Candidate Delta Regions for Treatment to Reduce Organic Carbon Loads

Consultant's Report to the Department of Water Resources
Municipal Water Quality Investigations Program

MWQI-CR#2

January 1999

Marvin Jung and Quy Tran

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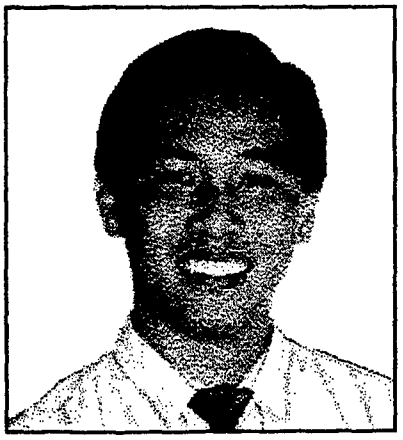
Marvin Jung received a B.S. degree in Chemical Oceanography from the University of Washington (1972) and an M.S. degree in Oceanography from the University of Michigan (1973). During the past twenty-seven years, he has served as an advisor, consultant, and expert witness on several San Francisco Bay and Delta water quality studies and issues for the State Water Resources Control Board, California Department of Water Resources, U.S. Bureau of Reclamation, State Water Contractors, and the Metropolitan Water District of Southern California. He is a recognized expert on the drinking water quality of the Sacramento-San Joaquin Delta and has written over 15 reports on this subject. His work has been the foundation for many studies on the impacts of delta island drainage on municipal water supplies. Mr. Jung continues to serve as the primary scientific consultant to the Department of Water Resources Municipal Water Quality Investigations Program. He may be reached at his Sacramento firm, Marvin Jung & Associates, Inc.



Quy Tran is a recent graduate of the University of California at Davis with a Bachelor of Science Degree in both Civil Engineering and Biological Sciences. He currently owns Limit to Infinity Enterprises, a firm specializing in Computer, Graphics and Data Analysis Consulting. He also is on contract with the California Resources Agency under the California Environmental Resources Evaluation System (CERES) to develop the California Ocean and Coastal Environmental Access Network (CalOCEAN). The CalOCEAN Project website may be viewed at http://ceres.ca.gov/ocean starting in November 1998. He will enter medical school in the Fall of 1999. His future plans after graduation are to eventually combine his medical, engineering, and research skills by forming a firm specializing in prosthetics. Quy may be reached by email at quy@2xtreme.net or at the address shown on the title page of this report.

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A. Modeling Delta Alternatives to Improve Drinking Water Quality Work Plan
B. Water Quality Data Summaries

1. Introduction

In 1996, the Municipal Water Quality Investigations Program awarded a contract to Brown and Caldwell Engineers to study the feasibility of treating agricultural drainage in the Sacramento-San Joaquin Delta. The purpose of the treatment would be to reduce the amount of organic carbon in drain water that is discharged into the channels. The study was completed in 1997 and the results were summarized in the *MWQI Annual Report, October 1995 - December 1996* (DWR, 1997). Previous DWR studies have documented high concentrations of dissolved organic carbon (DOC) in delta island drain water, which are attributed to the leaching of organic peat soil (DWR, 1990; DWR, 1994).

New USEPA regulations impose stringent treatment requirements on the concentration of total organic carbon (TOC) at water supply intakes prior to disinfection. Enhanced coagulation is required when TOC concentrations exceed 2 mg/L. These new rules were developed to reduce the formation of disinfection by-products, such as trihalomethanes and haloacetic acids, in the treated water supply. DOC concentrations at delta water supply intakes range from 4 to 8 mg/L or more at different times of the year with the highest levels during the wet season. Discrete samples have shown that in general, a high proportion (90+ percent) of the TOC concentration is in the form of DOC.

The California Delta currently serves as the primary source of water for over 22 million people. In an effort to minimize additional water treatment costs and to protect the reliability of the delta as a major water source, member agencies of the MWQI Program are supporting work to study a variety of options and subcomponents for possible inclusion in the preferred CALFED Delta Alternatives. Through the MWQI Program, its sponsors are taking the lead role in implementing a series of technical assessment studies related to improving drinking water quality. These studies are described in the "Modeling Delta Alternatives To Improve Drinking Water Quality Work

Plan (Appendix A)." The studies were developed and are being directed by the MWQI technical consultant, Marvin Jung and Associates, Inc. of Sacramento. A series of consultant's reports will describe the results of each study for later inclusion in MWQI annual reports and technical documents.

In January 1998 the first consultant's report, *Delta Island Drainage Volume Estimates 1954-1955 versus 1995-96,* was completed and submitted to the MWQI Advisory Group. In this report, the methods and assumptions that were used to compute the estimated monthly volume of delta island drainage by DWR in 1954-55 and by the USGS in 1995-96 were compared. The comparison resulted in agreeing on a set of reasonable drainage volume estimates for future modeling work for DWR, CALFED, CUWA, and other agencies by DWR's Delta modelers and the MWQI technical consultant.

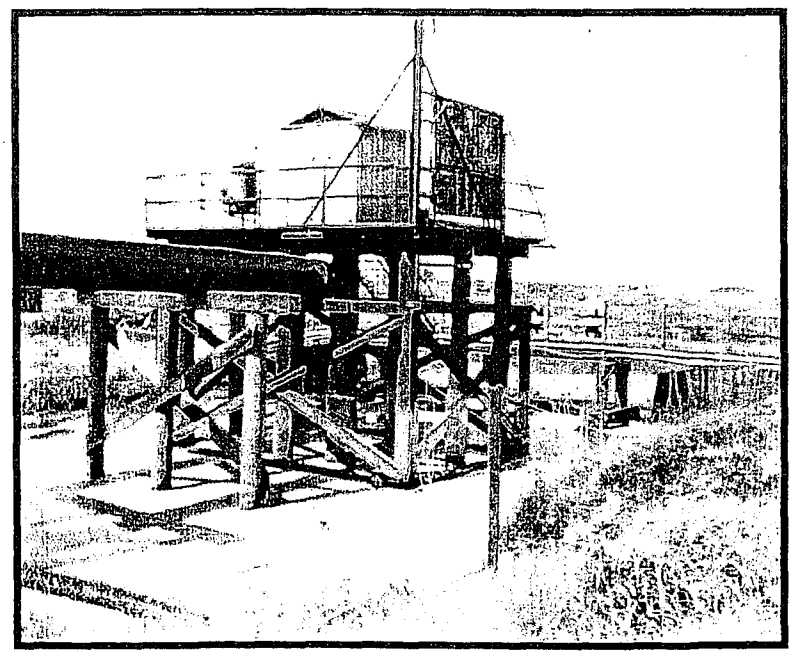
This second report, *Candidate Delta Regions for Treatment to Reduce Organic Carbon Loads,* serves as the input data and modeled conditions for conducting runs of DWR's Delta Simulation Model version 2 (DSM2) that will be used to assess the movement and distribution of organic carbon in the delta. In this computer model, dissolved organic carbon in the delta channels is treated as a conservative constituent. Support for assuming a conservative behavior of DOC in the delta channels is described in the *Five-year Report of the Municipal Water Quality Investigations Program, Summary and Findings During Five Dry Years, January 1991 - December 1991* (DWR, 1994).

The results of the Brown and Caldwell study will also be incorporated in the development of possible treatment scenarios and cost estimates for the DSM2 model runs. Water quality benefits from reductions in TOC/DOC by 60 percent will be compared against existing conditions of no treatment. The modeled scenarios include a list of candidate regions for treatment. Several factors were considered in developing the list of candidate areas for treatment.

The results of the DWR Delta Simulation Model runs for DOC will, in turn, serve as data input for the Water Treatment Cost Model for Treatment of State Project Water for Trihalomethane (THM) Control. This computer model was developed by Malcolm-Pirnie, Inc., for the MWQI Program in a contract awarded in 1997 (DWR, 1997). The model, based on a USEPA national water treatment plant model, was modified to incorporate the effects of high bromide concentrations in delta waters and operational cost data for 41 California water treatment facilities that treat State Water Project water from the delta. The model compares the costs of different treatment trains for each modeled facility to meet new EPA limits for THMs. The predicted costs associated with various treatment processes are based on a commercial software program developed by Culp Wesner Culp.

The results of the computer model runs will be presented in a third consultant's report titled, *Water Quality Benefits from Controlling Delta Island Drainage*, that is scheduled for completion in May 1999.

Pump station at Twitchell Island



2. Approach

The purpose of this work was to develop input data and conditions for modeling a variety of scenarios involving the treatment of drainage to reduce TOC/DOC concentrations at the State Water Project intake at Clifton Court Forebay. The subtasks in our approach were:

1. Determine and standardize on reasonable monthly drainage volume estimates for the delta lowlands. These estimates would be used in the subsequent modeling runs to assess the CALFED alternatives and their optional subcomponents.
2. Develop monthly mean DOC and bromide concentrations and UVA-254 nm values for subregions of the delta lowlands based on MWQI data and extrapolations and relationships with soil type and location. These values will be used to simulate drain water quality discharged into the delta channels.
3. Compute and rank the regional organic mass loads discharged from the delta lowland drains.
4. Develop key criteria to select candidate lowland regions for modeling the possible benefits in water quality from treating drain water.
5. Define assumptions about the treatment of island drainage and their associated costs based on the Brown and Caldwell study.
6. Develop a list of candidate regions for modeling treatment benefits and costs.
7. Compose a set of simulated conditions for the DWRDSM2 model runs to study the improvement of drinking water quality, in particular TOC/DOC reduction, at the State Water Project intake at Clifton Court Forebay.

3. Results

3-1. Drainage Volume Estimates

The first consultant's report, *Delta Island Drainage Volume Estimates 1954-1955 versus 1995-1996,* compared the methods, assumptions, and computed monthly volume of delta island drainage by DWR in 1954-55 (DWR, 1956) and by the USGS in 1995-96 (USGS, 1997; DWR, 1997). Staff from the MWQI Program and Delta Modeling Section examined the results and compared them to DWR DICU (Delta Island Consumptive Use) model predictions for those same years. These comparisons were made to develop a set of reasonable drainage volume estimates for future modeling work that will be conducted for assessing the CALFED Delta alternatives.

The DICU model predictions for the delta lowlands were in general agreement with the measured drainage volume estimates and monthly trends observed in the 1954-55 and 1995-96 studies. Although the predicted monthly drainage volume estimates were not numerically the same as those computed in the two studies, the comparison showed that the DICU model was able, with few exceptions, to predict the monthly trends in delta lowland drainage volume that were observed. The numeric differences could in part be due to the differences in billing cycle dates at the pump stations that would have affected the computation of monthly drainage volume. A plot of the DICU model predictions and those based on field data for 1954-55 is shown in Figure 3-1.1. A similar comparison made for 1995-96 is shown in Figure 3-1.2. The DICU model predicted more drainage during the heaviest rain months in January and March of 1995 than measured and estimated by the USGS. DICU monthly volume estimates were in some cases more than double the USGS estimates during the irrigation season. This disparity could be attributed to the use of assumed pump efficiencies in 80 percent of the 1995-96 USGS data set. The agreement with monthly trends, however, suggests that drainage from the central delta lowlands region, where both pump test efficiency and

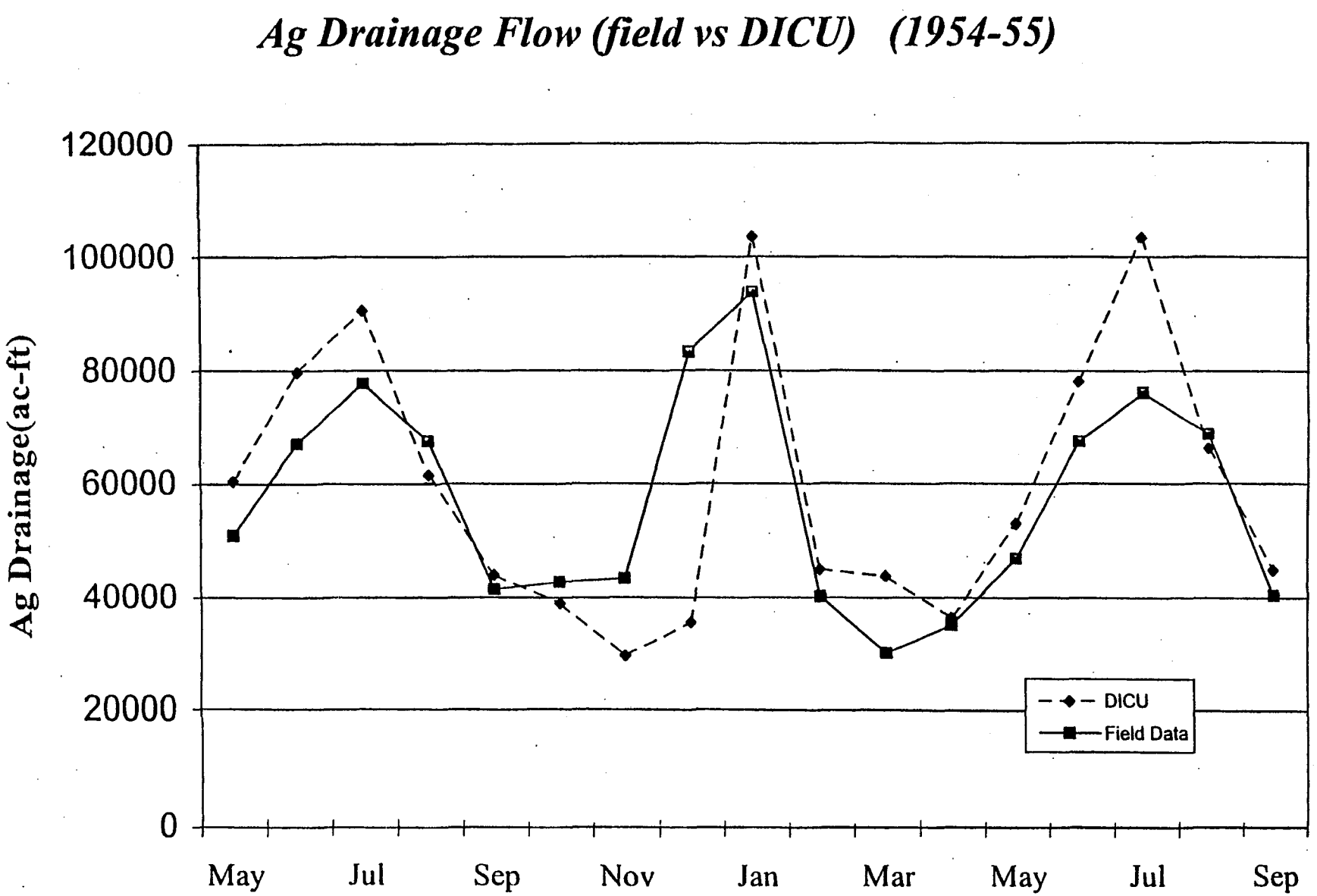


Figure 3-1.1. DICU 1954-55 Drainage Estimates
(Field Data from DWR Report No. 4, 1956)

Ag Drainage Flow (field vs data) (1995-96)

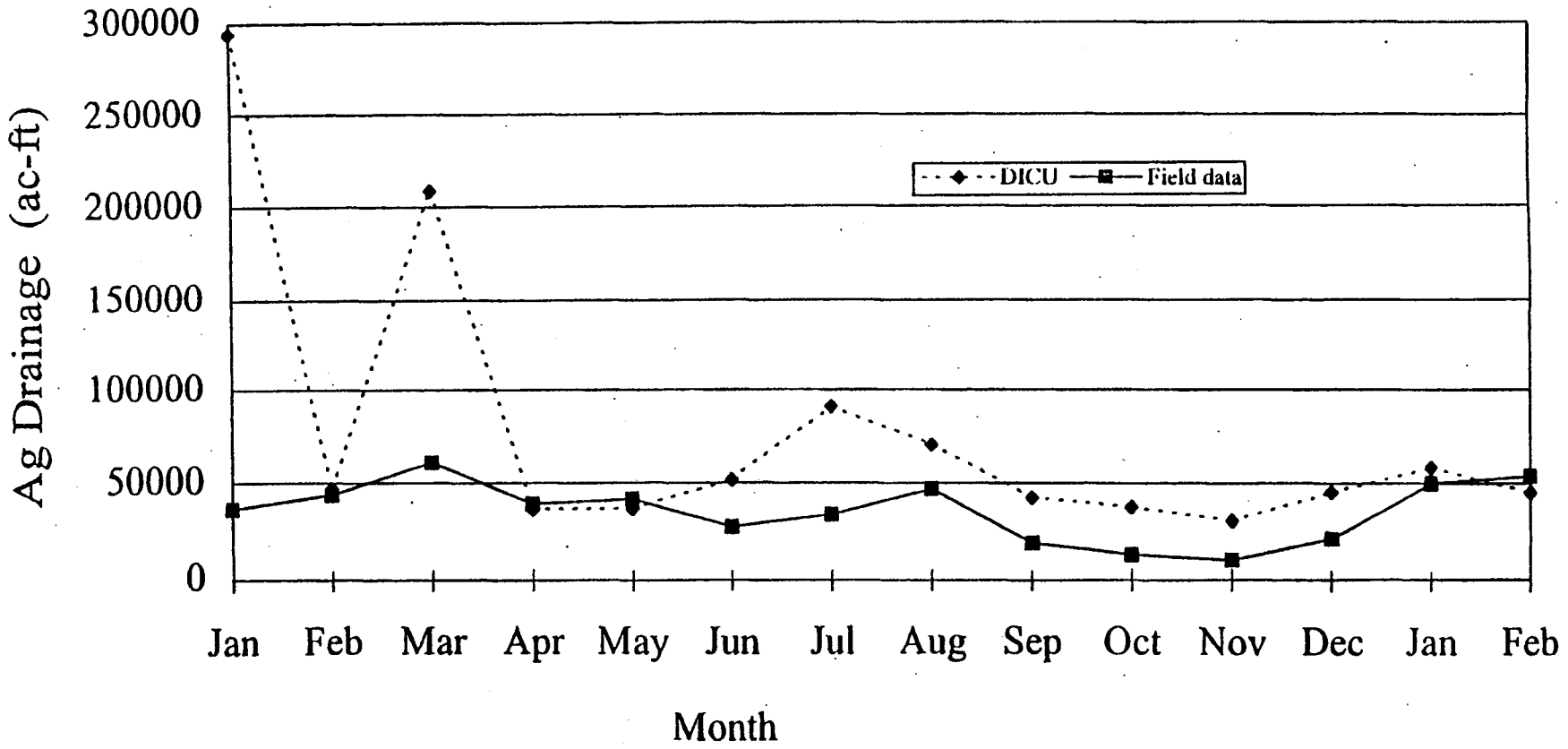


Figure 3-1.2. DICU 1995-96 Drainage Estimates
(Field Data from USGS Study, 1997)

power use records were available in the USGS study, controlled the seasonal trends that were observed. These areas included USGS aggregated areas 6, 10, 11 ,12 ,13 , and 14 (Figure 3-1.3). USGS aggregated areas are groupings of islands and tracts that were made to meet confidentiality requirements in the agency's study of drainage volume and power use in the delta.

It was decided that the DICU model could provide better flexibility and simulation of delta lowland drainage for our modeling work than using the historical estimates of 1954-55 and 1995-96. The DICU model was used to compute the average monthly drainage volume for the delta lowlands over a sixteen year period starting from water years 1976 through 1991 (October 1, 1975 – September 30, 1991). The monthly drainage estimates (acre-feet) for each water year and the sixteen-year average are shown in Table 3-1.1. The DICU model estimates were based on the conditions of the Year 2020 level of development. These estimates were also used in the preliminary delta simulation model studies of the CALFED delta conveyance components conducted by DWR's Delta Modeling Section.

For comparison, water year 1955 monthly estimates are also shown in the table. These estimates are based on power use and pump efficiency records collected by DWR in 1954 and 1955 (DWR, 1956). There is close agreement in the seasonal trends and magnitude of drainage between the W.Y. 1955 data and the DICU model estimates, in which the latter used a Year 2020 level of development.

A plot of the DICU model results is shown in Figure 3-1.4. The irrigation season (April – September) estimates were closely similar and consistent. The largest variations occurred during the wettest winter months (January – March). Higher pumped volumes in these months occur because of increased seepage and rainfall in the lowlands which in some areas are more than fifteen feet below mean sea level and twenty feet or more below river channel water levels. From this plot, we make the assumption that the

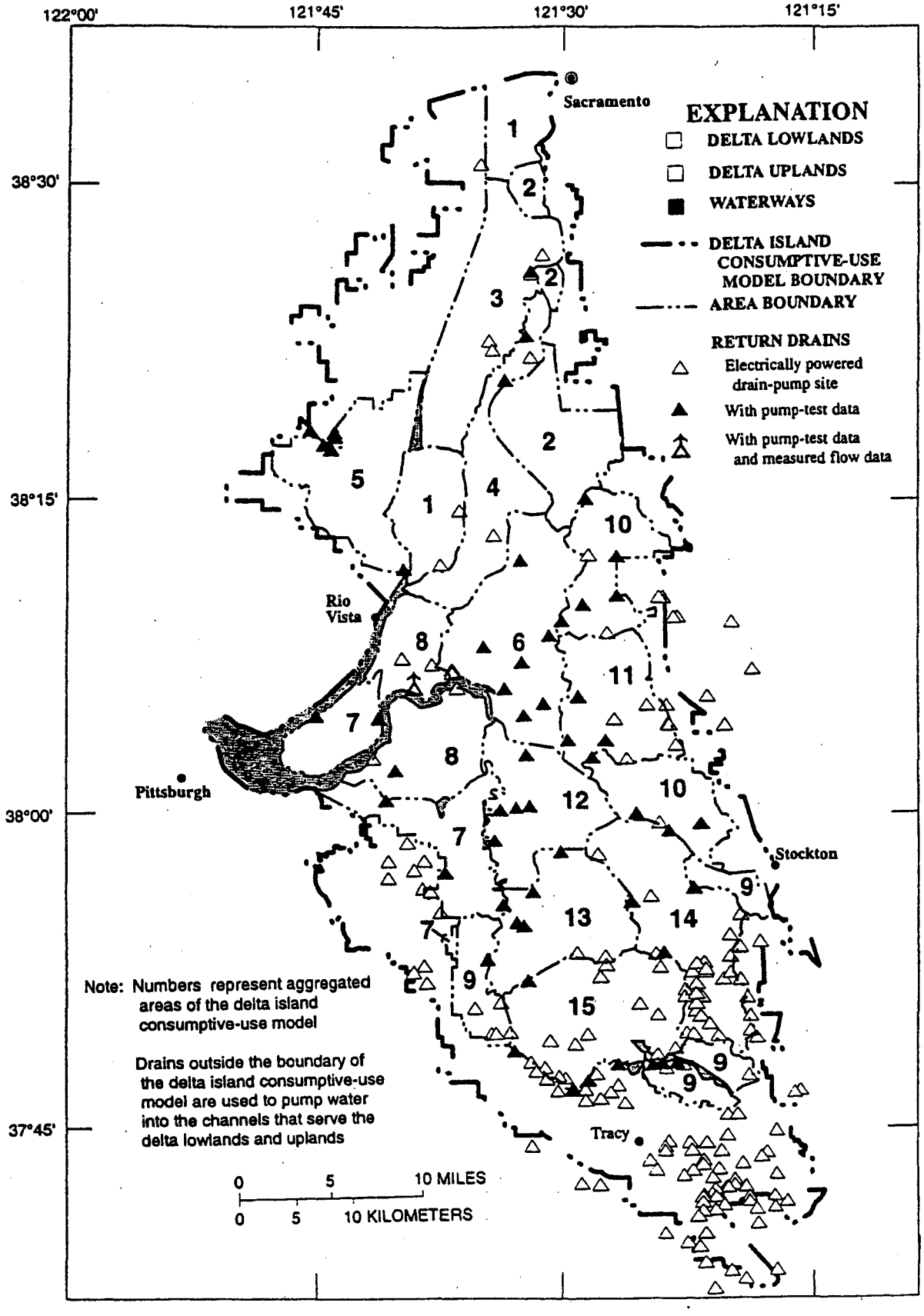
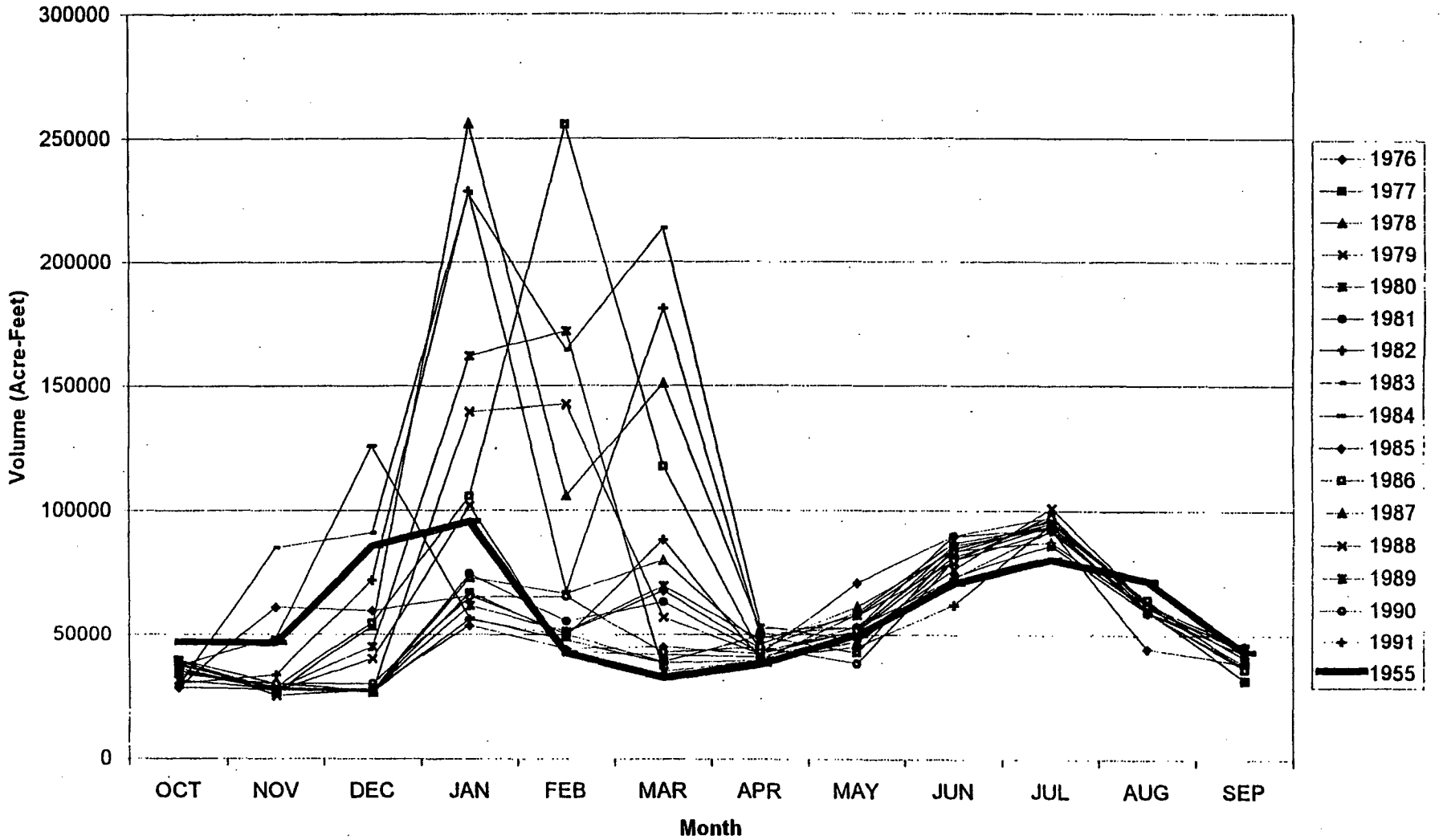


Figure 3-1.3. USGS Aggregated Drainage Study Areas

Table 3-1.1. DICU Model Delta Lowlands Drainage Volume Estimates
Acre-feet at Year 2020 level of development

Water Year	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1976	28249	27380	27730	53792	44011	44812	41829	71175	89679	92761	44335	38128
1977	37011	28343	26860	67057	49773	38486	49449	42169	85027	93873	59557	36222
1978	37777	26304	53363	255919	105849	150774	52522	52837	83340	95240	63667	40592
1979	39279	24873	27167	139517	142392	57137	41882	51459	85969	92852	59676	45237
1980	31229	27701	44681	161735	171654	34774	39182	46956	73585	86145	59707	42296
1981	39390	29615	27014	74663	55541	63477	42430	53071	90012	97280	63672	40505
1982	29952	33341	72261	228790	67525	181255	50220	52868	73112	92118	60627	31667
1983	28780	85018	90978	227783	163930	213884	53802	47381	80212	91599	62041	37670
1984	36738	48522	125632	56599	47546	38129	39037	58326	84419	96013	62603	45856
1985	28406	61382	59873	65958	50783	68019	44198	59139	87074	93854	59658	36932
1986	34906	28535	54772	105716	255340	117612	42950	51533	81371	93878	64627	35954
1987	37394	27829	26294	73171	66832	79876	45527	61598	83878	87489	61373	44218
1988	36028	27086	39817	101891	42591	41495	40569	49883	76268	101150	63185	44415
1989	38778	27197	26901	61883	51219	69966	47808	58036	79640	98049	60541	31556
1990	33716	29804	29993	65432	65503	42427	44773	37893	80230	97118	62271	43397
1991	34814	27268	26490	56343	49220	88328	40049	44788	62389	94526	59192	45547
16 yr. Avg.	34528	35012	47489	112266	89357	83153	44764	52445	81013	93996	60421	40012
1955	46817	46537	85731	95668	41960	32419	37628	49813	71084	80606	72170	43116

Figure 3-1.4. Lowland Drainage Estimates



Source: Water years 1976-91 estimates from DICU Model Run
Water year 1955 data from DWR Report No. 4, 1956

average percent contribution of total delta lowland drainage subareas have not changed significantly during the sixteen-year period. This appears to agree with a comparison of the contribution of total Delta Lowland drainage from the subareas made in our first consultant's report (Figure 3-1.5).

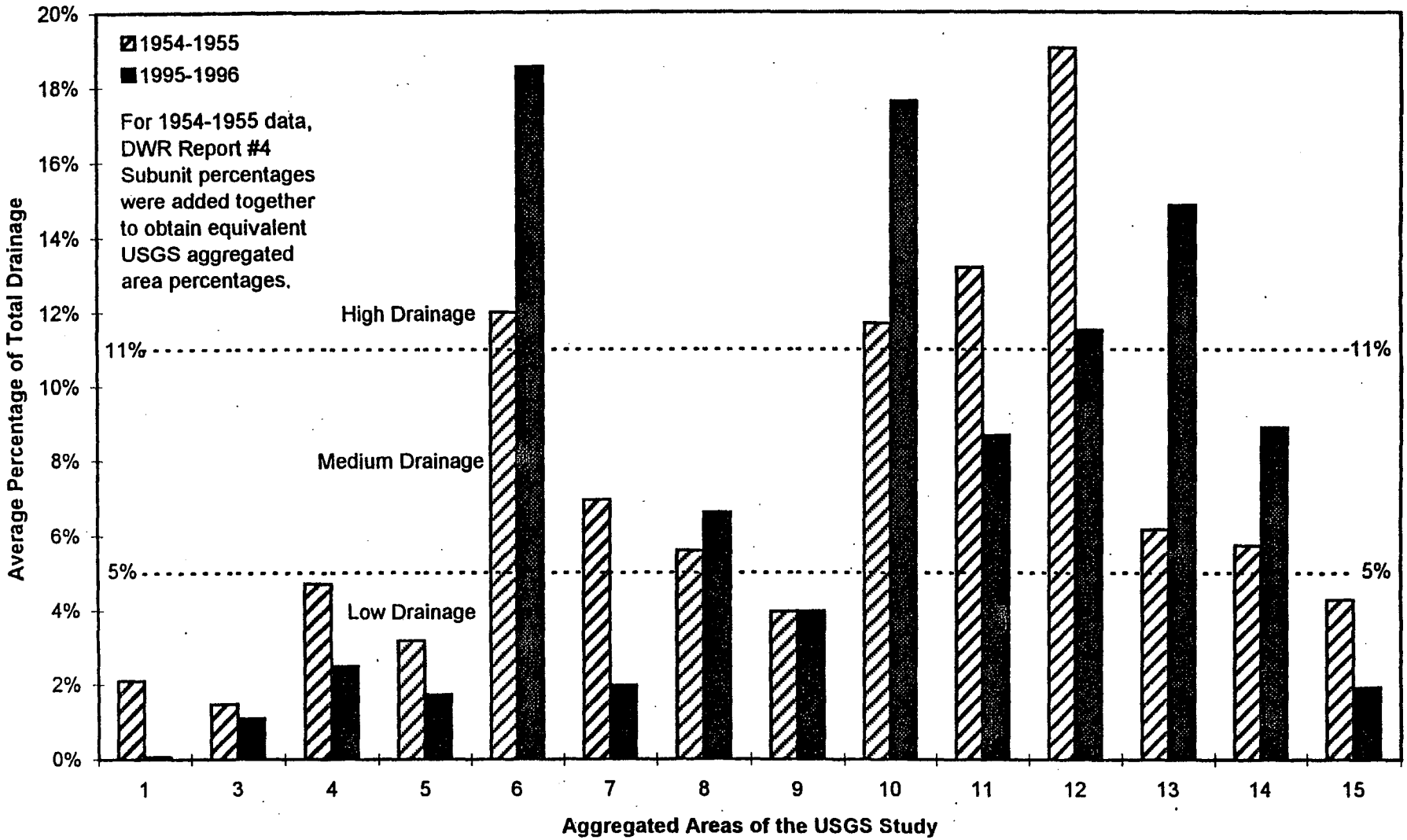
The sixteen year monthly average drainage volume for the delta lowlands (Tables 3-1.3 and 3-1.4) were computed by multiplying the DICU model sixteen year monthly average drainage totals (Table 3-1.1) by the monthly contribution (percent of total) of drainage for each USGS aggregated area (Table 3-1.2). For simplification, the monthly aggregated area contributions were computed from the May 1954 – October 1955 data (DWR, 1956) because there was closer agreement to the DICU model drainage estimates than with the DICU model estimates and 1995-96 data. The resulting average monthly drainage volumes for each area in monthly total acre-feet and in million gallons per day (MGD) units are shown in Tables 3-1.3 and 3-1.4, respectively.

The largest contributors of drainage by volume were areas 6, 10, 11, and 12 during the irrigation growing season (May – September). These areas each respectively discharged 17, 12, 14, and 21 percent of the total delta lowlands drainage. This was about 64 percent of the total drainage for the five-month period.

3-2. Water Quality

Irrigation in the lowlands usually starts in April or May depending on previous weather conditions and soil moisture. As irrigation volume increases so does drainage volume as seen in Figure 3-1.4. July and August are typically the two months when irrigation and drainage volumes are the highest during the crop growing season. For these reasons, TOC/DOC concentrations in drain water during the peak summer drainage months are of interest as the data predominantly reflects organic carbon releases from soil during the peak irrigation period.

