## ANNUAL REPORT

## WATER DIVISION 5

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## A. 1988 Water Year

In 1985 a lot of projects were identified and started as well as implementation of new procedures for about everything done in Division 5. In 1986 the work force jelled and a great volume of work, both accurate and professional, was accomplished. 1987 was a year of continued effort on many fronts and an increase in staff by 1 Engineering FTH. 1988 has been the payoff year where much of the backlog is finally behind us.

The year started in a frenzy with more rewrites on the WISP diversion data programming than we could tolerate. Consequently, the Annual Report was delayed. The frenzy only increased with March and April deadlines on the Tabulation. Many, many extra hours were worked by nearly everyone. The arrival of the runoff beginning the irrigation season was a welcome change of pace. However, the pressure continued because the short water year and heavy administration required kept it on us.

For the year we had 1 Water Comissioner retire, filled 1 Water Commissioner position for last year's retirement, 1 Engineer C transfer to Dam Safety Branch but remain in the Division 5 office, the Assistant Division Engineer replace his hydrographic duties with spreadsheet writing, and a Hydrographer transfer in thereby filling the vacant Engineer position.

Basically it was a plug-and-chug, grind it out year for all the staff.

## 1. Accomplishments

The goals and objectives of the last several years' reports are continually coming closer to being a reality as various work items are accomplished or near completion.

The biggest milestone reached, however, was the publishing of the 1988 Tabulation. The many man-years of quality work involved in getting it ready was quite an accomplishment. A part of that was the culmination and decree of the abandonment proceedings. Another was the coding and inclusion of thousands of other new decrees including hundreds of augmentation plans. The largest part, however, was the reworking of the older tabulated material and, again, I would mention the assistance of Divisions 4 and 7 years ago.

Water District. 36 and augmentation plans for Districts 36 and 37 are a glaring hole now being dealt with.

An offshoot of the Tabulation was the ability to generate much-needed current status administrative lists for individual streams or combination of streams. These greatly enhanced the Water Comissioners' ability to administer water correctly in the short water year.

The Tabulation was also used as a starting point to correct up the diversion structure data base which also greatly upgraded the work the Water Commissioners were able to do.

There were 328 water court applications in 1986, 398 in 1987 and 483 in 1988. Most of these were field inspected, have had water referee consultations written, and were decreed. Some Water Commissioner training on the field inspection process has been done.

The 1987 diversion records were completed and signed.
The 1988 diversion data of water usage has been collected and entered into the diversion data base. We are now going through the last revisions of the printouts and readying them for signing by the Water Commissioners. The in house PC and software are continuing to revolutionize this process.

We continue to develop and use several much needed data buses. The wells, water cases, abandonments, reservoirs, augmentation plans and our expenditures are now tracked electronically.

A total river call was administered much of the year--not perfectly by any means-but many of the individual parts are coming together. The Colorado River Accounting software is about 90 percent complete and usable. Water Comissioner understanding and ability to timely deliver real time diversion data is increasing and for the first time the records reflect replacements from Green Mountain Reservoir and the exchanges involved.

Last year each Water Commissioner diagrammed and coded a system for record keeping for diversions, deliveries, and water use for each non-ordinary (Source=River, Use=:Irrigation, etc.) diversion. The inclusion of these in this year's records greatly enhanced the quality of the records. Also the percentage of diversions for which records are kept increased from an estimated level of 50 percent to perhaps 70 percent. User-supplied data is being solicited in many instances, particularly in small spring and well situations and in nearly all municipal supply situations.

The remote data transmitted via satellite provided real time data that enabled our administrative decisions to be more responsive and save water. This system also monitored data from other agencies such as the National Weather Service, the USGS, the U.S. Bureau of Reclamation, Denver Wuter Board, Northern Colorado Water Conservancy District, and Colorado Springs.

The water using public is becoming aware that water administration does and will exist on a whole river scale.

A field engineer position for the Jam Safety Branch was moved to Division 5 in 1988. This action resulted in better communications with dam owners and the Water Commissioners. It also helped bridge the gap between reservoir administration problems and dam safety concerns. For example, an order was issued by the Dam Safety branch to drain a reservoir and fix the outlet for both safety and administrative reasons. This type of order has never been issued in the Division before. It appears at this time that the outlet problem will be resolved next year.

