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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

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| IN THE MATTER OF THE INVESTIGATION OF UNITED WATER IDAHO INC. AND ITS ABILITY TO PROVIDE ADEQUATE SERVICE AND WATER QUALITY. | )  )  )  )  )  ) | CASE NO. UWI-W-96-6  STAFF INVESTIGATION         FINAL REPORT |

The investigation in Case No. UWI-W-96-6 was initiated by the Commission in response to numerous water quality complaints expressed by customers during hearings in United Water’s last rate case, Case No. UWI-W-96-3, as well as the complaint records kept by the Commission’s Consumer Staff and the Company.  On November 7, 1997, the Commission issued Order

No. 26673 initiating the present case.  That Order allowed a 75-day discovery period and an additional 30 days (to February 20) in which Staff was to file a report detailing the nature and extent of the Company’s water quality (iron and manganese) problem, the Company’s efforts to address the problem (technical and customer relations), and alternatives for mitigating or eliminating the problem (including estimated costs).

On February 14, 1997, Staff filed with the Commission a status report detailing Staff’s preliminary analyses of water quality problems, alternative solutions, costs incurred, customer complaints and complaint processing.  At that time Staff also requested an extension of time in which to file a final report.  This request was granted by Commission Order No. 26810 dated February 24, 1997, which gave Staff until May 21, 1997 to file its final report.  This is the final report presented in two sections; 1) the Engineering Analysis, and 2) the Customer Complaint Analysis.

ENGINEERING ANALYSIS

WATER SUPPLY

United Water Idaho delivers 13.5 billion gallons of water per year to approximately 56,000 customers through an integrated distribution system in the Boise area with a combination of groundwater wells and a single water treatment plant.  Under provisions of the Safe Drinking Water Act (SDWA) as amended, the Company is required to test all water supplied for a wide range of primary inorganic compounds (IOCs) such as lead, arsenic, mercury and nitrate to assure that maximum contaminate levels (MCLs) specified by the SDWA are not exceeded.  In addition to requiring mandatory testing for these health threatening contaminates, the SDWA also recommends but does not require testing for secondary contaminates such as iron, manganese and odor.  Table No. 1 provides a list of primary and secondary IOCs.  These secondary contaminates are classified by the Environmental Protection Agency (EPA) and the State Division of Environmental Quality (DEQ) as non-health threatening.  Therefore, the secondary maximum contaminate levels (SMCLs) listed under the Act are advisory.  Attachment No. 1 provides statements from EPA regarding secondary contaminates and a position statement from the American Water Works Association (AWWA) regarding manganese, color, taste and odor.

Although the SDWA classifies secondary contaminates as non-health threatening and has established voluntary MCLs, customers can and have experienced aesthetic problems including foul odor, poor taste and discoloration.  The material impact of such poor water quality is staining of customer property including sidewalks, home siding, home appliances and clothes.  Because these problems have been identified by customers in United Water’s service area, the technical portion of this report examines the cause of the problem, the extent to which it occurs, actions taken by the Company to eliminate the problem and other possible solutions.

The primary cause of the aesthetic problems experienced by UWI customers has been tied to water supply with high levels of iron and manganese.  These secondary contaminates are often found in ground water supplies and become troublesome as concentrations increase.

The secondary maximum contaminate levels are 0.3 milligrams per liter (mg/l) for iron and .05 mg/l for manganese.  As of December 1996, the Company had 61 interconnected ground water wells with a combined rated capacity of 78 million gallons per day (MGD) which is equivalent to just over 54,000 gallons per minute.  The Company also has a water treatment plant rated at 8 MGD for a total rated supply capacity of approximately 86 MGD or 60,000 gallons per minute.  Of the 61 groundwater wells, UWI has indicated that 23 produce water that contains iron and/or manganese that exceed the voluntary SMCLs as specified in the amended SDWA.  Table No. 2 provides a list of the problem wells, the iron and manganese levels recorded in 1996 and well capacity.  These wells represent a rated capacity of approximately 31 MGD or 35% of the total rated supply capacity.  While the problem wells represent a large percentage of the total rated capacity, they represent a smaller portion of the total actual water pumped each year.  For example, in 1995 and 1996, these wells produced only 25.7% and 24.5%, respectively, of the total water actually supplied and most of that was provided during the summer months when demand was high.  Figures No. 1 and 2 show the percentage of 1996 capacity and production, respectively, for the poor wells, the good wells and the Marden water treatment plant.  Figure No. 3 compares monthly production from all wells in 1996 to production from problems wells.  Note that a very small portion of the winter supply is provided by these wells but grows steadily as demand increases in summer months.