Figure 3-1.5. Contribution of Total Lowland Drainage by Area



Source: Jung and Tran, 1998

Table 3-1.2. Monthly Drainage Contribution by Delta Areas

USGS Aggregated Areas	May-54	Jun-54	Jul-54	Aug-54	Sep-54	Oct-54	Nov-54	Dec-54	Jan-55	Feb-55	Mar-55	Apr-55	May-55	Jun-55	Jul-55	Aug-55	Sep-55	Oct-55	Average
1	3.3%	2.5%	1.7%	2.0%	1.9%	1.7%	1.7%	2.5%	2.2%	2.4%	2.1%	2.8%	1.7%	2.0%	1.9%	2.1%	1.5%	1.9%	2.1%
3	1.2%	0.6%	0.4%	0.4%	0.9%	0.8%	3.4%	3.0%	3.1%	5.4%	2.6%	1.1%	0.6%	0.3%	0.4%	0.4%	0.6%	1.1%	1.5%
4	5.7%	4.9%	4.7%	4.5%	3.7%	2.5%	3.8%	3.9%	4.0%	5.1%	6.3%	8.0%	5.2%	6.1%	5.4%	5.5%	2.7%	2.4%	4.7%
5	3.2%	3.7%	4.0%	4.5%	4.5%	2.8%	2.3%	1.8%	1.6%	1.5%	2.1%	4.3%	2.7%	3.1%	3.0%	3.6%	4.2%	4.1%	3.2%
6	11.0%	15.2%	16.8%	14.6%	17.2%	17.4%	10.5%	8.4%	6.5%	7.9%	9.0%	7.2%	9.5%	10.6%	16.4%	14.7%	11.1%	11.7%	12.0%
7	7.5%	6.8%	5.6%	6.1%	6.8%	6.4%	5.9%	6.0%	6.3%	7.7%	10.0%	11.8%	7.1%	6.3%	6.0%	4.2%	5.8%	8.5%	6.9%
8	5.1%	3.7%	3.9%	4.3%	5.0%	6.9%	7.9%	5.8%	6.1%	7.1%	9.2%	7.2%	3.8%	3.6%	3.7%	4.9%	5.1%	7.1%	5.6%
9	3.4%	2.6%	3.5%	3.1%	2.9%	3.2%	3.2%	5.0%	4.1%	3.3%	5.6%	7.5%	4.6%	3.5%	4.1%	4.2%	4.6%	2.9%	4.0%
10	11.1%	11.3%	12.7%	13.4%	13.0%	9.8%	11.6%	12.2%	10.6%	9.9%	9.1%	10.4%	13.8%	12.6%	12.0%	11.4%	13.3%	12.1%	11.7%
11	10.7%	13.7%	13.2%	15.4%	11.2%	10.7%	13.0%	12.2%	15.6%	9.5%	6.7%	10.0%	13.9%	15.5%	15.4%	17.3%	21.1%	12.3%	13.2%
12	24.3%	23.5%	19.6%	19.2%	20.9%	21.8%	19.9%	12.7%	13.6%	18.3%	17.0%	11.2%	22.9%	25.0%	20.4%	18.7%	15.2%	18.7%	19.0%
13	4.7%	4.5%	5.0%	4.8%	4.8%	8.9%	8.1%	11.2%	12.6%	8.0%	7.0%	5.2%	4.3%	3.7%	2.7%	4.1%	4.1%	7.0%	6.1%
14	4.2%	3.7%	3.8%	4.2%	4.5%	4.9%	6.4%	10.7%	9.8%	8.5%	6.8%	6.1%	5.0%	3.9%	3.8%	4.3%	5.7%	7.0%	5.7%
15	4.6%	3.3%	4.9%	3.4%	3.0%	2.1%	2.2%	4.6%	3.9%	5.4%	6.5%	7.2%	4.8%	3.8%	4.7%	4.7%	5.1%	3.2%	4.3%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

USGS Aggregated Areas	Jan-95	Feb-95	Mar-95	Apr-95	May-95	Jun-95	Jul-95	Aug-95	Sep-95	Oct-95	Nov-95	Dec-95	Jan-96	Feb-96	Average
1	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
3	2.8%	2.2%	1.4%	3.6%	0.8%	1.1%	0.5%	0.4%	0.6%	0.1%	0.1%	0.2%	0.6%	1.3%	1.1%
4	0.0%	3.7%	1.0%	4.5%	1.7%	16.2%	1.2%	1.0%	0.0%	1.6%	0.0%	0.7%	0.8%	2.1%	2.5%
5	0.0%	2.7%	4.1%	0.7%	1.1%	2.4%	3.4%	2.7%	0.0%	1.2%	1.4%	1.2%	0.9%	2.4%	1.7%
6	8.4%	14.1%	32.0%	8.3%	22.9%	18.2%	13.5%	19.2%	8.7%	14.5%	21.2%	33.7%	26.8%	18.3%	18.6%
7	0.1%	5.7%	3.8%	5.7%	2.0%	3.2%	4.0%	0.1%	0.0%	0.3%	0.4%	0.9%	0.4%	1.0%	2.0%
8	0.3%	0.4%	10.5%	0.4%	32.3%	1.9%	7.2%	6.1%	0.0%	3.0%	6.3%	10.0%	6.9%	7.1%	6.6%
9	0.5%	2.4%	0.4%	5.4%	5.4%	7.6%	10.1%	7.7%	0.3%	10.9%	1.8%	1.7%	0.4%	0.9%	4.0%
10	22.7%	15.7%	17.6%	13.7%	9.5%	12.8%	21.0%	16.1%	27.6%	19.7%	18.8%	19.7%	8.7%	23.0%	17.6%
11	13.3%	6.1%	10.3%	6.2%	2.4%	7.9%	12.6%	8.2%	9.5%	4.4%	5.7%	13.8%	9.3%	11.6%	8.7%
12	19.3%	11.9%	8.0%	14.3%	3.4%	7.4%	6.1%	13.0%	14.9%	12.3%	18.1%	7.1%	16.0%	9.2%	11.5%
13	21.2%	26.5%	6.4%	26.2%	7.2%	9.3%	5.2%	14.1%	15.3%	14.5%	18.4%	8.2%	21.7%	14.3%	14.9%
14	9.8%	8.2%	2.1%	9.2%	7.9%	9.4%	11.8%	9.3%	20.6%	14.3%	6.7%	1.4%	6.5%	7.1%	8.9%
15	1.7%	0.3%	2.4%	0.8%	3.4%	2.6%	3.3%	2.0%	2.4%	3.1%	1.1%	1.3%	0.9%	1.6%	1.9%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 3-1.3. Delta Lowlands 16-Year Average Monthly Drainage in Acre-Feet[1]

USGS Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	2454.6	2295.9	1717.3	1260.0	1274.0	1862.0	1614.6	1199.3	676.7	606.7	616.0	1148.0
3	3453.3	5198.6	2081.3	513.3	471.3	382.7	392.0	247.3	289.3	331.3	1213.3	1418.6
4	4423.9	4946.6	5161.2	3621.3	2809.3	4503.2	3817.2	2977.3	1292.6	830.6	1362.6	1838.6
5	1736.0	1456.0	1745.3	1932.0	1526.0	2781.3	3238.6	2426.6	1754.6	1171.3	821.3	821.3
6	7195.8	7709.2	7317.2	3247.9	5282.6	21251.5	15339.0	8670.5	5735.2	4932.6	3723.9	3938.6
7	6990.5	7503.8	8175.8	5366.5	3761.3	5371.2	5380.5	3051.9	2552.6	2519.9	2090.6	2771.9
8	6701.2	6915.8	7522.5	3275.9	2496.6	2986.6	3481.3	2729.9	2053.3	2375.3	2799.9	2706.6
9	4535.9	3163.9	4573.2	3406.6	2081.3	2468.6	3513.9	2160.6	1507.3	1017.3	1129.3	2342.6
10	11629.1	9594.5	7457.2	4703.9	6421.2	9818.5	11414.4	7349.8	5329.2	3723.9	4134.6	5665.2
11	17145.0	9249.1	5450.5	4554.6	6327.9	12002.4	12436.4	9692.5	6551.9	3905.9	4610.6	5702.5
12	14961.0	17779.6	13850.4	5086.6	12128.4	19921.6	18479.6	11223.1	7321.8	6850.5	7055.8	5935.9
13	13859.7	7774.5	5683.9	2379.9	2314.6	3369.3	3569.9	2645.9	1806.0	2683.3	2874.6	5198.6
14	10761.1	8213.2	5543.9	2753.3	2365.9	3145.3	3495.3	2515.3	2053.3	2011.3	2286.6	4974.6
15	4311.9	5263.9	5291.9	3275.9	2403.3	2897.9	4405.2	2393.9	1642.6	905.3	793.3	2128.0
Total	110158.9	97064.5	81571.5	45377.7	51663.5	92762.0	90578.0	59284.0	40566.4	33865.3	35512.6	46591.0

Table 3-1.4. Delta Lowlands 16-Year Average Monthly Drainage in MGD[1]

USGS Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	26.30	24.60	18.40	13.50	13.65	19.95	17.30	12.85	7.25	6.50	6.60	12.30
3	37.00	55.70	22.30	5.50	5.05	4.10	4.20	2.65	3.10	3.55	13.00	15.20
4	47.40	53.00	55.30	38.80	30.10	48.25	40.90	31.90	13.85	8.90	14.60	19.70
5	18.60	15.60	18.70	20.70	16.35	29.80	34.70	26.00	18.80	12.55	8.80	8.80
6	77.10	82.60	78.40	34.80	56.60	227.70	164.35	92.90	61.45	52.85	39.90	42.20
7	74.90	80.40	87.60	57.50	40.30	57.55	57.65	32.70	27.35	27.00	22.40	29.70
8	71.80	74.10	80.60	35.10	26.75	32.00	37.30	29.25	22.00	25.45	30.00	29.00
9	48.60	33.90	49.00	36.50	22.30	26.45	37.65	23.15	16.15	10.90	12.10	25.10
10	124.60	102.80	79.90	50.40	68.80	105.20	122.30	78.75	57.10	39.90	44.30	60.70
11	183.70	99.10	58.40	48.80	67.80	128.60	133.25	103.85	70.20	41.85	49.40	61.10
12	160.30	190.50	148.40	54.50	129.95	213.45	198.00	120.25	78.45	73.40	75.60	63.60
13	148.50	83.30	60.90	25.50	24.80	36.10	38.25	28.35	19.35	28.75	30.80	55.70
14	115.30	88.00	59.40	29.50	25.35	33.70	37.45	26.95	22.00	21.55	24.50	53.30
15	46.20	56.40	56.70	35.10	25.75	31.05	47.20	25.65	17.60	9.70	8.50	22.80
Total	1180.30	1040.00	874.00	486.20	553.55	993.90	970.50	635.20	434.65	362.85	380.50	499.20

[1]Average for calendar month based on percent contribution by USGS area during 1954-55 and using sixteen year DICU estimate.

The Delta islands could be distinctly grouped into the three areas with different DOC concentration ranges during the July - August period. The areas were those with: (1) DOC concentrations less than 8 mg/L, (2) 9 to 10 mg/L, and (3) above 10 mg/L. DOC concentrations were less variable in the drains during the growing season (May – September) than in the other months. The areas would have higher DOC during the October to April period. During these months, differences in DOC ranges were less distinguishable and more variable. This is attributed to several events that include heavy rainfall, seepage of water from surrounding channels, and field leaching of some areas to remove salt deposits.

The regional DOC concentrations in the delta lowland drainages were first studied in 1994 (DWR, 1994). The MWQI data were re-examined to determine if the DWRSIM2 and DICU models should use the same assumptions presented in 1994. A complete tabulation of the monthly mean DOC concentrations at the MWQI sampled drains are in Appendix B. The results were compared to the conceptual representation of the regional DOC distribution in the Delta Lowlands based on data collected from 1987-1991 (Figure 3-2.1; DWR, 1994). The additional data collected after 1991 refined this conceptual map of DOC distribution in the Delta (Figure 3-2.2).

The dry season mean DOC concentration ranges and the land surface elevation of the lowland islands appear to be related. Most of the low range DOC drains were located at islands with land surface elevations no more than ten feet below mean sea level (Figure 3-2.3). Most of the drains with the dry period mid and high range DOC concentrations were located on islands with land surface elevations greater than ten feet below sea level. The higher DOC concentrations at these lower elevation islands could be attributed to higher water tables caused by seepage under the levees from the adjacent channels. A higher water table would extend the peat soil to water contact time and the decomposition of organic matter, thereby, increasing the DOC concentration in the drains.

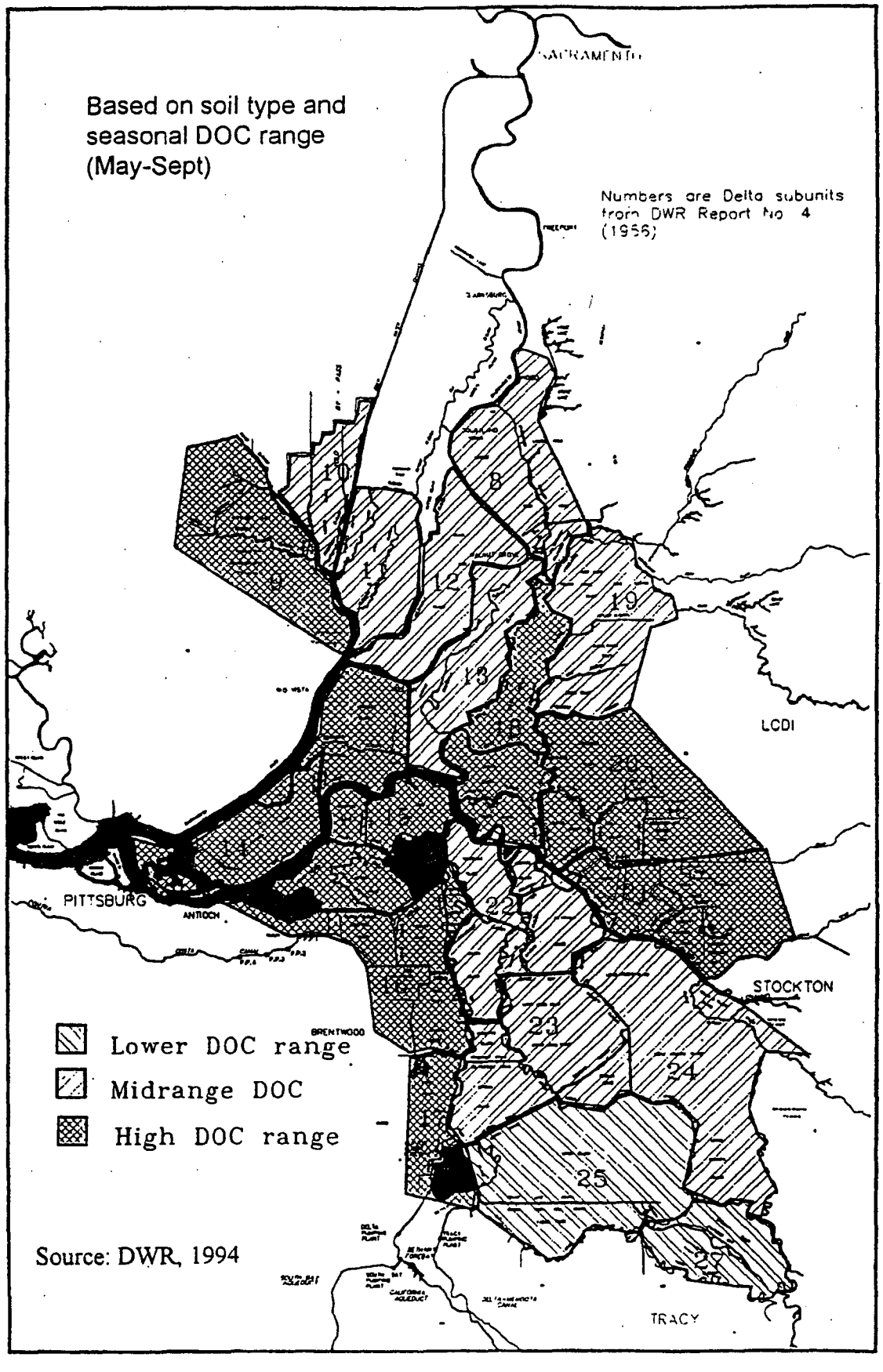


Figure 3-2.1. 1987-91 Regional Drainage DOC Distribution

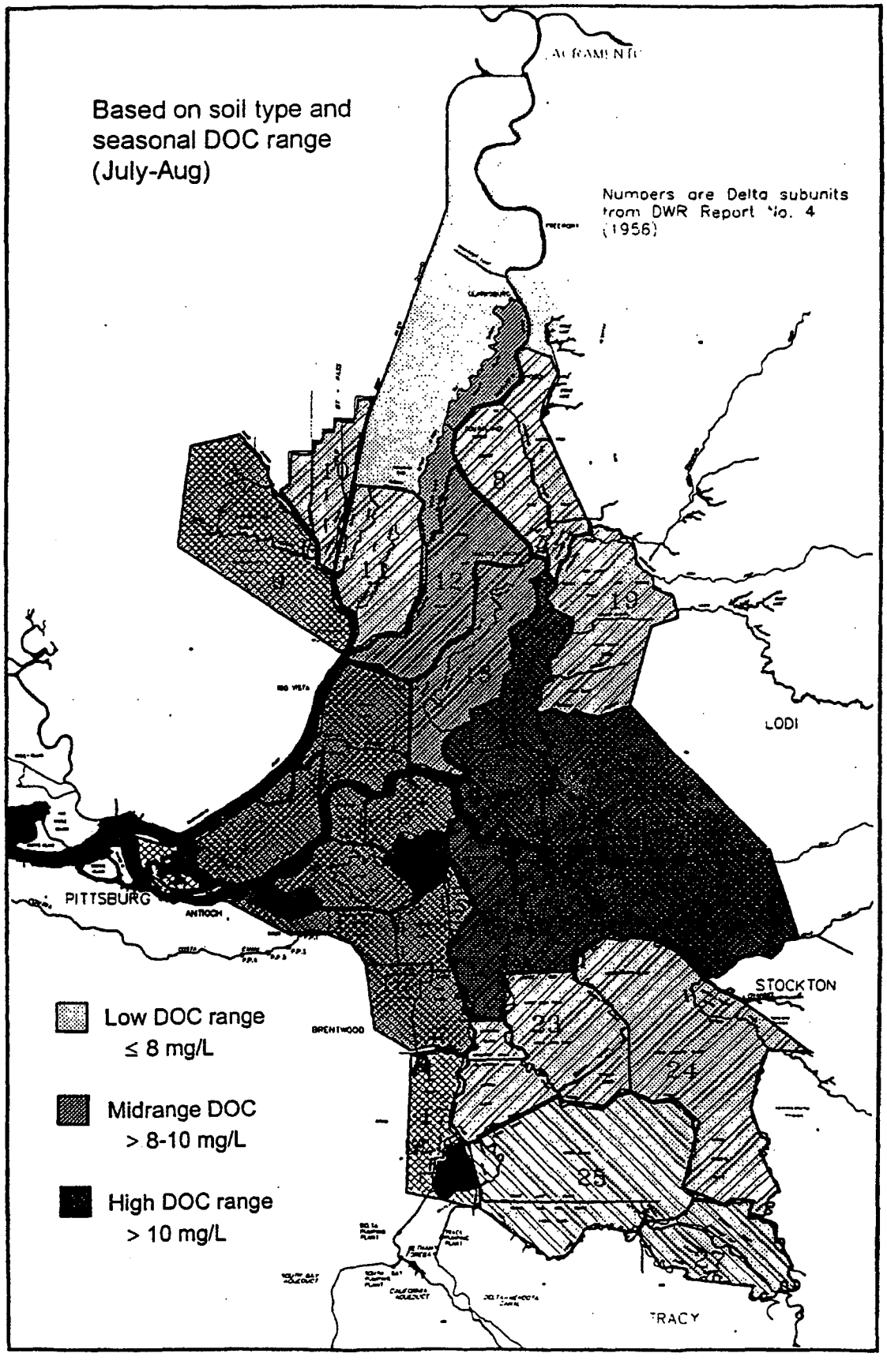


Figure 3-2.2. 1982-97 Regional Drainage DOC Distribution

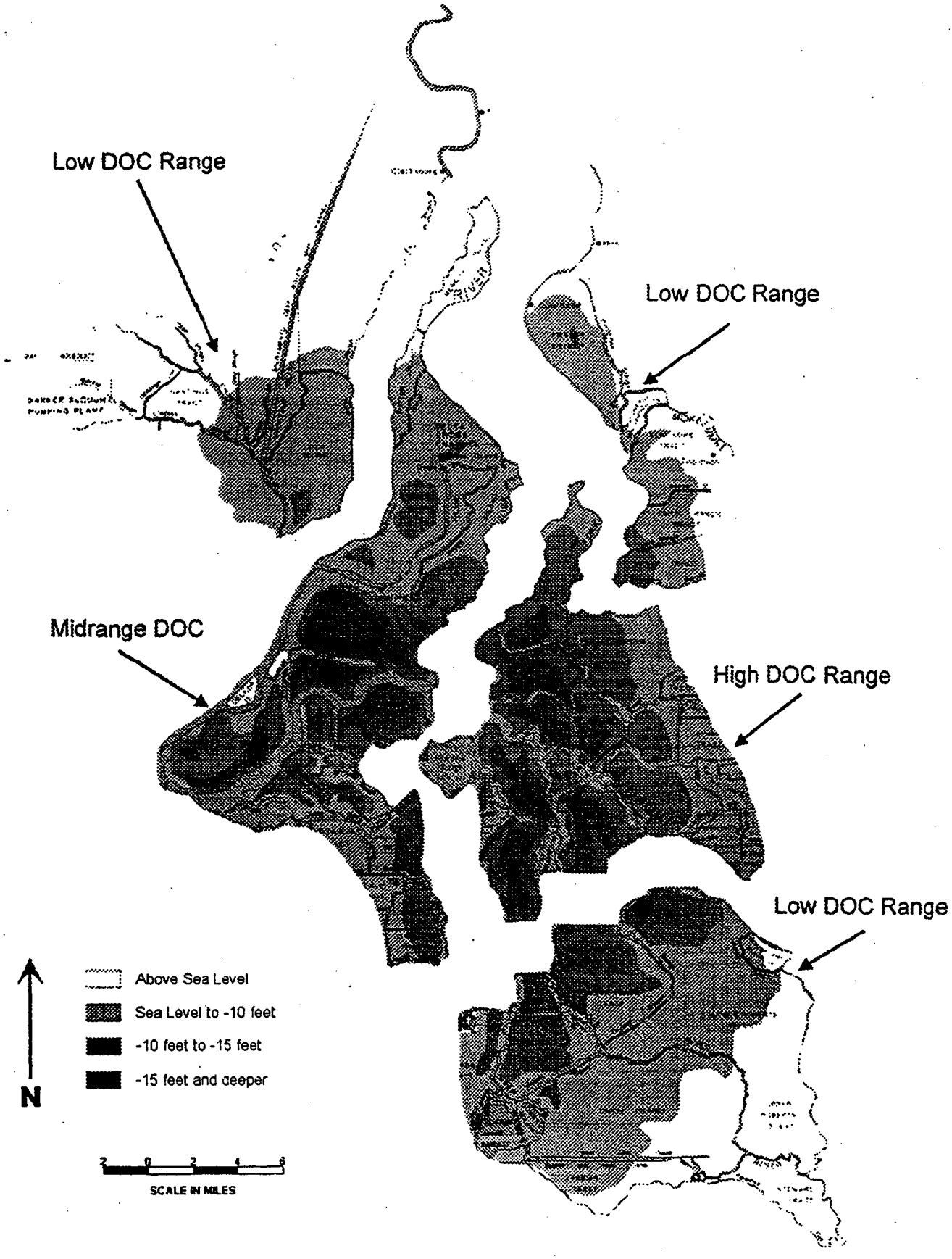


Figure 3-2.3. Land Surface Below Sea Level

Monthly mean concentrations of DOC and bromide and measured absorbance values of UVA at 254 nm for the delta lowlands were computed from the MWQI database and previous reports. In some cases, extrapolations and relationships with soil type and
location were used to fill in data gaps for unsampled areas (DWR, 1994). The data requirements for the DWRSIM2 and DICU models were drainage monthly mean values with accompanying bromide and UVA 254 nm data.

The average monthly DOC concentrations by USGS aggregated area are shown in Table 3-2.1. There were no data for areas 14 and 15. For this reason, data from area 13 were duplicated for areas 14 and 15. This may be a reasonable assumption as these three areas are of similar land surface elevation, soil type, and are adjacent to each other in the southern region of the delta. There were some months in which there were no DOC data for areas 3, 4, 5, 6, 7, and 10. Interpolation did not appear to be an appropriate solution to fill the missing data due to an unclear pattern in the data, especially during the wet months. The approach chosen was to repeat the previous monthly average DOC concentration. These values are shown in bold print in Table 3-2.1.

Bromide concentration and UVA-254nm data are presented in tables in Appendix B. Water Quality Data Summaries.

3-3. Organic Carbon Mass Loads

The monthly total organic carbon mass load estimates for the USGS aggregated areas were computed by multiplying the monthly mean DOC values for each area (Table 3-2.1) by the corresponding monthly drainage estimates in Table 3-1.4. The results are shown in Table 3-3.1.

USGS aggregated areas 11, 6, 12, and 10 had the highest average daily discharge of DOC per day during the irrigation season (May – September) and during the wet

Table 3-2.1. Monthly Average DOC Concentrations by Area

USGS	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	3.6	4.4	3.7	3.6	3.3	4.3	4.5	3.7	4.6	5.5	4.3	3.8
3	11.3	**11.3**	8.6	8.3	6.9	4.4	4.1	2.7	**2.7**	6.5	**6.5**	**6.5**
4	20.4	18.6	9	6.5	6.1	5.6	5.9	8.3	11	10.9	13.7	**13.7**
5	13.3	**13.3**	18.3	13.4	17.9	5	6	6.5	**6.5**	20.1	**20.1**	**20.1**
6	21.2	32.2	31.4	17.4	21.7	14.5	11.6	12.4	**12.4**	15.9	28.8	38.3
7	12.3	22.3	**22.3**	14.7	**14.7**	5.8	5.4	9	**9**	6.8	**6.8**	**6.8**
8	20.6	20.7	19.9	13	10.8	7.9	10	9.4	10.2	8.5	8.2	14.7
9	4.5	4.7	8.3	5.1	6.5	4.5	5	7.2	2	4.6	0.9	3.7
10	24.3	20.8	13.5	9	15.8	6	11.3	11.1	**11.1**	15.9	**15.9**	20.3
11	21.9	32.8	23.6	13.3	28.4	14.2	13.3	10.4	45	14.1	39.8	36.2
12	22.5	19.7	14.3	11.8	8.8	6.4	6.5	7.7	7.5	5.1	6.7	18.2
13	12.9	8.8	22	4.4	10	6.4	6.1	7.4	**7.4**	6.1	7.5	9.9
14	12.9	8.8	22	4.4	10	6.4	6.1	7.4	**7.4**	6.1	7.5	9.9
15	12.9	8.8	22	4.4	10	6.4	6.1	7.4	**7.4**	6.1	7.5	9.9

DOC concentration in mg/L

Note: Data for areas 14 and 15 were duplicated from area 13 due to lack of data.
Data in bold print are data repeated from previous month's average due to no available data.
DOC data from MWQI database 1982-97.

Table 3-3.1. Estimated Monthly Average Mass Loads of DOC

USGS	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	790	903	568	406	376	716	650	397	278	298	237	390
3	3,489	5,252	1,600	381	291	151	144	60	70	193	705	824
4	8,069	8,226	4,153	2,104	1,532	2,255	2,014	2,209	1,271	809	1,669	2,252
5	2,064	1,731	2,856	2,315	2,442	1,243	1,737	1,410	1,020	2,105	1,476	1,476
6	13,639	22,194	20,542	5,053	10,249	27,550	15,908	9,612	6,358	7,012	9,589	13,487
7	7,687	14,961	16,301	7,053	4,943	2,785	2,598	2,456	2,054	1,532	1,271	1,685
8	12,342	12,799	13,384	3,808	2,411	2,109	3,112	2,294	1,872	1,805	2,053	3,557
9	1,825	1,330	3,394	1,553	1,210	993	1,571	1,391	270	418	91	775
10	25,265	17,842	9,001	3,785	9,071	5,267	11,532	7,294	5,289	5,294	5,878	10,282
11	33,570	27,123	11,501	5,416	16,067	15,238	14,788	9,012	26,360	4,924	16,406	18,456
12	30,096	31,315	17,708	5,366	9,542	11,399	10,739	7,726	4,910	3,124	4,227	9,659
13	15,985	6,117	11,180	936	2,069	1,928	1,947	1,751	1,195	1,463	1,928	4,601
14	12,411	6,462	10,904	1,083	2,115	1,800	1,906	1,664	1,358	1,097	1,533	4,403
15	4,973	4,141	10,409	1,289	2,149	1,658	2,403	1,584	1,087	494	532	1,884

Average daily mass load of DOC discharged in pounds per day

season (October – April). The daily loads were about the same for both seasons at areas 11 and 6. The high mass loads from these areas are apparently resulting from the large volumes of drain water that are discharged from these four areas that were discussed previously in section 3-1. On a mass load basis, the four areas contributed 75 percent of the DOC during the irrigation season and 59 percent during the wet season.

3-4. Candidate Regions

The factors that were considered for the initial selection of candidate delta lowland regions for modeling the water quality benefits from treatment to reduce organic carbon included these three factors:

1. the predominant dry season delta channel flow patterns (direction) at the discharges
2. the distance of the nearest drainage discharge pumps to the Clifton Court Forebay intake
3. the seasonal organic carbon mass loads

A simple scoring system was used to select the candidate delta islands for modeling treatment. Each of the three factors had equal weight and three possible scores. The conditions associated with each score are shown below:

Factor	Score	Condition
Predominant dry season delta flow patterns	1 2 3	In area where most flows are out of delta In area where flows are limited within the delta Flows often toward Clifton Court Forebay gate
Nearest drainage pump to SWP intake at Clifton Court Forebay gate	1 2 3	Distant (more than 20 miles) 10 – 20 miles Near (within 10 miles)
Irrigation season (May – Sept) average daily mass load of organic carbon discharged (lbs/day)	1 2 3	Low contributor to total drainage (<5%) Mid-range contributor (5 to 10%) Among the highest contributor (>10%)

Total scores of 6 to 9 were used to select primary candidate areas for modeling trea tment. The results are shown in Table 3-4.1.

Table 3-4.1. Results of Scores to Select Candidate Regions for Treatment

USGS Area	Delta flow score	Discharge location score	DOC loading score	Total score
1	*1*	*1*	*1*	*3*
3	*1*	*1*	*1*	*3*
4	*1*	*1*	*1*	*3*
5	*1*	*1*	*1*	*3*
6	**3**	**2**	**3**	**8**
7	**3**	**3**	**1**	*7*
8	*2*	*2*	*1*	*5*
9	**2**	**3**	**1**	**6**
10	**2**	**2**	**3**	*7*
11	**2**	**2**	**3**	*7*
12	**3**	**2**	**3**	**8**
13	**3**	**3**	**1**	**7**
14	*2*	*2*	*1*	*5*
15	**3**	**3**	**1**	**7**

The results showed that the candidate areas (bold print) included those that were the largest contributors of total drainage and areas in close proximity to the SWP intake (Figure 3-4.1).

3-5. Treatment and Cost Assumptions

In 1997 drainage samples from Twitchell and Bacon islands were analyzed and jar tested in the Brown and Caldwell study on the feasibility of treating delta island drainage. TOC concentrations were 12 to 43 mg/L with most of the TOC approximately equal to the DOC concentrations. Twitchell Island TOC was about twice the amount in Bacon Island drain water samples. The major conclusions of the study (DWR, 1997) were:

1. Laboratory jar bench tests showed that optimized ferric chloride ($FeCl_3 \bullet 6H_2O$) coagulation removed 55 to 78 percent of the DOC from drainage samples taken from

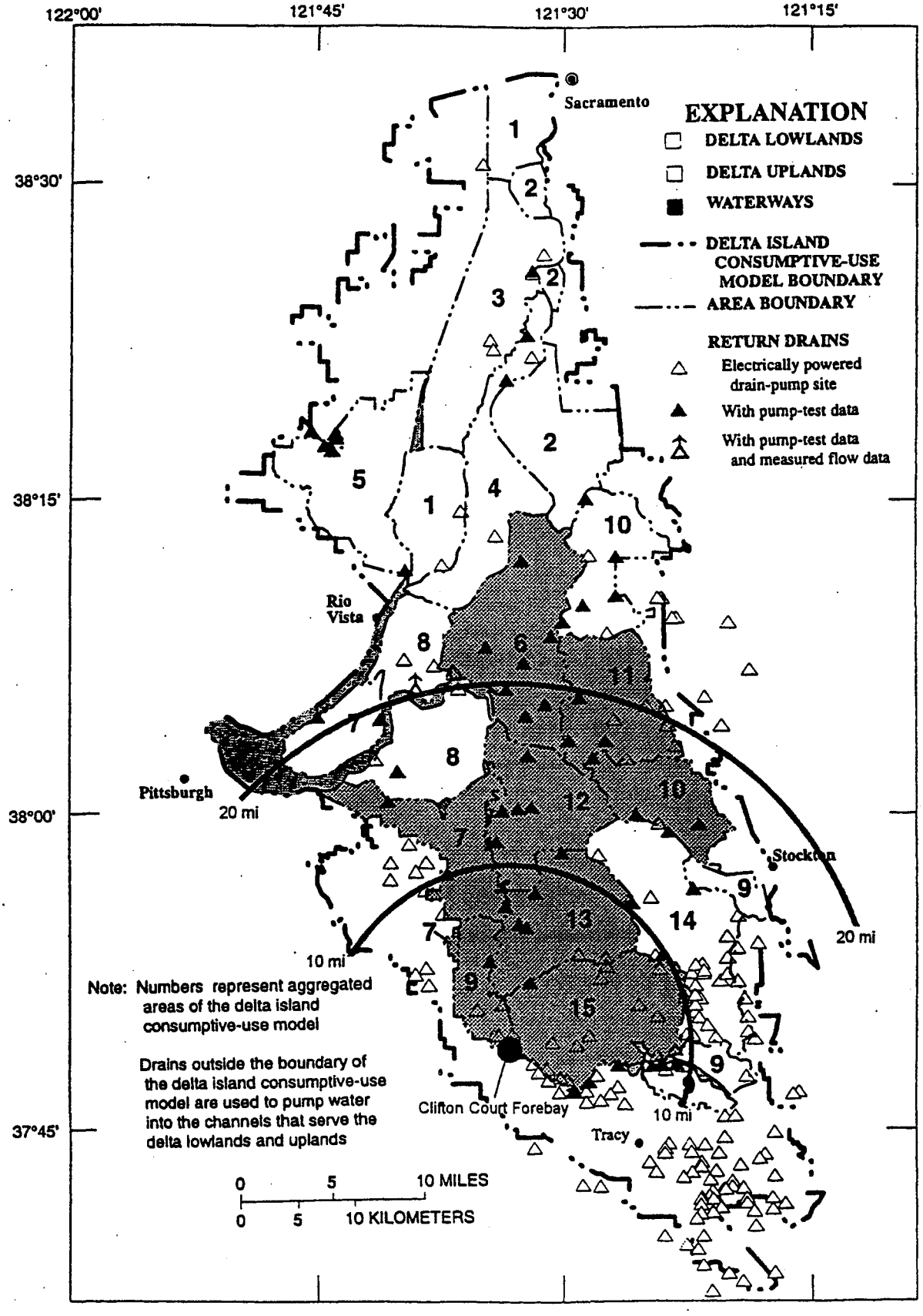


Figure 3-4.1. Candidate Regions for Modeling Treatment Impacts

2. Twitchell and Bacon islands. Alum ($Al_2(SO_4)_3 \bullet 14H_2O$) coagulation removed 44 to 74 percent of the DOC. Membrane processes removed 38 to 97 percent of the DOC, with the tightest membranes producing the highest removals. THMFP and HAAFP were reduced approximately the same percentage as DOC was reduced in each of the treatment technologies.
3. A cost analysis indicated that optimized ferric chloride coagulation is more cost effective than optimized alum coagulation for TOC removal from Twitchell Island drainage. Ferric chloride coagulation, which includes chemical addition, rapid mixing, flocculation, and sedimentation, could remove 60 percent of the TOC from Twitchell Island for about $1.73 per pound of TOC removed. Process trains using membranes cost 2 to 3.5 times as much as ferric chloride coagulation to achieve similar TOC removals. Biofiltration alone or with ozone treatment did not appear to be cost effective.
4. The treatment costs are dependent on drainage water composition and flow rates, which are known to vary between locations and seasonally. Therefore, extrapolating the Twitchell island treatment cost factors (e.g., $1.73/lb. of TOC removed) to all treatment scenarios will only provide a gross estimate of delta-wide treatment of drainage to reduce TOC.
5. Treatment by coagulation can raise concentrations of chloride, sulfate, sodium, calcium, iron, and aluminum in the discharge, depending on the treatment chemicals that are used. Coagulation in low pH conditions could reduce inorganic carbon by carbon dioxide loss. Inorganic carbon could be partly restored by dosing soda ash to neutralize the low pH.
6. A follow-up pilot drain water treatment plant is recommended to confirm the technical and economic viability of ferric chloride coagulation. Parallel jar testing of drain water from other delta islands with ferric chloride coagulants should be made for comparison.

The assumptions used to derive the cost estimates included the capability to remove 60 percent of the TOC during peak week flows and loadings (i.e., daily flows

and loads sustained during the week of maximum lows and loads). Peak week flows at Twitchell Island from 9/23/94 to 5/15/96 were about 26 million gallons per day (mgd). Peak week TOC loadings were about 8500 lbs/day with TOC essentially all in the dissolved form (DOC). The highest concentrations of DOC generally corresponded to the periods of high wet winter drainage flows.

Operating costs were based primarily on the average flows and loads. The average flow was about 11 mgd and average TOC loading at about 2100 lbs/day. Assumptions about the drain water quality were also made. It was assumed that peak week water quality (e.g., highest TOC concentration) were represented by wet winter drain water samples and average conditions by dry winter samples.

Preliminary calculations suggested that flow-equalization basins upstream to the treatment plants could lower the costs of higher capacity facilities. These basins would store drain water during high volume periods for later release during low volume periods. The added benefit includes improvements in plant operation efficiency. Flow equalization basins such as a 3200 acre-feet basin at Twitchell Island would result in significant savings. The basin would require an 11 mgd treatment plant instead of a 26 mgd facility. A 3200 acre-feet basin with a depth of 8 feet would occupy 400 acres. The calculations for treatment costs did not consider use of flow equalization basins because there was no land available on Twitchell Island that could be dedicated for the basins. Twitchell Island is approximately 3500 acres in size. Therefore, the costs are conservatively high in capital costs.

The cost figure of $ 1.73 per pound of TOC removed for Twitchell Island drainage was based on a 20 year project life for the treatment plant. The total cost of constructing and operating the Twitchell Island treatment plant for 20 years was calculated by the following equation:

$$PW = CC + f(O\&M)$$

where PW is the present worth in dollars (i.e., the amount of money needed now to fund the project over 20 years), CC is the capital cost in 1997 dollars, f is the operations and maintenance cost factor, and O&M the annual operating and maintenance costs in 1997 dollars.

The O&M cost factor of 14.88 was calculated by:

$$f = [(1+i)^n - 1]/[i(1+i)^n]$$

where i = interest rate minus inflation rate, expressed as a fraction (0.03 in this calculation) and n = project life of 20 years

For Twitchell Island the lowest cost treatment option was coagulation with ferric chloride. The present worth was $14.6 million or $ 1.73 per pound of TOC removed. Chemical purchase and capital expense comprised about 70 percent of the project present worth (Table 3-5.1). Capital costs based on the peak flow capacity of 26 mgd was $4,517,440 with annual O & M costs of $675,301 based on an average flow of 11 mgd with a TOC load of about 2100 pounds per day.

The cost estimates assumed disposal of sludge by subsurface injection on dedicated land. If the sludge was mechanically dewatered and disposed into a landfill, the costs would be higher by $2.5 million. The sludge treatment and disposal practice that was assumed was thickening and storage of the sludge in a pond with subsequent removal of the thickened sludge by dredging during dry weather and immediate disposal by subsurface injection to minimize odor problems. Balancing the liquid load with evaporation would prevent movement of the sludge from the disposal site to groundwater or back to the delta channels. Details of the cost analysis and the results of other tasks performed in the study are on file in technical memorandums from the contractor to MWQI (Brown and Caldwell, 1997a,b,c,d).