The Water Conmissioners completed 51 dam inspections of the 62 assigned. Along with these dam inspections, the Water Comissioners accompanied and helped the new dam inspector with his inspections.

A total of 45 reservoir inspections were carefully monitored by the Hater Commissioners. This number was reduced to 35 by the end of the season by the lifting of 10 restrictions. This was largely due to owners' cooperation, the adoption of new rules and regulations for dam safety which relaxes some requirements for small low hazard dams, and the better communications between dain owners and the dam inspector and Water Commissioners. No new restrictions were imposed but three (3) repair or breach orders were made.

## 2. Involvement in the Water User Comnunity

There has been continued effort this year to increase contact with the water user community. Water Commissioners have specifically made that their responsibility and have been succesaful in it. Municipalities and non-exempt well owners including those with augmentation plans have been systematically contacted concerning measuring devices and have submitted much diversion information.

The Division Engineer has been carefully reviewing each new augmentation plan. It is imperative that he work with the applicants' engineers and attorneys to make these plans acceptable for water adainistration. Establishment of accounting procedures for each is of utmost importance. Many, many problems and misconceptions have been resolved before the decrees were signed.

The Division Office continues to facilitate usage by the public. The more accurate tabulation, decree books with indexes, updated structure lists, well permit information, organized diversion data, combined with a concerted effort to assist anyone with questions has brought this about. It is also convenient for them to have a place to work.

Public information meetings were set up in five locations within the Division. While these were sporadically attended, those who did attend expressed appreciation and approval, and learned a lot. Three well attended meetings were held for major water users where the subject was "Clarification of Division 5 Water Administration."

## 3. Issues Impacting Division 5

There are several important trends that are impacting bivision 5 which affect the direction of water administration. Decisions will be made for manpower needs, work coverage, and new technology required to deal with these trends.

First, the NEW DEMANDS on a sometimes limited water supply are creating all kinds of pressures.
(1) The rapid growth in the high country combined with ski industry demands, including water for snow making, has necessitated not only more augmentation plans but increasingly complex augmentation plans requiring more manpower and expertise in administration.
(2) East Slope demauds, such as Windy Gap, Northern Colorado's major transmountain water diversion, have come on-line and effectively depleted any excess water in the Upper Colorado River requiring more stringent administrative practices. The exchange pool from Windy Gap for the Middle Park Water Conservancy District will create additional measurements and paperwork to track water exchanged up the Blue River for snow making and municipal uses.
(3) The Front Range metropolitan area has been involved in several major negotiations concerning water from the Colorado River. An agreement has been signed with Public Service Company of Colorado concerning payment in lieu of power generation at the Shoshone Power Plant (the major river call on the Colorado River), thus freeing up an additional depletion to the Colorado Kiver of 30,000 to 50,000 acre feet of firm yield during the non-irrigation season. No request to administer this agreement has been made but will occur sometime.
(4) Previously, agreements were signed with Sumit County enabling augmentation plans and growth to proceed in the Upper Blue River with a uniform approach and protection for Denver water rights. Those have run headlong into minimum streanflow filings by the Water Conservation Board. This will create need for careful winter administration of the exchanges involved.
(5) Finally, major agreement was worked out last year with the Colorado River Water Conservation District which basically gives Western Colorado a number of storage reservoirs for their usage, gives Northern Colorado several storage reservoirs for their replacement usage, and gives the llenver Metro area the Blue River and Williams Fork River, including Green Mountain Reservoir.
"All of these agrements will necessarily be administered by exchanges with very little of the administrative details as of yet even conceived. The fairly new principal operating policy for Green Mountain Reservoir along with the Federal Blue Hiver decrees and Senate Document 80 now look like interim steps in the continual movement of water to the highest usage."

The above quote from last year's Annual Report couldn't have been more on target in that a multiplicity of court applications including motions to clarify have been filed in both the State and Federal District Courts concerning the operation of Green Mountain.