Although the problem wells provide a relatively small percentage of the overall supply and a very small percentage of the winter supply, significant amounts of poor quality water are required in high demand periods from wells scattered throughout the service territory.  Figure

No. 4 is a map of UWI’s service area showing the location of all groundwater wells with problem wells separately identified.  To the extent water quality complaints are caused by these problem wells, they should occur when the wells are producing water and be within a reasonable distance from the wells.  As might be expected, water quality complaints are likewise scattered throughout the service territory.  In 1996 there were 339 water quality complaints with identified locations broken into four general categories: (1) discolored water, (2) staining, (3) chlorine taste or odor, and (4) taste or odor other than chlorine.  (The Company apparently could not identify the customer locations of 67 additional complaints.)  Of the 339 customer complaints, 28 dealt with chlorine taste and odor.  Chlorine is injected by the Company at every well operated within the integrated system as a disinfectant to control health threatening bacteria.  Chlorine is not a primary or secondary contaminate and complaints associated with this chemical would not necessarily be resolved by eliminating iron and manganese.

When the remaining non-chlorine related complaints are placed on a service area map and related to the location and production period of problem wells, only 116 of the complaints are within a half mile radius of the wells.  Figure Nos. 5, 6 and 7 show the location of customer complaints dealing with discolored water, taste and odor, and staining, respectively.  Figure No. 8 shows how customer complaints near problem wells vary by month and how that compares to monthly variability of all water quality complaints.  While these complaints rise and fall with problem well production (as shown in Figure No. 3), complaints in total continue to increase in months when problem well production declines.  The number of complaints outside the half mile radius and the timing of many customer complaints would seem to indicate that other factors influence who might receive water of poor quality and when complaints might be received by the Company.  Those factors could include seasonal activity such as spring system flushing, the proximity of customers to other high quality water supplies, the type of distribution system in the area, the quantities of water used in the area and even when customers receive summer billings.

Another critical factor in determining when and where customer water quality complaints will occur is the presence of iron bacteria.  These naturally occurring bacteria feed primarily on iron that is present in well water or on iron pipe that is present in the distribution system.  The bacteria can form black slimes that plug filters and stain clothing and fixtures.  It lives in temperatures between 40 and 60 degrees Fahrenheit and can be controlled with chlorination.  The chlorine must be introduced at relatively high doses to kill the bacteria.  Treatment of iron bacteria using chlorine could be the cause of periodic chlorine odor and taste complaints.  Although little additional information is available regarding iron bacteria occurrence within the UWI system, presence of the bacteria appears to be related to iron and manganese introduced by supply resources.  Consequently, the presence of iron and manganese seems to be the primary source of water quality problems regardless of the presence of iron bacteria or other factors that determine timing and location of customer complaints.

COMPANY RESPONSE

The primary focus of the Company in dealing with customer water quality complaints is to reduce the amount of water supplied to the system from problem wells.  As shown in

Figure No. 3, production from these wells is limited in periods of low demand but grows steadily as summer irrigation demand grows.  Because problem wells provide a significant portion of summer water production, and in fact, are needed in some areas for winter supply as well, halting operation of these resources all at once is simply not practical.  Therefore, the Company also sequesters at each problem well to keep the iron and manganese in solution.  A polyphosphate chemical product called Westo is used by UWI to keep dissolved iron and manganese in soluble form so it does not stain clothes and appliances.  The product, which costs about $6.30 a gallon, comes in various formulas for various conditions with effectiveness dependent upon concentrations of iron and manganese, water temperature, chlorine levels and customer perception.  In 1996 the Company used over 10,000 gallons of WESTO in an effort to control iron and manganese.