Table 3-5.1. Estimated Costs for Treatment of Twitchell Island Drainage

Capital costs based on peak flow, mgd =	26
Installed cost of equipment	
Feed pumps	184,000
$FeCl_3$ storage and delivery	138,000
H_2SO_4 storage and delivery	48,000
Rapid mix	31,000
Flocculator	400,000
Polymer storage and delivery	41,000
Clarifier w/tube settlers	1,212,000
Lime storage and delivery	184,000
Dilute sludge pumps	74,000
Sludge thickening/storage pond	155,000
Dedicated land disposal	80,000
Interconnecting piping	125,000
Subtotal	2,672,000
General facilities	
Roads	25000
Operations building	275000
Subtotal	300,000
Grand total	2,972,000
Contractor OH + profit[a]	445,800
Engineering[b]	208,040
Contingency[c]	891,600
Grand total	4,517,440
[a] Contractor OH + profit, % of installed costs	15
[b] Engineering, percent of installed costs	7
[c] Contingency, percent of installed costs	30
PV = CC + (O&M)(14.88) =	14,565,919
Life-cycle cost, $/1000 gal	0.18

Operation and maintenance costs based on average flow, mgd = 11

System	Energy kwh/yr	Fuel, gal/yr	Labor, hr/yr	Maint. mat'l., $/yr	Chemicals, $/yr	Sludge disposal, $/yr	Sum costs, $/yr
Feed pumps	420,000		700	3,200			50,100
$FeCl_3$ storage and delivery	3,000		65	250	201,000		203,085
H_2SO_4 storage and delivery	1,800		180	225	92,500		97,351
Rapid mix	40,000		450	100			14,150
Flocculator	73,000		250	3,900			15,260
Polymer storage and delivery	18,000		200	500	20,000		26,760
Clarifier w/tube settlers	14,000		900	3,900			27,380
Lime storage and delivery	5,000		1,400	2,600	47,000		84,950
Dilute sludge pumps	22,000		250	11,000			18,790
Sludge thickening/storage pond		400	1,040	1,500			28,100
Dedicated land disposal		400	1,040	3,000			29,600
Interconnecting piping			250	2,000			8,250
Subtotal	596,800	800	6,725	32,175	360,500	0	603,776
General facilities							
Roads			40	2000			3,000
Operations building			1345	8000			68,525
Subtotal	0	0	1,385	10,000	0	0	71,525
Sum O&M entries	596,800	800	8,110	42,175	360,500	0	675,301
Cost of entries, $/yr	41,776	1,200	229,650	42,175	360,500	0	675,301

Note:	
Energy cost, $/kwh	0.07
Fuel cost, $/gal	1.50
Labor cost, $/hr	25

Source: Brown and Caldwell, 1997

Table 3-5.2. Comparison of Treatment Costs for Twitchell Island TOC Reduction

Twenty year project life in 1997 dollars

Treatment Process Alternative	Fraction of drain water treated	Capital cost $ million	O &M $ million/yr	Present worth, $ million	Cost, $ per pound TOC removed
Coagulation [a]	1.00	4.5	0.7	14.6	1.73
Coagulation + filtration [a]	0.86	6.4	0.8	17.6	2.09
Ultrafiltration [a]	1.00	10.6	1.5	33.1	3.93
Coagulation + ultrafiltration [a,b]	0.73	9.4	1.5	30.5	3.61
Microfiltration + nanofiltration [a]	0.62	21.9	2.0	51.6	6.12
Coagulation + ozonation + biofiltration [a]	0.73	11.7	1.1	28.4	3.37

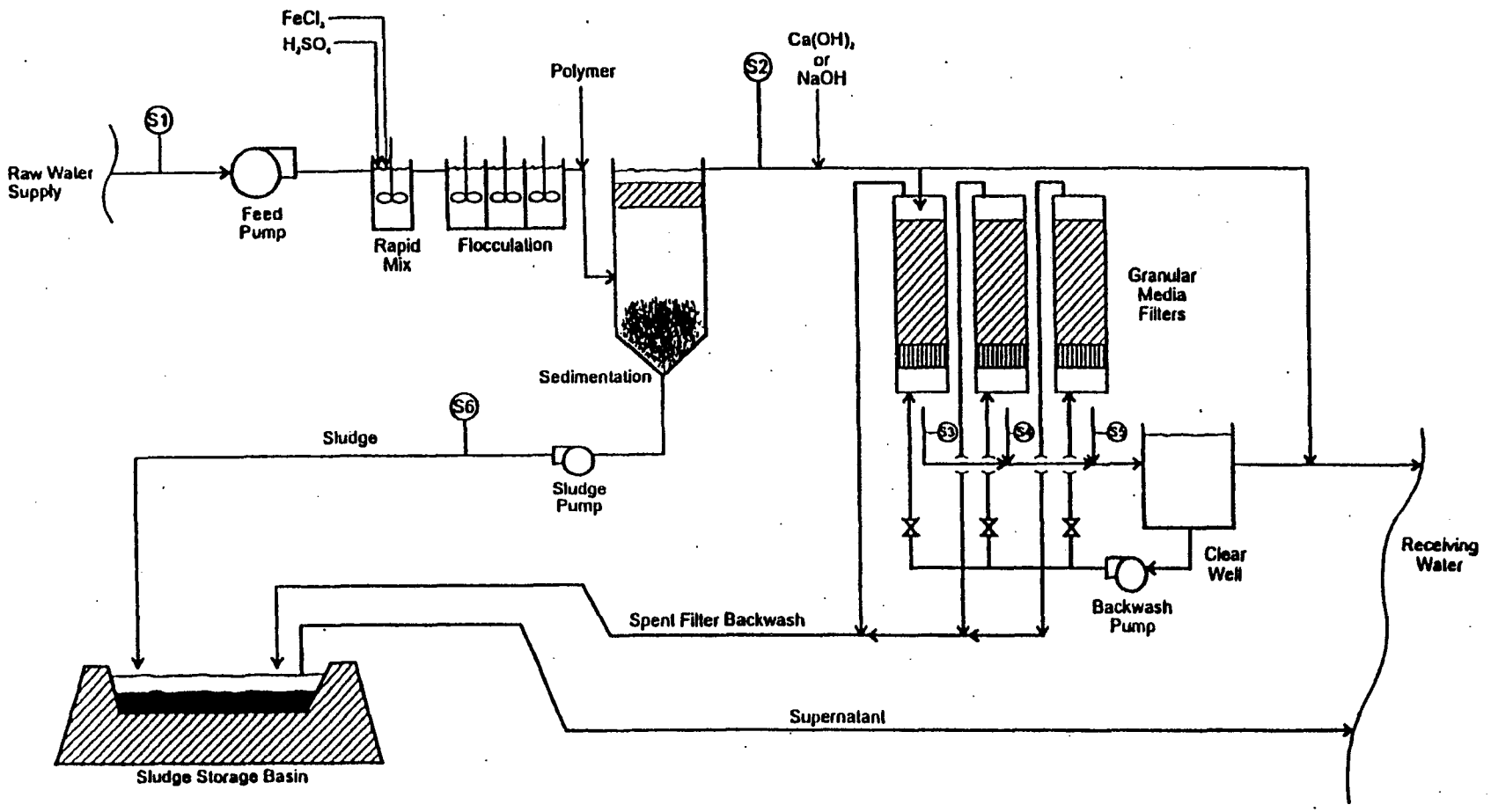
[a] Assumes sludge disposal by subsurface injection on dedicated land. Add $2.5 million if sludge is mechanically dewatered and disposed to landfill.

[b]Coagulation does not include flocculation and sedimentation steps.

A schematic of the coagulation treatment process for a proposed pilot plant is shown in Figure 3-5.1.

The cost estimates used for treatment by ferric chloride coagulation for the candidate delta subregions are based on extrapolating the estimated costs for Twitchell Island. For simplification in the forthcoming model runs and because of the lack of additional data, it is assumed that treatment plant facilities similar to the Twitchell Island design are built at the selected candidate islands for treatment. These facilities would have similar capacities (peak flow 26 mgd) and treat peak TOC loads of 8500 lbs/day.

Figure 3-5.1. Flow Schematic for Proposed Plant Pilot



Note: S = Sample Point

Source: Brown and Caldwell, 1997

Each treatment facility would have the same fixed capital costs ($ 4,517,440) and O & M annual costs except for chemicals ($ 314,801) due to different TOC loads.

The estimated annual cost of chemicals at the Twitchell Island treatment plant was $360,500 for an average daily TOC load of 2100 pounds. This was equal to $987.67 per daily average load of 2100 lb/day of TOC or about $0.47 per pound of TOC load for chemicals. Using this factor and assuming a linear relationship occurs with zero dollars for chemicals when there is a zero TOC load, the annual chemical cost for different TOC loads could be estimated. The equations used were:

O & M annual cost =

($ 314,801) + $ 0.47 (average daily TOC load in lbs/day)(365 days/yr)

Present Worth (20 year life) =

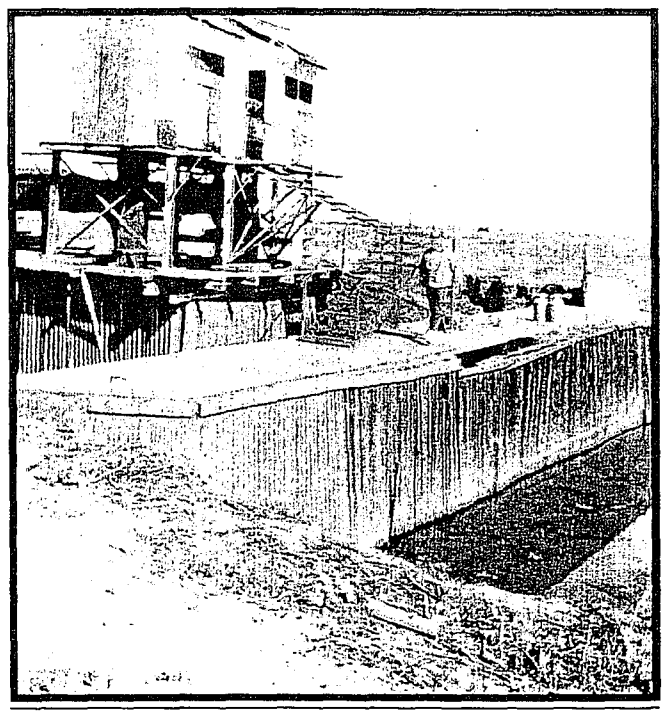
$ 4.6 million + (O & M annual cost) (14.88)

The average cost for chemicals and O & M is about $1,850 per day for Twitchell Island after the treatment facility has been built at a cost of $4.6 million.

The projected costs of treating the eight candidate lowland regions are shown in Table 3-5.3. Both the daily average discharge volume and organic carbon loads during the dry and wet months were used to compute the hypothetical maximum number of treatment plants needed to meet the highest demands. The number of treatment plants to meet the highest discharge volume per day were based on a 26 mgd capacity per plant. The number of plants to meet the highest peak loads were based on a plant with a peak load of 8,500 pounds of organic carbon per day. Using these assumptions, more treatment plants were needed to meet the peak flows than the peak loads. Chemical costs to reduce wet season organic carbon loads were higher than for the dry period. Capital costs were based on 4.6 million dollars per plant. Annual O & M costs per plant were set at $ 0.3 million excluding chemicals. Total annual chemical costs were based on the rate

of 47 cents per pound of TOC load for the combined wet and dry periods. The present worth estimates were based on capital costs of all treatment plants constructed ($314,801 per plant) plus the twenty-year cost factor (14.88) multiplied by the total annual O & M costs.

The estimates showed that treatment costs based on these present worth calculations could reach over $ 400 million. More in-depth engineering studies would be needed to refine these gross estimates as different sized treatment facilities could yield another set of cost estimates. A small-scale pilot plant study would also help determine the feasibility of treatment and address other costs such as sludge disposal. Additional monitoring of drainages in the candidate regions would also be needed to refine load estimates.



Trash rack at drainage pump station on Bacon Island

Table 3-5.3. Estimated Treatment Costs

Twenty-year project life

Costs in millions of dollars

Area	Dry month mgd (load)\a	Wet month mgd (load)\b	No. of treatment plants\c	Capital costs\d	Annual O & M costs\e excluding chemicals	Total annual chemical costs\f	Present worth\g
11	100.7 (16,293)	77.5 (16,771)	4 (2)	$ 9.2 - $ 18.4	$ 0.6 - $1.2	$ 2.8	$ 60.8- $ 79.4
6	120.6 (13,936)	58.3 (13,074)	5 (2)	$ 9.2 - $ 23	$ 0.6 - $ 1.5	$ 2.3	$ 52.8 - $ 80.7
12	148 (8,863)	109.5 (14,499)	6 (2)	$ 9.2 - $ 27.6	$ 0.6 - $ 1.8	$ 2.1	$ 49.5 - $ 86.7
10	86.3 (7,690)	71.8 (11,050)	4 (2)	$ 9.2 - $ 18.4	$ 0.6 - $ 1.2	$ 1.7	$ 43.2 - $ 61.7
7	43.1 (2,967)	54.2 (7,213)	2 (1)	$ 4.6 - $ 9.2	$ 0.3 - $ 0.6	$ 0.9	$ 23.1 - $ 32.4
9	25.1 (1,033)	30.9 (1,341)	1 (1)	$ 4.6	$ 0.3	$ 0.2	$ 12.4
13	29.4 (1,778)	61.9 (6,030)	3 (1)	$ 4.6 - $ 13.8	$ 0.3 - $ 0.9	$ 0.7	$ 20.1 - $ 38.7
15	29.5 (1,776)	33.6 (3,389)	2 (1)	$ 4.6 - $ 9.2	$ 0.3 - $ 0.6	$ 0.5	$ 16.2 - $ 25.5
Total	582.7 (54,336)	497.7 (73,367)	27 (12)	$ 55.2 - $ 124.2	$ 3.6 - $ 8.1	$ 11.2	$ 278.3 – $ 417.6

Assumptions: Treatment facilities built have an average capacity to treat 11mgd and a peak flow of 26 mgd and an average daily load of 2,100 pounds of DOC and a peak load of 8500 lbs/day. Assumed capital cost at $ 4.6 million, annual O & M costs excluding chemicals at $ 0.3 million and present worth (20 yr. life) at $ 4.6 million + (O & M annual cost) (14.88).

\a Dry month mgd (load) is average drainage volume and organic carbon load (lbs/day), respectively, from the aggregated areas for May through September (153 days) when irrigation is the primary water source during the growing season.

\b Wet month mgd (load) begins October to following April (212 days) when rainfall and seepage are the major sources of water at the drains.

\c Top values under Number of treatment plants column are based on number of facilities to meet the highest average mgd. Parenthesized bottom value is based on meeting highest load.

\d Capital cost at $ 4.6 million per treatment facility.

\e Based on $ 0.3 million per treatment plant without chemical costs.

\f Total annual chemical costs = $0.47((dry season load x 153 days) + (wet season load x 212 days)). Total to meet annual load regardless of number of treatment plants.

\g Present worth = $4.6 million/treatment plant x no. of plants + ((total O &M cost) x 14.88)) where total annual O&M (with chemicals) = ($314,801 per plant) x (no. of plants)) + Total annual chemical costs.

4. Conclusions

The following conditions will be tested in the DWRDSM2 and DICU simulations of reducing organic carbon concentrations from selected delta islands by treatment:

1. The conditions will simulate a combination of hydrologies and delta drainage options. For each of the following three delta hydrologies, two variations of managing delta island drainage will be modeled. The three delta hydrologies are: (1) high river inflows, (2) low inflow with high export pumping, and (3) low inflow with low export pumping conditions. The two delta island drainage management options include: (1) existing conditions with south Delta improvements (CalFed Delta Alternative 1C), and (2) similar conditions but with treatment at the candidate areas with 60 percent reductions of existing TOC/DOC loads. Hydrodynamic conditions in the delta are primarily controlled by upstream river flows into the delta and the amount of water exported by the State and Federal water project pumps in the southern delta. These three hydrologic conditions were previously modeled by DWR for the CALFED Programmatic EIS/EIR.

2. The sixteen-year DICU model estimates for delta lowland drainage volume will be used. Computed monthly average DOC concentrations with accompanying bromide and UVA 254 nm data in this report will be used to represent drain water quality in the model runs.

3. The candidate islands for modeling treatment will include those in the following eight USGS aggregated areas: 6, 7, 9, 10, 11, 12, 13, and 15 in the delta lowlands. These areas contribute over 75 percent of the total amount of organic carbon from the lowlands during May to September. A reduction of 60 percent of the monthly average loads for DOC will be assumed from treatment of drainage from these areas.

4. The results of the model runs will be compared. The results will include the predicted relative change in DOC and bromide concentrations and UVA-254nm values. Each of the simulations will yield sixteen years of monthly data at over 30 channel locations in the Delta. These sites include the primary water supply intakes.

5. The results for the water supply intakes will eventually serve as input to DWR's Water Treatment Cost Model for Treatment of State Project Water for Trihalomethane (THM) Control, which predicts the costs of treatment for THM control to meet the new USEPA standards. However, until a predictive bromate formation module is developed for this model, the Department's Water Treatment Cost Model for THM Control will not be used as it would incorrectly yield a significant underestimation of treatment costs to meet all USEPA disinfection by-product regulations for drinking water.

A third consultant's report to MWQI, titled " Water Quality Benefits from Controlling Delta Island Drainage," will summarize the comparison of water quality results and associated predicted treatment costs to meet new USEPA drinking water standards. This work is one of several tasks being conducted concurrently for the "Modeling Delta Alternatives To Improve Drinking Water Quality Work Plan" (Appendix A).

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Appendix A

Modeling Delta Alternatives
To Improve Drinking Water Quality
Work Plan

MODELING DELTA ALTERNATIVES TO IMPROVE DRINKING WATER QUALITY

by
Marvin Jung

Presented at MWQI Advisory Committee meeting of January 13, 1998

This is an outline of goals, tasks, and products that we plan to complete over the next two and a-half years with respect to identifying the best solutions for protecting and improving the drinking water quality of the delta.

We will review the historical drinking water quality of the delta to develop sets of input data for the Delta Water Treatment and Costs Model developed under the DWR/ Malcolm-Pirnie contract. We will test different scenarios of actions within the delta including the original set of 12+ proposed CalFed alternatives that might improve water quality and treatment. The scenarios include the following actions and in combination with each other:

1. reducing agricultural drainage volume by:
    a. conversion to fallow land
    b. conversion to flooded wetlands for soil subsidence control

2. reducing TOC concentrations in agricultural drainage by:
    a. treating drainwater by chemical flocculation prior to discharge
    b. reducing leaching frequency

3. relocating or adding intake and water storage sites
    a. out of delta storage
    b. in delta storage

4. blending water

5. shortening water residence time in the delta
    a. wider channels to increase flow
    b. deep flooded islands to increase flow and provide storage
    c. a separate canal

Technical briefings or workshops will be made before the MWQI Advisory Group as the work proceeds to each milestone. The Advisory Group will contribute to the program by providing guidance, suggestions, and review of the tasks. A series of technical summary reports will be prepared as consultant's reports to DWR. This will enable faster

distribution of information to the MWQI Advisory Group. These reports, in turn, will be edited to become official DWR publications.

The following work plan describes the goals and products of modeling alternatives to improve the drinking water quality of delta water supplies. The tasks are grouped into three topics that were common themes in the original set of proposed CALFED list of delta alternatives. The topics for study are: (1) drainage control options, (2) designing wetlands and shallow water storage options, and (3) water supply intake options. These three topics will be studied concurrently. The results of the work will be used to prepare an Alternatives Assessment Report in 1999-2000.

Tasks

1. EXAMINING DRAINAGE CONTROL OPTIONS

Goal: Estimating Monthly DOC Loads from Delta Island Drainage

Proposed Report: Delta Island Drainage Estimates, 1954-55 vs. 1995
Completion Date: 1/15/98

We are comparing the 1995 and 1996 delta island drainage volume estimates computed by USGS for DWR in the Delta Island Water Use Study to the 1954-55 estimates in DWR Report Number 4 (1956). We are comparing the methodologies used, seasonal trends in estimated drainage volumes discharged, land use changes, computational assumptions, and water year hydrologies (e.g., rainfall). We will determine if there are significant differences between the annual and monthly estimates for the entire delta and subregions. A report titled "Delta Island Drainage Estimates, 1954-55 vs. 1995" will be prepared and available in mid-January 1998.

We will confer with the Delta Modeling Group on our analysis. Depending upon the results of our report, we may recommend a range of values to use for monthly drainage volume discharges rather than a single value such as an average. It is probable that there will be more than one set of monthly drainage volume numbers that will be recommended for use in the delta water quality and hydrology models.

Goal: Developing Drainage Reduction Options

Proposed Report: Candidate Regions in the Delta for Reduction of Organic Carbon Loads
Completion Date: 4/1/98

We will develop a set of island drainage reduction options. Organic carbon mass loads will be computed from drainage volume estimates and DOC concentration data collected under the MWQI Program since 1982. The historical and regional distribution of DOC has been studied and reported in previous MWQI reports. Mass load estimation work will

begin in February 1998. Delta areas with the highest organic carbon loads discharged into the delta channels will be identified.

Brown and Caldwell engineers completed a study for MWQI on the treatment of delta island drainage in 1997. The study found that a reduction of up to 60 percent could be achieved by conventional coagulation/flocculation processes. Fallowing land could be another option. The options will be developed on the basis of proximity to water supply intakes, dominant water circulation patterns in the delta, and size of DOC mass load from each island or subregion. A candidate list of islands or regions for organic carbon reduction will be developed.

The regional distribution of DOC in the delta was discussed in the MWQI Five-Year Report for January 1987 - December 1991 (DWR, 1994). Further analysis of MWQI data will be performed to develop expected monthly DOC values across the regions of the delta. These values will be used with monthly drainage volume estimates to compute monthly mass loads of DOC discharged from the delta islands. As with drainage volume estimates, we expect to generate more than one set of DOC concentration values to be used in the modeling work because of different water year classifications and conditions.

Goal: Model Runs of Drainage Control Options

Proposed Report: Water Quality Benefits from Controlling Delta Island Drainage
Completion Date: 8/1/98

The Delta Modeling Group will run predictive delta water quality models on various scenarios we define that cover the above spectrum of alternatives for the delta. In turn, the results will be used to help us develop other alternatives. For example, modeled results might show only slight improvement in water quality by reducing organic loads from three islands. Another model run that simulates more islands under treatment or intake relocation might be result in better water quality. There will be interaction between MWQI and Delta Modeling staff in refining possible alternatives.

The Delta Water Treatment and Costs Model for THM Control, developed by Malcolm-Pirnie for MWQI, will then be used to assess the cost of treating the resulting modeled water quality.

2. DESIGNING WETLANDS AND SHALLOW WATER STORAGE FACILITIES

Goal: Study of Factors Affecting Organic Carbon Availability from Flooded Environments (Wetlands and Water Storage)

Proposed Report: Progress Report - Experiment 1: Water Depth, Water Flow, and Peat Soil Depth Effects on DOC Availability
Completion Date: June 15, 1998

Initial experiments at the new SMARTS facility will be conducted to study the major factors that may affect DOC in waters overlying peat soil from wetlands creation and water storage on delta islands. The experimental protocol will be a full or partial factorial experimental design or response surface methodology. The information will be used to design and operate such projects with minimal impact on drinking water quality, specifically organic carbon concentrations. Iterations of the experiments are necessary and peat soil may be substituted with other soil types to study out-of-delta water storage options. Other follow-up experiments might examine TOC contributions from algae, decaying crop biomass, and wetland plants.

The results will be used to develop a computer model. Results of the SMARTS experiments may develop a model that relates the mass load of TOC to different water flow rates and water depth. Commercial software such as Model Maker will be used by the MWQI water quality consultant.

Goal: Assessing Organic Carbon Loads from Wetland and Water Storage Projects

Proposed Report: Model Runs of Proposed Wetland and Water Storage Projects in the Delta
Completion Date: December 1, 1998

Computer model runs of hypothetical wetlands and water storage facilities in the delta (e.g., flooded islands) will be performed.

3. EXAMINING WATER SUPPLY INTAKE OPTIONS

Goal: Examine Water Quality at Proposed Water Supply Intakes

Proposed Report: Historical Data Report, MWQI 1982 - 1997
Completion Date: 1998

Channel water quality data collected since 1982 will be summarized and interpreted. The report will describe the history, mission, and milestones of the Interagency Delta Health Aspects Monitoring Program and MWQI Program. Data analysis will primarily focus on the water quality parameters that are needed in the Delta Water Treatment and Costs Model for THM Control. The analysis will provide input data sets for the model runs.

Data needs will be identified and further data collection needs will be recommended to the MWQI Program for monitoring.

Goal: Assess Water Supply Intake Location Options

Proposed Report: Model Runs of Water Quality Benefits from Various Water Supply Intake Locations

Completion Date: 1998 - early 1999

Computer model runs using historical and predicted water quality data for various potential water supply intakes in the delta will be performed.

4. ALTERNATIVES ASSESSMENT

Goal: Develop Candidate Delta Alternatives

Proposed Report: Summary Report of Candidate Water Transfer and Storage Alternatives to Improve Drinking Water Quality in the Delta
Completion Date: 1999-2000

Additional as needed SMARTS experiments, computer model runs, delta water quality monitoring, and refinements to delta alternative scenarios are expected to continue into 1998-99. A final report will summarize the predicted water quality benefits from the computer model runs of the modeled delta alternatives and combinations of scenarios.

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Appendix B

Water Quality Data Summaries

Appendix B. Table 1. Water Quality Data for Modeling Organic Carbon Distribution in the Delta by Month and Area

UVA-254nm values, bromide and DOC concentrations (mg/l), and specific absorbance (UVA-254nm x 100/DOC)
Results are grouped by numeric calendar month for each designated USGS aggregated area
in 1995-96 USGS study for DWR MWQI Program

NMONTH = numeric calendar month (Jan = 1, Dec = 12)
USGS = There were 13 areas and the areas are designated by number following colon (areas 0,1,2,4,..)
Mean = Computed arithmetic average
N = Number of samples
Std. Dv. = Standard deviation

STAT. BASIC STATS — Summary Table of Means (agdat1.sta) N=2009 (Casewise deletion of missing data)

NMONTH	USGS	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_1:1	G_1:0	.012750	8	.036062	0.000000	8	0.000000	5.86250	8	2.17054	.310976	8	.879572
G_1:1	G_2:1	0.000000	1	0.000000	0.000000	1	0.000000	24.00000	1	0.00000	0.000000	1	0.000000
G_1:1	G_3:2	0.000000	4	0.000000	0.000000	4	0.000000	11.30000	4	8.93458	0.000000	4	0.000000
G_1:1	G_4:4	0.000000	5	0.000000	0.000000	5	0.000000	20.40000	5	8.32466	0.000000	5	0.000000
G_1:1	G_5:5	0.000000	13	0.000000	0.000000	13	0.000000	13.28462	13	13.32472	0.000000	13	0.000000
G_1:1	G_6:6	.931125	24	1.199734	.075000	24	.142188	45.29167	24	21.39591	2.025578	24	2.279934
G_1:1	G_7:7	.731769	13	.558196	.107692	13	.213937	20.75385	13	8.83955	3.402567	13	1.983324
G_1:1	G_8:8	1.019167	42	.701119	.166667	42	.292730	33.32143	42	8.19689	2.994170	42	1.951183
G_1:1	G_9:9	.033818	33	.086631	.290909	33	.969008	5.91515	33	3.90673	.694492	33	1.419207
G_1:1	G_10:10	.351429	14	.584464	.128571	14	.246291	27.71429	14	11.77781	1.177854	14	1.940413
G_1:1	G_11:11	.132000	33	.329572	.048485	33	.134910	27.17879	33	30.96486	.913245	33	1.662807
G_1:1	G_12:12	1.536651	43	.718572	.046512	43	.112014	35.60000	43	13.46298	4.126178	43	1.226718
G_1:1	G_13:13	.475500	14	.505900	.078571	14	.136880	18.42143	14	9.79083	2.302383	14	2.073795
G_2:2	G_1:0	.118500	12	.117372	.016667	12	.038925	5.51667	12	1.76884	1.924144	12	1.569926
G_2:2	G_2:1	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_2:2	G_3:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_2:2	G_4:4	0.000000	5	0.000000	0.000000	5	0.000000	18.60000	5	1.51658	0.000000	5	0.000000
G_2:2	G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_2:2	G_6:6	.470000	7	.804550	.057143	7	.151186	45.98571	7	13.42764	1.152458	7	1.970556
G_2:2	G_7:7	0.000000	3	0.000000	0.000000	3	0.000000	22.33333	3	2.51661	0.000000	3	0.000000
G_2:2	G_8:8	1.318732	41	.711804	.087805	41	.259032	34.85366	41	9.34714	3.716716	41	1.612433
G_2:2	G_9:9	.049500	4	.099000	.275000	4	.550000	7.02500	4	2.05487	1.100000	4	2.200000
G_2:2	G_10:10	0.000000	4	0.000000	0.000000	4	0.000000	20.75000	4	4.11299	0.000000	4	0.000000
G_2:2	G_11:11	0.000000	16	0.000000	0.000000	16	0.000000	32.75000	16	28.73718	0.000000	16	0.000000
G_2:2	G_12:12	1.525500	34	.529506	.017647	34	.075761	34.76765	34	9.88996	4.233739	34	1.117575
G_2:2	G_13:13	0.000000	2	0.000000	0.000000	2	0.000000	8.80000	2	.98995	0.000000	2	0.000000
G_3:3	G_1:0	.102077	13	.087622	0.000000	13	0.000000	5.39231	13	2.58665	1.854198	13	1.345582
G_3:3	G_2:1	0.000000	3	0.000000	0.000000	3	0.000000	11.96667	3	8.77515	0.000000	3	0.000000
G_3:3	G_3:2	0.000000	6	0.000000	0.000000	6	0.000000	8.60000	6	5.41147	0.000000	6	0.000000
G_3:3	G_4:4	0.000000	8	0.000000	0.000000	8	0.000000	16.17500	8	11.11174	0.000000	8	0.000000
G_3:3	G_5:5	0.000000	11	0.000000	0.000000	11	0.000000	18.30000	11	16.02323	0.000000	11	0.000000
G_3:3	G_6:6	.669333	12	1.092627	.183333	12	.332575	36.68333	12	17.30658	1.460605	12	2.186108
G_3:3	G_7:7	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_3:3	G_8:8	1.431688	48	.781919	.054167	48	.240530	33.50000	48	14.75664	4.141445	48	1.284521
G_3:3	G_9:9	0.000000	20	0.000000	0.000000	20	0.000000	9.14000	20	7.85751	0.000000	20	0.000000

STAT. BASIC STATS

Summary Table of Means (agdat1.sta)
N=2009 (Casewise deletion of missing data)

NMONTH	USGS	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_3:3	G_10:10	0.000000	6	0.000000	0.000000	6	0.000000	13.48333	6	6.94620	0.000000	6	0.000000
G_3:3	G_11:11	.048500	20	.216899	.135000	20	.603738	23.55000	20	22.22032	.210870	20	.943037
G_3:3	G_12:12	1.210129	31	.374874	0.000000	31	0.000000	27.16452	31	8.30360	4.467374	31	.929523
G_3:3	G_13:13	0.000000	3	0.000000	0.000000	3	0.000000	22.00000	3	9.53939	0.000000	3	0.000000
G_4:4	G_1:0	.057100	10	.063173	.020000	10	.042164	4.36000	10	1.00576	1.250389	10	1.326615
G_4:4	G_2:1	0.000000	1	0.000000	0.000000	1	0.000000	10.00000	1	0.00000	0.000000	1	0.000000
G_4:4	G_3:2	0.000000	6	0.000000	0.000000	6	0.000000	8.31667	6	3.70590	0.000000	6	0.000000
G_4:4	G_4:4	0.000000	5	0.000000	0.000000	5	0.000000	9.02000	5	2.51436	0.000000	5	0.000000
G_4:4	G_5:5	0.000000	11	0.000000	0.000000	11	0.000000	13.41818	11	12.73592	0.000000	11	0.000000
G_4:4	G_6:6	1.169471	17	.881917	.217647	17	.318660	31.78235	17	14.26829	3.523469	17	2.044395
G_4:4	G_7:7	.884647	17	.315420	.288235	17	.335191	20.75882	17	6.20041	4.217592	17	.686253
G_4:4	G_8:8	.838159	69	.482575	.086957	69	.187799	20.59130	69	8.62380	4.072175	69	2.039202
G_4:4	G_9:9	.031690	29	.069221	.089655	29	.360897	7.44483	29	3.58714	.517138	29	1.071030
G_4:4	G_10:10	.227300	10	.298958	.220000	10	.355278	11.65000	10	5.40231	1.502481	10	1.956049
G_4:4	G_11:11	.174367	30	.388508	.113333	30	.379413	17.77000	30	17.35283	1.238767	30	1.989564
G_4:4	G_12:12	.924326	46	.325561	.045652	46	.098221	20.28478	46	6.24670	4.538652	46	.682072
G_4:4	G_13:13	.260500	8	.167867	.137500	8	.159799	9.81250	8	2.25986	2.982831	8	1.884545
G_5:5	G_1:0	.061875	8	.066443	.025000	8	.046291	4.47500	8	.61586	1.297040	8	1.386807
G_5:5	G_2:1	0.000000	1	0.000000	0.000000	1	0.000000	4.20000	1	0.00000	0.000000	1	0.000000
G_5:5	G_3:2	0.000000	4	0.000000	0.000000	4	0.000000	6.92500	4	2.22017	0.000000	4	0.000000
G_5:5	G_4:4	0.000000	6	0.000000	0.000000	6	0.000000	6.48333	6	1.46481	0.000000	6	0.000000
G_5:5	G_5:5	0.000000	7	0.000000	0.000000	7	0.000000	17.90000	7	18.73944	0.000000	7	0.000000
G_5:5	G_6:6	1.306333	6	1.352157	.216667	6	.183485	28.88333	6	20.28708	3.428081	6	2.682512
G_5:5	G_7:7	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_5:5	G_8:8	.764848	46	.286319	.065217	46	.184050	17.29348	46	4.53276	4.519752	46	1.577367
G_5:5	G_9:9	.028077	13	.055666	.107692	13	.210006	7.04615	13	4.09463	.610702	13	1.165147
G_5:5	G_10:10	0.000000	3	0.000000	0.000000	3	0.000000	15.83333	3	8.46069	0.000000	3	0.000000
G_5:5	G_11:11	.066933	15	.259232	0.000000	15	0.000000	30.32667	15	27.27682	.278889	15	1.080132
G_5:5	G_12:12	.698500	36	.226222	.005556	36	.033333	15.92222	36	4.40144	4.378550	36	.587687
G_5:5	G_13:13	0.000000	1	0.000000	0.000000	1	0.000000	10.00000	1	0.00000	0.000000	1	0.000000
G_6:6	G_1:0	.074556	9	.092991	.033333	9	.050000	5.73333	9	.62048	1.314572	9	1.615995
G_6:6	G_2:1	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_6:6	G_3:2	0.000000	3	0.000000	0.000000	3	0.000000	4.36667	3	2.89367	0.000000	3	0.000000
G_6:6	G_4:4	0.000000	7	0.000000	0.000000	7	0.000000	6.08571	7	.69864	0.000000	7	0.000000
G_6:6	G_5:5	0.000000	8	0.000000	0.000000	8	0.000000	4.98750	8	1.79399	0.000000	8	0.000000
G_6:6	G_6:6	.506542	24	.773650	.050000	24	.093250	21.17500	24	12.57880	2.303420	24	2.400031
G_6:6	G_7:7	.604625	8	.241505	.287500	8	.331393	12.25000	8	5.18487	5.255371	8	2.696476
G_6:6	G_8:8	.659643	56	.465197	.083929	56	.213010	13.95000	56	8.29703	4.665311	56	1.493339
G_6:6	G_9:9	.131200	20	.131084	.380000	20	.576377	6.54500	20	2.25353	1.744912	20	1.516161
G_6:6	G_10:10	.087000	4	.174000	.075000	4	.150000	11.95000	4	2.66020	.988636	4	1.977273
G_6:6	G_11:11	.320455	22	.572334	.227273	22	.468210	17.37727	22	12.56821	1.662404	22	2.052510
G_6:6	G_12:12	.545975	40	.211136	.042500	40	.093060	12.07500	40	3.72116	4.476928	40	.642352
G_6:6	G_13:13	.240846	13	.361556	.084615	13	.114354	9.84615	13	6.29942	2.260701	13	2.191016
G_7:7	G_1:0	.100600	10	.092994	.030000	10	.048305	5.41000	10	1.15802	1.846140	10	1.730285
G_7:7	G_2:1	0.000000	1	0.000000	0.000000	1	0.000000	3.00000	1	0.00000	0.000000	1	0.000000
G_7:7	G_3:2	0.000000	3	0.000000	0.000000	3	0.000000	4.13333	3	1.19304	0.000000	3	0.000000
G_7:7	G_4:4	0.000000	3	0.000000	0.000000	3	0.000000	5.63333	3	3.67469	0.000000	3	0.000000
G_7:7	G_5:5	0.000000	7	0.000000	0.000000	7	0.000000	6.00000	7	3.55668	0.000000	7	0.000000
G_7:7	G_6:6	.457960	25	.526476	.024000	25	.043589	18.15200	25	10.79425	2.995446	25	2.514221

STAT. BASIC STATS

Summary Table of Means (agdat1.sta)
N=2009 (Casewise deletion of missing data)