Second, under OLD DEMANDS, the entry and demise of the oil shale industry has affected Division 5 in many ways:
(1) Conditional water rights have been left undeveloped, water rights that were transferred from agriculture to industrial uses have been left standing and once farmed lands are turning to sagebrush. Oil prices will rise again and therefore the industry is protecting their rights but the population growth pressures associated with it have waned.
(2) Agriculture, along with the coonomy on the lower river, is just getting by. With farm prices as low as they are and real estate falling terribly with the oil shale industry, there is little incentive to use water and maintain agriculture. The bright spot continues to be the good fruit crop this year and the rise in cattle prices.
(3) Further downstream, the Central Arizona Project is using more water and so far has taken it from California. Soneday this will affect administration in Colorado also and we should be prepared for it.
(4) Finally, governmental policies are continuing to slowly shift toward more emphasis on environmental issues. The federal government has been heavily involved in cleming up the salinity problems in the Grand Valley. The Federal Fish and Wildlife Service is making overtures toward storage pools in West Slope reservoirs to be used for endangered species programs. The United States Bureau of Reclamation is less involved with large agriculture projects. Even the Colorado Water Conservation Board's involvement centers around minimum streamflows and fish and wildlife habitat.

The adoption of the Colorado Miver Accounting which is being phased out by the United States Bureau of Reclamation has put considerable strain on our manpower. This project has had to be absorbed by our staff and the hydrographic work necessary is left undone. A bill designed to create the FTR's and funding support which would correct the deficiencies, although valiantly carried by its sponsors Bishop and Carpenter, died on the last day of the legisiative sessions. It also was supported by many days' work by Division personnel, the State Engineer, the Denver Water Board, Northern Colorado Conservancy District, and the Colorado River Water Conservation Board.

## 4. Issues_of Concern

Again, we have many of the same concerns that we had last year. The main concern is the inability of the staff to accomplish all that needs to be done in almost any area. The continuing areas of concern are:
-- Do not have the hydrographic staff to handle the river accounting. (See Notes (1), (2), and (3) below and on the next page.)
-- Number and complexity of augmentation plans are prohibitive to administer with existing staff and methods.

- Much work is still needed on the tabulation prior to final publishing. (Water District 36 and augmentation plans)
-- Thirty percent of the structures have no record at all.
-.. Many diversion records are estimated rather than observed.
---- Staff gauges and capacity tables are almost non existent for reservoirs.
- Many of the structures have no control and/or measuring devices.
(1) A general river call requiring deliveries of Green Mountain water and the accounting of such is still not satisfactory. The Satellite Monitoring system has improved our accessibility to accurate data; however, there are a number of hotes in the systern.
(2) There is a lack of Water Commissioner coverage in the Blue River area. There has been a large conversion of agricultural lands and waters to commercial and municipal development in District 36 and the decretal information and the data gathering network cannot function without a Water Cominissioner.
(3) 300,000 to 500,000 acre feet of diversions are not monitored for quality control by any neutral party, which creates nervousness and feeds Last Slope/West Slope tensions.


## 5. Effect of Workload Changes

The adoption of the Colorado lliver Accounting, the increasing Water Court activity, increased pressure in the high country because of minimum stream flow versus ski area development and out of basin demand for water all placed extra time demands on the Division 5 office staff. More time was also spent in management practices and training of personnel. The increased productivity of personnel and better equipment and data management facilities have helped us to keep pace. It is also true that each year more of the backlog is finalized and thus some time comes available to handle the increase but the botion line is that the Blue River is not being covered and the River Accounting only hits the high spots and leaves the wolves guarding the hen house.

## 6. Impact of the Budgets on Operations

We do not have enough FTE's to put Water Commissioners in each Water District. Additionally, 11 of the 16 Water Commissioners are part-time employees and the seasonal nature of their employment severely hampers the updating of structure lists, administrative lists, tabulations, or any other non-direct water administration activity. Another problem is that as the jobs are becoming more complex, adequate training is harder to achieve. The pressure is for part-timers to seek full-time employment and, threfore, a problem. 69\% of the Water Comissioner work force is in this situation.

Not only were we short in human resources but operating funds were precariously low. We had only enough to provide us with the supplies we needed to function by transferring travel money to operating.

Funds for capital expenditures were not received. However, we did divert small amounts of operating to purchase used goods through the government resale program.

