641	.718	.846	.436	.359	.590	.513	.462	.487	.585
94	23.25	.590	.667	.718	.641	.744	.846	.462	.359	.590	.513	.462	.513	.592
95	23.50	.590	.667	.718	.641	.744	.846	.462	.410	.590	.513	.462	.513	.596
96	23.75	.590	.667	.718	.641	.744	.846	.462	.410	.590	.513	.462	.513	.596
97	24.00	.590	.667	.718	.641	.744	.846	.462	.410	.590	.513	.487	.513	.598
98	24.25	.615	.667	.718	.641	.744	.846	.462	.436	.590	.538	.487	.513	.605
99	24.50	.615	.667	.718	.641	.769	.846	.487	.436	.590	.538	.513	.513	.611
100	24.75	.615	.667	.718	.641	.769	.846	.487	.436	.590	.564	.513	.513	.613
101	25.00	.615	.667	.718	.641	.769	.846	.513	.462	.590	.564	.513	.513	.618
102	25.25	.615	.667	.718	.667	.769	.846	.538	.462	.590	.564	.513	.513	.622
103	25.50	.615	.667	.744	.667	.769	.846	.538	.462	.590	.564	.513	.513	.624
104	25.75	.615	.692	.744	.667	.769	.846	.538	.462	.590	.564	.513	.513	.626
105	26.00	.641	.692	.744	.667	.795	.846	.538	.462	.590	.564	.538	.513	.632
106	26.25	.641	.692	.769	.667	.795	.846	.538	.462	.590	.564	.538	.513	.635
107	26.50	.641	.692	.769	.692	.795	.846	.538	.462	.590	.564	.538	.513	.637
108	26.75	.667	.692	.769	.744	.795	.846	.538	.462	.590	.590	.538	.513	.645
109	27.00	.667	.692	.769	.744	.795	.846	.538	.462	.590	.590	.538	.513	.645
110	27.25	.667	.692	.769	.769	.795	.846	.538	.462	.615	.590	.564	.513	.652
111	27.50	.692	.692	.769	.769	.795	.846	.538	.462	.641	.590	.564	.513	.656
112	27.75	.692	.718	.769	.769	.795	.846	.538	.462	.641	.590	.564	.513	.658
113	28.00	.692	.718	.795	.769	.795	.872	.538	.487	.641	.590	.564	.513	.665
114	28.25	.692	.718	.795	.769	.795	.872	.564	.487	.667	.590	.564	.513	.669
115	28.50	.692	.718	.795	.795	.821	.897	.564	.487	.667	.590	.564	.513	.675

116	28.75	.692	.718	.795	.795	.821	.897	.564	.487	.667	.590	.564	.513	.675
117	29.00	.692	.718	.795	.795	.821	.897	.590	.487	.667	.590	.564	.513	.677
118	29.25	.692	.718	.795	.821	.821	.897	.641	.487	.667	.590	.564	.513	.684
119	29.50	.692	.769	.795	.821	.821	.923	.641	.513	.667	.590	.564	.513	.692
120	29.75	.718	.769	.795	.821	.821	.923	.641	.513	.667	.590	.564	.513	.694
121	30.00	.718	.769	.821	.821	.821	.923	.641	.513	.667	.615	.564	.538	.701
122	30.25	.718	.769	.821	.821	.821	.923	.641	.513	.667	.615	.564	.538	.701
123	30.50	.718	.769	.821	.821	.821	1.000	.641	.513	.692	.615	.564	.538	.709
124	30.75	.718	.769	.821	.821	.821	1.000	.641	.538	.692	.615	.564	.538	.712
125	31.00	.718	.769	.821	.821	.821	1.000	.641	.538	.692	.615	.590	.538	.714
126	31.25	.718	.769	.821	.821	.821	1.000	.641	.538	.692	.615	.590	.538	.714
127	31.50	.718	.769	.821	.846	.821	1.000	.667	.538	.692	.615	.615	.538	.720
128	31.75	.718	.769	.846	.846	.846	1.000	.667	.538	.718	.641	.615	.538	.727
129	32.00	.718	.769	.846	.846	.846	1.000	.667	.564	.718	.641	.641	.538	.733
130	32.25	.718	.769	.846	.846	.846	1.000	.667	.564	.718	.667	.641	.538	.735
131	32.50	.718	.795	.846	.846	.846	1.000	.667	.564	.718	.667	.641	.538	.737
132	32.75	.744	.795	.846	.846	.846	1.000	.667	.564	.718	.667	.641	.538	.739
133	33.00	.744	.821	1.000	.846	.846	1.000	.667	.564	.744	.667	.641	.538	.756
134	33.25	.744	.821	1.000	.846	.872	1.000	.667	.615	.744	.667	.641	.538	.763
135	33.50	.744	.821	1.000	.846	.872	1.000	.667	.615	.744	.667	.641	.538	.763
136	33.75	.744	.821	1.000	.872	.872	1.000	.667	.615	.744	.667	.641	.538	.765
137	34.00	.744	.821	1.000	.872	.872	1.000	.667	.615	.744	.667	.667	.538	.767
138	34.25	.744	.821	1.000	.872	.872	1.000	.667	.615	1.000	.667	.667	.538	.788