NMONTH	USGS	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_7:7	G_7:7	.620818	11	.257956	.427273	11	.346672	12.85455	11	5.52854	5.131456	11	2.284389
G_7:7	G_8:8	.716423	71	.451349	.084507	71	.173739	15.31972	71	7.41970	4.631981	71	1.376256
G_7:7	G_9:9	.134250	24	.125857	.329167	24	.429842	7.77917	24	2.19227	1.620262	24	1.454800
G_7:7	G_10:10	.234750	4	.469500	.100000	4	.200000	19.75000	4	5.73730	1.173750	4	2.347500
G_7:7	G_11:11	.232091	22	.316590	.081818	22	.156255	18.80455	22	16.80441	1.960375	22	2.223479
G_7:7	G_12:12	.554342	38	.259414	.060526	38	.128483	11.54737	38	4.29020	4.690579	38	.658712
G_7:7	G_13:13	.203250	16	.200838	.100000	16	.146059	9.15000	16	2.09157	2.287970	16	2.095130
G_8:8	G_1:0	.068571	7	.065335	.042857	7	.053452	4.75714	7	.70204	1.484918	7	1.390173
G_8:8	G_2:1	0.000000	1	0.000000	0.000000	1	0.000000	3.40000	1	0.00000	0.000000	1	0.000000
G_8:8	G_3:2	0.000000	2	0.000000	0.000000	2	0.000000	2.70000	2	.56569	0.000000	2	0.000000
G_8:8	G_4:4	0.000000	3	0.000000	0.000000	3	0.000000	5.90000	3	.26458	0.000000	3	0.000000
G_8:8	G_5:5	0.000000	6	0.000000	0.000000	6	0.000000	6.48333	6	1.76796	0.000000	6	0.000000
G_8:8	G_6:6	.486652	23	.554151	.043478	23	.072777	19.44783	23	9.08169	2.531088	23	2.494794
G_8:8	G_7:7	.700100	10	.225404	.600000	10	.182574	16.12000	10	6.98217	4.783373	10	2.351773
G_8:8	G_8:8	.836962	53	.472809	.115094	53	.344404	16.32642	53	8.63179	5.256902	53	2.991081
G_8:8	G_9:9	.121069	29	.191441	.475862	29	1.039456	8.22069	29	4.27128	1.290123	29	1.514892
G_8:8	G_10:10	.351800	5	.482339	.220000	5	.303315	15.58000	5	6.46390	1.803474	5	2.469889
G_8:8	G_11:11	.293706	17	.407089	.164706	17	.325847	14.74118	17	10.31116	1.987643	17	2.187039
G_8:8	G_12:12	.594828	29	.296549	.093103	29	.160203	12.52759	29	4.95046	4.656156	29	.614488
G_8:8	G_13:13	.353909	11	.471692	.045455	11	.103573	12.11818	11	8.69273	2.427677	11	2.342262
G_9:9	G_1:0	.070375	8	.081386	.050000	8	.075593	5.17500	8	1.03337	1.364851	8	1.492289
G_9:9	G_2:1	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_9:9	G_3:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_9:9	G_4:4	0.000000	3	0.000000	0.000000	3	0.000000	8.33333	3	2.55408	0.000000	3	0.000000
G_9:9	G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_9:9	G_6:6	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_9:9	G_7:7	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_9:9	G_8:8	.905024	41	.541099	.034146	41	.123713	18.11707	41	12.31527	5.576950	41	2.324112
G_9:9	G_9:9	.204000	1	0.000000	.800000	1	0.000000	7.80000	1	0.00000	2.615385	1	0.000000
G_9:9	G_10:10	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_9:9	G_11:11	0.000000	4	0.000000	0.000000	4	0.000000	44.97500	4	34.74194	0.000000	4	0.000000
G_9:9	G_12:12	.476500	8	.143858	.025000	8	.070711	10.32500	8	2.58056	4.561334	8	.381530
G_9:9	G_13:13	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_10:10	G_1:0	.069400	10	.091603	.030000	10	.048305	6.54000	10	1.83799	1.133005	10	1.464871
G_10:10	G_2:1	0.000000	1	0.000000	0.000000	1	0.000000	14.00000	1	0.00000	0.000000	1	0.000000
G_10:10	G_3:2	0.000000	3	0.000000	0.000000	3	0.000000	6.46667	3	1.66233	0.000000	3	0.000000
G_10:10	G_4:4	0.000000	7	0.000000	0.000000	7	0.000000	11.04286	7	5.81001	0.000000	7	0.000000
G_10:10	G_5:5	0.000000	7	0.000000	0.000000	7	0.000000	20.11429	7	21.32224	0.000000	7	0.000000
G_10:10	G_6:6	1.036333	12	.759607	.050000	12	.100000	31.70000	12	25.00963	4.486991	12	2.726116
G_10:10	G_7:7	.779778	9	.208613	.711111	9	.321887	13.55556	9	4.84126	6.249011	9	2.130744
G_10:10	G_8:8	.780762	42	.558969	.150000	42	.262493	15.83810	42	10.35292	4.969968	42	2.295809
G_10:10	G_9:9	.138292	24	.224740	.770833	24	1.298989	6.77083	24	2.72708	2.081694	24	3.454066
G_10:10	G_10:10	.438333	9	.367983	.255556	9	.576869	15.91111	9	7.41138	2.679531	9	2.245680
G_10:10	G_11:11	.197565	23	.289927	.286957	23	.577065	17.80000	23	19.57979	1.737903	23	2.034457
G_10:10	G_12:12	.400316	19	.127610	.121053	19	.201602	9.17368	19	2.67952	4.351656	19	.505244

STAT. BASIC STATS

Summary Table of Means (agdat1.sta)
N=2009 (Casewise deletion of missing data)

NMONTH	USGS	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_10:10	G_13:13	.392727	11	.212524	.100000	11	.148324	9.39091	11	3.80774	4.308114	11	1.546825
G_11:11	G_1:0	.044800	10	.072169	.020000	10	.042164	5.15000	10	.99582	.849240	10	1.370738
G_11:11	G_2:1	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_11:11	G_3:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_11:11	G_4:4	0.000000	6	0.000000	0.000000	6	0.000000	10.90000	6	4.86045	0.000000	6	0.000000
G_11:11	G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_11:11	G_6:6	1.168000	7	1.116364	.071429	7	.149603	41.11429	7	14.33927	2.585374	7	2.479515
G_11:11	G_7:7	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_11:11	G_8:8	.567133	30	.184225	.216667	30	.473493	12.29667	30	4.97244	4.823032	30	.746415
G_11:11	G_9:9	.085000	1	0.000000	0.000000	1	0.000000	2.60000	1	0.00000	3.269231	1	0.000000
G_11:11	G_10:10	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_11:11	G_11:11	0.000000	6	0.000000	0.000000	6	0.000000	39.83333	6	26.82101	0.000000	6	0.000000
G_11:11	G_12:12	.618500	12	.359866	.016667	12	.057735	15.10833	12	7.44623	4.000322	12	1.451197
G_11:11	G_13:13	0.000000	1	0.000000	0.000000	1	0.000000	7.50000	1	0.00000	0.000000	1	0.000000
G_12:12	G_1:0	.037286	7	.063866	.014286	7	.037796	5.40000	7	1.20968	.705460	7	1.205530
G_12:12	G_2:1	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_12:12	G_3:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_12:12	G_4:4	0.000000	6	0.000000	0.000000	6	0.000000	13.66667	6	1.86190	0.000000	6	0.000000
G_12:12	G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_12:12	G_6:6	.262727	11	.606895	0.000000	11	0.000000	48.75455	11	17.43269	.819554	11	1.823526
G_12:12	G_7:7	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_12:12	G_8:8	.790318	22	.381833	.172727	22	.374397	21.38182	22	5.78064	3.749907	22	1.603247
G_12:12	G_9:9	.071000	2	.009899	.600000	2	0.000000	3.65000	2	.35355	1.967572	2	.461806
G_12:12	G_10:10	0.000000	3	0.000000	0.000000	3	0.000000	20.03333	3	12.71233	0.000000	3	0.000000
G_12:12	G_11:11	0.000000	15	0.000000	0.000000	15	0.000000	36.16667	15	26.85691	0.000000	15	0.000000
G_12:12	G_12:12	1.491056	18	.628263	.033333	18	.097014	33.37778	18	14.86071	4.511343	18	.404237
G_12:12	G_13:13	0.000000	4	0.000000	0.000000	4	0.000000	9.92500	4	2.41299	0.000000	4	0.000000
All Groups		.541799	2009	.626005	.107715	2009	.341320	18.33171	2009	14.86532	2.826013	2009	2.421303

Appendix B. Table 2. Water Quality Data for Modeling Organic Carbon Distribution in the Delta by Area and Month

UVA-254nm values, bromide and DOC concentrations (mg/l), and specific absorbance (UVA-254nm x 100/DOC)
Results are grouped by designated USGS aggregated area (USGS, 1997) for each calendar month

USGS = There were 13 areas and the areas are designated by number following colon (areas 0,1,2,4,...)
NMONTH = Numeric calendar month (Jan = 1, Dec = 12)
Mean = Computed arithmetic mean
N = Number of samples
Std. Dv. = Standard deviation

STAT. BASIC STATS — Summary Table of Means (agdat1.sta) N=2009 (Casewise deletion of missing data)

USGS	NMONTH	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_1:0	G_1:1	.012750	8	.036062	0.000000	8	0.000000	5.86250	8	2.17054	.310976	8	.879572
G_1:0	G_2:2	.118500	12	.117372	.016667	12	.038925	5.51667	12	1.76884	1.924144	12	1.569926
G_1:0	G_3:3	.102077	13	.087622	0.000000	13	0.000000	5.39231	13	2.58665	1.854198	13	1.345582
G_1:0	G_4:4	.057100	10	.063173	.020000	10	.042164	4.36000	10	1.00576	1.250389	10	1.326615
G_1:0	G_5:5	.061875	8	.066443	.025000	8	.046291	4.47500	8	.61586	1.297040	8	1.386807
G_1:0	G_6:6	.074556	9	.092991	.033333	9	.050000	5.73333	9	.62048	1.314572	9	1.615995
G_1:0	G_7:7	.100600	10	.092994	.030000	10	.048305	5.41000	10	1.15802	1.846140	10	1.730285
G_1:0	G_8:8	.068571	7	.065335	.042857	7	.053452	4.75714	7	.70204	1.484918	7	1.390173
G_1:0	G_9:9	.070375	8	.081386	.050000	8	.075593	5.17500	8	1.03337	1.364851	8	1.492289
G_1:0	G_10:10	.069400	10	.091603	.030000	10	.048305	6.54000	10	1.83799	1.133005	10	1.464871
G_1:0	G_11:11	.044800	10	.072169	.020000	10	.042164	5.15000	10	.99582	.849240	10	1.370738
G_1:0	G_12:12	.037286	7	.063866	.014286	7	.037796	5.40000	7	1.20968	.705460	7	1.205530
G_2:1	G_1:1	0.000000	1	0.000000	0.000000	1	0.000000	24.00000	1	0.00000	0.000000	1	0.000000
G_2:1	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_2:1	G_3:3	0.000000	3	0.000000	0.000000	3	0.000000	11.96667	3	8.77515	0.000000	3	0.000000
G_2:1	G_4:4	0.000000	1	0.000000	0.000000	1	0.000000	10.00000	1	0.00000	0.000000	1	0.000000
G_2:1	G_5:5	0.000000	1	0.000000	0.000000	1	0.000000	4.20000	1	0.00000	0.000000	1	0.000000
G_2:1	G_6:6	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_2:1	G_7:7	0.000000	1	0.000000	0.000000	1	0.000000	3.00000	1	0.00000	0.000000	1	0.000000
G_2:1	G_8:8	0.000000	1	0.000000	0.000000	1	0.000000	3.40000	1	0.00000	0.000000	1	0.000000
G_2:1	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_2:1	G_10:10	0.000000	1	0.000000	0.000000	1	0.000000	14.00000	1	0.00000	0.000000	1	0.000000
G_2:1	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_2:1	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_3:2	G_1:1	0.000000	4	0.000000	0.000000	4	0.000000	11.30000	4	8.93458	0.000000	4	0.000000
G_3:2	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_3:2	G_3:3	0.000000	6	0.000000	0.000000	6	0.000000	8.60000	6	5.41147	0.000000	6	0.000000
G_3:2	G_4:4	0.000000	6	0.000000	0.000000	6	0.000000	8.31667	6	3.70590	0.000000	6	0.000000
G_3:2	G_5:5	0.000000	4	0.000000	0.000000	4	0.000000	6.92500	4	2.22017	0.000000	4	0.000000
G_3:2	G_6:6	0.000000	3	0.000000	0.000000	3	0.000000	4.36667	3	2.89367	0.000000	3	0.000000
G_3:2	G_7:7	0.000000	3	0.000000	0.000000	3	0.000000	4.13333	3	1.19304	0.000000	3	0.000000
G_3:2	G_8:8	0.000000	2	0.000000	0.000000	2	0.000000	2.70000	2	.56569	0.000000	2	0.000000
G_3:2	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000

STAT. BASIC STATS

Summary Table of Means (agdat1.sta)
N=2009 (Casewise deletion of missing data)

USGS	NMONTH	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_3:2	G_10:10	0.000000	3	0.000000	0.000000	3	0.000000	6.46667	3	1.66233	0.000000	3	0.000000
G_3:2	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_3:2	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_4:4	G_1:1	0.000000	5	0.000000	0.000000	5	0.000000	20.40000	5	8.32466	0.000000	5	0.000000
G_4:4	G_2:2	0.000000	5	0.000000	0.000000	5	0.000000	18.60000	5	1.51658	0.000000	5	0.000000
G_4:4	G_3:3	0.000000	8	0.000000	0.000000	8	0.000000	16.17500	8	11.11174	0.000000	8	0.000000
G_4:4	G_4:4	0.000000	5	0.000000	0.000000	5	0.000000	9.02000	5	2.51436	0.000000	5	0.000000
G_4:4	G_5:5	0.000000	6	0.000000	0.000000	6	0.000000	6.48333	6	1.46481	0.000000	6	0.000000
G_4:4	G_6:6	0.000000	7	0.000000	0.000000	7	0.000000	6.08571	7	.69864	0.000000	7	0.000000
G_4:4	G_7:7	0.000000	3	0.000000	0.000000	3	0.000000	5.63333	3	3.67469	0.000000	3	0.000000
G_4:4	G_8:8	0.000000	3	0.000000	0.000000	3	0.000000	5.90000	3	.26458	0.000000	3	0.000000
G_4:4	G_9:9	0.000000	3	0.000000	0.000000	3	0.000000	8.33333	3	2.55408	0.000000	3	0.000000
G_4:4	G_10:10	0.000000	7	0.000000	0.000000	7	0.000000	11.04286	7	5.81001	0.000000	7	0.000000
G_4:4	G_11:11	0.000000	6	0.000000	0.000000	6	0.000000	10.90000	6	4.86045	0.000000	6	0.000000
G_4:4	G_12:12	0.000000	6	0.000000	0.000000	6	0.000000	13.66667	6	1.86190	0.000000	6	0.000000
G_5:5	G_1:1	0.000000	13	0.000000	0.000000	13	0.000000	13.28462	13	13.32472	0.000000	13	0.000000
G_5:5	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_5:5	G_3:3	0.000000	11	0.000000	0.000000	11	0.000000	18.30000	11	16.02323	0.000000	11	0.000000
G_5:5	G_4:4	0.000000	11	0.000000	0.000000	11	0.000000	13.41818	11	12.73592	0.000000	11	0.000000
G_5:5	G_5:5	0.000000	7	0.000000	0.000000	7	0.000000	17.90000	7	18.73944	0.000000	7	0.000000
G_5:5	G_6:6	0.000000	8	0.000000	0.000000	8	0.000000	4.98750	8	1.79399	0.000000	8	0.000000
G_5:5	G_7:7	0.000000	7	0.000000	0.000000	7	0.000000	6.00000	7	3.55668	0.000000	7	0.000000
G_5:5	G_8:8	0.000000	6	0.000000	0.000000	6	0.000000	6.48333	6	1.76796	0.000000	6	0.000000
G_5:5	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_5:5	G_10:10	0.000000	7	0.000000	0.000000	7	0.000000	20.11429	7	21.32224	0.000000	7	0.000000
G_5:5	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_5:5	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_6:6	G_1:1	.931125	24	1.199734	.075000	24	.142188	45.29167	24	21.39591	2.025578	24	2.279934
G_6:6	G_2:2	.470000	7	.804550	.057143	7	.151186	45.98571	7	13.42764	1.152458	7	1.970656
G_6:6	G_3:3	.669333	12	1.092627	.183333	12	.332575	36.68333	12	17.30658	1.460605	12	2.186108
G_6:6	G_4:4	1.169471	17	.881917	.217647	17	.318660	31.78235	17	14.26829	3.523469	17	2.044395
G_6:6	G_5:5	1.306333	6	1.352157	.216667	6	.183485	28.88333	6	20.28708	3.428081	6	2.682512
G_6:6	G_6:6	.506542	24	.773650	.050000	24	.093250	21.17500	24	12.57880	2.303420	24	2.400031
G_6:6	G_7:7	.457960	25	.526476	.024000	25	.043589	18.15200	25	10.79425	2.995446	25	2.514221
G_6:6	G_8:8	.486652	23	.554151	.043478	23	.072777	19.44783	23	9.08169	2.531088	23	2.494794
G_6:6	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_6:6	G_10:10	1.036333	12	.759607	.050000	12	.100000	31.70000	12	25.00963	4.486991	12	2.726116
G_6:6	G_11:11	1.168000	7	1.116364	.071429	7	.149603	41.11429	7	14.33927	2.585374	7	2.479515
G_6:6	G_12:12	.262727	11	.606895	0.000000	11	0.000000	48.75455	11	17.43269	.819554	11	1.823526
G_7:7	G_1:1	.731769	13	.558196	.107692	13	.213937	20.75385	13	8.83955	3.402567	13	1.983324
G_7:7	G_2:2	0.000000	3	0.000000	0.000000	3	0.000000	22.33333	3	2.51661	0.000000	3	0.000000
G_7:7	G_3:3	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_7:7	G_4:4	.884647	17	.315420	.288235	17	.335191	20.75882	17	6.20041	4.217592	17	.686253
G_7:7	G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_7:7	G_6:6	.604625	8	.241505	.287500	8	.331393	12.25000	8	5.18487	5.255371	8	2.696476
G_7:7	G_7:7	.620818	11	.257956	.427273	11	.346672	12.85455	11	5.52854	5.131456	11	2.284389
G_7:7	G_8:8	.700100	10	.225404	.600000	10	.182574	16.12000	10	6.98217	4.783373	10	2.351773
G_7:7	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_7:7	G_10:10	.779778	9	.208613	.711111	9	.321887	13.55556	9	4.84126	6.249011	9	2.130744
G_7:7	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000

STAT. BASIC STATS

Summary Table of Means (agdat1.sta)
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USGS	NMONTH	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_7:7	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_8:8	G_1:1	1.019167	42	.701119	.166667	42	.292730	33.32143	42	8.19689	2.994170	42	1.951183
G_8:8	G_2:2	1.318732	41	.711804	.087805	41	.259032	34.85366	41	9.34714	3.716716	41	1.612433
G_8:8	G_3:3	1.431688	48	.781919	.054167	48	.240530	33.50000	48	14.75664	4.141445	48	1.284521
G_8:8	G_4:4	.838159	69	.482575	.086957	69	.187799	20.59130	69	8.62380	4.072175	69	2.039202
G_8:8	G_5:5	.764848	46	.286319	.065217	46	.184050	17.29348	46	4.53276	4.519752	46	1.577367
G_8:8	G_6:6	.659643	56	.465197	.083929	56	.213010	13.95000	56	8.29703	4.665311	56	1.493339
G_8:8	G_7:7	.716423	71	.451349	.084507	71	.173739	15.31972	71	7.41970	4.631981	71	1.376256
G_8:8	G_8:8	.836962	53	.472809	.115094	53	.344404	16.32642	53	8.63179	5.256902	53	2.991081
G_8:8	G_9:9	.905024	41	.541099	.034146	41	.123713	18.11707	41	12.31527	5.576950	41	2.324112
G_8:8	G_10:10	.780762	42	.558969	.150000	42	.262493	15.83810	42	10.35292	4.969968	42	2.295809
G_8:8	G_11:11	.567133	30	.184225	.216667	30	.473493	12.29667	30	4.97244	4.823032	30	.746415
G_8:8	G_12:12	.790318	22	.381833	.172727	22	.374397	21.38182	22	5.78064	3.749907	22	1.603247
G_9:9	G_1:1	.033818	33	.086631	.290909	33	.969008	5.91515	33	3.90673	.694492	33	1.419207
G_9:9	G_2:2	.049500	4	.099000	.275000	4	.550000	7.02500	4	2.05487	1.100000	4	2.200000
G_9:9	G_3:3	0.000000	20	0.000000	0.000000	20	0.000000	9.14000	20	7.85751	0.000000	20	0.000000
G_9:9	G_4:4	.031690	29	.069221	.089655	29	.360897	7.44483	29	3.58714	.517138	29	1.071030
G_9:9	G_5:5	.028077	13	.055666	.107692	13	.210006	7.04615	13	4.09463	.610702	13	1.165147
G_9:9	G_6:6	.131200	20	.131084	.380000	20	.576377	6.54500	20	2.25353	1.744912	20	1.516161
G_9:9	G_7:7	.134250	24	.125857	.329167	24	.429842	7.77917	24	2.19227	1.620262	24	1.454800
G_9:9	G_8:8	.121069	29	.191441	.475862	29	1.039456	8.22069	29	4.27128	1.290123	29	1.514892
G_9:9	G_9:9	.204000	1	0.000000	.800000	1	0.000000	7.80000	1	0.00000	2.615385	1	0.000000
G_9:9	G_10:10	.138292	24	.224740	.770833	24	1.298989	6.77083	24	2.72708	2.081694	24	3.454066
G_9:9	G_11:11	.085000	1	0.000000	0.000000	1	0.000000	2.60000	1	0.00000	3.269231	1	0.000000
G_9:9	G_12:12	.071000	2	.009899	.600000	2	0.000000	3.65000	2	.35355	1.967572	2	.461806
G_10:10	G_1:1	.351429	14	.584464	.128571	14	.246291	27.71429	14	11.77781	1.177854	14	1.940413
G_10:10	G_2:2	0.000000	4	0.000000	0.000000	4	0.000000	20.75000	4	4.11299	0.000000	4	0.000000
G_10:10	G_3:3	0.000000	6	0.000000	0.000000	6	0.000000	13.48333	6	6.94620	0.000000	6	0.000000
G_10:10	G_4:4	.227300	10	.298958	.220000	10	.355278	11.65000	10	5.40231	1.502481	10	1.956049
G_10:10	G_5:5	0.000000	3	0.000000	0.000000	3	0.000000	15.83333	3	8.46069	0.000000	3	0.000000
G_10:10	G_6:6	.087000	4	.174000	.075000	4	.150000	11.95000	4	2.66020	.988636	4	1.977273
G_10:10	G_7:7	.234750	4	.469500	.100000	4	.200000	19.75000	4	5.73730	1.173750	4	2.347500
G_10:10	G_8:8	.351800	5	.482339	.220000	5	.303315	15.58000	5	6.46390	1.803474	5	2.469889
G_10:10	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_10:10	G_10:10	.438333	9	.367983	.255556	9	.576869	15.91111	9	7.41138	2.679531	9	2.245680
G_10:10	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_10:10	G_12:12	0.000000	3	0.000000	0.000000	3	0.000000	20.03333	3	12.71233	0.000000	3	0.000000
G_11:11	G_1:1	.132000	33	.329572	.048485	33	.134910	27.17879	33	30.96486	.913245	33	1.662807
G_11:11	G_2:2	0.000000	16	0.000000	0.000000	16	0.000000	32.75000	16	28.73718	0.000000	16	0.000000
G_11:11	G_3:3	.048500	20	.216899	.135000	20	.603738	23.55000	20	22.22032	.210870	20	.943037
G_11:11	G_4:4	.174367	30	.388508	.113333	30	.379413	17.77000	30	17.35283	1.238767	30	1.989564
G_11:11	G_5:5	.066933	15	.259232	0.000000	15	0.000000	30.32667	15	27.27682	.278889	15	1.080132
G_11:11	G_6:6	.320455	22	.572334	.227273	22	.468210	17.37727	22	12.56821	1.662404	22	2.052510
G_11:11	G_7:7	.232091	22	.316590	.081818	22	.156255	18.80455	22	16.80441	1.960375	22	2.223479
G_11:11	G_8:8	.293706	17	.407089	.164706	17	.325847	14.74118	17	10.31116	1.987643	17	2.187039
G_11:11	G_9:9	0.000000	4	0.000000	0.000000	4	0.000000	44.97500	4	34.74194	0.000000	4	0.000000

STAT. BASIC STATS

Summary Table of Means (agdat1.sta)
N=2009 (Casewise deletion of missing data)

USGS	NMONTH	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_11:11	G_10:10	.197565	23	.289927	.286957	23	.577065	17.80000	23	19.57979	1.737903	23	2.034457
G_11:11	G_11:11	0.000000	6	0.000000	0.000000	6	0.000000	39.83333	6	26.82101	0.000000	6	0.000000
G_11:11	G_12:12	0.000000	15	0.000000	0.000000	15	0.000000	36.16667	15	26.85691	0.000000	15	0.000000
G_12:12	G_1:1	1.536651	43	.718572	.046512	43	.112014	35.60000	43	13.46298	4.126178	43	1.226718
G_12:12	G_2:2	1.525500	34	.529506	.017647	34	.075761	34.76765	34	9.88996	4.233739	34	1.117575
G_12:12	G_3:3	1.210129	31	.374874	0.000000	31	0.000000	27.16452	31	8.30360	4.467374	31	.929323
G_12:12	G_4:4	.924326	46	.325561	.045652	46	.098221	20.28478	46	6.24670	4.538652	46	.682072
G_12:12	G_5:5	.698500	36	.226222	.005556	36	.033333	15.92222	36	4.40144	4.378550	36	.587687
G_12:12	G_6:6	.545975	40	.211136	.042500	40	.093060	12.07500	40	3.72116	4.476928	40	.642352
G_12:12	G_7:7	.554342	38	.259414	.060526	38	.128483	11.54737	38	4.29020	4.690579	38	.658712
G_12:12	G_8:8	.594828	29	.296549	.093103	29	.160203	12.52759	29	4.95046	4.656156	29	.614488
G_12:12	G_9:9	.476500	8	.143858	.025000	8	.070711	10.32500	8	2.58056	4.561334	8	.381530
G_12:12	G_10:10	.400316	19	.127610	.121053	19	.201602	9.17368	19	2.67952	4.351656	19	.505244
G_12:12	G_11:11	.618500	12	.359866	.016667	12	.057735	15.10833	12	7.44623	4.000322	12	1.451197
G_12:12	G_12:12	1.491056	18	.628263	.033333	18	.097014	33.37778	18	14.86071	4.511343	18	.404237
G_13:13	G_1:1	.475500	14	.505900	.078571	14	.136880	18.42143	14	9.79083	2.302383	14	2.073795
G_13:13	G_2:2	0.000000	2	0.000000	0.000000	2	0.000000	8.80000	2	.98995	0.000000	2	0.000000
G_13:13	G_3:3	0.000000	3	0.000000	0.000000	3	0.000000	22.00000	3	9.53939	0.000000	3	0.000000
G_13:13	G_4:4	.260500	8	.167867	.137500	8	.159799	9.81250	8	2.25986	2.982831	8	1.884545
G_13:13	G_5:5	0.000000	1	0.000000	0.000000	1	0.000000	10.00000	1	0.00000	0.000000	1	0.000000
G_13:13	G_6:6	.240846	13	.361556	.084615	13	.114354	9.84615	13	6.29942	2.260701	13	2.191016
G_13:13	G_7:7	.203250	16	.200838	.100000	16	.146059	9.15000	16	2.09157	2.287970	16	2.095130
G_13:13	G_8:8	.353909	11	.471692	.045455	11	.103573	12.11818	11	8.69273	2.427677	11	2.342262
G_13:13	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
G_13:13	G_10:10	.392727	11	.212524	.100000	11	.148324	9.39091	11	3.80774	4.308114	11	1.546825
G_13:13	G_11:11	0.000000	1	0.000000	0.000000	1	0.000000	7.50000	1	0.00000	0.000000	1	0.000000
G_13:13	G_12:12	0.000000	4	0.000000	0.000000	4	0.000000	9.92500	4	2.41299	0.000000	4	0.000000
All Groups		.541799	2009	.626005	.107715	2009	.341320	18.33171	2009	14.86532	2.826013	2009	2.421303

Appendix B. Table 3. Water Quality at Agricultural Drains in the Delta by Month

UVA-254nm values, bromide and DOC concentrations (mg/l), and specific absorbance (UVA-254nm x 100/DOC)
Results are grouped by numeric calendar month for each MWQI sampled drain in the Delta

SNAME = Abbreviated MWQI station name
NMONTH = numeric calendar month (Jan = 1, Dec = 12)
Mean = Computed arithmetic average
N = Number of samples
Std. Dv. = Standard deviation

STAT. BASIC STATS — Summary Table of Means (agdat1.sta) N=2009 (Casewise deletion of missing data)

SNAME	NMONTH	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
AGDCLIFT	G_1:1	.147667	3	.255766	1.766667	3	3.059956	7.03333	3	1.61967	1.659176	3	2.873777
AGDCLIFT	G_2:2	0.000000	2	0.000000	0.000000	2	0.000000	8.70000	2	0.00000	0.000000	2	0.000000
AGDCLIFT	G_3:3	0.000000	1	0.000000	0.000000	1	0.000000	9.10000	1	0.00000	0.000000	1	0.000000
AGDCLIFT	G_4:4	.090333	3	.156462	0.000000	3	0.000000	7.63333	3	1.76163	1.220721	3	2.114350
AGDCLIFT	G_5:5	0.000000	1	0.000000	0.000000	1	0.000000	7.60000	1	0.00000	0.000000	1	0.000000
AGDCLIFT	G_6:6	.242200	5	.151950	.760000	5	.898888	8.06000	5	1.39571	2.840700	5	1.621327
AGDCLIFT	G_7:7	.216667	3	.187905	.166667	3	.288675	7.86667	3	1.55671	2.555480	3	2.272794
AGDCLIFT	G_8:8	.729500	2	.160513	4.000000	2	0.000000	17.50000	2	9.19239	4.556250	2	1.476085
AGDCLIFT	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
AGDCLIFT	G_10:10	.539250	4	.288644	3.375000	4	.694622	7.15000	4	.75939	7.926658	4	5.320042
AGDCLIFT	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
AGDCLIFT	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
AGDEMPIR	G_1:1	.251636	11	.527122	.027273	11	.090453	59.68182	11	34.65564	1.066310	11	1.827148
AGDEMPIR	G_2:2	0.000000	8	0.000000	0.000000	8	0.000000	57.75000	8	18.31276	0.000000	8	0.000000
AGDEMPIR	G_3:3	.138571	7	.366626	.385714	7	1.020504	49.28571	7	18.46361	.602484	7	1.594024
AGDEMPIR	G_4:4	.373500	8	.693410	.250000	8	.707107	43.75000	8	13.15566	1.051192	8	1.946987
AGDEMPIR	G_5:5	.125500	8	.354968	0.000000	8	0.000000	48.75000	8	25.53849	.522917	8	1.479032
AGDEMPIR	G_6:6	.542727	11	.748291	.381818	11	.616146	26.94545	11	11.14382	1.911759	11	2.200792
AGDEMPIR	G_7:7	.304000	8	.434961	.100000	8	.192725	35.00000	8	18.13442	1.681303	8	2.335836
AGDEMPIR	G_8:8	.440667	6	.493832	.166667	6	.287518	24.11667	6	8.67881	2.244754	6	2.476612
AGDEMPIR	G_9:9	0.000000	4	0.000000	0.000000	4	0.000000	44.97500	4	34.74194	0.000000	4	0.000000
AGDEMPIR	G_10:10	.273333	9	.424834	.511111	9	.847709	33.33333	9	24.59675	1.331303	9	1.997975
AGDEMPIR	G_11:11	0.000000	6	0.000000	0.000000	6	0.000000	39.83333	6	26.82101	0.000000	6	0.000000
AGDEMPIR	G_12:12	0.000000	7	0.000000	0.000000	7	0.000000	59.28571	7	19.52532	0.000000	7	0.000000
AGDGRAND	G_1:1	0.000000	5	0.000000	0.000000	5	0.000000	20.40000	5	8.32466	0.000000	5	0.000000
AGDGRAND	G_2:2	0.000000	5	0.000000	0.000000	5	0.000000	18.60000	5	1.51658	0.000000	5	0.000000
AGDGRAND	G_3:3	0.000000	8	0.000000	0.000000	8	0.000000	16.17500	8	11.11174	0.000000	8	0.000000
AGDGRAND	G_4:4	0.000000	5	0.000000	0.000000	5	0.000000	9.02000	5	2.51436	0.000000	5	0.000000
AGDGRAND	G_5:5	0.000000	6	0.000000	0.000000	6	0.000000	6.48333	6	1.46481	0.000000	6	0.000000
AGDGRAND	G_6:6	0.000000	7	0.000000	0.000000	7	0.000000	6.08571	7	.69864	0.000000	7	0.000000
AGDGRAND	G_7:7	0.000000	3	0.000000	0.000000	3	0.000000	5.63333	3	3.67469	0.000000	3	0.000000
AGDGRAND	G_8:8	0.000000	3	0.000000	0.000000	3	0.000000	5.90000	3	.26458	0.000000	3	0.000000
AGDGRAND	G_9:9	0.000000	3	0.000000	0.000000	3	0.000000	8.33333	3	2.55408	0.000000	3	0.000000
AGDGRAND	G_10:10	0.000000	7	0.000000	0.000000	7	0.000000	11.04286	7	5.81001	0.000000	7	0.000000
AGDGRAND	G_11:11	0.000000	6	0.000000	0.000000	6	0.000000	10.90000	6	4.86045	0.000000	6	0.000000
AGDGRAND	G_12:12	0.000000	6	0.000000	0.000000	6	0.000000	13.66667	6	1.86190	0.000000	6	0.000000

STAT. BASIC STATS

Summary Table of Means (agdat1.sta)
N=2009 (Casewise deletion of missing data)

SNAME	NMONTH	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
AGDTYLER	G_1:1	0.000000	1	0.000000	0.000000	1	0.000000	20.00000	1	0.00000	0.000000	1	0.000000
AGDTYLER	G_2:2	0.000000	1	0.000000	0.000000	1	0.000000	24.00000	1	0.00000	0.000000	1	0.000000
AGDTYLER	G_3:3	0.000000	1	0.000000	0.000000	1	0.000000	36.00000	1	0.00000	0.000000	1	0.000000
AGDTYLER	G_4:4	0.000000	1	0.000000	0.000000	1	0.000000	7.50000	1	0.00000	0.000000	1	0.000000
AGDTYLER	G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
AGDTYLER	G_6:6	0.000000	2	0.000000	0.000000	2	0.000000	7.00000	2	.84853	0.000000	2	0.000000
AGDTYLER	G_7:7	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
AGDTYLER	G_8:8	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
AGDTYLER	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
AGDTYLER	G_10:10	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
AGDTYLER	G_11:11	0.000000	1	0.000000	0.000000	1	0.000000	26.00000	1	0.00000	0.000000	1	0.000000
AGDTYLER	G_12:12	0.000000	1	0.000000	0.000000	1	0.000000	23.00000	1	0.00000	0.000000	1	0.000000
BACON01	G_1:1	.664875	8	.370734	.137500	8	.159799	17.46250	8	7.22969	3.705846	8	1.580255
BACON01	G_2:2	.496750	4	.335503	.150000	4	.191485	14.90000	4	3.29343	3.000834	4	2.013836
BACON01	G_3:3	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
BACON01	G_4:4	.584500	2	.154856	.150000	2	.212132	11.00000	2	1.27279	5.267452	2	.798297
BACON01	G_5:5	.455000	1	0.000000	.200000	1	0.000000	9.20000	1	0.00000	4.945652	1	0.000000
BACON01	G_6:6	.338400	5	.072728	.080000	5	.083666	8.00000	5	1.30000	4.269100	5	.801021
BACON01	G_7:7	.402600	5	.261455	.240000	5	.194936	8.92000	5	5.62779	4.438151	5	.281111
BACON01	G_8:8	.471000	3	.261368	.166667	3	.208167	10.03333	3	5.23482	4.595780	3	.284819
BACON01	G_9:9	.651500	2	.019092	.100000	2	.141421	13.55000	2	1.76777	4.840118	2	.490554
BACON01	G_10:10	.281667	3	.198619	.333333	3	.351188	6.53333	3	4.13078	4.192452	3	.301656
BACON01	G_11:11	.540000	1	0.000000	.200000	1	0.000000	8.40000	1	0.00000	6.428571	1	0.000000
BACON01	G_12:12	.588250	4	.228446	.150000	4	.173205	13.50000	4	6.12699	4.474876	4	.376940
BACON02	G_1:1	.242000	3	.419156	.100000	3	.173205	18.43333	3	.75056	1.253886	3	2.171794
BACON02	G_2:2	0.000000	1	0.000000	0.000000	1	0.000000	19.00000	1	0.00000	0.000000	1	0.000000
BACON02	G_3:3	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
BACON02	G_4:4	.410000	4	.112244	.125000	4	.095743	10.95000	4	4.13239	3.886694	4	.577077
BACON02	G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
BACON02	G_6:6	.260500	2	.017678	.100000	2	.141421	6.45000	2	.49497	4.040140	2	.035969
BACON02	G_7:7	.238333	3	.030925	.200000	3	.173205	5.56667	3	.68069	4.278830	3	.042687
BACON02	G_8:8	.325500	4	.069726	.325000	4	.170783	7.20000	4	1.54272	4.527865	4	.202124
BACON02	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
BACON02	G_10:10	.382000	2	.137179	.350000	2	.070711	9.30000	2	3.81838	4.154924	2	.230881
BACON02	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
BACON02	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
BOULDIN1	G_1:1	.311250	8	.880348	.037500	8	.106066	41.25000	8	19.31506	.723837	8	2.047321
BOULDIN1	G_2:2	0.000000	3	0.000000	0.000000	3	0.000000	57.00000	3	8.66025	0.000000	3	0.000000
BOULDIN1	G_3:3	0.000000	2	0.000000	0.000000	2	0.000000	38.50000	2	9.19239	0.000000	2	0.000000
BOULDIN1	G_4:4	.815000	4	.563235	.075000	4	.150000	27.70000	4	9.04581	3.457630	4	2.341044
BOULDIN1	G_5:5	0.000000	1	0.000000	0.000000	1	0.000000	8.80000	1	0.00000	0.000000	1	0.000000
BOULDIN1	G_6:6	.287625	8	.514763	.012500	8	.035355	18.60000	8	7.30870	1.540589	8	2.193878
BOULDIN1	G_7:7	.337125	8	.481095	.025000	8	.046291	23.47500	8	13.28068	1.862852	8	2.574740
BOULDIN1	G_8:8	.375800	10	.412521	.040000	10	.051640	15.98000	10	6.08400	2.280432	10	2.414825
BOULDIN1	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
BOULDIN1	G_10:10	1.050333	3	1.275747	.166667	3	.152753	57.66667	3	40.10403	2.768477	3	2.399806
BOULDIN1	G_11:11	0.000000	1	0.000000	0.000000	1	0.000000	47.00000	1	0.00000	0.000000	1	0.000000
BOULDIN1	G_12:12	0.000000	4	0.000000	0.000000	4	0.000000	48.00000	4	6.68331	0.000000	4	0.000000
BOULDIN2	G_1:1	.797875	8	1.412296	0.000000	8	0.000000	51.05000	8	23.38736	1.645761	8	2.274705