Based on continued complaints from customers served from wells that are sequestered, the Company has proceeded with other possible solutions to replace existing problem supplies.  The Company has plans to expand its Marden Street water treatment plant, further investigate the use of aquifer storage and recovery (ASR) and (most promising) identify aquifers of high water quality and redrill and or replace existing wells.  All of these replacement solutions guarantee in advance that the supply acquired will reduce iron and manganese.  These new high quality resources can be used immediately to displace resources of poor quality or mixed with existing supplies to meet new demand with a product that is better overall than the poor quality resource could provide alone.

Obviously, the Marden treatment plant provides a high quality product free of contaminates including iron and manganese.  Expansion of the plant would likewise guarantee a high quality product.  ASR would also allow the Company to guarantee production of contaminate free water by injecting water of high quality into the aquifer during low demand periods and pumping it out of the aquifer during high demand periods.

This strategy to replace poor quality resources with resources of guaranteed high quality is also being utilized in the rehabilitation of existing production wells and in the construction of new production wells.  By drilling exploratory wells at new and existing well sites the Company can document, isolate and test various groundwater aquifers for chemical and mineral makeup.  Exploratory wells have been utilized at several existing production sites including Maple Hills, Bali Hai, Overland, Cole and Swift in an effort to improve water quality.  The Company has also recently utilized an observation well in the construction of at least one new well at Gary Lane.  For about $40,000, the Company can drill an exploratory well and determine the availability of high quality water before costs are incurred to redrill an existing production well or construct a new well.  The table below provides before and after iron and manganese levels experienced at the Overland and Maple Hills wells.

Overland Before (1992)Overland After (1996)

Iron = 1.07mg/lIron = 0.10mg/l

Manganese = 0.24mg/l  Manganese = 0.17mg/l

Maple Hills Before (1994)Maple Hills After (1995)

Iron = .31mg/lIron = <0.05mg/l

Manganese = 0.46mg/lManganese = 0.08mg/l

Exploratory wells can also identify multiple aquifers that can be pumped by different wells at the same site as in the case of the Swift project.  Unfortunately, an exploratory well does not guarantee that high quality water is available at the site, as in the case of Bali Hai, and it does not guarantee that sufficient capacity will be available once the well is drilled, as in the case of Gary Lane.

PROJECT COSTS

In an effort to improve water quality and eliminate associated customer complaints, the Company has spent a significant amount of money investigating the problem and making facility improvements.  It also plans to make additional investments in the future.  Table No. 3 provides a list of current and projected water quality activities since 1992 and the cost incurred for each.  While some of these projects such as ASR and the test well program provide the potential for new sources of supply to meet new demand, most of the expenditures are incurred to reduce the amount of iron and manganese introduced into the system by existing resources.  As shown in the Table, the Company has spent or plans to spend about $2 million by the year 2000 to improve the aesthetic characteristics of water produced.  The revenue requirement associated with this investment when combined with other water quality expenses exceeds $460,000 per year which represents about 2.3% of the Company’s revenue collected from customers.  Therefore, each customer contributes nearly $1.50 bi-monthly on average to pay for aesthetic water quality improvement.

Although this may be a reasonable amount to pay in order for all customers to receive water of high quality, it does not guarantee that no wells will exceed the SMCL for iron and manganese or that all customers will be satisfied with the quality of their water after improvements are made.  For example, improvements made to the Overland and Maple Hills wells resulted in reductions in both iron and manganese levels as described earlier.  However, manganese levels after the improvements still exceed the SMCL of 0.05mg/l in both wells.  In addition, while customer complaints were nearly eliminated near the Maple Hills well in 1996 after improvements, the Overland well tied with Bali Hai for the highest number of nearby water quality complaints in 1996.  The work performed at Bali Hai is another example that money spent will not guarantee better water quality.  The Company indicates that exploratory well work at Bali Hai failed to identify a high quality aquifer at the existing well site.  Therefore, the Company must look elsewhere at additional cost to find a supply of sufficient quality and quantity to replace the existing well.