139	34.50	.744	.821	1.000	.872	.872	1.000	.667	.615	1.000	.667	.667	.538	.788
140	34.75	.744	.821	1.000	.872	.872	1.000	.667	.615	1.000	.667	.667	.538	.788
141	35.00	.744	.821	1.000	.872	.872	1.000	.667	.615	1.000	.667	.667	.538	.788
142	35.25	.744	.821	1.000	.872	.872	1.000	.667	.641	1.000	.667	.667	.538	.791
143	35.50	.744	.821	1.000	.872	.872	1.000	.667	.641	1.000	.667	.667	.538	.791
144	35.75	.744	.821	1.000	.872	.872	1.000	.667	.641	1.000	.667	.667	.538	.791
145	36.00	.744	.821	1.000	.872	.872	1.000	.667	.641	1.000	.667	.667	.564	.793
146	36.25	.744	.821	1.000	.872	.872	1.000	.667	.641	1.000	.692	.692	.590	.797
147	36.50	.744	.821	1.000	.872	.897	1.000	.667	1.000	1.000	.692	.692	.590	.831
148	36.75	.744	.821	1.000	.872	1.000	1.000	.667	1.000	1.000	.692	.718	.590	.842
149	37.00	.744	.821	1.000	.872	1.000	1.000	.692	1.000	1.000	.692	.718	.590	.844
150	37.25	.744	.821	1.000	.872	1.000	1.000	.718	1.000	1.000	.692	.718	.590	.846
151	37.50	.769	.821	1.000	.872	1.000	1.000	.718	1.000	1.000	.744	.718	.590	.853
152	37.75	.795	.821	1.000	.872	1.000	1.000	.718	1.000	1.000	.744	.718	.590	.855
153	38.00	.795	.821	1.000	.897	1.000	1.000	.718	1.000	1.000	.744	.718	.590	.857
154	38.25	.795	.821	1.000	.897	1.000	1.000	.718	1.000	1.000	.769	.718	.590	.859
155	38.50	.795	.846	1.000	.897	1.000	1.000	.718	1.000	1.000	.769	.718	.590	.861
156	38.75	.795	.846	1.000	.897	1.000	1.000	1.000	1.000	1.000	1.000	.718	.590	.904
157	39.00	.795	.846	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.718	.590	.912
158	39.25	.795	.846	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.718	.590	.912
159	39.50	.795	.846	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.590	.936
160	39.75	.821	.846	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.590	.938
161	40.00	.821	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.590	.951
162	40.25	.821	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.985
163	40.50	.821	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.985
164	40.75	.821	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.985
165	41.00	.821	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.985
166	41.25	.821	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.985
167	41.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
168	41.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
169	42.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
170	42.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
171	42.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
172	42.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
173	43.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
174	43.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
175	43.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

176	43.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
177	44.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
178	44.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
179	44.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
180	44.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
181	45.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
182	45.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
183	45.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
184	45.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
185	46.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
186	.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