STAT. BASIC STATS

Summary Table of Means (agdat1.sta)
N=2009 (Casewise deletion of missing data)

SNAME	NMONTH	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
BOULDIN2	G_2:2	0.000000	1	0.000000	0.000000	1	0.000000	45.00000	1	0.00000	0.000000	1	0.000000
BOULDIN2	G_3:3	0.000000	2	0.000000	0.000000	2	0.000000	53.00000	2	2.82843	0.000000	2	0.000000
BOULDIN2	G_4:4	1.129800	5	1.054519	.120000	5	.130384	35.20000	5	9.09395	2.959015	5	2.703773
BOULDIN2	G_5:5	0.000000	1	0.000000	0.000000	1	0.000000	18.00000	1	0.00000	0.000000	1	0.000000
BOULDIN2	G_6:6	.154167	6	.377630	.016667	6	.040825	28.50000	6	6.89202	.700758	6	1.716498
BOULDIN2	G_7:7	.228714	7	.400918	.028571	7	.048795	18.20000	7	5.55098	1.446091	7	2.474067
BOULDIN2	G_8:8	.335000	10	.471023	.010000	10	.031623	20.75000	10	10.34486	2.012497	10	2.602461
BOULDIN2	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
BOULDIN2	G_10:10	0.000000	1	0.000000	0.000000	1	0.000000	39.00000	1	0.00000	0.000000	1	0.000000
BOULDIN2	G_11:11	0.000000	1	0.000000	0.000000	1	0.000000	27.00000	1	0.00000	0.000000	1	0.000000
BOULDIN2	G_12:12	0.000000	4	0.000000	0.000000	4	0.000000	64.25000	4	13.96126	0.000000	4	0.000000
BRANNANP	G_1:1	.398059	17	.671343	.117647	17	.209867	31.20000	17	10.76685	1.308590	17	2.097649
BRANNANP	G_2:2	0.000000	4	0.000000	0.000000	4	0.000000	28.50000	4	10.24695	0.000000	4	0.000000
BRANNANP	G_3:3	0.000000	4	0.000000	0.000000	4	0.000000	20.50000	4	7.50555	0.000000	4	0.000000
BRANNANP	G_4:4	.600773	22	.612822	.150000	22	.211007	19.56364	22	9.42537	3.276300	22	3.366971
BRANNANP	G_5:5	0.000000	4	0.000000	0.000000	4	0.000000	18.02500	4	9.16892	0.000000	4	0.000000
BRANNANP	G_6:6	.618625	16	.492872	.131250	16	.199060	15.90625	16	6.85920	3.398429	16	2.119962
BRANNANP	G_7:7	.626714	14	.578755	.092857	14	.143925	16.87857	14	7.51063	3.537385	14	2.345268
BRANNANP	G_8:8	.613167	12	.567831	.158333	12	.188092	10.95000	12	4.39597	5.012746	12	4.832016
BRANNANP	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
BRANNANP	G_10:10	.709500	12	.708876	.275000	12	.295804	14.75833	12	9.54449	4.600304	12	4.288844
BRANNANP	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
BRANNANP	G_12:12	0.000000	3	0.000000	0.000000	3	0.000000	20.66667	3	8.38650	0.000000	3	0.000000
COLUSA	G_1:1	0.000000	2	0.000000	0.000000	2	0.000000	6.95000	2	2.05061	0.000000	2	0.000000
COLUSA	G_2:2	.136400	5	.018188	0.000000	5	0.000000	5.14000	5	1.00150	2.704462	5	.470372
COLUSA	G_3:3	.119375	8	.050627	0.000000	8	0.000000	4.68750	8	.88872	2.471967	8	1.064412
COLUSA	G_4:4	0.000000	1	0.000000	0.000000	1	0.000000	3.80000	1	0.00000	0.000000	1	0.000000
COLUSA	G_5:5	0.000000	1	0.000000	0.000000	1	0.000000	4.60000	1	0.00000	0.000000	1	0.000000
COLUSA	G_6:6	0.000000	1	0.000000	0.000000	1	0.000000	5.90000	1	0.00000	0.000000	1	0.000000
COLUSA	G_7:7	0.000000	1	0.000000	0.000000	1	0.000000	4.60000	1	0.00000	0.000000	1	0.000000
COLUSA	G_8:8	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
COLUSA	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
COLUSA	G_10:10	0.000000	1	0.000000	0.000000	1	0.000000	6.40000	1	0.00000	0.000000	1	0.000000
COLUSA	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
COLUSA	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
EGBERTPP	G_1:1	0.000000	4	0.000000	0.000000	4	0.000000	24.95000	4	18.56547	0.000000	4	0.000000
EGBERTPP	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
EGBERTPP	G_3:3	0.000000	4	0.000000	0.000000	4	0.000000	36.75000	4	11.32475	0.000000	4	0.000000
EGBERTPP	G_4:4	0.000000	3	0.000000	0.000000	3	0.000000	28.00000	3	18.08314	0.000000	3	0.000000
EGBERTPP	G_5:5	0.000000	2	0.000000	0.000000	2	0.000000	43.00000	2	15.55635	0.000000	2	0.000000
EGBERTPP	G_6:6	0.000000	3	0.000000	0.000000	3	0.000000	4.46667	3	.47258	0.000000	3	0.000000
EGBERTPP	G_7:7	0.000000	2	0.000000	0.000000	2	0.000000	10.60000	2	3.39411	0.000000	2	0.000000
EGBERTPP	G_8:8	0.000000	1	0.000000	0.000000	1	0.000000	7.10000	1	0.00000	0.000000	1	0.000000
EGBERTPP	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
EGBERTPP	G_10:10	0.000000	2	0.000000	0.000000	2	0.000000	40.00000	2	36.76955	0.000000	2	0.000000
EGBERTPP	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
EGBERTPP	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000

STAT. BASIC STATS

Summary Table of Means (agdat1.sta)
N=2009 (Casewise deletion of missing data)

SNAME NMONTH	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
HOLLANDO G_1:1	.580111	9	.470474	.066667	9	.200000	18.46667	9	4.21812	3.108703	9	2.358260
HOLLANDO G_2:2	0.000000	3	0.000000	0.000000	3	0.000000	22.33333	3	2.51661	0.000000	3	0.000000
HOLLANDO G_3:3	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
HOLLANDO G_4:4	.943000	12	.275993	.333333	12	.365148	22.61667	12	5.16788	4.156567	12	.591954
HOLLANDO G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
HOLLANDO G_6:6	.688333	6	.189315	.283333	6	.343026	13.43333	6	5.12744	5.716995	6	3.009856
HOLLANDO G_7:7	.691750	8	.248621	.525000	8	.345378	13.76250	8	6.18938	5.556169	8	2.543565
HOLLANDO G_8:8	.780571	7	.191684	.642857	7	.181265	17.62857	7	7.45089	5.093676	7	2.812047
HOLLANDO G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
HOLLANDO G_10:10	.732250	8	.162794	.750000	8	.320713	13.50000	8	5.17245	5.994423	8	2.126495
HOLLANDO G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
HOLLANDO G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
JERSEYPP G_1:1	1.890000	1	0.000000	1.400000	1	0.000000	35.70000	1	0.00000	5.294118	1	0.000000
JERSEYPP G_2:2	3.400000	1	0.000000	1.400000	1	0.000000	66.10000	1	0.00000	5.143722	1	0.000000
JERSEYPP G_3:3	3.076667	3	.854537	.500000	3	.866025	63.33333	3	15.42282	4.826975	3	.312099
JERSEYPP G_4:4	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
JERSEYPP G_5:5	.953000	2	.391737	.400000	2	.141421	18.35000	2	8.27315	5.245322	2	.230061
JERSEYPP G_6:6	1.722500	2	2.089501	.750000	2	.636396	32.10000	2	38.04234	5.067634	2	.503595
JERSEYPP G_7:7	1.309500	2	1.117936	.450000	2	.353553	26.75000	2	24.53661	5.141591	2	.536957
JERSEYPP G_8:8	.551333	3	.425377	.766667	3	1.327906	11.20000	3	9.38723	5.103434	3	.325969
JERSEYPP G_9:9	.770500	2	.706400	0.000000	2	0.000000	14.95000	2	13.78858	5.176619	2	.049383
JERSEYPP G_10:10	.416000	1	0.000000	0.000000	1	0.000000	8.30000	1	0.00000	5.012048	1	0.000000
JERSEYPP G_11:11	.957500	2	.300520	1.650000	2	.353553	20.70000	2	6.50538	4.524280	2	.029945
JERSEYPP G_12:12	.934500	2	.672459	1.000000	2	.707107	18.45000	2	13.93000	5.159771	2	.250936
KINGISPP G_1:1	.113429	14	.174428	.092857	14	.185904	9.01429	14	2.72760	1.314833	14	1.879141
KINGISPP G_2:2	0.000000	6	0.000000	0.000000	6	0.000000	8.88333	6	1.34524	0.000000	6	0.000000
KINGISPP G_3:3	0.000000	6	0.000000	0.000000	6	0.000000	11.28333	6	2.92193	0.000000	6	0.000000
KINGISPP G_4:4	.172538	13	.187210	.107692	13	.184669	9.00000	13	2.95860	2.211806	13	2.270398
KINGISPP G_5:5	0.000000	3	0.000000	0.000000	3	0.000000	10.86667	3	1.20554	0.000000	3	0.000000
KINGISPP G_6:6	.154286	7	.148311	.114286	7	.203540	8.17143	7	2.43359	2.220504	7	2.086274
KINGISPP G_7:7	.267400	10	.238322	.100000	10	.156347	10.74000	10	5.42939	2.967782	10	2.094545
KINGISPP G_8:8	.293625	8	.386156	.225000	8	.409704	11.38750	8	7.69071	2.540176	8	2.110215
KINGISPP G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
KINGISPP G_10:10	.208400	10	.147733	.200000	10	.282843	7.81000	10	1.29910	2.799005	10	1.952053
KINGISPP G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
KINGISPP G_12:12	0.000000	3	0.000000	0.000000	3	0.000000	21.00000	3	6.24500	0.000000	3	0.000000
KINGS IS G_1:1	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
KINGS IS G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
KINGS IS G_3:3	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
KINGS IS G_4:4	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
KINGS IS G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
KINGS IS G_6:6	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
KINGS IS G_7:7	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
KINGS IS G_8:8	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
KINGS IS G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
KINGS IS G_10:10	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
KINGS IS G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
KINGS IS G_12:12	0.000000	1	0.000000	0.000000	1	0.000000	4.20000	1	0.00000	0.000000	1	0.000000
LJONES01 G_1:1	.914000	4	.262576	.075000	4	.150000	22.87500	4	6.80949	3.998735	4	.196433
LJONES01 G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
LJONES01 G_3:3	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
LJONES01 G_4:4	.280000	1	0.000000	.300000	1	0.000000	8.50000	1	0.00000	3.294118	1	0.000000

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Summary Table of Means (agdat1.sta)
N=2009 (Casewise deletion of missing data)

SNAME	NMONTH	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
LJONES01	G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
LJONES01	G_6:6	.654000	1	0.000000	.300000	1	0.000000	16.00000	1	0.00000	4.087500	1	0.000000
LJONES01	G_7:7	.294000	3	.268743	0.000000	3	0.000000	10.43333	3	2.22785	2.666097	3	2.309555
LJONES01	G_8:8	.501000	1	0.000000	.300000	1	0.000000	12.00000	1	0.00000	4.175000	1	0.000000
LJONES01	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
LJONES01	G_10:10	.382667	3	.026558	.100000	3	.173205	7.33333	3	.92376	5.298786	3	.959825
LJONES01	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
LJONES01	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
LJONES02	G_1:1	1.096000	2	.458205	.100000	2	.141421	26.25000	2	11.66726	4.202415	2	.122292
LJONES02	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
LJONES02	G_3:3	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
LJONES02	G_4:4	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
LJONES02	G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
LJONES02	G_6:6	.789000	2	.666095	.100000	2	.141421	17.70000	2	14.28356	4.358292	2	.246189
LJONES02	G_7:7	.253333	3	.219505	.133333	3	.152753	9.26667	3	.45092	2.747696	3	2.395548
LJONES02	G_8:8	.956000	2	.854185	0.000000	2	0.000000	22.95000	2	19.86970	4.085636	2	.184668
LJONES02	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
LJONES02	G_10:10	.504333	3	.234022	.066667	3	.115470	11.06667	3	5.08363	4.539767	3	.198922
LJONES02	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
LJONES02	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
MANDEVIL	G_1:1	1.875969	32	.424278	.018750	32	.078030	41.74375	32	9.01947	4.500539	32	.426579
MANDEVIL	G_2:2	1.720000	29	.211896	0.000000	29	0.000000	38.05172	29	6.13815	4.549786	29	.276979
MANDEVIL	G_3:3	1.210129	31	.374874	0.000000	31	0.000000	27.16452	31	8.30360	4.467374	31	.929323
MANDEVIL	G_4:4	.992750	40	.287848	.032500	40	.088831	21.68250	40	5.32049	4.567408	40	.650505
MANDEVIL	G_5:5	.705457	35	.225584	0.000000	35	0.000000	16.11429	35	4.30992	4.362347	35	.588051
MANDEVIL	G_6:6	.594727	33	.198450	.033333	33	.092421	13.03333	33	3.33735	4.534889	33	.632845
MANDEVIL	G_7:7	.611233	30	.242315	.016667	30	.064772	12.58333	30	3.61692	4.773825	30	.711954
MANDEVIL	G_8:8	.660682	22	.299173	.040909	22	.109801	13.83636	22	4.65153	4.687715	22	.696562
MANDEVIL	G_9:9	.418167	6	.112102	0.000000	6	0.000000	9.25000	6	1.77511	4.468406	6	.337952
MANDEVIL	G_10:10	.428357	14	.104325	.042857	14	.108941	9.72143	14	2.06404	4.413875	14	.565138
MANDEVIL	G_11:11	.625636	11	.376539	0.000000	11	0.000000	15.71818	11	7.48877	3.779572	11	1.293571
MANDEVIL	G_12:12	1.749000	14	.426241	0.000000	14	0.000000	39.05714	14	11.12722	4.521762	14	.424702
MCCORWIL	G_1:1	0.000000	2	0.000000	0.000000	2	0.000000	5.60000	2	3.39411	0.000000	2	0.000000
MCCORWIL	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
MCCORWIL	G_3:3	0.000000	4	0.000000	0.000000	4	0.000000	5.40000	4	1.35892	0.000000	4	0.000000
MCCORWIL	G_4:4	0.000000	4	0.000000	0.000000	4	0.000000	6.22500	4	1.97210	0.000000	4	0.000000
MCCORWIL	G_5:5	0.000000	3	0.000000	0.000000	3	0.000000	5.90000	3	1.04403	0.000000	3	0.000000
MCCORWIL	G_6:6	0.000000	2	0.000000	0.000000	2	0.000000	2.70000	2	.28284	0.000000	2	0.000000
MCCORWIL	G_7:7	0.000000	2	0.000000	0.000000	2	0.000000	3.45000	2	.21213	0.000000	2	0.000000
MCCORWIL	G_8:8	0.000000	1	0.000000	0.000000	1	0.000000	2.30000	1	0.00000	0.000000	1	0.000000
MCCORWIL	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
MCCORWIL	G_10:10	0.000000	2	0.000000	0.000000	2	0.000000	5.70000	2	1.41421	0.000000	2	0.000000
MCCORWIL	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
MCCORWIL	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
MOSSDALE	G_1:1	0.000000	9	0.000000	0.000000	9	0.000000	7.73333	9	5.93212	0.000000	9	0.000000
MOSSDALE	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
MOSSDALE	G_3:3	0.000000	14	0.000000	0.000000	14	0.000000	9.87143	14	9.29900	0.000000	14	0.000000
MOSSDALE	G_4:4	0.000000	9	0.000000	0.000000	9	0.000000	8.77778	9	4.34649	0.000000	9	0.000000
MOSSDALE	G_5:5	0.000000	5	0.000000	0.000000	5	0.000000	7.96000	5	5.72957	0.000000	5	0.000000
MOSSDALE	G_6:6	0.000000	3	0.000000	0.000000	3	0.000000	4.53333	3	2.66333	0.000000	3	0.000000

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Summary Table of Means (agdat1.sta)
N=2009 (Casewise deletion of missing data)

SNAME	NMONTH	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
MOSSDALE	G_7:7	0.000000	5	0.000000	0.000000	5	0.000000	7.02000	5	1.33304	0.000000	5	0.000000
MOSSDALE	G_8:8	0.000000	10	0.000000	0.000000	10	0.000000	7.44000	10	4.08662	0.000000	10	0.000000
MOSSDALE	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
MOSSDALE	G_10:10	0.000000	7	0.000000	0.000000	7	0.000000	7.18571	7	2.45590	0.000000	7	0.000000
MOSSDALE	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
MOSSDALE	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
MOSSTRPP	G_1:1	0.000000	4	0.000000	0.000000	4	0.000000	8.40000	4	3.16544	0.000000	4	0.000000
MOSSTRPP	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
MOSSTRPP	G_3:3	0.000000	5	0.000000	0.000000	5	0.000000	7.10000	5	2.27156	0.000000	5	0.000000
MOSSTRPP	G_4:4	0.000000	2	0.000000	0.000000	2	0.000000	9.15000	2	2.61630	0.000000	2	0.000000
MOSSTRPP	G_5:5	0.000000	2	0.000000	0.000000	2	0.000000	10.80000	2	1.69706	0.000000	2	0.000000
MOSSTRPP	G_6:6	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
MOSSTRPP	G_7:7	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
MOSSTRPP	G_8:8	0.000000	2	0.000000	0.000000	2	0.000000	7.65000	2	2.47487	0.000000	2	0.000000
MOSSTRPP	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
MOSSTRPP	G_10:10	0.000000	2	0.000000	0.000000	2	0.000000	4.20000	2	1.55563	0.000000	2	0.000000
MOSSTRPP	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
NATOMAS	G_1:1	.017000	6	.041641	0.000000	6	0.000000	5.50000	6	2.26363	.414634	6	1.015642
NATOMAS	G_2:2	.105714	7	.156774	.028571	7	.048795	5.78571	7	2.20562	1.366775	7	1.871151
NATOMAS	G_3:3	.074400	5	.130351	0.000000	5	0.000000	6.52000	5	4.01335	.865769	5	1.210188
NATOMAS	G_4:4	.063444	9	.063536	.022222	9	.044096	4.42222	9	1.04616	1.389321	9	1.327685
NATOMAS	G_5:5	.070714	7	.066492	.028571	7	.048795	4.45714	7	.66297	1.482331	7	1.386843
NATOMAS	G_6:6	.083875	8	.094812	.037500	8	.051755	5.71250	8	.65995	1.478893	8	1.645227
NATOMAS	G_7:7	.111778	9	.091232	.033333	9	.050000	5.50000	9	1.19059	2.051266	9	1.701398
NATOMAS	G_8:8	.068571	7	.065335	.042857	7	.053452	4.75714	7	.70204	1.484918	7	1.390173
NATOMAS	G_9:9	.070375	8	.081386	.050000	8	.075593	5.17500	8	1.03337	1.364851	8	1.492289
NATOMAS	G_10:10	.077111	9	.093664	.033333	9	.050000	6.55556	9	1.94879	1.258895	9	1.495255
NATOMAS	G_11:11	.044800	10	.072169	.020000	10	.042164	5.15000	10	.99582	.849240	10	1.370738
NATOMAS	G_12:12	.037286	7	.063866	.014286	7	.037796	5.40000	7	1.20968	.705460	7	1.205530
NETHERLA	G_1:1	0.000000	4	0.000000	0.000000	4	0.000000	5.02500	4	1.59243	0.000000	4	0.000000
NETHERLA	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
NETHERLA	G_3:3	0.000000	4	0.000000	0.000000	4	0.000000	5.92500	4	.59090	0.000000	4	0.000000
NETHERLA	G_4:4	0.000000	4	0.000000	0.000000	4	0.000000	5.07500	4	1.97041	0.000000	4	0.000000
NETHERLA	G_5:5	0.000000	2	0.000000	0.000000	2	0.000000	4.35000	2	1.20208	0.000000	2	0.000000
NETHERLA	G_6:6	0.000000	2	0.000000	0.000000	2	0.000000	3.45000	2	1.90919	0.000000	2	0.000000
NETHERLA	G_7:7	0.000000	2	0.000000	0.000000	2	0.000000	3.15000	2	.07071	0.000000	2	0.000000
NETHERLA	G_8:8	0.000000	2	0.000000	0.000000	2	0.000000	4.80000	2	.98995	0.000000	2	0.000000
NETHERLA	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
NETHERLA	G_10:10	0.000000	2	0.000000	0.000000	2	0.000000	3.90000	2	.70711	0.000000	2	0.000000
NETHERLA	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
NETHERLA	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
ORWOODPP	G_1:1	.500000	1	0.000000	.300000	1	0.000000	13.30000	1	0.00000	3.759398	1	0.000000
ORWOODPP	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
ORWOODPP	G_3:3	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
ORWOODPP	G_4:4	.323500	2	.024749	0.000000	2	0.000000	9.25000	2	.91924	3.528013	2	.618158
ORWOODPP	G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
ORWOODPP	G_6:6	.179000	1	0.000000	.600000	1	0.000000	5.30000	1	0.00000	3.377358	1	0.000000
ORWOODPP	G_7:7	.313000	2	.025456	.200000	2	.282843	9.00000	2	.98995	3.483294	2	.100300
ORWOODPP	G_8:8	.304000	1	0.000000	.400000	1	0.000000	7.80000	1	0.00000	3.897436	1	0.000000
ORWOODPP	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
ORWOODPP	G_10:10	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000

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SNAME	NMONTH	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
MOSSTRPP	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
ORWOODPP	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
ORWOODPP	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
PALMTRPP	G_1:1	1.264000	3	.654865	.166667	3	.288675	30.10000	3	14.67345	4.165213	3	.176603
PALMTRPP	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
PALMTRPP	G_3:3	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
PALMTRPP	G_4:4	1.025333	3	.107965	.300000	3	.264575	21.00000	3	2.64575	4.921410	3	.639008
PALMTRPP	G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
PALMTRPP	G_6:6	.528000	1	0.000000	0.000000	1	0.000000	12.10000	1	0.00000	4.363636	1	0.000000
PALMTRPP	G_7:7	.669000	1	0.000000	.100000	1	0.000000	13.30000	1	0.00000	5.030075	1	0.000000
PALMTRPP	G_8:8	.616500	2	.143543	.550000	2	.212132	15.00000	2	4.24264	4.140278	2	.214096
PALMTRPP	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
PALMTRPP	G_10:10	1.160000	1	0.000000	.400000	1	0.000000	14.00000	1	0.00000	8.285714	1	0.000000
PALMTRPP	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
PALMTRPP	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
PESCADER	G_1:1	.039588	17	.058635	.252941	17	.478432	4.17059	17	1.96270	1.055336	17	1.513688
PESCADER	G_2:2	.099000	2	.140007	.550000	2	.777817	5.35000	2	1.20208	2.200000	2	3.111270
PESCADER	G_3:3	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
PESCADER	G_4:4	.043200	15	.066468	.173333	15	.494927	6.38000	15	3.35074	.755657	15	1.130669
PESCADER	G_5:5	.073000	5	.072090	.280000	5	.268328	4.52000	5	.77910	1.587824	5	1.460593
PESCADER	G_6:6	.117750	12	.103881	.316667	12	.413045	6.41667	12	2.14681	1.724562	12	1.279859
PESCADER	G_7:7	.160750	16	.107075	.462500	16	.460254	8.00000	16	2.51529	1.951240	16	1.178817
PESCADER	G_8:8	.136800	15	.075804	.386667	15	.429063	7.58000	15	2.46089	1.886739	15	1.049859
PESCADER	G_9:9	.204000	1	0.000000	.800000	1	0.000000	7.80000	1	0.00000	2.615385	1	0.000000
PESCADER	G_10:10	.105636	11	.092097	.454545	11	.615408	6.83636	11	3.40096	1.659456	11	1.089864
PESCADER	G_11:11	.085000	1	0.000000	0.000000	1	0.000000	2.60000	1	0.00000	3.269231	1	0.000000
PESCADER	G_12:12	.071000	2	.009899	.600000	2	0.000000	3.65000	2	.35355	1.967572	2	.461806
PIERSONP	G_1:1	0.000000	2	0.000000	0.000000	2	0.000000	17.00000	2	9.89949	0.000000	2	0.000000
PIERSONP	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
PIERSONP	G_3:3	0.000000	2	0.000000	0.000000	2	0.000000	15.00000	2	4.24264	0.000000	2	0.000000
PIERSONP	G_4:4	0.000000	2	0.000000	0.000000	2	0.000000	12.50000	2	2.12132	0.000000	2	0.000000
PIERSONP	G_5:5	0.000000	1	0.000000	0.000000	1	0.000000	10.00000	1	0.00000	0.000000	1	0.000000
PIERSONP	G_6:6	0.000000	1	0.000000	0.000000	1	0.000000	7.70000	1	0.00000	0.000000	1	0.000000
PIERSONP	G_7:7	0.000000	1	0.000000	0.000000	1	0.000000	5.50000	1	0.00000	0.000000	1	0.000000
PIERSONP	G_8:8	0.000000	1	0.000000	0.000000	1	0.000000	3.10000	1	0.00000	0.000000	1	0.000000
PIERSONP	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
PIERSONP	G_10:10	0.000000	1	0.000000	0.000000	1	0.000000	8.00000	1	0.00000	0.000000	1	0.000000
PIERSONP	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
PIERSONP	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
PROSPECT	G_1:1	0.000000	1	0.000000	0.000000	1	0.000000	24.00000	1	0.00000	0.000000	1	0.000000
PROSPECT	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
PROSPECT	G_3:3	0.000000	3	0.000000	0.000000	3	0.000000	11.96667	3	8.77515	0.000000	3	0.000000
PROSPECT	G_4:4	0.000000	1	0.000000	0.000000	1	0.000000	10.00000	1	0.00000	0.000000	1	0.000000
PROSPECT	G_5:5	0.000000	1	0.000000	0.000000	1	0.000000	4.20000	1	0.00000	0.000000	1	0.000000
PROSPECT	G_6:6	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
PROSPECT	G_7:7	0.000000	1	0.000000	0.000000	1	0.000000	3.00000	1	0.00000	0.000000	1	0.000000
PROSPECT	G_8:8	0.000000	1	0.000000	0.000000	1	0.000000	3.40000	1	0.00000	0.000000	1	0.000000
PROSPECT	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
PROSPECT	G_10:10	0.000000	1	0.000000	0.000000	1	0.000000	14.00000	1	0.00000	0.000000	1	0.000000

STAT. BASIC STATS

Summary Table of Means (agdat1.sta)
N=2009 (Casewise deletion of missing data)

SNAME	NMONTH	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
PROSPECT	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
PROSPECT	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
RINDGEPP	G_1:1	.410000	12	.614418	.150000	12	.261116	31.39167	12	7.78255	1.374163	12	2.038505
RINDGEPP	G_2:2	0.000000	4	0.000000	0.000000	4	0.000000	20.75000	4	4.11299	0.000000	4	0.000000
RINDGEPP	G_3:3	0.000000	4	0.000000	0.000000	4	0.000000	17.75000	4	2.75379	0.000000	4	0.000000
RINDGEPP	G_4:4	.284125	8	.310580	.275000	8	.380789	13.05000	8	5.12891	1.878102	8	2.028072
RINDGEPP	G_5:5	0.000000	2	0.000000	0.000000	2	0.000000	20.50000	2	3.53553	0.000000	2	0.000000
RINDGEPP	G_6:6	.116000	3	.200918	.100000	3	.173205	12.26667	3	3.16439	1.318182	3	2.283158
RINDGEPP	G_7:7	.313000	3	.542132	.133333	3	.230940	22.00000	3	4.35890	1.565000	3	2.710660
RINDGEPP	G_8:8	.439750	4	.508560	.275000	4	.320156	18.00000	4	4.08248	2.254342	4	2.603571
RINDGEPP	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
RINDGEPP	G_10:10	.493125	8	.351962	.287500	8	.608129	16.91250	8	7.24301	3.014472	8	2.147000
RINDGEPP	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
RINDGEPP	G_12:12	0.000000	2	0.000000	0.000000	2	0.000000	27.00000	2	5.65685	0.000000	2	0.000000
RIOBLANC	G_1:1	0.000000	4	0.000000	0.000000	4	0.000000	4.55000	4	.44347	0.000000	4	0.000000
RIOBLANC	G_2:2	0.000000	2	0.000000	0.000000	2	0.000000	4.35000	2	.07071	0.000000	2	0.000000
RIOBLANC	G_3:3	0.000000	4	0.000000	0.000000	4	0.000000	5.37500	4	.51881	0.000000	4	0.000000
RIOBLANC	G_4:4	0.000000	4	0.000000	0.000000	4	0.000000	5.60000	4	.52281	0.000000	4	0.000000
RIOBLANC	G_5:5	0.000000	2	0.000000	0.000000	2	0.000000	6.30000	2	.84853	0.000000	2	0.000000
RIOBLANC	G_6:6	0.000000	2	0.000000	0.000000	2	0.000000	5.00000	2	1.83848	0.000000	2	0.000000
RIOBLANC	G_7:7	0.000000	2	0.000000	0.000000	2	0.000000	5.60000	2	.28284	0.000000	2	0.000000
RIOBLANC	G_8:8	0.000000	1	0.000000	0.000000	1	0.000000	3.50000	1	0.00000	0.000000	1	0.000000
RIOBLANC	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
RIOBLANC	G_10:10	0.000000	2	0.000000	0.000000	2	0.000000	7.85000	2	2.61630	0.000000	2	0.000000
RIOBLANC	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
RIOBLANC	G_12:12	0.000000	2	0.000000	0.000000	2	0.000000	5.65000	2	.21213	0.000000	2	0.000000
SHIMATR	G_1:1	0.000000	2	0.000000	0.000000	2	0.000000	5.65000	2	1.06066	0.000000	2	0.000000
SHIMATR	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
SHIMATR	G_3:3	0.000000	2	0.000000	0.000000	2	0.000000	4.95000	2	.21213	0.000000	2	0.000000
SHIMATR	G_4:4	0.000000	2	0.000000	0.000000	2	0.000000	6.05000	2	.35355	0.000000	2	0.000000
SHIMATR	G_5:5	0.000000	1	0.000000	0.000000	1	0.000000	6.50000	1	0.00000	0.000000	1	0.000000
SHIMATR	G_6:6	0.000000	1	0.000000	0.000000	1	0.000000	11.00000	1	0.00000	0.000000	1	0.000000
SHIMATR	G_7:7	0.000000	1	0.000000	0.000000	1	0.000000	13.00000	1	0.00000	0.000000	1	0.000000
SHIMATR	G_8:8	0.000000	1	0.000000	0.000000	1	0.000000	5.90000	1	0.00000	0.000000	1	0.000000
SHIMATR	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
SHIMATR	G_10:10	0.000000	1	0.000000	0.000000	1	0.000000	7.90000	1	0.00000	0.000000	1	0.000000
SHIMATR	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
SHIMATR	G_12:12	0.000000	1	0.000000	0.000000	1	0.000000	6.10000	1	0.00000	0.000000	1	0.000000
STATENPP	G_1:1	1.603500	4	.174458	.275000	4	.189297	37.72500	4	4.54414	4.257619	4	.187172
STATENPP	G_2:2	1.645000	2	.134350	.200000	2	.282843	40.95000	2	5.72756	4.033604	2	.236086
STATENPP	G_3:3	1.401000	2	.790545	.750000	2	.494975	36.95000	2	21.00107	3.796869	2	.018506
STATENPP	G_4:4	1.040500	4	.555679	.600000	4	.476095	24.97500	4	15.22550	4.314899	4	.346528
STATENPP	G_5:5	.278000	1	0.000000	.200000	1	0.000000	6.30000	1	0.00000	4.412698	1	0.000000
STATENPP	G_6:6	.369500	4	.133543	.125000	4	.150000	8.27500	4	2.60432	4.414540	4	.244193
STATENPP	G_7:7	.448429	7	.212707	.014286	7	.037796	9.30000	7	4.20912	4.758212	7	.316821
STATENPP	G_8:8	1.105000	2	.427092	.100000	2	0.000000	21.00000	2	5.65685	5.175765	2	.639557
STATENPP	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
STATENPP	G_10:10	1.209000	4	.508075	0.000000	4	0.000000	20.45000	4	7.92528	6.154903	4	3.029746
STATENPP	G_11:11	2.315000	2	.021213	.200000	2	.282843	59.55000	2	.35355	3.887664	2	.058704
STATENPP	G_12:12	1.810000	1	0.000000	0.000000	1	0.000000	40.60000	1	0.00000	4.458128	1	0.000000

STAT. BASIC STATS

Summary Table of Means (agdat1.sta)
N=2009 (Casewise deletion of missing data)

SNAME	NMONTH	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
TERMPP01	G_1:1	0.000000	2	0.000000	0.000000	2	0.000000	18.50000	2	9.19239	0.000000	2	0.000000
TERMPP01	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TERMPP01	G_3:3	0.000000	1	0.000000	0.000000	1	0.000000	18.00000	1	0.00000	0.000000	1	0.000000
TERMPP01	G_4:4	0.000000	3	0.000000	0.000000	3	0.000000	7.90000	3	1.03923	0.000000	3	0.000000
TERMPP01	G_5:5	0.000000	1	0.000000	0.000000	1	0.000000	11.00000	1	0.00000	0.000000	1	0.000000
TERMPP01	G_6:6	0.000000	1	0.000000	0.000000	1	0.000000	8.70000	1	0.00000	0.000000	1	0.000000
TERMPP01	G_7:7	0.000000	1	0.000000	0.000000	1	0.000000	10.00000	1	0.00000	0.000000	1	0.000000
TERMPP01	G_8:8	0.000000	1	0.000000	0.000000	1	0.000000	6.50000	1	0.00000	0.000000	1	0.000000
TERMPP01	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TERMPP01	G_10:10	0.000000	1	0.000000	0.000000	1	0.000000	9.30000	1	0.00000	0.000000	1	0.000000
TERMPP01	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TERMPP01	G_12:12	0.000000	1	0.000000	0.000000	1	0.000000	33.00000	1	0.00000	0.000000	1	0.000000
TERMPP02	G_1:1	0.000000	2	0.000000	0.000000	2	0.000000	29.50000	2	6.36396	0.000000	2	0.000000
TERMPP02	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TERMPP02	G_3:3	0.000000	2	0.000000	0.000000	2	0.000000	9.40000	2	.70711	0.000000	2	0.000000
TERMPP02	G_4:4	0.000000	2	0.000000	0.000000	2	0.000000	10.00000	2	2.82843	0.000000	2	0.000000
TERMPP02	G_5:5	0.000000	1	0.000000	0.000000	1	0.000000	8.70000	1	0.00000	0.000000	1	0.000000
TERMPP02	G_6:6	0.000000	1	0.000000	0.000000	1	0.000000	10.00000	1	0.00000	0.000000	1	0.000000
TERMPP02	G_7:7	0.000000	1	0.000000	0.000000	1	0.000000	5.10000	1	0.00000	0.000000	1	0.000000
TERMPP02	G_8:8	0.000000	1	0.000000	0.000000	1	0.000000	4.80000	1	0.00000	0.000000	1	0.000000
TERMPP02	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TERMPP02	G_10:10	0.000000	1	0.000000	0.000000	1	0.000000	6.30000	1	0.00000	0.000000	1	0.000000
TERMPP02	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TERMPP02	G_12:12	0.000000	1	0.000000	0.000000	1	0.000000	16.00000	1	0.00000	0.000000	1	0.000000
TWITCHEL	G_1:1	1.418000	20	.215714	.110000	20	.202355	34.37500	20	5.63400	4.138466	20	.242871
TWITCHEL	G_2:2	1.532194	31	.359478	.048387	31	.152471	34.95161	31	7.67372	4.390630	31	.407829
TWITCHEL	G_3:3	1.429775	40	.511516	.027500	40	.121924	32.08500	40	12.19387	4.498395	40	.236906
TWITCHEL	G_4:4	.862732	41	.225764	.036585	41	.133709	19.08049	41	5.26409	4.445112	41	.755939
TWITCHEL	G_5:5	.824026	39	.149340	.033333	39	.117727	16.80513	39	3.22024	4.968609	39	.734808
TWITCHEL	G_6:6	.593622	37	.117576	.029730	37	.112706	11.52703	37	2.41404	5.194897	37	.718582
TWITCHEL	G_7:7	.629653	49	.169049	.034694	49	.103181	12.86531	49	3.14395	4.881512	49	.844960
TWITCHEL	G_8:8	.890235	34	.333846	.020588	34	.068664	17.35294	34	6.25752	5.421027	34	2.487561
TWITCHEL	G_9:9	.911923	39	.542278	.035897	39	.126672	18.27949	39	12.41330	5.597480	39	2.382615
TWITCHEL	G_10:10	.776444	27	.470099	.081481	27	.203880	15.47407	27	9.36498	5.094535	27	.511324
TWITCHEL	G_11:11	.525296	27	.127263	.077778	27	.192820	11.50000	27	4.35987	4.815514	27	.767994
TWITCHEL	G_12:12	.912824	17	.165645	.105882	17	.238408	21.85294	17	4.64033	4.245789	17	.472645
TYLERPPO	G_1:1	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TYLERPPO	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TYLERPPO	G_3:3	0.000000	3	0.000000	0.000000	3	0.000000	14.00000	3	5.19615	0.000000	3	0.000000
TYLERPPO	G_4:4	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TYLERPPO	G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TYLERPPO	G_6:6	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TYLERPPO	G_7:7	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TYLERPPO	G_8:8	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TYLERPPO	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TYLERPPO	G_10:10	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TYLERPPO	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TYLERPPO	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TwitDitc	G_1:1	1.260000	1	0.000000	.200000	1	0.000000	35.40000	1	0.00000	3.559322	1	0.000000