Reducing iron and manganese levels through costly system improvements in an attempt to reduce customer water quality complaints could result in more high bill complaints due to higher rates.  From 1994 through 1996 the Company received four times as many high bill complaints as water quality complaints (5450 vs. 1350).  The annual number of water quality complaints have declined from 1994 to 1996 to currently represent about 0.6% of total Company customers.  It is hoped that the number of customers that benefit from Company water quality improvements significantly exceeds the number of customers that actually complain.  However, it is unclear how the Company measures the extent of the problem, how it determines how much money should be spent in resolution and what its overall responsibility is with respect to system improvements and in customer specific solutions.

ALTERNATIVES AND CUSTOMER SPECIFIC SOLUTIONS

In response to Staff production requests, the Company states that there are four major alternatives available for controlling iron and manganese in groundwater.  The treatment and the associated costs are as follows:

  CapitalOperating

      Treatment(per MGD)(per MGD)

1)Add Sequestering Agent   $2,500$25.20

2)Deepen/Redrill$150,000 - $350,000   $  0.00

3)ASR$200,000 - $325,000$62.20

4)Greensand Filtration$600,000 - $800,000$30.00

The first three alternatives have been previously described and are currently being implemented or are under serious consideration by the Company.  Greensand filters are described as a granular material coated with manganese oxide that provides oxidation- reduction capabilities that remove iron and manganese in a pressure filtration system.  The Company states that the Greensand filter is very good at removing all iron and manganese but that the process is very costly.  Estimates shown above are for treatment of a well with a 1MGD capacity and unlike the cost of a new well that is relatively constant with capacity, Greensand filtration costs increase linearly with capacity.  Therefore, a 3 MGD Greensand filtration facility would be three times as costly as a 1MGD facility.  The main costs associated with Greensand filtration include the land, filtration equipment, the building to house the equipment and water lines to interconnect with existing wells.

The four alternatives listed above can be separated into two categories for removal of iron and manganese:  (1) treat existing supplies through sequestration or filtration or (2) replace existing supplies through deepening/redrilling wells or ASR.  As previously indicated, the Company has also displaced/replaced existing supplies previously provided by problem wells by drilling new wells, using water from the water treatment plant and purchasing some supplies.  All of these water quality improvement alternatives implemented or proposed by the Company are water system alternatives.  There are however, water treatment alternatives that can be directed at individual customers.

Whole house or in home water treatment can be provided by several different devices depending upon the water chemistry at the specific customer location.  In response to Staff production requests, the Company indicates that only home water softeners have been found to provide any potential for removal of iron and manganese.  Greensand filters on a small scale have also been identified as having some potential for reducing iron in tap water.  UWI has rejected both of these products as costly, inefficient methods for treating iron and manganese.  Besides having a high initial capital cost and ongoing maintenance problems, the Company indicates that these methods would only treat part of the problem.

As part of its investigation, Staff has conducted a review of available information regarding in-home water treatment methods including mechanical gravity and pressure filters, iron and sulphur traps, ozone treatment, chlorine and charcoal filters and reverse osmosis filters.  Staff has also contacted several area vendors to identify exactly what type of products are locally available, what the potential is for effective removal of iron and manganese and what these products cost to operate in time and money.  The results of the investigation are less than conclusive.  Available information on the specific subject of in home iron and manganese removal often provides conflicting information regarding the type of device that should be used and its effectiveness.  For example, Table No. 4 provides a listing by device type, its primary use and the limitations of each device.  The article that includes this table states that a water softener will remove small amounts of dissolved iron in concentrations up to 5 mg/l (UWI’s worst well has only 0.75mg/l) but an iron filter is required if oxidized iron particulate is present.  However, the same article states that iron filters are only useful for removing soluble iron and manganese because iron particulate will plug the filter.