TABLE F-8 SALINITY FREQUENCY-DURATION RESULTS FOR CASE D' BASED ON LAVACA AND NAVIDAD RIVER GAGE SITE REGRESSIONS

RANGE NO.	UPPER RANGE VALUE	PROBABILITY THAT MONTHLY SALINITY IS LESS THAN THE INDICATED VALUE												
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1	.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
2	.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3	.50	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
4	.75	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5	1.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
6	1.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
7	1.50	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
8	1.75	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
9	2.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
10	2.25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
11	2.50	.000	.000	.000	.000	.000	.026	.026	.000	.000	.000	.000	.026	.006
12	2.75	.000	.000	.000	.000	.000	.026	.026	.000	.000	.000	.000	.026	.006
13	3.00	.000	.000	.000	.000	.000	.051	.051	.000	.000	.000	.000	.026	.011
14	3.25	.000	.000	.000	.000	.000	.051	.051	.000	.000	.000	.000	.026	.011
15	3.50	.000	.000	.026	.000	.000	.077	.051	.000	.000	.026	.000	.026	.017
16	3.75	.000	.000	.026	.000	.026	.077	.077	.000	.000	.026	.000	.026	.021
17	4.00	.000	.051	.051	.000	.051	.103	.077	.000	.051	.051	.000	.051	.041
18	4.25	.026	.051	.051	.026	.077	.154	.077	.000	.051	.077	.000	.051	.053
19	4.50	.051	.103	.077	.026	.103	.154	.077	.000	.103	.128	.051	.051	.077
20	4.75	.077	.103	.077	.026	.128	.154	.077	.000	.103	.128	.051	.051	.081
21	5.00	.128	.103	.077	.026	.205	.179	.077	.000	.128	.128	.103	.051	.100
22	5.25	.128	.128	.103	.051	.205	.179	.077	.000	.128	.128	.128	.051	.109
23	5.50	.128	.154	.128	.103	.282	.231	.103	.000	.154	.128	.128	.077	.135
24	5.75	.128	.154	.128	.128	.282	.256	.128	.000	.205	.179	.154	.103	.154
25	6.00	.128	.179	.128	.179	.282	.256	.128	.026	.205	.205	.154	.103	.165
26	6.25	.154	.179	.128	.205	.282	.282	.128	.026	.205	.205	.154	.103	.171
27	6.50	.205	.205	.128	.231	.385	.282	.179	.026	.205	.256	.154	.103	.197
28	6.75	.205	.205	.128	.256	.410	.308	.179	.026	.205	.256	.154	.128	.205
29	7.00	.205	.231	.179	.256	.410	.333	.205	.026	.205	.282	.154	.128	.218
30	7.25	.205	.256	.179	.256	.436	.333	.205	.026	.205	.282	.154	.128	.222
31	7.50	.205	.256	.179	.256	.436	.385	.205	.026	.205	.282	.179	.154	.231
32	7.75	.205	.282	.179	.282	.436	.436	.205	.026	.205	.282	.205	.205	.246
33	8.00	.205	.282	.179	.282	.462	.462	.205	.026	.231	.282	.205	.205	.252
34	8.25	.205	.282	.179	.282	.462	.462	.205	.026	.231	.282	.205	.205	.252
35	8.50	.205	.282	.179	.282	.487	.462	.231	.103	.256	.282	.205	.205	.265
36	8.75	.231	.308	.205	.282	.487	.462	.231	.103	.256	.282	.205	.231	.274
37	9.00	.256	.308	.205	.282	.487	.487	.256	.103	.256	.282	.205	.231	.280
38	9.25	.256	.308	.231	.282	.487	.487	.256	.128	.256	.282	.205	.256	.286
39	9.50	.256	.308	.231	.333	.487	.538	.256	.128	.256	.282	.205	.256	.295
40	9.75	.308	.308	.256	.359	.487	.538	.256	.154	.282	.282	.205	.256	.308
41	10.00	.308	.359	.256	.359	.513	.564	.256	.154	.282	.282	.256	.256	.321
42	10.25	.385	.359	.256	.359	.564	.564	.256	.154	.282	.282	.256	.256	.331
43	10.50	.385	.359	.282	.359	.564	.564	.282	.154	.282	.282	.282	.256	.338
44	10.75	.385	.385	.282	.359	.564	.590	.282	.154	.282	.308	.282	.256	.344
45	11.00	.385	.410	.308	.359	.564	.641	.282	.154	.282	.308	.282	.256	.353
46	11.25	.385	.410	.308	.359	.564	.641	.282	.179	.308	.308	.282	.256	.357