TwitDitc G_2:2	1.056667	3	.051316	.066667	3	.057735	28.46667	3	.92916	3.710709	3	.065610
TwitDitc G_3:3	2.300000	1	0.000000	0.000000	1	0.000000	52.60000	1	0.00000	4.372624	1	0.000000
TwitDitc G_4:4	1.280000	1	0.000000	0.000000	1	0.000000	32.10000	1	0.00000	3.987539	1	0.000000
TwitDitc G_5:5	1.140000	1	0.000000	.900000	1	0.000000	31.30000	1	0.00000	3.642173	1	0.000000
TwitDitc G_6:6	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TwitDitc G_7:7	2.890000	1	0.000000	.400000	1	0.000000	42.50000	1	0.00000	6.800000	1	0.000000
TwitDitc G_8:8	1.180000	1	0.000000	0.000000	1	0.000000	22.30000	1	0.00000	5.291480	1	0.000000
TwitDitc G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TwitDitc G_10:10	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
TwitDitc G_11:11	.956000	1	0.000000	1.100000	1	0.000000	17.00000	1	0.00000	5.623529	1	0.000000
TwitDitc G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
UPEGBERT G_1:1	0.000000	5	0.000000	0.000000	5	0.000000	10.56000	5	7.65852	0.000000	5	0.000000
UPEGBERT G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
UPEGBERT G_3:3	0.000000	3	0.000000	0.000000	3	0.000000	10.20000	3	2.30651	0.000000	3	0.000000
UPEGBERT G_4:4	0.000000	4	0.000000	0.000000	4	0.000000	10.82500	4	2.09503	0.000000	4	0.000000
UPEGBERT G_5:5	0.000000	3	0.000000	0.000000	3	0.000000	10.20000	3	5.40648	0.000000	3	0.000000
UPEGBERT G_6:6	0.000000	3	0.000000	0.000000	3	0.000000	6.53333	3	1.69214	0.000000	3	0.000000
UPEGBERT G_7:7	0.000000	3	0.000000	0.000000	3	0.000000	4.83333	3	.92916	0.000000	3	0.000000
UPEGBERT G_8:8	0.000000	3	0.000000	0.000000	3	0.000000	7.40000	3	1.74356	0.000000	3	0.000000
UPEGBERT G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
UPEGBERT G_10:10	0.000000	3	0.000000	0.000000	3	0.000000	17.66667	3	4.50925	0.000000	3	0.000000
UPEGBERT G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
UPEGBERT G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
UPJONESP G_1:1	.051000	7	.134933	.057143	7	.151186	14.67143	7	10.15262	.542553	7	1.435461
UPJONESP G_2:2	0.000000	2	0.000000	0.000000	2	0.000000	8.80000	2	.98995	0.000000	2	0.000000
UPJONESP G_3:3	0.000000	3	0.000000	0.000000	3	0.000000	22.00000	3	9.53939	0.000000	3	0.000000
UPJONESP G_4:4	.243333	6	.193977	.100000	6	.167332	10.41667	6	2.30167	2.663644	6	2.077504
UPJONESP G_5:5	0.000000	1	0.000000	0.000000	1	0.000000	10.00000	1	0.00000	0.000000	1	0.000000
UPJONESP G_6:6	.031571	7	.083530	.028571	7	.075593	8.67143	7	2.50846	.544335	7	1.440175
UPJONESP G_7:7	.164667	9	.197780	.100000	9	.158114	9.28889	9	1.59800	1.878519	9	2.229179
UPJONESP G_8:8	.111429	7	.190301	0.000000	7	0.000000	8.80000	7	2.77669	1.326531	7	2.265482
UPJONESP G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
UPJONESP G_10:10	.358000	4	.300422	.100000	4	.200000	10.82500	4	3.70439	3.286107	4	2.201852
UPJONESP G_11:11	0.000000	1	0.000000	0.000000	1	0.000000	7.50000	1	0.00000	0.000000	1	0.000000
UPJONESP G_12:12	0.000000	4	0.000000	0.000000	4	0.000000	9.92500	4	2.41299	0.000000	4	0.000000
VENICE G_1:1	2.353333	3	.913090	.133333	3	.152753	59.23333	3	33.00823	4.208866	3	.651518
VENICE G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
VENICE G_3:3	2.615000	2	.530330	.350000	2	.070711	52.65000	2	10.67731	4.966759	2	.000026
VENICE G_4:4	2.270000	3	.519711	.133333	3	.115470	48.70000	3	10.65223	4.671260	3	.416319
VENICE G_5:5	2.520000	3	.355106	.366667	3	.057735	46.73333	3	5.92312	5.385263	3	.085767
VENICE G_6:6	1.863250	4	.829772	.125000	4	.125831	35.32500	4	15.95146	5.273668	4	.169536
VENICE G_7:7	1.337333	3	.703910	.033333	3	.057735	24.50000	3	13.68357	5.517735	3	.193945
VENICE G_8:8	1.875000	1	0.000000	.300000	1	0.000000	38.00000	1	0.00000	4.934211	1	0.000000
VENICE G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
VENICE G_10:10	1.112250	4	.605711	.025000	4	.050000	21.65000	4	12.76519	5.229714	4	.348969
VENICE G_11:11	1.773000	2	.145664	.050000	2	.070711	34.35000	2	.07071	5.161147	2	.413434
VENICE G_12:12	1.080000	1	0.000000	0.000000	1	0.000000	23.70000	1	0.00000	4.556962	1	0.000000
WEBB01 G_1:1	.788000	1	0.000000	.600000	1	0.000000	27.00000	1	0.00000	2.918519	1	0.000000
WEBB01 G_2:2	0.000000	1	0.000000	.500000	1	0.000000	33.00000	1	0.00000	0.000000	1	0.000000
WEBB01 G_3:3	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
WEBB01 G_4:4	1.637000	2	1.093187	.300000	2	.424264	36.50000	2	20.50610	4.326381	2	.564425
WEBB01 G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
WEBB01 G_6:6	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
WEBB01 G_7:7	.850000	2	.219203	.300000	2	.424264	20.00000	2	4.24264	4.228900	2	.198930
WEBB01 G_8:8	.798000	1	0.000000	.600000	1	0.000000	20.00000	1	0.00000	3.990000	1	0.000000
WEBB01 G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
WEBB01 G_10:10	.975000	1	0.000000	.800000	1	0.000000	14.00000	1	0.00000	6.964286	1	0.000000
WEBB01 G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000

STAT. BASIC STATS

Summary Table of Means (agdat1.sta)
N=2009 (Casewise deletion of missing data)

SNAME	NMONTH	UVA Mean	UVA N	UVA Std.Dv.	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
WEBB01	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
WEBB02	G_1:1	1.870000	2	.042426	.300000	2	.424264	41.75000	2	2.47487	4.483908	2	.164179
WEBB02	G_2:2	0.000000	1	0.000000	0.000000	1	0.000000	47.00000	1	0.00000	0.000000	1	0.000000
WEBB02	G_3:3	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
WEBB02	G_4:4	1.563333	3	.448144	.200000	3	.346410	34.33333	3	13.05118	4.670522	3	.581693
WEBB02	G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
WEBB02	G_6:6	1.633000	1	0.000000	0.000000	1	0.000000	36.00000	1	0.00000	4.536111	1	0.000000
WEBB02	G_7:7	1.343333	3	.236500	.366667	3	.321455	28.33333	3	8.50490	4.870734	3	.686816
WEBB02	G_8:8	1.550500	2	1.399364	.300000	2	.424264	34.00000	2	32.52691	4.778070	2	.455278
WEBB02	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
WEBB02	G_10:10	1.923000	1	0.000000	0.000000	1	0.000000	48.00000	1	0.00000	4.006250	1	0.000000
WEBB02	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
WEBB02	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
WOODWARD	G_1:1	.452000	1	0.000000	.200000	1	0.000000	11.20000	1	0.00000	4.035714	1	0.000000
WOODWARD	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
WOODWARD	G_3:3	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
WOODWARD	G_4:4	.344000	1	0.000000	.200000	1	0.000000	7.50000	1	0.00000	4.586667	1	0.000000
WOODWARD	G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
WOODWARD	G_6:6	.226000	3	.046130	.133333	3	.115470	5.30000	3	.87178	4.258227	3	.431685
WOODWARD	G_7:7	.128000	1	0.000000	.300000	1	0.000000	3.70000	1	0.00000	3.459459	1	0.000000
WOODWARD	G_8:8	.700000	1	0.000000	.200000	1	0.000000	13.80000	1	0.00000	5.072464	1	0.000000
WOODWARD	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
WOODWARD	G_10:10	.227000	1	0.000000	.200000	1	0.000000	4.80000	1	0.00000	4.729167	1	0.000000
WOODWARD	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
WOODWARD	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.00000	--	0	0.000000
All Groups		.541799	2009	.626005	.107715	2009	.341320	18.33171	2009	14.86532	2.826013	2009	2.421303

Appendix B. Table 4. Water Quality at MWQI Delta Boundary Stations

Bromide and DOC concentrations (mg/l) and UVA-254nm values and specific absorbance (UVA-254nm x 100/DOC)
Results grouped by station for each month.

SNAME = Abbreviated MWQI station name
NMONTH = Numeric calendar month (Jan = 1, Dec = 12)
Mean = Computed arithmetic average
N = Number of observations
Std. Dv. = Standard deviation

STAT. BASIC STATS — Summary Table of Means (infldat1.sta) N=1139 (Casewise deletion of missing data)

SNAME	NMONTH	BROMIDE Mean	BROMIDE N	BROMIDE Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
GREENES	G_1:1	.011053	57	.068860	2.535088	57	1.033457	.069105	57	.045641	2.694273	57	1.185484
GREENES	G_2:2	.001053	76	.004496	3.272368	76	1.575360	.097645	76	.050659	3.010572	76	1.243577
GREENES	G_3:3	.001429	63	.008397	2.357143	63	.803965	.074571	63	.052049	3.219551	63	2.026315
GREENES	G_4:4	.001923	78	.010072	2.034615	78	.402533	.047462	78	.023885	2.339700	78	1.145088
GREENES	G_5:5	.001026	78	.003810	2.243590	78	.973225	.044744	78	.013389	2.163840	78	.843138
GREENES	G_6:6	.001264	87	.007121	2.103448	87	.642931	.044092	87	.014802	2.242559	87	.899572
GREENES	G_7:7	.000737	95	.003340	2.552632	95	1.549114	.046705	95	.063169	2.036955	95	.987784
GREENES	G_8:8	.001222	90	.005369	2.421111	90	1.430997	.042244	90	.009818	2.108285	90	.817461
GREENES	G_9:9	.002073	82	.007326	2.657317	82	1.408706	.045695	82	.014173	2.037286	82	.912474
GREENES	G_10:10	.000909	66	.003814	2.174242	66	.645055	.041045	66	.018412	1.964253	66	.910002
GREENES	G_11:11	.000794	63	.003725	2.384127	63	.623261	.047397	63	.021665	2.028593	63	.840569
GREENES	G_12:12	0.000000	50	0.000000	2.680000	50	.841767	.062580	50	.038577	2.297181	50	1.095734
MALLARDI	G_1:1	2.052222	9	3.267988	3.300000	9	1.058301	.070111	9	.081416	1.946538	9	1.910554
MALLARDI	G_2:2	6.810000	11	9.896298	3.200000	11	1.302306	.088818	11	.073346	2.482001	11	1.620205
MALLARDI	G_3:3	1.608000	10	3.788051	4.060000	10	2.548289	.083500	10	.062104	2.179610	10	1.652675
MALLARDI	G_4:4	.301111	9	.560947	3.077778	9	.874325	.066222	9	.056318	2.134981	9	1.624393
MALLARDI	G_5:5	4.257500	8	7.858116	2.512500	8	.603413	.055875	8	.048333	2.208839	8	1.854905
MALLARDI	G_6:6	1.352857	7	3.566112	2.671429	7	.729644	.051286	7	.049358	1.720131	7	1.628510
MALLARDI	G_7:7	6.673571	14	5.185897	2.628571	14	1.033611	.064071	14	.041232	2.454762	14	1.401932
MALLARDI	G_8:8	4.531818	11	4.551279	2.427273	11	.502177	.080818	11	.075093	3.054752	11	2.138607
MALLARDI	G_9:9	4.153333	15	6.557567	2.520000	15	.748522	.052400	15	.028261	2.164651	15	1.280548
MALLARDI	G_10:10	8.481667	12	6.622400	2.133333	12	.389249	.050417	12	.031023	2.480507	12	1.526313
MALLARDI	G_11:11	7.527273	11	8.817493	2.918182	11	3.057390	.040455	11	.032318	1.829069	11	1.701969
MALLARDI	G_12:12	2.405556	9	6.939851	2.222222	9	.576146	.044667	9	.043764	1.737207	9	1.659866
MOKELUMN	G_1:1	--	0	0.000000	--	0	0.000000	--	0	0.000000	--	0	0.000000
MOKELUMN	G_2:2	--	0	0.000000	--	0	0.000000	--	0	0.000000	--	0	0.000000
MOKELUMN	G_3:3	--	0	0.000000	--	0	0.000000	--	0	0.000000	--	0	0.000000
MOKELUMN	G_4:4	--	0	0.000000	--	0	0.000000	--	0	0.000000	--	0	0.000000
MOKELUMN	G_5:5	--	0	0.000000	--	0	0.000000	--	0	0.000000	--	0	0.000000
MOKELUMN	G_6:6	--	0	0.000000	--	0	0.000000	--	0	0.000000	--	0	0.000000
MOKELUMN	G_7:7	--	0	0.000000	--	0	0.000000	--	0	0.000000	--	0	0.000000
MOKELUMN	G_8:8	--	0	0.000000	--	0	0.000000	--	0	0.000000	--	0	0.000000
MOKELUMN	G_9:9	--	0	0.000000	--	0	0.000000	--	0	0.000000	--	0	0.000000
MOKELUMN	G_10:10	--	0	0.000000	--	0	0.000000	--	0	0.000000	--	0	0.000000
MOKELUMN	G_11:11	--	0	0.000000	--	0	0.000000	--	0	0.000000	--	0	0.000000
MOKELUMN	G_12:12	--	0	0.000000	--	0	0.000000	--	0	0.000000	--	0	0.000000

STAT. BASIC STATS

Summary Table of Means (infldat1.sta)
N=1139 (Casewise deletion of missing data)

SNAME	NMONTH	BROMIDE Mean	BROMIDE N	BROMIDE Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
VERNALIS	G_1:1	.150714	14	.210803	4.992857	14	2.529659	.098571	14	.130868	1.661440	14	1.561751
VERNALIS	G_2:2	.104545	11	.220743	5.190909	11	2.050100	.099000	11	.101528	1.695709	11	1.486342
VERNALIS	G_3:3	.154444	9	.177561	4.477778	9	1.796370	.077111	9	.086033	1.476678	9	1.414926
VERNALIS	G_4:4	.120833	12	.154182	3.816667	12	.922283	.064167	12	.070122	1.446920	12	1.523841
VERNALIS	G_5:5	.081429	7	.119224	3.071429	7	.797317	.031143	7	.039160	1.110023	7	1.403448
VERNALIS	G_6:6	.074545	11	.188434	3.390909	11	.939632	.040818	11	.047604	1.283827	11	1.477525
VERNALIS	G_7:7	.155000	8	.173699	3.187500	8	.180772	.056875	8	.047438	1.756073	8	1.460143
VERNALIS	G_8:8	.127500	8	.158182	3.625000	8	.291548	.046750	8	.050016	1.241071	8	1.328658
VERNALIS	G_9:9	.092500	8	.186911	4.300000	8	1.939072	.033000	8	.045857	1.000694	8	1.386062
VERNALIS	G_10:10	.093846	13	.157984	3.592308	13	.956958	.048538	13	.040822	1.498326	13	1.250173
VERNALIS	G_11:11	.117857	14	.165445	3.021429	14	.635100	.043500	14	.041000	1.494550	14	1.353873
VERNALIS	G_12:12	.138462	13	.185421	3.853846	13	1.603442	.073615	13	.083287	1.655183	13	1.412739
All Groups		.512968	1139	2.583322	2.647322	1139	1.311300	.055887	1139	.045884	2.216037	1139	1.268194

Appendix B. Table 5. Water Quality at MWQI M&I Intake Stations in Delta by Month

Bromide and DOC concentrations (mg/l) and UVA-254nm values and specific absorbance (UVA-254nm x 100/DOC)
Results are grouped by numeric calendar month for each MWQI sampling station in the Delta

NMONTH = Numeric calendar month (Jan = 1, Dec = 12)
SNAME = Abbreviated MWQI station name
Mean = Computed arithmetic average
N = Number of samples
Std. Dv. = Standard deviation

STAT. BASIC STATS — Summary Table of Means (intkdat1.sta) N=683 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_1:1	BANKS	.137500	16	.214864	5.018750	16	1.332276	.144500	16	.100121	2.716544	16	1.640249
G_1:1	CLIFTON	.100000	6	.181659	4.816667	6	.538207	.100667	6	.110391	1.911852	6	2.094824
G_1:1	CONCOSPP	.260000	7	.211896	5.300000	7	1.213809	.190000	7	.046461	3.586984	7	.338058
G_1:1	DMC	.125385	13	.173475	5.230769	13	1.914586	.115231	13	.119380	2.024433	13	1.688310
G_1:1	ROCKSL	.062500	8	.176777	4.737500	8	1.886749	.107375	8	.141429	1.839140	8	1.992665
G_1:1	STATION0	.156667	6	.227391	5.533333	6	1.717750	.185333	6	.108471	3.135445	6	1.578757
G_2:2	BANKS	.048889	27	.116366	5.800000	27	1.539980	.183852	27	.103113	2.975376	27	1.462787
G_2:2	CLIFTON	.043333	6	.106145	5.066667	6	1.635441	.089500	6	.152792	1.310999	6	2.057937
G_2:2	CONCOSPP	.172000	5	.168731	6.720000	5	1.785217	.249600	5	.068508	3.713223	5	.188154
G_2:2	DMC	.092727	11	.183744	5.681818	11	2.141877	.150818	11	.145502	2.211738	11	1.838748
G_2:2	ROCKSL	.157500	8	.320791	4.137500	8	.346152	.059000	8	.081514	1.302053	8	1.800016
G_2:2	STATION0	.183333	6	.293712	6.983333	6	1.711627	.209167	6	.118388	3.122635	6	1.539562
G_3:3	BANKS	.069375	16	.162336	4.468750	16	1.155692	.121500	16	.078079	2.605321	16	1.388480
G_3:3	CLIFTON	.096667	6	.153058	4.533333	6	1.702547	.074333	6	.117033	1.132132	6	1.754345
G_3:3	CONCOSPP	.168000	5	.117132	6.260000	5	1.947563	.219400	5	.066293	3.504450	5	.225863
G_3:3	DMC	.089091	11	.153327	5.136364	11	1.654251	.132727	11	.119538	2.149990	11	1.753251
G_3:3	ROCKSL	0.000000	5	0.000000	4.020000	5	.834865	.064800	5	.089851	1.359111	5	1.868904
G_3:3	STATION0	.030000	5	.027386	4.760000	5	1.182371	.165600	5	.054353	3.419008	5	.304979
G_4:4	BANKS	.065000	14	.136987	3.635714	14	.733387	.084071	14	.051534	2.306285	14	1.258502
G_4:4	CLIFTON	.020000	6	.048990	4.116667	6	1.185608	.073167	6	.088251	1.674645	6	1.840143
G_4:4	CONCOSPP	.066000	5	.095812	5.120000	5	1.164903	.168400	5	.051418	3.247113	5	.257429
G_4:4	DMC	.040714	14	.081944	4.371429	14	1.124160	.106000	14	.076060	2.298881	14	1.517349
G_4:4	ROCKSL	.022000	10	.037947	3.980000	10	.997553	.108300	10	.084816	2.615796	10	1.831338
G_4:4	STATION0	.058333	6	.066758	3.900000	6	.807465	.132500	6	.036193	3.363540	6	.416591
G_5:5	BANKS	.012308	26	.044927	3.507692	26	.796454	.093846	26	.046871	2.582518	26	1.143081
G_5:5	CLIFTON	.056667	6	.138804	3.216667	6	.798540	.059833	6	.071656	1.600125	6	1.770909
G_5:5	CONCOSPP	.147143	7	.110108	3.985714	7	.367099	.131714	7	.017056	3.305096	7	.308185
G_5:5	DMC	.020909	11	.047001	3.354545	11	.835899	.060909	11	.062967	1.589865	11	1.532858
G_5:5	ROCKSL	.072857	7	.138409	3.071429	7	.672593	.058286	7	.056659	1.715600	7	1.613422
G_5:5	STATION0	.077500	4	.069462	3.225000	4	.206155	.108000	4	.010893	3.345051	4	.187060
G_6:6	BANKS	.020000	22	.058554	3.531818	22	1.305441	.089955	22	.044381	2.795128	22	1.363988
G_6:6	CLIFTON	.157273	11	.165475	3.672727	11	.508116	.090273	11	.059402	2.377033	11	1.533536
G_6:6	CONCOSPP	.236667	3	.335012	3.166667	3	.321455	.099000	3	.009849	3.131462	3	.192719

STAT. BASIC STATS

Summary Table of Means (intkdat1.sta)
N=683 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_6:6	DMC	.061250	8	.091095	3.112500	8	.527629	.066000	8	.056675	1.964732	8	1.642187
G_6:6	ROCKSL	.158889	9	.222117	3.011111	9	.368932	.038333	9	.045869	1.208944	9	1.448057
G_6:6	STATION0	.047500	4	.095000	3.175000	4	.394757	.079000	4	.053429	2.585450	4	1.733673
G_7:7	BANKS	.025417	24	.098642	3.079167	24	.359927	.096292	24	.040499	3.079793	24	1.217742
G_7:7	CLIFTON	.056000	5	.125220	3.040000	5	.409878	.065000	5	.059389	1.952941	5	1.789362
G_7:7	CONCOSPP	.122857	7	.246895	2.771429	7	.188982	.096000	7	.010893	3.469931	7	.390370
G_7:7	DMC	.111429	14	.206579	3.235714	14	.509309	.083929	14	.047227	2.560027	14	1.409777
G_7:7	ROCKSL	.090000	8	.168014	2.687500	8	.304432	.063000	8	.039388	2.296702	8	1.459222
G_7:7	STATION0	.103636	11	.160952	3.145455	11	.469816	.109091	11	.022047	3.462550	11	.388382
G_8:8	BANKS	.038421	19	.099066	2.863158	19	.336997	.096158	19	.026769	3.330137	19	.850632
G_8:8	CLIFTON	.136667	3	.140119	2.666667	3	.305505	.061000	3	.053226	2.178632	3	1.886752
G_8:8	CONCOSPP	.270000	7	.292461	3.542857	7	1.651118	.088143	7	.013496	2.792308	7	.860055
G_8:8	DMC	.193333	9	.208746	3.466667	9	.880341	.085333	9	.050675	2.416540	9	1.436037
G_8:8	ROCKSL	.195000	6	.215383	2.566667	6	.471876	.068500	6	.035286	2.596497	6	1.306189
G_8:8	STATION0	.118333	6	.240035	2.933333	6	.686052	.077500	6	.041563	2.846026	6	1.408409
G_9:9	BANKS	.017097	31	.066493	2.970968	31	.394287	.074161	31	.038096	2.544963	31	1.324142
G_9:9	CLIFTON	.228333	6	.253410	2.900000	6	.303315	.062333	6	.048343	2.070578	6	1.613748
G_9:9	CONCOSPP	.222857	7	.270353	2.671429	7	.228869	.078429	7	.007743	2.955498	7	.399900
G_9:9	DMC	.159091	11	.215381	3.054545	11	.535469	.073182	11	.047690	2.371470	11	1.583618
G_9:9	ROCKSL	.114286	7	.302372	2.514286	7	.260951	.048000	7	.045092	1.854665	7	1.742078
G_9:9	STATION0	.053333	9	.103441	2.644444	9	.206828	.088222	9	.004969	3.354790	9	.335394
G_10:10	BANKS	.020000	23	.060076	2.834783	23	.527954	.076609	23	.035826	2.771442	23	1.145080
G_10:10	CLIFTON	0.000000	4	0.000000	3.700000	4	.489898	.024750	4	.049500	.668919	4	1.337838
G_10:10	CONCOSPP	.236364	11	.255940	2.527273	11	.148936	.080545	11	.007326	3.191874	11	.275640
G_10:10	DMC	.076667	12	.167730	3.266667	12	.469687	.053500	12	.047605	1.800302	12	1.614744
G_10:10	ROCKSL	.208462	13	.296081	2.646154	13	.315213	.109000	13	.210803	4.625565	13	9.638950
G_10:10	STATION0	0.000000	5	0.000000	2.640000	5	.328634	.083600	5	.008792	3.176667	5	.198466
G_11:11	BANKS	.094375	16	.181180	2.825000	16	.371484	.062625	16	.043935	2.151757	16	1.515379
G_11:11	CLIFTON	0.000000	6	0.000000	2.733333	6	.307679	0.000000	6	0.000000	0.000000	6	0.000000
G_11:11	CONCOSPP	.458571	7	.250894	2.685714	7	.157359	.084429	7	.003599	3.149596	7	.170099
G_11:11	DMC	.094000	10	.168140	2.860000	10	.445222	.055700	10	.048525	1.820782	10	1.583647
G_11:11	ROCKSL	0.000000	5	0.000000	2.460000	5	.433590	.019000	5	.042485	.633333	5	1.416176
G_11:11	STATION0	.144000	5	.230933	3.040000	5	.350714	.094600	5	.010334	3.141787	5	.460895
G_12:12	BANKS	.035385	13	.127581	3.161538	13	.806782	.056154	13	.056826	1.689047	13	1.631334
G_12:12	CLIFTON	.051667	6	.126557	3.200000	6	.732120	.036500	6	.056546	1.177419	6	1.824079
G_12:12	CONCOSPP	.446667	3	.386825	2.966667	3	.115470	.089000	3	.004359	3.005191	3	.233636
G_12:12	DMC	0.000000	6	0.000000	3.183333	6	.735980	.019167	6	.046949	.580808	6	1.422683
G_12:12	ROCKSL	.131429	7	.347727	2.985714	7	.920921	.048286	7	.060279	1.408447	7	1.758284
G_12:12	STATION0	.720000	1	0.000000	3.700000	1	0.000000	.114000	1	0.000000	3.081081	1	0.000000
All Groups		.091552	683	.177171	3.674963	683	1.373995	.094873	683	.080139	2.488982	683	1.971711

Appendix B. Table 6. Water Quality at MWQI Interior Delta Stations by Month

Bromide and DOC concentrations (mg/l) and UVA-254nm values and specific absorbance (UVA-254nm x 100/DOC)
Results are grouped by numeric calendar month for each MWQI sampling station in the Delta

NMONTH = Numeric calendar month (Jan = 1, Dec = 12)
SNAME = Abbreviated MWQI station name
Mean = Computed arithmetic average
N = Number of samples
Std. Dv. = Standard deviation

STAT. BASIC STATS

Summary Table of Means (intdat1.sta)
N=6264 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_1:1	AMERICAN	0.000000	8	0.000000	1.67500	8	.40970	.028750	8	.035229	1.483038	8	1.718799
G_1:1	BANKS	.089063	32	.176203	5.12813	32	1.53901	.100938	32	.102434	1.990505	32	1.801367
G_1:1	BARKER	0.000000	1	0.000000	9.30000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_1:1	BARKERNO	.017273	11	.024532	6.08182	11	4.29926	.117273	11	.262606	1.325194	11	1.930622
G_1:1	CACHE	0.000000	1	0.000000	6.20000	1	0.00000	.330000	1	0.000000	5.322581	1	0.000000
G_1:1	CACHEMIN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	CHECK 12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	CHECK 13	.500000	1	0.000000	5.00000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_1:1	CLIFTON	.175000	6	.220794	4.81667	6	.53821	0.000000	6	0.000000	0.000000	6	0.000000
G_1:1	CONCOSPP	.173000	10	.177954	5.04000	10	1.17870	.147000	10	.087439	2.946042	10	1.578644
G_1:1	CONNMAND	.110000	3	.190526	5.00000	3	.43589	.066667	3	.115470	1.282051	3	2.220578
G_1:1	DELTACRC	.005000	4	.010000	3.52500	4	2.37118	.085000	4	.144568	1.711957	4	2.115846
G_1:1	DISAPPHO	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	DMC	.160526	19	.197807	5.39474	19	1.80815	.074211	19	.122398	1.134475	19	1.728314
G_1:1	FALSETIP	.477500	4	.551747	3.52500	4	.20616	.110000	4	.011547	3.114491	4	.153058
G_1:1	GEORGSLW	.006000	5	.008944	2.54000	5	1.13049	.042000	5	.073621	1.350000	5	1.949359
G_1:1	GRANTLNC	.210000	5	.295296	4.82000	5	3.42812	.134000	5	.234585	1.888889	5	2.107982
G_1:1	GRANTOLD	.310000	5	.283461	4.26000	5	1.53232	.064000	5	.077653	1.690909	5	1.597810
G_1:1	GREENES	.002326	86	.006975	2.63721	86	1.08531	.046395	86	.050571	1.752003	86	1.556354
G_1:1	HONKER	.068000	5	.068702	6.40000	5	1.83984	.182000	5	.138456	2.628996	5	1.634766
G_1:1	HONKERWH	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	HOOD	0.000000	5	0.000000	3.28000	5	1.08259	0.000000	5	0.000000	0.000000	5	0.000000
G_1:1	LATHAM	.040000	4	.080000	5.12500	4	.53774	.147500	4	.098446	2.752193	4	1.839992
G_1:1	LCONNECT	.004000	10	.012649	5.58000	10	2.32130	.009000	10	.028460	.173077	10	.547317
G_1:1	LINDSEY	.015000	10	.018409	5.98000	10	1.60194	.138000	10	.178811	2.061982	10	2.400196
G_1:1	LPOTATOW	0.000000	2	0.000000	3.65000	2	.21213	0.000000	2	0.000000	0.000000	2	0.000000
G_1:1	LPOTTERM	.012500	8	.019086	4.45000	8	2.00428	.062500	8	.137815	.964419	8	1.807619
G_1:1	MALLARDI	3.623333	18	5.602678	2.98333	18	1.15364	.031111	18	.041287	1.292718	18	1.700779
G_1:1	MAZE	.284286	7	.287857	5.42857	7	3.55702	.024286	7	.041576	.623540	7	1.100991
G_1:1	MIDDLER	.018939	66	.065283	7.53788	66	2.52774	.184697	66	.152812	2.326859	66	1.665100
G_1:1	MIDMOWRY	.120000	5	.268328	4.76000	5	3.16275	.040000	5	.038079	1.322440	5	1.254134
G_1:1	MIDWOODW	0.000000	2	0.000000	5.45000	2	.07071	0.000000	2	0.000000	0.000000	2	0.000000
G_1:1	MOKELUMN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	MOKGEORG	.016000	5	.008944	3.32000	5	1.66042	.032000	5	.031145	1.399471	5	1.304517
G_1:1	MOKRABVG	0.000000	3	0.000000	3.40000	3	.26458	0.000000	3	0.000000	0.000000	3	0.000000
G_1:1	MOKSNODG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	MRIVBACO	.165000	10	.112373	6.21000	10	1.94848	.133000	10	.156351	1.849048	10	1.953067
G_1:1	MRIVTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000

STAT. BASIC STATS

Summary Table of Means (intdat1.sta)
N=6264 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_1:1	NOBAY	0.000000	3	0.000000	3.13333	3	.98658	0.000000	3	0.000000	0.000000	3	0.000000
G_1:1	NORTHCAN	.244000	5	.148088	5.30000	5	.77782	.082000	5	.112783	1.503704	5	2.066056
G_1:1	NVICWOOD	.112000	5	.159123	5.86000	5	.83546	.138000	5	.126174	2.251613	5	2.061793
G_1:1	OLDR-DMC	.280000	4	.197821	5.82500	4	.40311	.097500	4	.112657	1.712963	4	1.979404
G_1:1	OLDRIVBA	.008378	37	.044691	5.63243	37	1.49426	.137838	37	.113923	2.443720	37	1.852339
G_1:1	OLDRIVDM	.186000	5	.254716	5.04000	5	.55045	.062000	5	.086718	1.271318	5	1.744272
G_1:1	OLDRTRAC	.294000	5	.292711	4.94000	5	3.20125	.138000	5	.188468	2.354730	5	1.615382
G_1:1	POTNODE2	0.000000	2	0.000000	4.45000	2	.07071	0.000000	2	0.000000	0.000000	2	0.000000
G_1:1	ROCKSL	.179167	12	.286720	4.43333	12	1.57499	.037500	12	.068374	.891696	12	1.615690
G_1:1	SACCOLUS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SACISLET	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SACRIVID	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SACRIVLT	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SACRRIOV	.014615	13	.029613	3.19231	13	1.29837	.045385	13	.065015	1.493068	13	1.705370
G_1:1	SACSLOUG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SACWSACI	.004000	5	.008944	2.74000	5	1.23612	.052000	5	.035637	2.292982	5	1.322637
G_1:1	SANDMOUN	.200000	7	.319322	4.72857	7	1.92848	.122857	7	.140679	2.193878	7	2.081064
G_1:1	SANTAFEB	.292000	5	.208014	10.06000	5	11.16302	.114000	5	.104307	1.495088	5	1.778150
G_1:1	SIPH#06	.180000	1	0.000000	35.00000	1	0.00000	1.400000	1	0.000000	4.000000	1	0.000000
G_1:1	SIPH#16	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SIPH#17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SIPH01	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SIPH02	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SIPH03	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SIPH04	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SIPH05	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SIPH08	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SIPH11	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SIPH12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SIPH13	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SIPH14	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SIPH18	.040000	1	0.000000	3.90000	1	0.00000	.160000	1	0.000000	4.102564	1	0.000000
G_1:1	SIPH19	.270000	3	.425088	3.93333	3	.30551	.136667	3	.005774	3.494709	3	.396852
G_1:1	SIPH20	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SJOAQHWY	.390000	1	0.000000	4.70000	1	0.00000	.120000	1	0.000000	2.553191	1	0.000000
G_1:1	SJRBLIND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	SJRJERSE	.689000	10	.760430	3.74000	10	1.31420	.165000	10	.298040	4.928336	10	9.797135
G_1:1	SJRMOSSD	.177000	10	.251133	4.71000	10	3.07298	.033000	10	.053759	1.010028	10	1.376917
G_1:1	SOMOK269	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	STATION0	.071667	18	.144355	5.47222	18	2.06819	.127222	18	.121064	2.310071	18	1.914843
G_1:1	SacWSac	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	Siph17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	TURNERCU	.138333	6	.109438	6.60000	6	1.37550	.141667	6	.157787	1.870595	6	2.050124
G_1:1	VERNALIS	.235625	16	.227712	4.76875	16	2.44014	.043125	16	.113179	.727441	16	1.338267
G_1:1	Verona	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	WHITEBIS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_1:1	WSTCANCL	.140000	7	.207926	5.67143	7	2.03774	.184286	7	.118161	3.027246	7	1.355009
G_2:2	AMERICAN	0.000000	25	0.000000	2.09600	25	.57770	.035600	25	.047441	1.467610	25	1.734410
G_2:2	BANKS	.059706	34	.134558	5.76176	34	1.38521	.122647	34	.116757	1.984258	34	1.800548
G_2:2	BARKER	0.000000	1	0.000000	6.80000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_2:2	BARKERNO	.018889	9	.030596	11.32222	9	6.76845	.315556	9	.328029	2.282600	9	2.217995