On a more basic level, most of the references indicate that activated carbon filters and reverse osmosis filters are best for solving taste and odor problems while softeners and some form of mechanical pressure or gravity filter are most effective for iron and manganese removal.  Table No. 5 shows the local vendors, in-home treatment devices and their respective prices.  In addition to the effectiveness of each device in removing iron and manganese, the costs of purchasing the device, the annual operation and maintenance cost and the ease of operation are also important factors.

Eco Water indicates that from a practical standpoint, the water conditioner is the best device it sells for removing iron and manganese.  The water conditioner consists of a water softener and an iron filter to eliminate 98% of the iron and manganese at levels found in UWI supplies.  The water conditioner is an in line device that filters all water used within the home.  It costs between $1,500 and $2,000 depending on the difficulty of installation and has a 20 year maintenance free life. Operation is automatic or semi automatic requiring only addition of $10 to $30 of sodium or salt per year.  Eco has lease to own programs for its water conditioner for

about $35 per month or the unit can be rented for about $20 per month.  Installation charges for lease to own or rentals range from $100 to $300.

Kinetico also sells iron and sulfur filters with potassium permanganate as well as water conditioners with iron filtration.  However, this company indicates that a simple water softener is usually sufficient to eliminate most of the iron and manganese problems experience by local customers.  This opinion was also expressed by the Culligan company which also sells more sophisticated iron and manganese removal equipment.  If water softeners are indeed the answer to most customer water quality problems, then it would cost about $467,000 to resolve the problems of 311 customers that complained about water quality in 1996. However, no information is available regarding how many customers have water quality problems or what actually qualifies as a water quality problem in the eyes of most customers.

CUSTOMER COMPLAINT ANALYSIS

SUMMARY OF PUBLIC TESTIMONY

During a public hearing held on October 2, 1996, in Case No. UWI-W-96-3 (United Water’s last rate case), five customers testified before the Commission.  All five of the customers thought United Water’s rates were already too high.  One said rates were too high given the brown color of her water.  Another said the summer rate surcharge was inappropriate given that was when water quality was very poor.

Three of the five customers complained of water color and/or staining.  At least two of these customers had been told by United Water to periodically drain and flush their water heaters, which apparently did not solve their problems.  One of these customers installed both a water softener and a filter with only marginal results.  The other customer’s testimony was most troubling.  Apparently, the Company did not acknowledge to him that the water quality of the well providing his water was the source of the problem until his third year of complaining.  Meanwhile, the Company had been advising him to periodically flush his water heater; offered him a free supply of Red-Be-Gone (which ruined his family’s clothing); and told him that the cause of the problem was in his house rather than in United Water’s well.

COMPLAINTS RECEIVED BY UNITED WATER AND BY COMMISSION STAFF

United Water was able to provide three years of customer complaint data even though our rules require utilities to keep these records for only one year.  Unfortunately, the Company’s record-keeping of complaints is a manual entry process that is not tied to customer account records and results in numerous inconsistencies, omissions and other errors in the data.  Regardless of whether the Company is able to adequately respond to complaints on a day-to-day basis, its record keeping does not facilitate data analysis such as customer tracking, geographic grouping, or other trend spotting.  Nevertheless, a summary of customer complaints is provided in Tables 6 and 7.  Table 6 shows that the Company received a total of 2,130 water quality complaints from 1994 to 1996, of which 1,391 were not related to pressure, sand, noise and “other”.  During this period the Company also received an estimated 5,450 complaints about high bills and rates.  These complaints originated from about 1,200 different customer addresses or 2.2% of all customer addresses.  Table 7 provides a summary of complaint incidents by month and year (Note that there are only 1,350 complaint incidents compared to the 1,391 complaints by type in Table 6).  The number of annual complaints has decreased by more than one-third from 1994 to 1996 (including a small adjustment for the increasing number of customers served).  The number of complaints is generally highest during late summer and early fall months, which should be expected because that is when the demand for water is highest and, thus, when the Company must have all of its wells in service, including those with known high levels of manganese or iron.  Customers may also be more apt to complain about water quality when their bills go up due to higher usage and/or rate increases because of the general consumer expectation that if the cost is high the quality should also be high.  The summer of 1994 was especially hard on consumers because a rate increase in excess of 20% was approved and the weather was much hotter and drier than normal.  During the same three year period in which the Company received 1,391 water quality complaints it received an estimated 5,450 complaints regarding high bills.