47	11.50	.385	.410	.359	.359	.564	.641	.282	.179	.308	.333	.282	.256	.363
48	11.75	.385	.410	.359	.359	.564	.641	.282	.179	.359	.333	.282	.256	.368
49	12.00	.410	.436	.359	.359	.564	.667	.308	.179	.385	.359	.282	.256	.380
50	12.25	.436	.436	.436	.359	.564	.667	.308	.179	.410	.359	.282	.256	.391
51	12.50	.436	.436	.436	.359	.590	.692	.333	.179	.410	.359	.282	.282	.400
52	12.75	.462	.436	.436	.359	.590	.692	.333	.179	.436	.359	.282	.282	.404
53	13.00	.462	.436	.436	.410	.641	.718	.333	.179	.462	.359	.308	.308	.421
54	13.25	.462	.487	.436	.436	.667	.718	.333	.179	.487	.359	.308	.308	.432
55	13.50	.462	.513	.462	.436	.667	.718	.385	.179	.487	.359	.308	.308	.440

56	13.75	.462	.513	.487	.436	.667	.718	.436	.205	.513	.385	.308	.308	.453
57	14.00	.462	.513	.538	.436	.667	.718	.436	.205	.513	.410	.308	.308	.459
58	14.25	.462	.513	.538	.462	.667	.718	.462	.256	.513	.410	.308	.359	.472
59	14.50	.462	.538	.564	.487	.667	.718	.487	.256	.513	.410	.308	.385	.483
60	14.75	.462	.564	.564	.513	.667	.744	.538	.282	.513	.410	.308	.385	.496
61	15.00	.462	.590	.590	.538	.667	.744	.538	.308	.513	.410	.308	.410	.506
62	15.25	.462	.590	.590	.564	.667	.744	.538	.333	.513	.462	.359	.410	.519
63	15.50	.487	.590	.590	.564	.692	.744	.538	.333	.538	.462	.359	.410	.526
64	15.75	.487	.590	.590	.590	.692	.795	.538	.385	.538	.462	.359	.410	.536
65	16.00	.487	.590	.615	.590	.692	.795	.564	.436	.538	.462	.359	.410	.545
66	16.25	.487	.590	.692	.615	.692	.795	.564	.462	.590	.513	.359	.410	.564
67	16.50	.487	.590	.692	.615	.692	.795	.590	.462	.590	.513	.359	.410	.566
68	16.75	.487	.615	.692	.641	.692	.821	.615	.462	.615	.564	.359	.436	.583
69	17.00	.487	.615	.692	.641	.692	.821	.641	.462	.641	.564	.359	.436	.588
70	17.25	.487	.615	.692	.641	.718	.821	.641	.462	.641	.590	.359	.436	.592
71	17.50	.487	.615	.692	.641	.718	.821	.641	.462	.667	.590	.359	.487	.598
72	17.75	.538	.615	.692	.641	.718	.821	.667	.487	.667	.615	.385	.487	.611
73	18.00	.538	.641	.692	.641	.718	.846	.692	.487	.667	.615	.385	.487	.618
74	18.25	.564	.641	.692	.641	.718	.846	.692	.487	.692	.615	.385	.487	.622
75	18.50	.590	.667	.692	.641	.744	.846	.692	.538	.692	.615	.410	.487	.635
76	18.75	.590	.692	.692	.641	.769	.846	.692	.538	.718	.615	.436	.487	.643
77	19.00	.590	.692	.692	.641	.769	.846	.692	.538	.744	.615	.436	.487	.645
78	19.25	.590	.692	.692	.641	.769	.846	.692	.538	.744	.615	.436	.487	.645
79	19.50	.590	.692	.718	.641	.769	.846	.692	.538	.744	.615	.462	.487	.650
80	19.75	.590	.692	.744	.641	.769	.846	.692	.564	.744	.615	.462	.513	.656
81	20.00	.590	.692	.769	.641	.769	.872	.692	.564	.769	.615	.462	.513	.662
82	20.25	.667	.692	.769	.641	.795	.897	.692	.590	.769	.615	.462	.513	.675
83	20.50	.667	.692	.795	.667	.795	.897	.692	.590	.769	.615	.487	.513	.682
84	20.75	.667	.718	.795	.667	.795	.897	.692	.590	.769	.615	.513	.513	.686
85	21.00	.667	.718	.795	.667	.795	.897	.692	.590	.769	.615	.538	.513	.688
86	21.25	.667	.718	.795	.692	.795	.897	.692	.590	.769	.615	.564	.513	.692
87	21.50	.667	.718	.795	.692	.795	.897	.692	.590	.795	.615	.590	.513	.697
88	21.75	.667	.718	.795	.718	.795	.897	.692	.590	.821	.641	.590	.513	.703
89	22.00	.667	.718	.795	.718	.795	.897	.718	.590	.821	.641	.615	.513	.707
90	22.25	.667	.744	.795	.769	.795	.897	.744	.590	.821	.641	.615	.513	.716
91	22.50	.667	.744	.795	.769	.795	.897	.744	.615	.821	.641	.615	.538	.720
92	22.75	.667	.744	.795	.769	.795	.897	.744	.615	.821	.641	.641	.564	.724