STAT. BASIC STATS

Summary Table of Means (intdat1.sta)
N=6264 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_2:2	CACHE	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	CACHEMIN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	CHECK 12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	CHECK 13	.560000	1	0.000000	4.60000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_2:2	CLIFTON	.065000	8	.100570	5.63750	8	1.86390	.040000	8	.113137	.465116	8	1.315547
G_2:2	CONCOSPP	.070000	7	.072342	6.78571	7	1.54211	.195714	7	.142929	2.684230	7	1.841051
G_2:2	CONMMAND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	DELTACRC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	DISAPPHO	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	DMC	.108667	15	.173611	5.18667	15	2.01879	.116000	15	.136842	1.876651	15	1.876301
G_2:2	FALSETIP	1.095000	2	.007071	3.70000	2	.14142	.120000	2	0.000000	3.245614	2	.124054
G_2:2	GEORGSLW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	GRANTLNC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	GRANTOLD	0.000000	2	0.000000	4.25000	2	.91924	.130000	2	.056569	2.984694	2	.685461
G_2:2	GREENES	.001121	107	.005378	3.27664	107	1.45035	.065421	107	.059910	2.047503	107	1.706466
G_2:2	HONKER	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	HONKERWM	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	HOOD	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	LATHAM	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	LCONNECT	0.000000	3	0.000000	3.26667	3	1.33167	0.000000	3	0.000000	0.000000	3	0.000000
G_2:2	LINDSEY	.014444	9	.022423	5.23333	9	2.27651	.032222	9	.063988	.741132	9	1.472634
G_2:2	LPOTATOW	0.000000	1	0.000000	5.90000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_2:2	LPOTTERM	0.000000	1	0.000000	3.80000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_2:2	MALLARDI	4.358000	15	7.591345	3.45333	15	1.31468	.063333	15	.071481	1.793064	15	1.746641
G_2:2	MAZE	.370000	5	.363249	5.12000	5	2.27530	.092000	5	.109864	1.579880	5	1.481004
G_2:2	MIDDLER	.020968	62	.075741	7.83548	62	2.38631	.179516	62	.142293	2.139748	62	1.642553
G_2:2	MIDMOWRY	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	MIDWOODW	0.000000	1	0.000000	6.00000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_2:2	MOKELUMN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	MOKGEORG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	MOKRABVG	0.000000	1	0.000000	2.70000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_2:2	MOKSNODG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	MRIVBACO	.128000	5	.153199	7.30000	5	1.79861	.154000	5	.149097	2.221384	5	2.036259
G_2:2	MRIVTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	NOBAY	0.000000	2	0.000000	2.60000	2	.56569	0.000000	2	0.000000	0.000000	2	0.000000
G_2:2	NORTHCAN	.270000	3	.236432	5.16667	3	.11547	.123333	3	.106927	2.418301	3	2.096603
G_2:2	NVICWOOD	0.000000	2	0.000000	4.85000	2	.07071	.170000	2	0.000000	3.505527	2	.051109
G_2:2	OLDR-DMC	.555000	2	.063640	4.25000	2	.91924	0.000000	2	0.000000	0.000000	2	0.000000
G_2:2	OLDRIVBA	.006471	34	.020133	6.84118	34	1.77561	.176765	34	.120522	2.689737	34	1.649257
G_2:2	OLDRIVDM	.575000	2	.035355	4.15000	2	.91924	.040000	2	.056569	1.142857	2	1.616244
G_2:2	OLDRTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	POTNODE2	0.000000	1	0.000000	3.50000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_2:2	ROCKSL	.209167	12	.344448	4.50833	12	.95390	.060000	12	.089443	1.246187	12	1.844046
G_2:2	SACCOLUS	0.000000	8	0.000000	2.50000	8	.51824	.021250	8	.022952	.925785	8	.998396
G_2:2	SACISLET	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	SACRIVID	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	SACRIVLT	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	SACRRIOV	.141000	10	.315011	3.35000	10	1.31846	.040000	10	.045461	1.355564	10	1.451406
G_2:2	SACSLOUG	0.000000	8	0.000000	4.38750	8	1.73817	.052500	8	.052304	1.344027	8	1.133642
G_2:2	SACWSACI	0.000000	12	0.000000	2.71667	12	.54411	.073333	12	.046580	2.600546	12	1.381646
G_2:2	SANDMOUN	.860000	2	0.000000	5.75000	2	1.90919	.150000	2	.014142	2.804097	2	1.177002
G_2:2	SANTAFEB	.385000	2	.544472	4.65000	2	.21213	.085000	2	.120208	1.770833	2	2.504337
G_2:2	SIPH#06	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000

STAT. BASIC STATS

Summary Table of Means (intdat1.sta)
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NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_2:2	SIPH#16	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	SIPH#17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	SIPH01	0.000000	1	0.000000	36.70000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_2:2	SIPH02	0.000000	1	0.000000	36.20000	1	0.00000	1.570000	1	0.000000	4.337017	1	0.000000
G_2:2	SIPH03	0.000000	1	0.000000	37.50000	1	0.00000	1.650000	1	0.000000	4.400000	1	0.000000
G_2:2	SIPH04	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	SIPH05	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	SIPH08	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	SIPH11	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	SIPH12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	SIPH13	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	SIPH14	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	SIPH18	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	SIPH19	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	SIPH20	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	SJOAQHWY	0.000000	1	0.000000	4.40000	1	0.00000	.160000	1	0.000000	3.636364	1	0.000000
G_2:2	SJRBLIND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	SJRJERSE	.536667	3	.895116	4.10000	3	.98489	.150000	3	.060828	3.573999	3	.575504
G_2:2	SJRMOSSD	.032500	4	.065000	3.70000	4	.29439	.085000	4	.056862	2.355567	4	1.602291
G_2:2	SOMOK269	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	STATIONO	.133333	9	.296522	6.01111	9	2.01274	.122222	9	.129207	2.116821	9	2.011735
G_2:2	SacWSac	0.000000	6	0.000000	2.60000	6	.47749	.035000	6	.039875	1.321429	6	1.452479
G_2:2	Siph17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	TURNEROU	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	VERNALIS	.138333	12	.214087	5.22500	12	1.95826	.060000	12	.094195	1.096913	12	1.496189
G_2:2	Verona	0.000000	4	0.000000	2.22500	4	.40311	.067500	4	.015000	3.031271	4	.430964
G_2:2	WHITEBIS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_2:2	WSTCANCL	.030000	4	.060000	6.47500	4	1.88038	.170000	4	.134907	2.822774	4	1.894616
G_3:3	AMERICAN	0.000000	23	0.000000	2.00870	23	.64450	.015217	23	.022937	.816483	23	1.203260
G_3:3	BANKS	.082593	27	.169923	4.72963	27	1.32049	.106296	27	.094142	2.167416	27	1.621638
G_3:3	BARKER	0.000000	1	0.000000	6.70000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_3:3	BARKERNO	.015000	8	.029761	8.95000	8	3.00571	.162500	8	.265639	1.672069	8	2.425761
G_3:3	CACHE	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	CACHEMIN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	CHECK 12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	CHECK 13	.370000	1	0.000000	5.20000	1	0.00000	.160000	1	0.000000	3.076923	1	0.000000
G_3:3	CLIFTON	.086000	10	.119555	4.78000	10	1.47181	.099000	10	.110700	1.756248	10	1.858471
G_3:3	CONCOSPP	.126667	6	.136626	6.16667	6	1.75689	.130000	6	.108628	2.301932	6	1.790708
G_3:3	CONNMAND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	DELTACRC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	DISAPPHO	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	DMC	.137500	16	.150266	4.90000	16	1.50244	.060000	16	.085245	1.198920	16	1.622007
G_3:3	FALSETIP	.030000	3	.051962	5.36667	3	.66583	0.000000	3	0.000000	0.000000	3	0.000000
G_3:3	GEORGSLW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	GRANTLNC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	GRANTOLD	.030000	3	.051962	7.70000	3	2.35160	.146667	3	.155671	2.142396	3	2.005283
G_3:3	GREENES	.001183	93	.004627	2.47097	93	.95229	.050645	93	.060394	2.074903	93	2.279267
G_3:3	HONKER	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	HONKERWH	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	HOOD	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	LATHAM	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	LCONNECT	0.000000	4	0.000000	3.25000	4	1.45488	0.000000	4	0.000000	0.000000	4	0.000000
G_3:3	LINDSEY	.027000	10	.029078	3.83000	10	1.43686	.023000	10	.037431	.955863	10	1.540602

STAT. BASIC STATS

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NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_3:3	LPOTATOW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	LPOTTERM	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	MALLARDI	2.083077	13	3.894737	4.10000	13	2.26127	.094615	13	.060224	2.397185	13	1.504226
G_3:3	MAZE	.116667	6	.262043	10.43333	6	9.20014	.118333	6	.165459	1.448689	6	1.601154
G_3:3	MIDDLER	.007324	71	.034141	7.17746	71	1.77444	.173944	71	.105823	2.380652	71	1.394635
G_3:3	MIDMOWRY	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	MIDWOODW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	MOKELUMN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	MOKGEORG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	MOKRABVG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	MOKSNODG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	MRIVBACO	.153333	6	.115701	6.30000	6	1.35941	.120000	6	.136967	1.762822	6	1.933027
G_3:3	MRIVTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	NOBAY	0.000000	2	0.000000	2.20000	2	.28284	0.000000	2	0.000000	0.000000	2	0.000000
G_3:3	NORTHCAN	.123333	3	.213620	6.50000	3	1.55242	.103333	3	.178979	1.275720	3	2.209612
G_3:3	NVIOWOOD	.240000	3	.147309	6.60000	3	1.55242	.226667	3	.076376	3.387163	3	.382461
G_3:3	OLDR-DMC	.076667	3	.132791	7.40000	3	2.25167	.213333	3	.185831	2.513889	3	2.189120
G_3:3	OLDRIVBA	.006857	35	.019368	4.74571	35	1.33292	.106000	35	.095122	2.199842	35	1.666221
G_3:3	OLDRIVDM	.073333	3	.127017	7.60000	3	2.40000	.263333	3	.100167	3.410661	3	.531457
G_3:3	OLDRTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	POTNODE2	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	ROCKSL	.171000	10	.271148	4.42000	10	1.13608	.123000	10	.095108	2.550683	10	1.823506
G_3:3	SACCOLUS	0.000000	7	0.000000	4.02857	7	1.26717	.048571	7	.035790	1.209972	7	.941529
G_3:3	SACISLET	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SACRIVID	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SACRIVLT	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SACRRIOV	.033333	9	.070887	3.76667	9	1.28550	.061111	9	.064700	1.667649	9	1.592301
G_3:3	SACSLOUG	0.000000	8	0.000000	5.11250	8	1.67540	.045000	8	.053452	1.015236	8	1.108267
G_3:3	SACWSACI	.000909	11	.003015	2.75455	11	.76729	.032727	11	.039266	1.365785	11	1.590169
G_3:3	SANDMOUN	.245000	4	.322645	5.30000	4	.86023	.152500	4	.105633	2.678268	4	1.799491
G_3:3	SANTAFEB	.290000	3	.209523	6.16667	3	1.55671	.153333	3	.150111	2.416803	3	2.104643
G_3:3	SIPH#06	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SIPH#16	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SIPH#17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SIPH01	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SIPH02	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SIPH03	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SIPH04	0.000000	1	0.000000	36.00000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_3:3	SIPH05	0.000000	1	0.000000	36.30000	1	0.00000	1.630000	1	0.000000	4.490358	1	0.000000
G_3:3	SIPH08	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SIPH11	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SIPH12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SIPH13	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SIPH14	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SIPH18	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SIPH19	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SIPH20	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SJOAQHWY	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SJRBLIND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	SJRJERSE	.052857	7	.068243	5.08571	7	.83751	.087143	7	.117006	1.630347	7	2.091716
G_3:3	SJRMOSSD	.062500	4	.047871	4.20000	4	1.26754	.077500	4	.051881	2.160618	4	1.500011
G_3:3	SOMOK269	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	STATION0	.182308	13	.228515	5.17692	13	1.24977	.150000	13	.101078	2.759039	13	1.615577
G_3:3	SacWSac	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000

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Summary Table of Means (intdat1.sta)
N=6264 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_3:3	Siph17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	TURNERCU	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	VERNALIS	.079091	11	.145358	4.29091	11	1.65979	.052727	11	.064667	1.258183	11	1.459329
G_3:3	Verona	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	WHITEBIS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_3:3	WSTCANCL	.250000	4	.266958	6.77500	4	1.72313	.125000	4	.147986	1.826484	4	2.125128
G_4:4	AMERICAN	.005556	9	.016667	1.48889	9	.28916	.017778	9	.027739	1.253307	9	1.899666
G_4:4	BANKS	.060000	29	.104506	4.11034	29	1.08573	.075172	29	.074144	1.771808	29	1.538935
G_4:4	BARKER	0.000000	1	0.000000	7.80000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_4:4	BARKERNO	.019167	24	.035376	7.17083	24	2.04864	.160833	24	.163545	2.115374	24	1.756446
G_4:4	CACHE	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	CACHEMIN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	CHECK 12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	CHECK 13	.130000	1	0.000000	5.90000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_4:4	CLIFTON	.062857	7	.121890	4.42857	7	1.36102	.078571	7	.098222	1.392704	7	1.745495
G_4:4	CONCOSPP	.091250	8	.078819	4.83750	8	1.41516	.072500	8	.102365	1.253051	8	1.730654
G_4:4	CONNMAND	0.000000	1	0.000000	2.60000	1	0.00000	.060000	1	0.000000	2.307692	1	0.000000
G_4:4	DELTACRC	.017500	4	.023629	2.72500	4	.82209	.040000	4	.048990	1.433424	4	1.668542
G_4:4	DISAPPHO	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	DMC	.088824	17	.119994	4.44706	17	1.24856	.071176	17	.081308	1.436280	17	1.580746
G_4:4	FALSETIP	.086000	5	.077330	4.08000	5	.83187	.128000	5	.042071	3.129749	5	.626815
G_4:4	GEORGSLW	.002000	5	.004472	3.04000	5	1.22597	.034000	5	.031305	1.257778	5	1.227700
G_4:4	GRANTLNC	.244000	5	.289275	3.84000	5	.35071	.084000	5	.049295	2.175933	5	1.235274
G_4:4	GRANTOLD	.170000	5	.159374	4.70000	5	1.35093	.034000	5	.076026	.653846	5	1.462044
G_4:4	GREENES	.001101	109	.005828	1.99174	109	.37047	.035046	109	.029709	1.753508	109	1.479003
G_4:4	HONKER	.050000	6	.070427	3.13333	6	1.35302	.030000	6	.034641	1.468254	6	1.677966
G_4:4	HONKERWH	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	HOOD	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	LATHAM	0.000000	1	0.000000	4.10000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_4:4	LCONNECT	.008889	9	.020276	2.60000	9	.61033	.042222	9	.051424	1.636926	9	2.124848
G_4:4	LINDSEY	.028750	8	.030909	3.65000	8	1.42528	.042500	8	.045591	1.576282	8	1.687824
G_4:4	LPOTATOW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	LPOTTERM	.030000	5	.030822	2.38000	5	.43243	.028000	5	.038341	1.296296	5	1.833240
G_4:4	MALLARDI	.716923	13	2.240373	3.03077	13	.81994	.048462	13	.057278	1.583194	13	1.804577
G_4:4	MAZE	.262500	8	.241469	5.16250	8	1.19993	.068750	8	.076240	1.230067	8	1.317830
G_4:4	MIDDLER	.009028	72	.035372	5.36250	72	1.21324	.095417	72	.081482	1.814174	72	1.526917
G_4:4	MIDMOWRY	.320000	6	.215314	4.01667	6	1.43585	.061667	6	.072503	1.772169	6	2.098664
G_4:4	MIDWOODW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	MOKELUMN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	MOKGEORG	.003333	6	.008165	2.11667	6	.46655	.038333	6	.046224	1.545940	6	1.892928
G_4:4	MOKRABVG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	MOKSNODG	0.000000	3	0.000000	6.46667	3	7.39008	.200000	3	.251197	2.755556	3	.497573
G_4:4	MRIVBACO	.086250	8	.064794	5.43750	8	1.95078	.111250	8	.106829	2.157520	8	1.790444
G_4:4	MRIVTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	NOBAY	0.000000	2	0.000000	2.35000	2	.21213	0.000000	2	0.000000	0.000000	2	0.000000
G_4:4	NORTHCAN	.028000	5	.062610	5.18000	5	1.82948	.126000	5	.122801	2.032092	5	1.867549
G_4:4	NVICWOOD	.066000	5	.063087	4.92000	5	1.77398	.092000	5	.130843	1.462639	5	2.004819
G_4:4	OLDR-DMC	.177500	4	.137204	5.20000	4	1.43062	.067500	4	.080571	1.540011	4	1.784675
G_4:4	OLDRIVBA	.007632	38	.020193	3.93158	38	.84761	.077105	38	.063284	2.022004	38	1.585327
G_4:4	OLDRIVDM	.030000	5	.067082	4.76000	5	1.78410	.042000	5	.093915	.807692	5	1.806055
G_4:4	OLDRTRAC	.270000	6	.323914	4.56667	6	.90921	.095000	6	.052440	2.168338	6	1.068333
G_4:4	POTNODE2	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	ROCKSL	.024545	11	.055743	3.89091	11	.99142	.050000	11	.070285	1.380308	11	1.923792

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Summary Table of Means (intdat1.sta)
N=6264 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_4:4	SACCOLUS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SACISLET	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SACRIVID	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SACRIVLT	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SACRRIOV	.017273	11	.012721	2.63636	11	.76586	.042727	11	.043839	1.581915	11	1.554219
G_4:4	SACSLOUG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SACWSACI	.008000	5	.010954	1.64000	5	.35071	.022000	5	.031937	1.233333	5	1.714319
G_4:4	SANDMOUN	.121250	8	.268245	3.73750	8	1.00561	.068750	8	.084758	1.720621	8	1.850664
G_4:4	SANTAFEB	.060000	6	.051769	4.73333	6	1.39380	.066667	6	.080911	1.547906	6	1.736429
G_4:4	SIPH#06	.170000	1	0.000000	38.50000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_4:4	SIPH#16	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SIPH#17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SIPH01	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SIPH02	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SIPH03	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SIPH04	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SIPH05	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SIPH08	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SIPH11	0.000000	1	0.000000	34.80000	1	0.00000	1.310000	1	0.000000	3.764368	1	0.000000
G_4:4	SIPH12	.170000	1	0.000000	38.60000	1	0.00000	1.410000	1	0.000000	3.652850	1	0.000000
G_4:4	SIPH13	.095000	2	.007071	5.40000	2	.84853	.185000	2	.035355	3.416667	2	.117851
G_4:4	SIPH14	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SIPH18	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SIPH19	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SIPH20	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SJOAQHWY	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SJRBLIND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	SJRJERSE	.176000	5	.122597	3.74000	5	1.28569	.078000	5	.083187	2.177629	5	2.011599
G_4:4	SJRMOSSD	.092222	9	.196963	3.72222	9	.62805	.075556	9	.045031	2.156389	9	1.245087
G_4:4	SOMOK269	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	STATION0	.059375	16	.054829	4.23125	16	1.07065	.097500	16	.089405	2.135202	16	1.762623
G_4:4	SacWSac	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	Siph17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	TURNERCU	.172000	5	.134425	5.02000	5	1.66793	.098000	5	.103537	2.044495	5	1.872768
G_4:4	VERNALIS	.158571	14	.171323	3.85714	14	.91038	.019286	14	.050909	.429025	14	1.091610
G_4:4	Verona	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	WHITEBIS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_4:4	WSTCANCL	.085000	6	.072595	4.98333	6	1.74059	.121667	6	.106097	2.306663	6	1.813178
G_5:5	AMERICAN	0.000000	10	0.000000	1.79000	10	.34140	.024000	10	.025473	1.311688	10	1.416907
G_5:5	BANKS	.025789	38	.080627	3.58947	38	.72552	.055263	38	.057879	1.554735	38	1.582014
G_5:5	BARKER	0.000000	1	0.000000	6.60000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_5:5	BARKERNO	.033684	19	.058709	4.80000	19	.77603	.072105	19	.082028	1.464003	19	1.605566
G_5:5	CACHE	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	CACHEMIN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	CHECK 12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	CHECK 13	.350000	1	0.000000	4.40000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_5:5	CLIFTON	.127500	12	.122632	3.68333	12	.79067	.078333	12	.072342	1.887944	12	1.679310
G_5:5	CONCOSPP	.160000	9	.067639	3.93333	9	.43301	.073333	9	.071589	1.851597	9	1.780641
G_5:5	CONMMAND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	DELTACRC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	DISAPPHO	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	DMC	.090625	16	.101224	3.59375	16	.83862	.068750	16	.065307	1.708610	16	1.574533
G_5:5	FALSETIP	.227500	4	.278971	3.15000	4	.12910	.027500	4	.055000	.833333	4	1.666667

STAT. BASIC STATS

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NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_5:5	GEORGSLW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	GRANTLNC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	GRANTOLD	.100000	2	.141421	4.45000	2	.49497	.155000	2	.021213	3.478150	2	.089826
G_5:5	GREENES	.001058	104	.004388	2.23462	104	.89299	.029038	104	.023172	1.392882	104	1.210508
G_5:5	HONKER	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	HONKERWH	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	HOOD	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	LATHAM	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	LCONNECT	0.000000	3	0.000000	2.26667	3	.55076	0.000000	3	0.000000	0.000000	3	0.000000
G_5:5	LINDSEY	.005000	8	.014142	3.57500	8	1.32207	.030000	8	.041404	1.062776	8	1.471278
G_5:5	LPOTATOW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	LPOTTERM	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	MALLARDI	1.515000	12	5.222971	2.59167	12	.55179	.031667	12	.048021	1.165947	12	1.796486
G_5:5	MAZE	.287143	7	.227209	3.95714	7	1.12821	.067143	7	.047509	1.911702	7	1.314259
G_5:5	MIDDLER	.012051	78	.042407	5.19103	78	1.29476	.087179	78	.063714	1.642272	78	1.226962
G_5:5	MIDMOWRY	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	MIDWOODW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	MOKELUMN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	MOKGEORG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	MOKRABVG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	MOKSNODG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	MRIVBACO	.152000	5	.029496	4.26000	5	.29665	.026000	5	.058138	.590909	5	1.321313
G_5:5	MRIVTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	NOBAY	0.000000	1	0.000000	2.40000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_5:5	NORTHCAN	.080000	2	.113137	4.55000	2	.35355	.155000	2	.007071	3.410853	2	.109629
G_5:5	NVICWOOD	.160000	2	.070711	4.55000	2	.49497	.080000	2	.113137	1.632653	2	2.308920
G_5:5	OLDR-DMC	.155000	2	.077782	4.45000	2	.49497	.145000	2	.021213	3.252033	2	.114977
G_5:5	OLDRIVBA	.008857	35	.029483	3.47143	35	.38239	.085714	35	.048403	2.474734	35	1.378352
G_5:5	OLDRIVDM	.150000	2	.070711	4.60000	2	.28284	.080000	2	.113137	1.666667	2	2.357023
G_5:5	OLDRTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	POTNODE2	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	ROCKSL	.132857	7	.184817	3.07143	7	.67259	.048571	7	.060671	1.305157	7	1.634759
G_5:5	SACCOLUS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	SACISLET	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	SACRIVID	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	SACRIVLT	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	SACRRIOV	.066667	9	.103562	2.14444	9	.38115	.086667	9	.173133	4.532818	9	9.648285
G_5:5	SACSLOUG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	SACWSACI	.005000	4	.010000	1.52500	4	.05000	.047500	4	.009574	3.114583	4	.628578
G_5:5	SANDMOUN	0.000000	2	0.000000	3.35000	2	.07071	.055000	2	.077782	1.617647	2	2.287698
G_5:5	SANTAFEB	.050000	2	.070711	4.60000	2	.84853	.075000	2	.106066	1.442308	2	2.039731
G_5:5	SIPH#06	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	SIPH#16	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	SIPH#17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	SIPH01	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	SIPH02	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	SIPH03	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	SIPH04	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	SIPH05	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_5:5	SIPH08	.240000	1	0.000000	22.80000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_5:5	SIPH11	.073333	3	.127017	24.63333	3	2.21886	.653333	3	.568008	2.547325	3	2.206057
G_5:5	SIPH12	0.000000	1	0.000000	25.60000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_5:5	SIPH13	.023333	3	.020817	3.66667	3	.47258	.080000	3	.069282	2.095238	3	1.836886

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Summary Table of Means (intdat1.sta)
N=6264 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G 5:5	SIPH14	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 5:5	SIPH18	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 5:5	SIPH19	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 5:5	SIPH20	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 5:5	SJOAQHWY	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 5:5	SJRBLIND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 5:5	SJRJERSE	.415000	2	.586899	4.85000	2	1.90919	.050000	2	.070711	1.428571	2	2.020305
G 5:5	SJRMOSSD	.072500	4	.043493	2.87500	4	.49244	.090000	4	.023094	3.095833	4	.278347
G 5:5	SOMOK269	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 5:5	STATION0	.057500	8	.088277	3.80000	8	.86355	.088750	8	.055918	2.351651	8	1.539487
G 5:5	SacWSac	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 5:5	Siph17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 5:5	TURNERCU	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 5:5	VERNALIS	.124444	9	.147827	3.12222	9	.70494	.027778	9	.042361	.863458	9	1.301797
G 5:5	Verona	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 5:5	WHITEBIS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 5:5	WSTCANCL	.050000	2	.070711	4.55000	2	.21213	.145000	2	.021213	3.179400	2	.317993
G 6:6	AMERICAN	0.000000	12	0.000000	1.70833	12	.32602	.015000	12	.018829	.847555	12	1.068212
G 6:6	BANKS	.040870	46	.099193	3.53478	46	1.01461	.065870	46	.057021	1.954934	46	1.676147
G 6:6	BARKER	0.000000	1	0.000000	5.10000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G 6:6	BARKERNO	.010000	22	.021822	4.72273	22	2.84587	.098636	22	.064608	2.419722	22	1.533378
G 6:6	CACHE	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 6:6	CACHEMIN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 6:6	CHECK 12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 6:6	CHECK 13	.380000	1	0.000000	4.70000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G 6:6	CLIFTON	.190833	12	.159115	3.68333	12	.48586	.080833	12	.060672	2.157964	12	1.598958
G 6:6	CONCOSPP	.214286	7	.236844	3.28571	7	.45617	.070000	7	.048305	2.186649	7	1.499277
G 6:6	CONNMAND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 6:6	DELTACRC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 6:6	DISAPPHO	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 6:6	DMC	.139231	13	.134874	3.39231	13	.60616	.043077	13	.057501	1.263580	13	1.669845
G 6:6	FALSETIP	.763333	3	.238607	2.96667	3	.23094	.056667	3	.049329	1.827957	3	1.591253
G 6:6	GEORGSLW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 6:6	GRANTLNC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 6:6	GRANTOLD	.256667	3	.222785	4.03333	3	.25166	.086667	3	.075056	2.148103	3	1.870914
G 6:6	GREENES	.000930	129	.004750	2.03643	129	.56263	.031318	129	.023894	1.666270	129	1.316995
G 6:6	HONKER	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 6:6	HONKERWH	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 6:6	HOOD	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 6:6	LATHAM	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 6:6	LCONNECT	0.000000	4	0.000000	3.52500	4	1.18427	0.000000	4	0.000000	0.000000	4	0.000000
G 6:6	LINDSEY	.020000	11	.019494	3.44545	11	1.61763	.042727	11	.041253	1.871667	11	1.798292
G 6:6	LPOTATOW	0.000000	3	0.000000	2.56667	3	.63509	0.000000	3	0.000000	0.000000	3	0.000000
G 6:6	LPOTTERM	0.000000	4	0.000000	2.67500	4	.82614	0.000000	4	0.000000	0.000000	4	0.000000
G 6:6	MALLARDI	1.887857	14	3.790320	2.52857	14	.54268	.049286	14	.045820	1.952225	14	1.839063
G 6:6	MAZE	.316250	8	.385521	4.27500	8	.58002	.057500	8	.062963	1.399760	8	1.547281
G 6:6	MIDDLER	.012619	84	.059680	3.99048	84	.85906	.076786	84	.056423	1.967787	84	1.490564
G 6:6	MIDMOWRY	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 6:6	MIDWOODW	0.000000	4	0.000000	3.10000	4	.29439	0.000000	4	0.000000	0.000000	4	0.000000
G 6:6	MOKELUMN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 6:6	MOKGEORG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 6:6	MOKRABVG	0.000000	4	0.000000	2.42500	4	.46458	0.000000	4	0.000000	0.000000	4	0.000000
G 6:6	MOKSNODG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000

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Summary Table of Means (intdat1.sta)
N=6264 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_6:6	MRIVBACO	.157143	7	.128415	3.85714	7	.79970	.050000	7	.062716	1.270008	7	1.616417
G_6:6	MRIVTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	NOBAY	0.000000	1	0.000000	2.10000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_6:6	NORTHCAN	.270000	3	0.000000	4.26667	3	.30551	.043333	3	.075056	1.083333	3	1.876388
G_6:6	NVICWOOD	.123333	3	.213620	3.80000	3	.34641	.083333	3	.072342	2.083333	3	1.808545
G_6:6	OLDR-DMC	.256667	3	.222336	3.86667	3	.30551	.036667	3	.063509	1.018519	3	1.764126
G_6:6	OLDRIVBA	.011667	36	.024202	3.08889	36	.71105	.079444	36	.050537	2.600868	36	1.592060
G_6:6	OLDRIVDM	.390000	3	.010000	4.00000	3	.20000	.040000	3	.069282	1.000000	3	1.732051
G_6:6	OLDRTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	POTNODE2	0.000000	5	0.000000	2.34000	5	.25100	0.000000	5	0.000000	0.000000	5	0.000000
G_6:6	ROCKSL	.246000	10	.273504	2.99000	10	.35418	.016000	10	.033731	.492424	10	1.038275
G_6:6	SACCOLUS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SACISLET	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SACRIVID	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SACRIVLT	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SACRRIOV	.020000	7	.044721	2.94286	7	1.79337	.032857	7	.030938	1.533894	7	1.463672
G_6:6	SACSLOUG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SACWSACI	.018000	5	.023875	1.48000	5	.08367	.046000	5	.005477	3.101190	5	.238467
G_6:6	SANDMCUN	.196667	3	.340637	3.00000	3	.20000	.060000	3	.051962	1.937500	3	1.680541
G_6:6	SANTAFEB	0.000000	3	0.000000	3.50000	3	.30000	.073333	3	.063509	2.012531	3	1.747313
G_6:6	SIPH#06	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SIPH#16	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SIPH#17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SIPH01	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SIPH02	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SIPH03	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SIPH04	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SIPH05	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SIPH08	.225000	2	.021213	20.60000	2	.70711	.390000	2	.551543	1.940299	2	2.743996
G_6:6	SIPH11	.220000	3	.010000	19.13333	3	2.30290	.500000	3	.435890	2.669446	3	2.321572
G_6:6	SIPH12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SIPH13	.020000	4	.014142	3.30000	4	.57155	.080000	4	.054160	2.635281	4	1.761677
G_6:6	SIPH14	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SIPH18	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SIPH19	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SIPH20	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SJOAQHWY	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SJRBLIND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	SJRJERSE	1.515000	4	.844610	3.17500	4	.26300	.037500	4	.043493	1.139706	4	1.328287
G_6:6	SJRMOSSD	.152000	5	.106395	3.00000	5	.30822	.070000	5	.041231	2.245455	5	1.276348
G_6:6	SOMOK269	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	STATIONO	.130000	12	.210540	3.31667	12	.32427	.053333	12	.056942	1.625563	12	1.719818
G_6:6	SacWSac	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	Siph17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	TURNERCU	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	VERNALIS	.199231	13	.241366	3.50000	13	.93095	.042308	13	.048503	1.240703	13	1.436733
G_6:6	Verona	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	WHITEBIS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_6:6	WSTCANCL	.383333	3	.005774	3.83333	3	.15275	.120000	3	.010000	3.126956	3	.141081
G_7:7	AMERICAN	0.000000	6	0.000000	1.55000	6	.16432	.025000	6	.019748	1.669935	6	1.316849
G_7:7	BANKS	.033542	48	.100308	3.02917	48	.45614	.075417	48	.053194	2.462577	48	1.695815
G_7:7	BARKER	0.000000	1	0.000000	3.80000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_7:7	BARKERNO	.015000	30	.027006	4.17000	30	.42843	.098333	30	.071731	2.388622	30	1.733902

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Summary Table of Means (intdat1.sta)
N=6264 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G 7:7	CACHE	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 7:7	CACHEMIN	0.000000	1	0.000000	1.90000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G 7:7	CHECK 12	0.000000	1	0.000000	2.60000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G 7:7	CHECK 13	.190000	2	.268701	3.90000	2	.84853	.060000	2	.084853	1.333333	2	1.885618
G 7:7	CLIFTON	.148333	6	.162778	3.13333	6	.43205	.018333	6	.044907	.572917	6	1.403353
G 7:7	CONCOSPP	.097500	8	.235963	2.82500	8	.23146	.061250	8	.051113	2.114560	8	1.788976
G 7:7	CONNMAND	0.000000	2	0.000000	3.20000	2	.42426	.045000	2	.063640	1.551724	2	2.194469
G 7:7	DELTACRC	.010000	4	.011547	1.77500	4	.28723	.045000	4	.005774	2.605281	4	.638596
G 7:7	DISAPPHO	0.000000	1	0.000000	2.10000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G 7:7	DMC	.124000	20	.182624	3.26000	20	.48166	.058000	20	.054830	1.792445	20	1.674937
G 7:7	FALSETIP	.218182	11	.324802	2.60000	11	.35214	.033636	11	.039057	1.226557	11	1.430359
G 7:7	GEORGSLW	.015000	4	.010000	1.75000	4	.19149	0.000000	4	0.000000	0.000000	4	0.000000
G 7:7	GRANTLNC	.232000	5	.212297	4.72000	5	2.11943	.046000	5	.063875	.818703	5	1.179232
G 7:7	GRANTOLD	0.000000	9	0.000000	3.56667	9	.46904	.101111	9	.113957	2.662057	9	2.684251
G 7:7	GREENES	.000662	136	.003266	2.59559	136	1.48418	.030515	136	.020810	1.483846	136	1.236397
G 7:7	HONKER	.034000	5	.026077	2.66000	5	.28810	.070000	5	.040000	2.577426	5	1.463553
G 7:7	HONKERWH	0.000000	1	0.000000	2.00000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G 7:7	HOOD	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 7:7	LATHAM	.070000	2	.098995	5.70000	2	3.25269	0.000000	2	0.000000	0.000000	2	0.000000
G 7:7	LCONNECT	.020000	8	.035456	3.16250	8	1.19036	.057500	8	.049785	2.147654	8	1.844412
G 7:7	LINDSEY	.011429	7	.015736	2.67143	7	.45722	.011429	7	.030237	.519481	7	1.374416
G 7:7	LPOTATOW	0.000000	6	0.000000	4.23333	6	5.27889	0.000000	6	0.000000	0.000000	6	0.000000
G 7:7	LPOTTERM	.004615	13	.008771	2.10000	13	.33665	.028462	13	.040176	1.254727	13	1.696934
G 7:7	MALLARDI	4.275882	17	5.352933	2.60000	17	.94207	.034706	17	.046518	1.280428	17	1.589812
G 7:7	MAZE	.348889	9	.351690	4.68889	9	.91984	.038889	9	.058618	.819850	9	1.247497
G 7:7	MIDDLER	.014691	81	.057491	3.59753	81	.73841	.073951	81	.051688	2.099894	81	1.508957
G 7:7	MIDMOWRY	.202000	5	.300200	4.22000	5	.88713	.066000	5	.061887	1.598124	5	1.480324
G 7:7	MIDWOODW	0.000000	4	0.000000	3.17500	4	.33040	0.000000	4	0.000000	0.000000	4	0.000000
G 7:7	MOKELUMN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 7:7	MOKGEORG	.006000	5	.008944	1.72000	5	.22804	.020000	5	.027386	1.213235	5	1.662562
G 7:7	MOKRABVG	0.000000	5	0.000000	2.04000	5	.59414	0.000000	5	0.000000	0.000000	5	0.000000
G 7:7	MOKSNODG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 7:7	MRIVBACO	.060909	11	.117512	3.22727	11	.52743	.047273	11	.054789	1.575387	11	1.824623
G 7:7	MRIVTRAC	0.000000	1	0.000000	3.70000	1	0.00000	.130000	1	0.000000	3.513514	1	0.000000
G 7:7	NOBAY	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 7:7	NORTHCAN	.181111	9	.169665	3.52222	9	.41164	.077778	9	.062405	2.189840	9	1.695467
G 7:7	NVICWOOD	.239000	10	.209308	3.09000	10	.21833	.072000	10	.050947	2.306888	10	1.607894
G 7:7	OLDR-DMC	.180000	8	.199714	3.62500	8	.45591	.097500	8	.044641	2.668075	8	1.135083
G 7:7	OLDRIVBA	.005714	63	.021305	2.73810	63	.65953	.061429	63	.042648	2.251452	63	1.558984
G 7:7	OLDRIVDM	.232222	9	.231343	3.56667	9	.42426	.061111	9	.058618	1.718954	9	1.633287
G 7:7	OLDRTRAC	.332000	5	.311239	4.38000	5	.53104	.086000	5	.048270	2.064891	5	1.161464
G 7:7	POTNODE2	0.000000	4	0.000000	2.42500	4	.26300	0.000000	4	0.000000	0.000000	4	0.000000
G 7:7	ROCKSL	.259167	12	.282568	2.76667	12	.28391	.043333	12	.045594	1.548337	12	1.655065
G 7:7	SACCOLUS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 7:7	SACISLET	0.000000	1	0.000000	1.40000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G 7:7	SACRIVID	0.000000	1	0.000000	1.40000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G 7:7	SACRIVLT	0.000000	1	0.000000	1.40000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G 7:7	SACRRIOV	.035000	14	.052294	2.12143	14	.61791	.035714	14	.028206	1.906495	14	1.505708
G 7:7	SACSLOUG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 7:7	SACWSACI	.011667	6	.024014	1.41667	6	.09832	.043333	6	.008165	3.063187	6	.584009
G 7:7	SANDMOUN	.281818	11	.265172	2.59091	11	.17581	.041818	11	.040452	1.663408	11	1.607362
G 7:7	SANTAFEB	.280000	9	.210891	3.02222	9	.32702	.064444	9	.049526	2.158756	9	1.651484
G 7:7	SIPH#06	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 7:7	SIPH#16	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000