## 1. Operational Concerns

1989 will be the year of finishing old projects and moving on to new ones. We are still working on a sizable backlog but expect to bring much of that to an end. The real problem is the large backlog of untabulated decrees. Most are very complicated augnentation plans or large multi-structure decrees covering several water districts. We continue to deal with the present as needs dictate and are implementing projects necessary to provide the basis for better administration in the future.

The U.S. Bureau of Reclamation's pullout of operations on the Colorado-Big Thompson has left a hydrographic void on the Upper Colorado that, combined with the Satellite Monitoring maintenance on gaging stations, creates a need for several full-time hydrographers.

The volume of Water Court activity has increased somewhat again which will continue to use our resources.
2. Projected Work Items for 1989:

Other than the usual business of:
(A) administering water,
(B) collecting and recording diversion data,
(C) reservoir inspections,
(D) hydrographic work, and
(B) reviewing water applications,
the following are Projected Work Items for the next year and for the next five years:
(1) Train Water Commissioners in:
(a) Standardization of municipal record keeping.
(b) Field inspecting augmentation plans.
(c) Creating schematics and coding for augmentation plans.
(d) Administration of reservoirs.
(e) Administration of exchanges.
(2) Find all fee well: and genemate records.
(3) Finish Tabulation work for Disitrict 36.
(4) For Augmentation Plans:
(a) Finish Tabulation of Augmentation Plans.
(b) Establish an Augmentation Plan data base that can be used for adsinistration.
(c) Establish an accounting system for each active augmentation plan.
(d) Install control structures and measuring devices as necessary.
(e) Obtain field data.
(f) Administer.
(5) Add 1988 decrees to Tabulation.
(6) Add 1988 decrees to structure lists.
(7) Do spread sheets for:
(a) Blue River Diversion Project plus Williams Fork plus Moffat System
(b) Continental-Hoosier System.
(c) McMahon/Red Dirt System.
(8) River Accounting Spread Sheet - increase utility.
(9) Finish 1985 diversion records.
(10) Write Individual Performance Objectives (IPO's) for Water Comissioners on diversion data and annual record submittals.
(11) Organize and implement program for hydrographic data collection for the Division.
(1) Create and assemble a Water Cownissioner handbook. (Division 7 is handling)
(2) Implement regular training sessions for Water Commissioners.
(3) Spend time in field with Water Commissioners.
(4) Continue to implement PACE program.
(5) In Colorado River Accounting, continue to:
(a) phase in hydrographic support and
(b) utilize real time diversion data.
(6) Continue upgrading each Water District's tabulations.
(7) Install reservoir staff gages and get capacity tables to match.

## 3. Goals and Objectives

Our objectives are quite broad, yet simply stated, are as follows:
(1) Establish the capability to administer a total river call prompted by either in state priorities or an interstate water compact requirement.
(2) Uphold all other statutory duties of the State Engineer's office.
(3) Provide the public with service regarding our administration and their needs in water resources.

In order to fulfill these objectives, the following goals must be attained. It is imperative that we have a complete and reliable tabulation. All water usage and consumption must be inventoried and we need to possess the ability to monitor the same on a real time basis. We need to know where augmentation and exchanges are taking place and in what amounts. We must know the locations and amounts of the water supply at any given time. We have to fully develop our personnel and must have an educated public willing to cooperate with us. We must also work with the legislature and other govermmental agencies in order to have our needs provided for. We can begin to reach these objectives as more of the work projects are completed. We are much closer to obtaining these objectives because of the past year's accomplishments. The prospects for the upcoming year look bright.