93	23.00	.692	.744	.795	.769	.795	.897	.744	.667	.846	.641	.641	.564	.733
94	23.25	.692	.744	.795	.769	.795	.897	.769	.667	.846	.641	.641	.564	.735
95	23.50	.692	.744	.821	.769	.795	.897	.769	.667	.846	.641	.667	.564	.739
96	23.75	.692	.769	.821	.769	.795	.897	.769	.667	.846	.667	.667	.564	.744
97	24.00	.718	.769	.821	.769	.795	.897	.769	.667	.846	.667	.667	.564	.746
98	24.25	.718	.769	.821	.769	.795	.897	.769	.667	.846	.667	.667	.564	.746
99	24.50	.718	.769	.821	.769	.795	.897	.769	.667	.846	.667	.667	.564	.746
100	24.75	.744	.769	.846	.769	.795	.897	.769	.692	.846	.667	.667	.564	.752
101	25.00	.744	.769	.846	.795	.795	.897	.769	.692	.846	.667	.667	.564	.754
102	25.25	.744	.769	.846	.795	.821	.897	.769	.692	.846	.667	.667	.564	.756
103	25.50	.744	.769	.846	.795	.846	.897	.769	.692	.846	.667	.667	.564	.759
104	25.75	.744	.769	.846	.795	.846	.897	.769	.744	.872	.744	.667	.564	.771
105	26.00	.744	.769	.846	.846	.846	.897	.769	.744	.872	.744	.667	.564	.776
106	26.25	.744	.769	.846	.846	.846	.897	.769	.744	.872	.744	.667	.564	.776
107	26.50	.744	.769	.846	.846	.846	.897	.769	.744	.872	.744	.667	.564	.776
108	26.75	.744	.769	.846	.846	.846	.897	.769	.769	.872	.744	.667	.564	.778
109	27.00	.744	.769	.846	.846	.846	.897	.769	.769	.872	.744	.667	.564	.778
110	27.25	.744	.795	.846	.872	.846	.923	.769	.769	.872	.744	.667	.564	.784
111	27.50	.744	.795	.846	.872	.846	.923	.769	.769	.872	.744	.667	.564	.784
112	27.75	.744	.795	.846	.872	.846	.923	.769	.769	.872	.744	.667	.564	.784
113	28.00	.744	.821	.846	.872	.846	.923	.795	.769	.872	.744	.667	.564	.788
114	28.25	.744	.821	.846	.872	.846	.923	.795	.769	.872	.744	.667	.564	.788
115	28.50	.744	.846	.846	.872	.846	.923	.795	.769	.872	.744	.667	.564	.791

116	28.75	.744	.846	.846	.872	.846	.923	.795	.769	.872	.744	.667	.564	.791
117	29.00	.744	.872	.846	.872	.846	.923	.795	.769	.872	.744	.667	.564	.793
118	29.25	.744	.872	.846	.872	.846	.923	.795	.769	.872	.744	.667	.564	.793
119	29.50	.744	.872	.846	.872	.846	.923	.795	.769	.872	.744	.667	.564	.793
120	29.75	.744	.872	.846	.872	.846	.923	.795	.795	.872	.744	.667	.564	.795
121	30.00	.769	.872	.846	.872	.846	.923	.795	.821	.872	.744	.667	.564	.795
122	30.25	.769	.872	.846	.872	.846	.923	.795	.821	.872	.744	.667	.564	.799
123	30.50	.769	.872	.846	.872	.846	1.000	.795	.821	.872	.744	.667	.564	.806
124	30.75	.769	.872	.846	.872	.846	1.000	.795	.821	.872	.744	.667	.564	.806
125	31.00	.769	.872	.846	.872	.846	1.000	.795	.821	.872	.744	.667	.615	.810
126	31.25	.769	.872	.846	.872	.846	1.000	.795	.821	.872	.744	.667	.615	.810
127	31.50	.769	.872	.846	.872	.846	1.000	.795	.821	.897	.744	.667	.641	.814
128	31.75	.769	.872	.846	.872	.872	1.000	.795	.821	.897	.744	.667	.641	.816
129	32.00	.769	.872	.872	.872	.872	1.000	.795	.821	.897	.744	.667	.641	.818
130	32.25	.769	.872	.872	.872	.872	1.000	.795	.821	.897	.744	.667	.641	.818
131	32.50	.769	.872	.872	.872	.872	1.000	.795	.821	.897	.744	.667	.641	.818
132	32.75	.769	.872	.872	.872	.872	1.000	.795	.846	.897	.744	.692	.641	.823
133	33.00	.769	.872	1.000	.872	.872	1.000	.795	.846	.897	.744	.692	.641	.833
134	33.25	.769	.872	1.000	.872	.872	1.000	.795	.846	.897	.744	.692	.641	.833
135	33.50	.769	.872	1.000	.872	.872	1.000	.795	.846	.897	.744	.718	.641	.835
136	33.75	.769	.872	1.000	.872	.872	1.000	.795	.846	.897	.744	.718	.641	.835
137	34.00	.769	.872	1.000	.872	.872	1.000	.795	.846	.923	.744	.744	.641	.840
138	34.25	.769	.872	1.000	.872	.897	1.000	.795	.846	1.000	.769	.769	.667	.855