STAT. BASIC STATS

Summary Table of Means (intdat1.sta)
N=6264 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_7:7	SIPH#17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_7:7	SIPH01	0.000000	1	0.000000	5.90000	1	0.00000	.280000	1	0.000000	4.745763	1	0.000000
G_7:7	SIPH02	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_7:7	SIPH03	.035000	2	.049497	8.35000	2	.91924	.200000	2	.282843	2.222222	2	3.142697
G_7:7	SIPH04	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_7:7	SIPH05	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_7:7	SIPH08	.025000	2	.035355	6.25000	2	.49497	.140000	2	.197990	2.121212	2	2.999847
G_7:7	SIPH11	.017500	4	.020616	5.82500	4	2.69119	.095000	4	.190000	.979381	4	1.958763
G_7:7	SIPH12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_7:7	SIPH13	.030000	2	.014142	2.80000	2	.14142	.100000	2	.014142	3.563218	2	.325107
G_7:7	SIPH14	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_7:7	SIPH18	0.000000	1	0.000000	2.60000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_7:7	SIPH19	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_7:7	SIPH20	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_7:7	SJOAQHWY	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_7:7	SJRBLIND	.016667	24	.081650	4.25000	24	3.48837	.038333	24	.039306	1.109032	24	1.196215
G_7:7	SJRJERSE	.775000	10	.622562	2.58000	10	.36454	.045000	10	.038944	1.840958	10	1.612176
G_7:7	SJRMOSSD	.217500	12	.227441	3.38333	12	.60428	.063333	12	.047354	1.845287	12	1.398087
G_7:7	SOMOK269	0.000000	1	0.000000	1.40000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_7:7	STATION0	.250769	26	.229607	2.88462	26	.43972	.064231	26	.050925	2.183014	26	1.663163
G_7:7	SacWSac	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_7:7	Siph17	0.000000	1	0.000000	2.00000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_7:7	TURNERCU	.052000	5	.082885	3.74000	5	.74027	.062000	5	.085557	1.408333	5	1.928496
G_7:7	VERNALIS	.133636	11	.188482	3.33636	11	.32641	.061818	11	.049360	1.790612	11	1.433431
G_7:7	Verona	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_7:7	WHITEBIS	0.000000	1	0.000000	2.30000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_7:7	WSTCANCL	.063636	11	.130558	3.40909	11	.33602	.069091	11	.056825	2.052405	11	1.652468
G_8:8	AMERICAN	0.000000	7	0.000000	1.61429	7	.38048	.010000	7	.017321	.737834	7	1.270034
G_8:8	BANKS	.058837	43	.131569	2.94186	43	.42886	.076977	43	.044803	2.661147	43	1.499505
G_8:8	BARKER	0.000000	1	0.000000	3.00000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_8:8	BARKERNO	.008462	26	.016659	3.86923	26	.39066	.099231	26	.078990	2.586268	26	2.096725
G_8:8	CACHE	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_8:8	CACHEMIN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_8:8	CHECK 12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_8:8	CHECK 13	.126667	3	.219393	3.30000	3	.43589	.050000	3	.043589	1.641577	3	1.436252
G_8:8	CLIFTON	.106000	5	.115672	2.82000	5	.31937	.042000	5	.057619	1.354167	5	1.854635
G_8:8	CONCOSPP	.118000	10	.194696	3.26000	10	1.42533	.046000	10	.049261	1.485670	10	1.674456
G_8:8	CONNMAND	.053333	3	.092376	2.63333	3	.11547	.056667	3	.049329	2.177778	3	1.887189
G_8:8	DELTACRC	.016667	3	.015275	1.76667	3	.05774	.026667	3	.023094	1.525054	3	1.322352
G_8:8	DISAPPHO	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_8:8	DMC	.218889	18	.213318	3.57222	18	.90020	.052778	18	.055604	1.469494	18	1.540949
G_8:8	FALSETIP	.248889	9	.240075	2.36667	9	.23452	.052222	9	.040242	2.206683	9	1.691777
G_8:8	GEORGSLW	.023333	3	.005774	1.80000	3	0.00000	.026667	3	.023094	1.481481	3	1.283001
G_8:8	GRANTLNC	.343333	3	.299388	4.36667	3	.37859	.066667	3	.058595	1.478175	3	1.282297
G_8:8	GRANTOLD	.242857	7	.231712	3.77143	7	.48892	.077143	7	.055891	2.013330	7	1.487494
G_8:8	GREENES	.001181	127	.004649	2.30157	127	1.28755	.029921	127	.021547	1.527855	127	1.222246
G_8:8	HONKER	.040000	3	.040000	3.00000	3	.45826	.076667	3	.068069	2.387521	3	2.071927
G_8:8	HONKERWH	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_8:8	HOOD	.012500	4	.005000	1.82500	4	.17078	.040000	4	.027080	2.102339	4	1.409721
G_8:8	LATHAM	.165000	2	.049497	2.60000	2	.14142	.040000	2	.056569	1.481481	2	2.095131
G_8:8	LCONNECT	.038333	6	.044460	2.31667	6	.20412	.011667	6	.028577	.466667	6	1.143095
G_8:8	LINDSEY	.011250	8	.021002	2.77500	8	.58002	.042500	8	.045591	1.772020	8	1.895229
G_8:8	LPOTATOW	0.000000	4	0.000000	2.95000	4	.81035	0.000000	4	0.000000	0.000000	4	0.000000

STAT. BASIC STATS

Summary Table of Means (intdat1.sta)
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NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G 8:8	LPOTTERM	.015714	7	.020702	2.78571	7	.63621	.011429	7	.030237	.457143	7	1.209486
G 8:8	MALLARDI	6.131250	16	4.986409	2.37500	16	.42348	.068125	16	.071295	2.622827	16	2.274386
G 8:8	MAZE	.261250	8	.332284	4.27500	8	.61818	.065000	8	.054248	1.575997	8	1.320492
G 8:8	MIDDLER	.007089	79	.031221	3.34051	79	.42833	.057975	79	.053789	1.719786	79	1.595636
G 8:8	MIDMOURY	.370000	3	.347707	4.10000	3	.90000	.076667	3	.066583	1.694309	3	1.474118
G 8:8	MIDWOODW	0.000000	7	0.000000	2.85714	7	.35989	0.000000	7	0.000000	0.000000	7	0.000000
G 8:8	MOKELUMN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	MOKGEORG	.016667	3	.015275	1.93333	3	.23094	.030000	3	.026458	1.498316	3	1.297826
G 8:8	MOKRABVG	0.000000	4	0.000000	2.37500	4	.46458	0.000000	4	0.000000	0.000000	4	0.000000
G 8:8	MOKSNCDG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	MRIVBACD	.181000	10	.115321	3.29000	10	.51305	.059000	10	.063849	1.681659	10	1.780809
G 8:8	MRIVTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	NOBAY	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	NORTHCAN	.172500	8	.168417	3.48750	8	.41209	.067500	8	.058248	1.903625	8	1.616534
G 8:8	NVICWOOD	.307778	9	.178100	3.14444	9	.62071	.064444	9	.051988	2.205329	9	1.678774
G 8:8	OLDR-DMC	.221667	6	.254434	3.93333	6	.97912	.070000	6	.057271	1.888993	6	1.480963
G 8:8	OLDRIVBA	.012432	37	.033116	2.42432	37	.36622	.054054	37	.038977	2.278427	37	1.618287
G 8:8	OLDRIVDM	.308000	10	.179059	3.53000	10	.51218	.045000	10	.059114	1.204021	10	1.570791
G 8:8	OLDRTRAC	.402500	4	.268499	4.70000	4	.81240	.060000	4	.069282	1.200000	4	1.385641
G 8:8	POTNODE2	0.000000	7	0.000000	2.31429	7	.35790	0.000000	7	0.000000	0.000000	7	0.000000
G 8:8	ROCKSL	.358182	11	.252461	2.63636	11	.39566	.055455	11	.044579	1.985824	11	1.593268
G 8:8	SACCOLUS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	SACISLET	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	SACRIVID	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	SACRIVLT	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	SACRRIOV	.066667	12	.095283	1.91667	12	.16967	.035000	12	.026799	1.851378	12	1.424411
G 8:8	SACSLOUG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	SACWSACI	.010000	6	.006325	2.43333	6	2.19241	.030000	6	.023664	1.559581	6	1.528435
G 8:8	SANDMOUN	.367000	10	.232429	2.57000	10	.30203	.040000	10	.042947	1.586399	10	1.675088
G 8:8	SANTAFEB	.303750	8	.175494	2.90000	8	.39279	.068750	8	.043569	2.428771	8	1.504710
G 8:8	SIPH#06	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	SIPH#16	0.000000	1	0.000000	1.90000	1	0.00000	.070000	1	0.000000	3.684211	1	0.000000
G 8:8	SIPH#17	.020000	3	0.000000	2.10000	3	.34641	.026667	3	.046188	1.066667	3	1.847521
G 8:8	SIPH01	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	SIPH02	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	SIPH03	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	SIPH04	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	SIPH05	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	SIPH08	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	SIPH11	.026667	3	.005774	4.36667	3	.85049	.126667	3	.120554	2.972549	3	2.596813
G 8:8	SIPH12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	SIPH13	.020000	1	0.000000	2.30000	1	0.00000	.080000	1	0.000000	3.478261	1	0.000000
G 8:8	SIPH14	0.000000	1	0.000000	1.90000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G 8:8	SIPH18	.010000	2	.014142	3.00000	2	1.13137	.075000	2	.007071	2.643541	2	.761239
G 8:8	SIPH19	.020000	1	0.000000	1.90000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G 8:8	SIPH20	.020000	1	0.000000	2.80000	1	0.00000	.090000	1	0.000000	3.214286	1	0.000000
G 8:8	SJOAQHWY	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	SJRBLIND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	SJRJERSE	.508750	8	.424077	2.37500	8	.26049	.022500	8	.031053	.992063	8	1.383127
G 8:8	SJRMOSSD	.320000	7	.107393	2.97143	7	.22147	.067143	7	.046085	2.250072	7	1.560509
G 8:8	SOMOK269	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000

STAT. BASIC STATS

Summary Table of Means (intdat1.sta)
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NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G 8:8	STATIONO	.241905	21	.228618	2.89048	21	.56205	.057619	21	.048156	2.019123	21	1.666420
G 8:8	SacWSac	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	Siph17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	TURNERCU	.172500	4	.051235	3.77500	4	.67515	.027500	4	.055000	.859375	4	1.718750
G 8:8	VERNALIS	.146000	15	.200136	3.44667	15	.29729	.034667	15	.044218	1.046201	15	1.334614
G 8:8	Verona	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	WHITEBIS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 8:8	WSTCANCL	.178750	8	.152169	3.47500	8	.64531	.033750	8	.046885	1.093321	8	1.510822
G 9:9	AMERICAN	0.000000	12	0.000000	1.75833	12	.42095	.018333	12	.018007	1.122357	12	1.143135
G 9:9	BANKS	.061250	48	.142555	2.93125	48	.36679	.041458	48	.044291	1.450187	48	1.537798
G 9:9	BARKER	0.000000	1	0.000000	6.70000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G 9:9	BARKERNO	.007333	30	.015960	3.86000	30	.42312	.077333	30	.069676	1.977615	30	1.770002
G 9:9	CACHE	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	CACHEMIN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	CHECK 12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	CHECK 13	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	CLIFTON	.207143	7	.238028	2.85714	7	.29921	.068571	7	.047409	2.359975	7	1.676265
G 9:9	CONCOSPP	.297000	10	.318435	2.66000	10	.21187	.049000	10	.042544	1.868005	10	1.625782
G 9:9	CONNMAND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	DELTACRC	0.000000	2	0.000000	1.80000	2	0.00000	.050000	2	0.000000	2.777778	2	0.000000
G 9:9	DISAPPHO	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	DMC	.152381	21	.183709	3.11905	21	.56800	.057619	21	.047213	1.904810	21	1.587806
G 9:9	FALSETIP	.512500	8	.377501	2.48750	8	.27999	.036250	8	.039619	1.562500	8	1.713650
G 9:9	GEORGSLW	.010000	1	0.000000	1.90000	1	0.00000	.050000	1	0.000000	2.631579	1	0.000000
G 9:9	GRANTLNC	.130000	1	0.000000	3.00000	1	0.00000	.090000	1	0.000000	3.000000	1	0.000000
G 9:9	GRANTOLD	.344286	7	.105650	3.31429	7	.42984	.060000	7	.056273	1.790153	7	1.698616
G 9:9	GREENES	.002016	124	.006865	2.64032	124	1.33136	.030565	124	.025924	1.350417	124	1.286288
G 9:9	HONKER	.030000	1	0.000000	2.40000	1	0.00000	.080000	1	0.000000	3.333333	1	0.000000
G 9:9	HONKERWH	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	HOOD	.005000	4	.010000	1.90000	4	.14142	.037500	4	.026300	2.039474	4	1.412894
G 9:9	LATHAM	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	LCONNECT	.010000	4	.020000	2.47500	4	.23629	0.000000	4	0.000000	0.000000	4	0.000000
G 9:9	LINDSEY	.018000	10	.019322	3.15000	10	1.48043	.032000	10	.042111	1.324677	10	1.729522
G 9:9	LPOTATOW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	LPOTTERM	.030000	1	0.000000	2.20000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G 9:9	MALLARDI	6.177778	18	6.623699	2.46667	18	.69112	.032222	18	.033704	1.380394	18	1.468826
G 9:9	MAZE	.102500	8	.217830	3.90000	8	.60474	.026250	8	.048679	.639775	8	1.190387
G 9:9	MIDDLER	.007108	83	.035631	3.25301	83	.62904	.062530	83	.044526	1.933261	83	1.394157
G 9:9	MIDMOWRY	.130000	1	0.000000	2.90000	1	0.00000	.090000	1	0.000000	3.103448	1	0.000000
G 9:9	MIDWOODW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	MOKELUMN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	MOKGEORG	.010000	1	0.000000	1.80000	1	0.00000	.060000	1	0.000000	3.333333	1	0.000000
G 9:9	MOKRABVG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	MOKSNODG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	MRIVBACO	.162857	14	.102163	3.24286	14	.35456	.068571	14	.061751	1.974977	14	1.776465
G 9:9	MRIVTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	NOBAY	0.000000	1	0.000000	2.70000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G 9:9	NORTHCAN	.196250	8	.107030	3.20000	8	.22039	.068750	8	.057181	2.099163	8	1.743774
G 9:9	NVICWOOD	.184286	7	.222400	3.07143	7	.21381	.060000	7	.056273	1.953176	7	1.829820
G 9:9	OLDR-DMC	.251250	8	.171417	3.32500	8	.49785	.088750	8	.038707	2.730488	8	1.198243
G 9:9	OLDRIVBA	.004118	34	.016899	2.38529	34	.32205	.071765	34	.113257	3.074098	34	4.929315
G 9:9	OLDRIVDM	.255714	7	.183381	3.17143	7	.34503	.070000	7	.048990	2.174666	7	1.489852
G 9:9	OLDRTRAC	.205000	2	.007071	3.45000	2	.07071	.050000	2	.070711	1.470588	2	2.079726

STAT. BASIC STATS

Summary Table of Means (intdat1.sta)
N=6264 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G 9:9	POTNODE2	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	ROCKSL	.192500	12	.283136	2.52500	12	.20057	.038333	12	.040415	1.473825	12	1.544404
G 9:9	SACCOLUS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SACISLET	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SACRIVID	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SACRIVLT	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SACRRIOV	.064000	15	.078358	2.17333	15	.28149	.036000	15	.025298	1.733218	15	1.232118
G 9:9	SACSLOUG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SACWSACI	.010000	5	.010000	1.84000	5	.19494	.030000	5	.028284	1.719814	5	1.587767
G 9:9	SANDMOUN	.262222	9	.218848	2.38889	9	.21473	.053333	9	.040620	2.288285	9	1.759948
G 9:9	SANTAFEB	.130000	7	.241592	2.85714	7	.25071	.070000	7	.048305	2.485514	7	1.706736
G 9:9	SIPH#06	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SIPH#16	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SIPH#17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SIPH01	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SIPH02	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SIPH03	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SIPH04	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SIPH05	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SIPH08	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SIPH11	.040000	1	0.000000	4.40000	1	0.00000	.180000	1	0.000000	4.090909	1	0.000000
G 9:9	SIPH12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SIPH13	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SIPH14	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SIPH18	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SIPH19	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SIPH20	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SJOAQHWY	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SJRBLIND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	SJRJERSE	1.270000	10	.678839	2.51000	10	.25144	.048000	10	.033267	1.857436	10	1.300132
G 9:9	SJRMOSSD	.195000	4	.081035	2.92500	4	.22174	.062500	4	.041932	2.205026	4	1.471263
G 9:9	SOMOK269	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	STATION0	.182273	22	.236279	2.66364	22	.26103	.051818	22	.044683	1.942235	22	1.660106
G 9:9	SacWSac	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	Siph17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	TURNEROU	.080000	1	0.000000	3.30000	1	0.00000	.120000	1	0.000000	3.636364	1	0.000000
G 9:9	VERNALIS	.123077	13	.204995	3.92308	13	1.59173	.056923	13	.047326	1.744938	13	1.482441
G 9:9	Verona	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	WHITEBIS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 9:9	WSTCANCL	.312500	8	.131774	3.01250	8	.45178	.076250	8	.047790	2.482308	8	1.550118
G 10:10	AMERICAN	0.000000	9	0.000000	1.62222	9	.49188	.017778	9	.024381	1.019444	9	1.237549
G 10:10	BANKS	.101842	38	.174679	2.81579	38	.49622	.048684	38	.046218	1.768478	38	1.626665
G 10:10	BARKER	0.000000	1	0.000000	4.20000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G 10:10	BARKERNO	.024615	13	.026018	3.96923	13	.63690	.057692	13	.066603	1.483706	13	1.686587
G 10:10	CACHE	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 10:10	CACHEMIN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 10:10	CHECK 12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 10:10	CHECK 13	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G 10:10	CLIFTON	.054286	7	.092711	3.30000	7	.61101	.040000	7	.050000	1.305641	7	1.638812
G 10:10	CONCOSPP	.245000	12	.249162	2.50833	12	.15643	.045000	12	.040788	1.798604	12	1.619282
G 10:10	CONNMAND	.265000	2	.374767	2.45000	2	.21213	0.000000	2	0.000000	0.000000	2	0.000000
G 10:10	DELTACRC	.010000	5	.010000	1.70000	5	.30000	.024000	5	.021909	1.435065	5	1.362167
G 10:10	DISAPPHO	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000

STAT. BASIC STATS

Summary Table of Means (intdat1.sta)
N=6264 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_10:10	DMC	.160500	20	.196856	3.15000	20	.49895	.038500	20	.043923	1.341431	20	1.545052
G_10:10	FALSETIP	.706000	10	.450708	2.35000	10	.20138	.036000	10	.038355	1.581088	10	1.675185
G_10:10	GEORGSLW	.012000	5	.008367	2.02000	5	.78549	.022000	5	.031937	.911765	5	1.258191
G_10:10	GRANTLNC	.160000	4	.235655	3.05000	4	.46547	.022500	4	.045000	.608108	4	1.216216
G_10:10	GRANTOLD	.316000	10	.194434	3.19000	10	.39001	.059000	10	.051088	1.773788	10	1.539315
G_10:10	GREENES	.000729	96	.003905	2.16875	96	.62984	.025625	96	.022234	1.253443	96	1.140089
G_10:10	HONKER	.027500	4	.025000	2.27500	4	.15000	.015000	4	.030000	.714286	4	1.428571
G_10:10	HONKERWH	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	HOOD	0.000000	4	0.000000	1.87500	4	.17078	.025000	4	.028868	1.429739	4	1.652267
G_10:10	LATHAM	.060000	2	.084853	2.55000	2	.49497	.085000	2	.021213	3.315047	2	.188414
G_10:10	LCONNECT	.007500	8	.013887	2.61250	8	.63118	.025000	8	.034641	1.126894	8	1.573257
G_10:10	LINDSEY	.005000	8	.014142	3.21250	8	1.42772	.025000	8	.034641	1.153162	8	1.592324
G_10:10	LPOTATOW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	LPOTTERM	.020000	6	0.000000	2.01667	6	.13292	.055000	6	.005477	2.738576	6	.332107
G_10:10	MALLARDI	6.809000	20	6.652785	2.09500	20	.33478	.027000	20	.034351	1.400938	20	1.774905
G_10:10	MAZE	.224444	9	.296990	3.48889	9	.62539	.035556	9	.042459	1.122807	9	1.352841
G_10:10	MIDDLER	.016122	49	.063895	3.50816	49	1.10714	.051429	49	.041783	1.608695	49	1.377084
G_10:10	MIDMOWRY	.268333	6	.224981	2.96667	6	.25820	.050000	6	.039497	1.681513	6	1.315351
G_10:10	MIDWOODW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	MOKELUMN	0.000000	2	0.000000	2.00000	2	0.00000	.020000	2	.028284	1.000000	2	1.414214
G_10:10	MOKGEORG	.005000	4	.005774	1.80000	4	.16330	.032500	4	.023629	1.788194	4	1.250482
G_10:10	MOKRABVG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	MOKSNODG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	MRIVBACO	.162308	13	.139771	3.25385	13	.49601	.062308	13	.052465	1.920666	13	1.598632
G_10:10	MRIVTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	NOBAY	0.000000	1	0.000000	2.30000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_10:10	NORTHCAN	.200909	11	.162077	3.24545	11	.32974	.092727	11	.033791	2.881717	11	.981594
G_10:10	NVICWOOD	.242000	10	.255769	3.02000	10	.52662	.062000	10	.055538	1.948803	10	1.689585
G_10:10	OLDR-DMC	.244545	11	.218740	3.29091	11	.53750	.062727	11	.050416	1.915739	11	1.557115
G_10:10	OLDRIVBA	.019318	44	.089557	2.71364	44	.51108	.054318	44	.040485	2.032942	44	1.519642
G_10:10	OLDRIVDM	.236000	10	.221369	3.26000	10	.38644	.065000	10	.045522	2.057890	10	1.425765
G_10:10	OLDRTRAC	.167500	4	.284180	3.42500	4	.49244	.067500	4	.045735	2.090336	4	1.397072
G_10:10	POTNODE2	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	ROCKSL	.350667	15	.324246	2.61333	15	.30441	.074000	15	.203884	3.261245	15	9.266915
G_10:10	SACCOLUS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SACISLET	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SACRIVID	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SACRIVLT	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SACRRIOV	.052500	16	.069522	1.92500	16	.23238	.035000	16	.028983	1.821153	16	1.531887
G_10:10	SACSLOUG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SACWSACI	0.000000	4	0.000000	1.30000	4	.08165	.010000	4	.020000	.769231	4	1.538462
G_10:10	SANDMOUN	.480000	10	.282095	2.47000	10	.19465	.037000	10	.039455	1.505070	10	1.620478
G_10:10	SANTAFEB	.388333	12	.233504	2.85833	12	.22747	.051667	12	.045892	1.803694	12	1.595341
G_10:10	SIPH#06	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SIPH#16	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SIPH#17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SIPH01	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SIPH02	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SIPH03	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SIPH04	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SIPH05	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SIPH08	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SIPH11	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000

STAT. BASIC STATS

Summary Table of Means (intdat1.sta)
N=6264 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_10:10	SIPH12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SIPH13	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SIPH14	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SIPH18	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SIPH19	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SIPH20	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SJOAQHWY	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SJRBLIND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	SJRJERSE	1.082308	13	.829911	2.24615	13	.21839	.050769	13	.030403	2.308357	13	1.407119
G_10:10	SJRMOSSD	.290000	7	.174929	2.60000	7	.25820	.062857	7	.029277	2.405701	7	1.104338
G_10:10	SOMOK269	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	STATION0	.327600	25	.255641	2.69200	25	.32393	.056400	25	.040402	2.094779	25	1.481772
G_10:10	SacWSac	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	Siph17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	TURNERCU	.175000	4	.152643	3.85000	4	.90370	.090000	4	.066332	2.262101	4	1.509118
G_10:10	VERNALIS	.144286	14	.222113	3.53571	14	.94349	.032143	14	.039062	1.054377	14	1.271233
G_10:10	Verona	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	WHITEBIS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_10:10	WSTCANCL	.253636	11	.215466	3.10909	11	.37538	.070909	11	.046574	2.301377	11	1.486875
G_11:11	AMERICAN	0.000000	12	0.000000	1.71667	12	.39042	.021667	12	.020817	1.357380	12	1.242452
G_11:11	BANKS	.095769	26	.177182	2.80000	26	.31623	.053077	26	.046542	1.895430	26	1.675018
G_11:11	BARKER	0.000000	2	0.000000	6.30000	2	.28284	0.000000	2	0.000000	0.000000	2	0.000000
G_11:11	BARKERNO	.027500	8	.024349	3.87500	8	1.64121	.052500	8	.058737	1.562304	8	1.697173
G_11:11	CACHE	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	CACHEMIN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	CHECK 12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	CHECK 13	.480000	1	0.000000	3.00000	1	0.00000	.090000	1	0.000000	3.000000	1	0.000000
G_11:11	CLIFTON	.050000	10	.158114	2.92000	10	.39101	.030000	10	.048990	.957440	10	1.549532
G_11:11	CONCOSPP	.454000	10	.319068	2.79000	10	.30350	.054000	10	.047188	1.963678	10	1.694899
G_11:11	CONNMAND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	DELTACRC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	DISAPPHO	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	DMC	.192727	11	.224191	2.86364	11	.42255	.039091	11	.045925	1.283858	11	1.497591
G_11:11	FALSETIP	1.100000	2	.155563	2.60000	2	.28284	.075000	2	.007071	2.886905	2	.042090
G_11:11	GEORGSLW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	GRANTLNC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	GRANTOLD	.220000	2	.311127	2.95000	2	.21213	.075000	2	.021213	2.523041	2	.537662
G_11:11	GREENES	.001474	95	.009561	2.39684	95	.65857	.033684	95	.029065	1.443189	95	1.190520
G_11:11	HONKER	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	HONKERWH	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	HOOD	0.000000	5	0.000000	2.62000	5	.54498	0.000000	5	0.000000	0.000000	5	0.000000
G_11:11	LATHAM	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	LCONNECT	0.000000	4	0.000000	2.92500	4	1.20934	0.000000	4	0.000000	0.000000	4	0.000000
G_11:11	LINDSEY	.007000	10	.014944	3.88000	10	1.41170	.034000	10	.045265	1.080279	10	1.395533
G_11:11	LPOTATOW	0.000000	1	0.000000	4.80000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_11:11	LPOTTERM	0.000000	1	0.000000	4.90000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_11:11	MALLARDI	6.500000	13	8.696359	2.82308	13	2.80064	.023077	13	.030382	1.140468	13	1.541298
G_11:11	MAZE	.162500	8	.224865	3.31250	8	.78091	.033750	8	.036228	1.277473	8	1.377467
G_11:11	MIDDLER	.038723	47	.114144	3.14468	47	.44272	.049149	47	.051365	1.582633	47	1.653916
G_11:11	MIDMOWRY	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	MIDWOODW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	MOKELUMN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	MOKGEORG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000

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Summary Table of Means (intdat1.sta)
N=6264 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_11:11	MOKRABVG	0.000000	1	0.000000	6.40000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_11:11	MOKSNODG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	MRIVBACO	.186667	6	.162193	3.53333	6	.42269	.081667	6	.064936	2.246890	6	1.743839
G_11:11	MRIVTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	NOBAY	0.000000	2	0.000000	2.60000	2	.56569	0.000000	2	0.000000	0.000000	2	0.000000
G_11:11	NORTHCAN	0.000000	3	0.000000	4.33333	3	1.96299	.070000	3	.060828	1.597222	3	1.563657
G_11:11	NVIOWOOD	.255000	2	.360624	3.65000	2	.91924	0.000000	2	0.000000	0.000000	2	0.000000
G_11:11	OLDR-DMC	.450000	2	0.000000	3.60000	2	.84853	.080000	2	.014142	2.333333	2	.942809
G_11:11	OLDRIVBA	.012444	45	.076222	3.16667	45	.56649	.061111	45	.044834	1.971788	45	1.448876
G_11:11	OLDRIVDM	.215000	2	.304056	2.75000	2	.49497	.025000	2	.035355	1.041667	2	1.473139
G_11:11	OLDRTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	POTNODE2	0.000000	1	0.000000	4.90000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_11:11	ROCKSL	.128333	6	.314351	2.55000	6	.44609	.030000	6	.046904	1.000000	6	1.563472
G_11:11	SACCOLUS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SACISLET	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SACRIVID	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SACRIVLT	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SACRRIOV	.081429	7	.087069	2.15714	7	.31547	.024286	7	.031015	1.064887	7	1.332197
G_11:11	SACSLOUG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SACWSACI	.012000	5	.008367	2.30000	5	.46904	.040000	5	.037417	1.678788	5	1.537651
G_11:11	SANDMOUN	.310000	2	.438406	2.65000	2	.07071	.080000	2	0.000000	3.019943	2	.080582
G_11:11	SANTAFEB	.615000	2	.063640	2.90000	2	.14142	.085000	2	.007071	2.928571	2	.101015
G_11:11	SIPH#06	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SIPH#16	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SIPH#17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SIPH01	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SIPH02	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SIPH03	0.000000	1	0.000000	16.40000	1	0.00000	.830000	1	0.000000	5.060976	1	0.000000
G_11:11	SIPH04	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SIPH05	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SIPH08	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SIPH11	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SIPH12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SIPH13	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SIPH14	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SIPH18	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SIPH19	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SIPH20	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SJOAQHWY	.295000	2	.007071	2.60000	2	0.00000	.035000	2	.049497	1.346154	2	1.903749
G_11:11	SJRBLIND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	SJRJERSE	1.745000	2	.275772	3.15000	2	.91924	.035000	2	.049497	.921053	2	1.302565
G_11:11	SJRMOSSD	.226667	3	.208407	2.93333	3	.32146	.080000	3	0.000000	2.748116	3	.285430
G_11:11	SOMOK269	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	STATION0	.433333	9	.288920	2.94444	9	.29202	.072222	9	.041767	2.476118	9	1.451516
G_11:11	SacWSac	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	Siph17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	TURNEROU	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	VERNALIS	.180667	15	.183165	3.00000	15	.61760	.026000	15	.039243	.899851	15	1.322527
G_11:11	Verona	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	WHITEBIS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_11:11	WSTCANCL	.490000	2	.056569	3.20000	2	.28284	0.000000	2	0.000000	0.000000	2	0.000000
G_12:12	AMERICAN	0.000000	12	0.000000	1.94167	12	.55179	.019167	12	.021088	1.025040	12	1.099884
G_12:12	BANKS	.134286	21	.209537	3.18095	21	.69758	.050000	21	.055498	1.456654	21	1.570858

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Summary Table of Means (intdat1.sta)
N=6264 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_12:12	BARKER	0.000000	2	0.000000	5.75000	2	.07071	0.000000	2	0.000000	0.000000	2	0.000000
G_12:12	BARKERNO	.029000	10	.026013	4.20000	10	.80966	.081000	10	.074304	1.847691	10	1.599840
G_12:12	CACHE	.080000	2	0.000000	3.45000	2	.07071	.075000	2	.007071	2.172269	2	.160436
G_12:12	CACHEMIN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	CHECK 12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	CHECK 13	.540000	1	0.000000	3.10000	1	0.00000	.100000	1	0.000000	3.225806	1	0.000000
G_12:12	CLIFTON	.070000	9	.210000	3.40000	9	.70356	.025556	9	.050772	.727599	9	1.450278
G_12:12	CONCOSPP	.311250	8	.339766	3.21250	8	.40156	.072500	8	.045591	2.314326	8	1.460724
G_12:12	CONMAND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	DELTACRC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	DISAPPHO	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	DMC	.184286	14	.220897	3.49286	14	.76507	.074286	14	.063454	1.996908	14	1.601050
G_12:12	FALSETIP	1.360000	2	.622254	2.95000	2	.35355	.085000	2	.007071	2.887731	2	.106395
G_12:12	GEORGSLW	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	GRANTLNC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	GRANTOLD	.275000	2	.388909	3.70000	2	.28284	.105000	2	.021213	2.824176	2	.357439
G_12:12	GREENES	.001220	82	.005303	2.81463	82	1.00137	.049024	82	.046178	1.765989	82	1.431732
G_12:12	HONKER	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	HONKERWH	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	HOOD	0.000000	6	0.000000	3.33333	6	1.36626	0.000000	6	0.000000	0.000000	6	0.000000
G_12:12	LATHAM	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	LCONNECT	0.000000	5	0.000000	5.10000	5	2.22036	0.000000	5	0.000000	0.000000	5	0.000000
G_12:12	LINDSEY	.007857	14	.013688	5.18571	14	2.57558	.028571	14	.057493	.677548	14	1.349232
G_12:12	LPOTATOW	0.000000	3	0.000000	3.20000	3	1.12694	0.000000	3	0.000000	0.000000	3	0.000000
G_12:12	LPOTTERM	0.000000	3	0.000000	3.90000	3	1.30767	0.000000	3	0.000000	0.000000	3	0.000000
G_12:12	MALLARDI	4.780833	12	7.555781	2.24167	12	.49444	.035000	12	.037050	1.448859	12	1.533971
G_12:12	MAZE	.128333	6	.200840	3.43333	6	.75807	.038333	6	.044008	1.200020	6	1.319015
G_12:12	MIDDLER	.029750	40	.100702	4.13000	40	1.02961	.064750	40	.070565	1.597337	40	1.631992
G_12:12	MIDMOWRY	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	MIDWOODW	0.000000	3	0.000000	5.83333	3	1.19304	0.000000	3	0.000000	0.000000	3	0.000000
G_12:12	MOKELUMN	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	MOKGEORG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	MOKRABVG	0.000000	2	0.000000	3.70000	2	2.40416	0.000000	2	0.000000	0.000000	2	0.000000
G_12:12	MOKSNODG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	MRIVBACO	.192500	4	.157348	4.02500	4	.88835	.105000	4	.074162	2.676683	4	1.811607
G_12:12	MRIVTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	NOBAY	0.000000	2	0.000000	2.30000	2	.56569	0.000000	2	0.000000	0.000000	2	0.000000
G_12:12	NORTHCAN	.230000	2	.325269	4.70000	2	.42426	.160000	2	.028284	3.390909	2	.295699
G_12:12	NVICWOOD	.500000	2	.212132	4.45000	2	.21213	.145000	2	.007071	3.258342	2	.003575
G_12:12	OLDR-DMC	.530000	2	.098995	3.80000	2	0.00000	.055000	2	.077782	1.447368	2	2.046888
G_12:12	OLDRIVBA	.023714	35	.114380	4.22286	35	.98611	.102000	35	.068462	2.411001	35	1.482152
G_12:12	OLDRIVDM	.520000	2	.084853	3.55000	2	.35355	.110000	2	.014142	3.094099	2	.090221
G_12:12	OLDRTRAC	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	POTNODE2	0.000000	3	0.000000	4.43333	3	.57735	0.000000	3	0.000000	0.000000	3	0.000000
G_12:12	ROCKSL	.367143	7	.461617	2.98571	7	.92092	.032857	7	.056188	.939511	7	1.604731
G_12:12	SACCOLUS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	SACISLET	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	SACRIVID	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	SACRIVLT	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	SACRRIOV	.078333	6	.177360	2.55000	6	.59582	.016667	6	.025820	.835422	6	1.296654
G_12:12	SACSLOUG	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	SACWSACI	.018000	5	.014832	6.92000	5	6.42900	.040000	5	.065192	.772284	5	1.276250
G_12:12	SANDMOUN	.405000	2	.572756	3.20000	2	.14142	.100000	2	.014142	3.118280	2	.304132
G_12:12	SANTAFEB	0.000000	2	0.000000	3.85000	2	.35355	.055000	2	.077782	1.527778	2	2.160604

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Summary Table of Means (intdat1.sta)
N=6264 (Casewise deletion of missing data)

NMONTH	SNAME	BR Mean	BR N	BR Std.Dv.	DOC Mean	DOC N	DOC Std.Dv.	UVA Mean	UVA N	UVA Std.Dv.	SPABS Mean	SPABS N	SPABS Std.Dv.
G_12:12	SIPH#06	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	SIPH#16	0.000000	1	0.000000	19.90000	1	0.00000	.810000	1	0.000000	4.070352	1	0.000000
G_12:12	SIPH#17	.220000	1	0.000000	23.00000	1	0.00000	.930000	1	0.000000	4.043478	1	0.000000
G_12:12	SIPH01	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	SIPH02	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	SIPH03	0.000000	1	0.000000	26.90000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_12:12	SIPH04	0.000000	1	0.000000	2.50000	1	0.00000	.060000	1	0.000000	2.400000	1	0.000000
G_12:12	SIPH05	.040000	1	0.000000	3.80000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_12:12	SIPH08	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	SIPH11	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	SIPH12	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	SIPH13	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	SIPH14	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	SIPH18	0.000000	1	0.000000	4.70000	1	0.00000	0.000000	1	0.000000	0.000000	1	0.000000
G_12:12	SIPH19	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	SIPH20	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	SJOAQHWY	0.000000	1	0.000000	4.20000	1	0.00000	.110000	1	0.000000	2.619048	1	0.000000
G_12:12	SJRBLIND	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	SJRJERSE	2.180000	3	.346410	2.86667	3	.05774	.026667	3	.046188	.919540	3	1.592690
G_12:12	SJRMOSSD	.140000	3	.242487	4.66667	3	2.71539	.093333	3	.161658	1.196581	3	2.072539
G_12:12	SOMOK269	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	STATION0	.256250	8	.298948	3.85000	8	.69076	.087500	8	.054968	2.500518	8	1.558869
G_12:12	SacWSac	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	Siph17	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	TURNERCU	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	VERNALIS	.148750	16	.195444	3.78125	16	1.47929	.065625	16	.078991	1.513309	16	1.422292
G_12:12	Verona	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	WHITEBIS	--	0	0.000000	--	0	0.00000	--	0	0.000000	--	0	0.000000
G_12:12	WSTCANCL	.560000	2	.056569	3.90000	2	.28284	.070000	2	.098995	1.891892	2	2.675539
All Groups		.203584	6264	1.268332	3.61568	6264	2.39777	.064968	6264	.094001	1.743777	6264	1.762297