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| ．$\quad . . .1$ | $2 \cdot 2$ | ＇ 61 | L91＋1 | L9ELSEZ | L909 | 90755 | 1,2582 |  | \％etis |  |
| SIL | 0 | $9 \downarrow$－ | 0 | Z50＇26L | でサ | 9で「92 | 699＇9 | ¢¢9＇t | 094＇${ }^{\text {c }}$ | ZL |
| 0 | 0 | 0 | 0 | 0 | 0 | $8 \varepsilon$ | 6LZ＇T | 0 | 0 | $0 L$ |
| 97を | 0 | $69 \varepsilon^{\prime}$ I | $\varepsilon \tau \varepsilon$ | ［16＇88L | LOI | 200＇ヵ | 997 | 0 | 0 | $\varepsilon \varsigma$ |
| 60 T | I | 0 | 0 | $\dagger$ | L91 | 0 | ¢9I | 0 | 0 | 25 |
| $586^{\circ} \mathrm{Z}$ | ¢81 | TSS | 0 | 206‘56 | $\angle L Z$ | \＃S5＇$冖$ | L9L＇I | $62 T \times 5$ | 18ヵ「0くを | LS |
| 2S | 0 | 7 | 0 | 0 | ¢乙 | 0 | $0 \varepsilon$ | 0 | 0 | OS |
| 502 | 0 | I | T9 \％${ }^{\text {c }}$ | $\varepsilon L$ | I9I | 6Sて＇I | $\angle 6 z^{\prime} \angle I$ | 0 | 0 | 57 |
| 662 | $\varepsilon$ | ZSL＇z | 0 | 972 | $816^{\prime} \varepsilon$ | 6LL＇Z | ZS0＇I | $\angle 96$ | 0 | $6 \varepsilon$ |
| 7S8 | LE | $\varepsilon \angle T \times \tau$ | 2T6‘tI | OT9＊0てZ | 969 | \＆ऽ8＇L | 7 | 629 | LIZ＇IS | $8 \varepsilon$ |
| 686＇t | 9 | 0 | 185 | 65 | ¢81 | £て£‘し | 0 | 0 | TSで8£ | $\angle E$ |
| 18でゥ | 0 | 0 | 0 | 0ヵ5 65ヶ | 68 | Z8¢＇$\varepsilon$ | 0 | 0 | LTO＇99 | $9 \varepsilon$ |
|  |  | xyヨuSIa | $\frac{\text { AV }}{\text { TVNOILVa\＆OJy }}$ | IV TVICILSNQNI | $\begin{gathered} \text { SV } \\ \text { OILSIWOd } \end{gathered}$ | $\left\lvert\, \begin{gathered} \text { dV } \\ \text { TVIOINMK } \end{gathered}\right.$ | $\begin{gathered} \text { dV } \\ \text { YOOIS } \end{gathered}$ | $\begin{array}{\|c\|} \text { IV } \\ \text { MOTILIOO } \\ \text { NISVG } \\ \text {-SNVGL } \\ \hline \end{array}$ | $\begin{array}{r} \text { IV } \\ \text { MOTALAO } \\ \text { NIVINnOW } \\ \text {-SNVZU } \\ \hline \end{array}$ | CM |

NUMBER OF WATER RIGLTS APPLICATIONS 88 CWOO thru 88 CW 483
$435=$ Division $5 \quad 48=$ Division 6
NUMBER OF DIVISION 5 WA'TER RIGHTS APIAIED FOH - ..... 1015
Alternate Point or Change of Water Right $=$ ..... 79
Plans for Augmentation ..... 22
Water Rights Within Augmentation Plans ..... 182
Conditional $=2$
Conditional to Absolute $=93$
Due Diligence = ..... 372
Exchange $=43$
Storage Rights = 55
Surface Water Rights $=144$
Water Rights (Unspecific) $=16$
Other = 7
STRUCTURES IN APHLICATIONS $=1092$
Canals and Tunnels ..... 14
Ditches = 114
Lakes and Reservoirs $=130$
Ponds and Springs = 236
Power Plants $=3$
Pumping Stations = ..... 16
Pumps and Pipelines $=118$
Wells $=366$
Other $=94$
WATER COURT DECREES FOR DTVISION 5 ..... 491
E. OFFICE ADMINISTRATION FISCAL YBAH 1983 (7/1/87 thru 6/30/88)

|  | MONTHS |  |  |
| :---: | :---: | :---: | :---: |
| POSITION MONTIS | BUDGETED | Woriked | MILEAGE |
| Bell, Orlyn J. Division Engineer | 12 | 12 | 19,770 S |
| Martellaro, Alan C. Asst Division Engincer | 12 | $12$ <br> 841 | $\xrightarrow{7,616 \mathrm{~s}}$ |
| McCabe, Robert D. Sr Water Resource Fingineer (McCabe transferred here 8/87) | 10 | 10 | 903 P |
| Schieldt, Wayne I. Sr Wtr Hes Engr (Hydro) (Schieldt transferred here $3 / 88$ ) | 4 | 4 | 3,660 s |
| Hitchcock, Nancy C. Sr Secretary | 12 | 12 |  |