139	34.50	.769	.872	1.000	.872	.897	1.000	.795	.846	1.000	.769	.769	.667	.855
140	34.75	.769	.872	1.000	.897	.923	1.000	.795	.846	1.000	.795	.769	.692	.863
141	35.00	.769	.872	1.000	.897	.923	1.000	.795	.846	1.000	.795	.769	.718	.865
142	35.25	.769	.872	1.000	.897	.923	1.000	.795	.846	1.000	.795	.769	.718	.865
143	35.50	.795	.872	1.000	.897	.923	1.000	.795	.846	1.000	.795	.769	.718	.868
144	35.75	.821	.872	1.000	.897	.923	1.000	.795	.872	1.000	.795	.769	.718	.872
145	36.00	.821	.872	1.000	.923	.923	1.000	.795	.872	1.000	.795	.769	.718	.874
146	36.25	.821	.872	1.000	.923	.923	1.000	.795	.872	1.000	.795	.769	.718	.874
147	36.50	.821	.872	1.000	.949	.923	1.000	.795	1.000	1.000	.795	.769	.718	.887
148	36.75	.821	.872	1.000	.949	1.000	1.000	.795	1.000	1.000	.795	.769	.744	.895
149	37.00	.821	.872	1.000	.949	1.000	1.000	.795	1.000	1.000	.795	.795	.744	.897
150	37.25	.821	.872	1.000	.949	1.000	1.000	.795	1.000	1.000	.795	.795	.744	.897
151	37.50	.821	.872	1.000	.949	1.000	1.000	.795	1.000	1.000	.795	.795	.744	.897
152	37.75	.821	.872	1.000	.949	1.000	1.000	.795	1.000	1.000	.795	.795	.744	.897
153	38.00	.821	.872	1.000	.949	1.000	1.000	.795	1.000	1.000	.795	.795	.744	.897
154	38.25	.821	.872	1.000	.949	1.000	1.000	.795	1.000	1.000	.795	.795	.744	.897
155	38.50	.821	.872	1.000	.949	1.000	1.000	.795	1.000	1.000	.795	.795	.744	.897
156	38.75	.821	.872	1.000	.949	1.000	1.000	1.000	1.000	1.000	1.000	.795	.744	.932
157	39.00	.821	.897	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.795	.744	.938
158	39.25	.821	.897	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.795	.744	.938
159	39.50	.821	.897	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.744	.955
160	39.75	.821	.897	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.744	.955
161	40.00	.821	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.744	.964
162	40.25	.821	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.985
163	40.50	.821	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.985
164	40.75	.821	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.985
165	41.00	.821	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.985
166	41.25	.821	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.985
167	41.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
168	41.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
169	42.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
170	42.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
171	42.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
172	42.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
173	43.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
174	43.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
175	43.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

176	43.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
177	44.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
178	44.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
179	44.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
180	44.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
181	45.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
182	45.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
183	45.50	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
184	45.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
185	46.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
186	.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000