In 1996 the Commission Staff received five complaints from four customers regarding the Company’s water quality.  Out of the 242 total complaints for all problems, 98 were regarding high bills and opposition to the summer surcharge as well as the rate increase proposed in Case No. UWI-W-96-3.

UNITED WATER’S RESPONSE TO COMPLAINTS

In 1996 United Water conducted more than 73 on-site visits in response to customer complaints, most of which were about fears of bacterial contamination or over-chlorination and probably fewer than ten were in response to the many complaints regarding problems associated with high levels of iron or manganese.  It is appropriate that the Company give higher priority to site-visits for complaints regarding health threats than to those that appear not to be health-threatening.  The relative infrequency of site-visits in response to iron and manganese complaints might also be explained by the Company’s prior recognition of the existence of these elements in some of its wells, combined with the fact that site-visits will do nothing to improve the water quality problems prompting these complaints.  Nevertheless, Staff believes the Company should improve how it responds to customers who have non-health-threatening water quality complaints.

Complaints involving water quality are not handled by customer service representatives, but instead complainants are referred directly to the various production departments that are best suited to correct specific problems such as sand, bacteria, low pressure, discoloration, etc.  After such referral, there is no further contact with the customer service representative unless the customer initiates contact.  Staff is concerned that however well-educated and experienced Company personnel in production departments are in their specialties, they are not particularly well-trained in recording and processing complaints.  As a result of this referral system, the Company does not have a regular follow-up procedure to verify that each customer’s problem was resolved to the best of the Company’s capability and that the customer was satisfied with at least the processing of the complaint.

When a customer complains about a non-health-threatening water quality problem that the Company cannot remedy, it is very important for the Company to explain why it cannot provide a remedy and equally important for it to provide any information about customer-premises solutions that may be available.  It is not acceptable for the Company to either ignore such complaints or suggest potentially ineffective remedies such as draining water heaters or flushing lines absent follow-up contacts with the complainants.  Given the amount and cost of resources the Company is committing to iron and manganese mitigation, it is important that it communicate this commitment to the general public and especially to customers who complain about these water quality problems.

COMPLAINT INFORMATION SYSTEM

Complainant information such as name, address, and telephone number is handwritten and verification with customer account information is not usually done, resulting in much erroneous or missing data.  One-third of all water quality complaint records initially provided to Staff did not have a telephone number listed for the customer, more than 10% had no name and many more had inconsistent formats, and many of the names and addresses were misspelled, inconsistently abbreviated or had transposed numbers and none had zip codes.  For example, the same customer calling four times with complaints might be variously identified as Mrs. Sanderson, Kathy Andersen, Cathy, and Mrs. Anderson whose address is 401 Nevada St., 401 W. Nevada,

410 Nevada and the intersection of Nevada and Pine and with various or no telephone numbers.  These data problems not only make it harder for Company personnel to follow-up to ensure that each individual problem was resolved, they also make it much more difficult to perform various computerized analyses of the aggregate data base to spot geographic problem areas, customers with repeated complaints, etc.

United Water has recently invested in a new computer system which, among several potential benefits, provides it with the capability to automatically match complaints with customer account records and thus, the potential to eliminate most data entry errors.  Unfortunately, this newly gained capability has not yet resulted in a firm commitment to do so and, in fact, Staff was recently informed that efforts to integrate complaint information with customer accounts has been postponed until 1998.  United Water has said that it puts first priority on responding to customer complaints rather than follow-up and tracking efforts.  On a positive note, the Company has told us that since Staff filed its Status Report in February, the Company has provided its employees with additional training on how to handle customer complaints and that “complaints are now being entered into a database quicker enabling us to follow up with customers more reliably.”