FULLTIME EMPLOYEES IN THR FIELD

| NAME | POSITION | MONIHS <br> DISTRICT | MONTHS <br> BUDGE'TED | HORKED | MILEAGE |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Cerise, Alvin L. | Wtr Conam C | Wells * | 12 | 12 | 16,574 S |
|  |  |  |  | 550 | $\xrightarrow{ }$ |
| Wells, L. Wayne | Sr Wtr Comm | 36, 37 | 12 | 12 | 9,447 S |
| Thompson, Will H. | Wtr Conm C | 50 | 12 | 12 | 11,779 P |
| Shelden, Jim E. | Wtr Comm C | 52, 53 | 12 | 12 | 12,278 P |
| Klocker, Marcus A. | Prin Wtr Comm | 72 | 12 | 12 | 8,335 S |

PEFMANENT PART-TIME EMPLOYEES IN THE FIELD

| Nichols, Becky | Wtr Comm | B | 38 |  | 11.0 | 12.0 | 10,849 P |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Whitehead, Dwight | Wtr Conm | A | 38 | ** | 10.0 | 8.75 | 1,777 P |
| Lemon, James | Wtr Comm | B | 39 |  | 9.0 | 9.5 | 6,770 P |
| Klendi, Robert | Wtr Comm | C | 45 |  | 12.0 | 12.0 | 12,109 P |
| Nelson, Glen | Wtr Cons | B | 45 |  | 3.0 | 3.0 | 1,526 P |
| Daxton, James | Wtr Comm | B | 51 |  | 9.4 | 9.1 | 14,353 P |
| Anderson, George | Wtr Comin | B | 70 |  | 6.0 | 7.0 | 7,957 P |
| Bieser, Robert | Wtr Comm | B | 72 |  | 5.75 | 5.0 | 2,789 P |
| Reed, Miles *** | Wtr Comm | B | 72 |  | 5.75 | 5.5 | 3,088 P |
| Carlson, Robert**** | Wtr Cowm | A | 72 |  | 2.5 | 2.3 | 1,794 P |
| Cox, Tom | Wtr Coma | B | 72 |  | 7.5 | 7.0 | 3,516 P |
| Hill, Clifford | Wtr Coum | B | 72 |  | 7.0 | 6.5 | 4,987 P |
| Hittle, Ray | Wtr Conm | B | 72 |  | 5.0 | 5.5 | 4,429 P |
|  |  |  |  | LS : | 93.9 | 93.15 | 65,402 S |
|  |  |  |  |  |  |  | 102,295 P |
|  |  |  | GRAND TO | AL: | 153.9 | 153.15 | 167,697 |

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## F. COIORADO RIVER CALLS FOR 1988

| DATE OF CALL | CALLING_STRUCTURE | ADMIN NO OF CALS | AMOUN' OF CALL |
| :---: | :---: | :---: | :---: |
| 11/1/87 | Shoshone Power Plant | 20427.18999 | 1250 cfs |
| 1/4/88 | Shoshone Power Plant Call For 1250 cfs reduced to 700 efs (one turbine down) |  |  |
| 3/21 | Shoshone Power Plant | 20427.18999 | 1250 cfs |
| 4/4 | Shoshone Power Plant Call For 1250 cfs Off |  |  |
| 4/4 | Shoshone Power Plant | 33023.28989 | 158 cfs |
| 4/5 | Shoshone Power Plant Call For 158 cfs Off |  |  |
| 7/19 | Grand Valley Water Users Assn | 30895.21241 | 400 cfs |
| 8/16 | Grand Valley Water Users Assn | 22729.21241 | 730 cfs |
| 8/30 | Shoshone Power Plant | 20427.18999 | 1250 cfs |
| 9/13 | Grand Valley Water Users Assn Call For 730 efs Off |  |  |
| 10/21 | Grand Valley Water Users Assn Call For 400 cfs Off |  |  |
| 12/31 | Shoshone Power Plant Call For 1250 cfs Still On |  |  |



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[^0]:    * Cerise 6/88 began working Dists 38, 39, 45
    ** Whitehead hired 10/87; 6/88 began working Wells
    *** Reed retired 6/88
    **** Carlson hired 4/88