CUSTOMER SURVEY COMPARISONS

In May of 1995 United Water-Idaho received the results of a random sample customer survey that compared its service and water quality to that of 12 other private water companies in Ohio, Pennsylvania, New Jersey and Illinois.  The total sample size of 1,361 customers is probably sufficient to produce statistically valid results for all service areas as a whole, depending upon response rates, proper stratification, etc.  But the sample size of 100 in the Boise area is too small for valid results at a high confidence level.  In addition to the small sample size of Idaho customers, there are also other factors detracting from the validity of comparing the Idaho service area to the other areas, which are all located in the Midwest and Northeast.  These factors include geography, climate and people.  Boise’s geography is quite different from the other service areas and this likely affects ground-source water quality.  Similarly, Boise’s climate is much drier and has greater evapotranspiration, thus requiring much more outdoor irrigation resulting in very high summer demand peaks and higher costs of supplying water.  And, finally, Boise’s customers appear to be more reluctant than others to give a top rating (i.e. 10) for any water or service quality.  This is evidenced by the fact that of the responses to the 15 questions analyzed by Staff, the overall average rating by Boiseans was only a statistically insignificant 2.5 % lower than all others (7.35 vs. 7.54, respectively), while the percent giving the highest rating in each category was 18.5% lower (23.8% vs. 29.2%).

Nevertheless, Staff believes the survey results do provide indicators about how Boise customers feel about their water quality and service quality compared to the perceptions of customers of other companies in other areas.  (United Water has recently completed another customer survey, but the results are not expected to be released for another two months.)

Attachment 2 contains graphical representations of customer responses to fifteen of the survey questions.  To smooth the graphs into more easily discernable lines, customer responses were grouped into a moving average of three adjacent responses.  The moving averages helped mitigate the apparent reluctance of Boiseans to give the highest rating, but it did not completely hide this relative reluctance as can be seen on several of the graphs.  A word of caution about the graphs:  They are almost all the same size and have the same horizontal scale, but they are not easily comparable to each other because of varying vertical scales ranging from 0%-15% up to 0%-50%.

Graph 1 in Attachment 2 indicates that customers in Idaho are less convinced than are customers in other states that the price for water is as low as possible.  Graph 2 shows that more customers in Idaho than elsewhere believe their water has a rust problem.  Graph 3 shows very little difference between customers in Idaho and elsewhere regarding their perception of color/clarity of their water.  Similarly, Graph 4 indicates very little difference between Idaho and non-Idaho customer perceptions of overall water quality.

Graph 5, however, shows that Idaho customers perceive their water to be very hard compared to customers elsewhere.  Graphs 6 and 7 show that Idaho customers rate the taste and smell of their water only slightly lower than other customers and much of this small difference is due to the apparent relative reluctance of Idahoans to give the highest rating for any aspect of their water.  Graph 8 shows that regarding whether their water is free of excessive chlorine, Idaho and non-Idaho customers give their water companies about the same ratings.

Graph 9 shows that more than 40% of Idaho customers and those elsewhere don’t know whether their water is free of lead and there was very little difference between the Idahoans and non-Idahoans whom expressed an opinion.  Graphs 10 and 11 generally show that Idaho customers are a little more confident than those elsewhere that their water is safe and free of contaminants, but it is interesting that essentially the same question asked in two different ways resulted in quite varied responses.  Graph 12 shows that more Idaho customers rate their water pressure as being less satisfactory than do customers elsewhere.  This is not at all surprising, given the differences in climate and irrigation needs discussed earlier.

Graph 13 shows that United Water’s Idaho customers are less satisfied than others with their water company’s handling of complaints.  Graph 14 indicates that Idaho customers have a very slightly lower level of satisfaction regarding overall water company service than do water customers elsewhere (contrary to next graph).  Finally, Graph 15 compares overall satisfaction of customers of five utility types.  This graph shows that Idaho gas and electricity utilities have the highest overall level of customer satisfaction, while cable TV has the lowest.  Graph 15 also shows United Water’s Idaho customers to be more satisfied with overall water service than are water customers elsewhere, contrary to the opposite response to another survey question shown in Graph 14.

In response to yet another survey question about service quality over the past 12 months, 24% of United Water’s Idaho customers said they had had a complaint, compared to only 16% of water customers elsewhere.  But in Idaho only 17% (71% of the 24%) said someone in their household actually complained to the water company, compared to 14% elsewhere (90% of the 16%).

When asked whether their water company had contacted them about service quality, only 5% of Idaho customers and 6% of customers elsewhere said yes.  But 48% of United Water’s Idaho customers said they would like to have more opportunities to tell the water company about their service.

When water customers were asked whether they use bottled water for drinking, 9% of Idaho customers said yes, compared to over 22% elsewhere.  When asked if the household used a water filter, 16% of Idaho customers said yes, compared to 13% elsewhere.

When asked if they were in favor of a $2 per month bill increase to pay for further water treatment for taste, odor and color, only 32% of United Water’s Idaho customers said yes and 62% said no.  Elsewhere, 34% said yes and 54% said no.

CONCLUSIONS AND RECOMMENDATIONS

The cause of water quality complaints within United Water’s service area seem to be due primarily to high levels of iron and manganese introduced into the system to varying degrees by existing production wells.  However, other factors such as the presence of iron bacteria, the layout of the distribution system, system flushing activities of the Company and the proximity of other wells of high quality seem to greatly influence how, where and when problems occur.  In addition, customer perceptions, tolerances and expectations as well as Company communications and customer service drive the number of actual complaints that are used to determine the extent of the problem.

Given the subjective nature of aesthetic customer complaints, it is difficult to determine exactly how serious the problem is, how it is best addressed and how much money should be spent.  For its part, the Company has chosen to eliminate iron and manganese from production wells by sequestering and systematic replacement of problem wells.  Figure No. 9 shows that production from problem wells has declined every year from 1992 to 1996 as a percentage of total production.  The number of water quality related customer complaints has also declined during the years from 1994 to 1996 as shown in general by Figure 10 and in detail by Table 7.  In 1996 the number of customers that complained about water quality represented about 0.6% of UWI’s total customer base.  On this basis, it appears that the Company’s approach is having some effect.  On the other hand, the Company has spent about $2 million since 1992, current rates provide about $465,000 per year to support improvement in aesthetic water quality problems and problems still occur.

The Company’s long term approach to eliminate iron and manganese from the system seems to be the most effective way to guarantee that most aesthetic problems are eliminated.  Although not specifically stated by the Company, its approach seems to be to replace/modify the largest problem wells, serving the most customers for the greatest period of time during the year.

Staff recommends that this approach be continued.  However, Staff also believes that the Company should be prepared to provide the Commission, in the course of recovering these costs, some stated objective regarding what it hopes to achieve.  The objective should be in terms of SMCLs for iron and manganese, total customer water quality complaints or some other objective method to measure effect.  The Company should also make water quality activity information available to customers including type of activity, timing of expected improvement and information regarding in-home treatment alternatives.

Staff sympathizes with those customers that are waiting for the Company to improve water quality on a system-wide basis.  However, we do not recommend that the Company provide in home devices on demand.  Much of this problem appears to be a function of geography and many customers have already purchased water softeners or other filtration equipment as a matter of preference.  Absent definitive measurement to evaluate need in the area of water quality or any other service quality area, Staff believes that customer specific expenditures by the Company is not advised.

Regarding the area of customer service and complaint records, the Company should take full advantage of its new computer system by automating the retrieval of customer account information by customer service employees for recording customer complaints.  This will create a much more accurate complaint data base, which initially should be used for improved follow-up in situations where the customer’s problem is not easily and readily resolved.  Secondarily, the data base improvement should be used for geographic analysis of water quality complaints.

DATED at Boise, Idaho this day of May 1997.

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