

WATER FOR LOS ANGELES

Robert V. Phillips

Interviewed by Andrew D. Basiago

Completed under the auspices  
of the  
Oral History Program  
University of California  
Los Angeles

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## BIOGRAPHICAL SUMMARY

### PERSONAL HISTORY:

*Born:* February 21, 1917.

*Education:* Public schools in Los Angeles; University of California, Los Angeles; B.S.C.E., University of California, Berkeley; School of Engineering and Applied Science, University of California, Los Angeles.

### CAREER WITH LOS ANGELES CITY DEPARTMENT OF WATER AND POWER:

Temporary junior civil engineer, aqueduct division, 1939-40.

Chainman, 1940-43.

Civil engineering associate, aqueduct division, 1943-48.

Waterworks engineer, aqueduct division, field engineering division, and water system executive office, 1948-59.

Principal waterworks engineer, aqueduct division, 1961-66.

Assistant chief engineer of waterworks, 1966-67.

Chief engineer of waterworks and assistant manager, 1967-72.

General manager and chief engineer, 1972-75.

### PROFESSIONAL AFFILIATIONS:

American Water Works Association, national standards council, 1967-72.

Colorado River Board of California, 1967-75.

California Water Resources Association, advisory committee, 1967-present.

American Society of Civil Engineers, chairman, committee on lifeline earthquake engineering, 1971-74.

California Municipal Utilities Association, board of governors, 1971-75.

American Public Power Association, board of directors and executive committee, 1972-75.

Western Energy Supply and Transmission Associates, board of directors, 1972-75.

University of California, engineering advisory council, 1974-85.

University of California, Los Angeles, School of Engineering and Applied Science, adjunct professor of engineering, 1975-present.

California Council for Environmental and Economic Balance, board of directors, 1975-78.

Navajo Tribal Utility Authority, management board, 1976-present.

Antelope Valley Runoff and Drainage Committee, chairman, 1983-present.

Electric Power Research Institute, board of directors.

#### OTHER AFFILIATIONS:

Optimists International.

Owens Valley Unified School District, board of trustees, 1946-52.

Masonic Lodge No. 221, Inyo County.

Tau Beta Pi.

Town Hall.

**AWARDS:**

American Water Works Association: National Publications Award, 1973;  
George Warren Fuller Award, 1975.

American Society of Civil Engineers: Stephen Bechtel Pipeline Engineering  
Award, 1977.

## INTERVIEW HISTORY

### INTERVIEWER:

Andrew D. Basiago, Interviewer, UCLA Oral History Program. B.A., History, UCLA.

### TIME AND SETTING OF INTERVIEW:

*Place:* Conference room, University Research Library, UCLA.

*Dates:* September 25, 27, 1985.

*Time of day, length of sessions, and total number of hours recorded:* Both sessions began at nine in the morning and lasted three hours. A total of six hours of conversation was recorded.

*Persons present during interview:* Phillips and Basiago.

### CONDUCT OF INTERVIEW:

This oral history is one in a series with retired long-time employees of the Department of Water and Power, City of Los Angeles, and individuals in the Office of the City Attorney for Water and Power. Duane L. Georgeson, Assistant General Manager-Water, Department of Water and Power, selected individuals to be interviewed after consulting with key members of his staff.

In preparing for the interview, Basiago consulted sources in the DWP's municipal reference department and in the Water Resources Center Archives at UCLA. He looked at inhouse material, including DWP memoranda and the employee magazine *Intake*. In addition, he also read several academic histories and reviewed *Los Angeles Times* articles dating from 1913 to the present.

The interview covers a broad time span, since it deals not only with issues which arose during Phillips's own thirty-five year career with the DWP, but even touches on several incidents which occurred during the years Phillips's father worked with the department. Among the topics covered are the DWP's role in the Owens Valley, water as the decisive factor in the growth of Los

Angeles, the DWP's relationship to the city government, the environmental movement, the quality of DWP water, and the 1971 Sylmar earthquake.

#### EDITING:

George Hodak, editorial assistant, edited the interview. He checked the verbatim transcript of the interview against the original tape recordings, edited for punctuation, paragraphing, and spelling, and verified proper names. Words and phrases inserted by the editor have been bracketed.

In October 1986 the edited transcript was sent to Phillips, who reviewed and approved the edited transcript. He made some corrections and additions and returned the manuscript in February of 1987.

Teresa Barnett, editor, prepared the table of contents and biographical summary. Richard Cándida Smith, principal editor, prepared the index.

#### SUPPORTING DOCUMENTS:

The original tape recordings of the interview are in the university archives and are available under the regulations governing the use of permanent noncurrent records of the university. Records relating to the interview are located in the office of the UCLA Oral History Program.

TAPE NUMBER: I, SIDE ONE

SEPTEMBER 25, 1985

BASIAGO: Why don't we begin again with things that you remember from working with your dad, J. [James] E. Phillips, up there in the Owens Valley.

PHILLIPS: Okay. I worked with him not only in the Owens Valley, but down here. I shouldn't say I worked with him, but he made it possible for me to share experiences, I'll put it that way, by taking me out on his work when he could and where he could. This is beginning about the time when I was ten years old or so. I think I gained a lot more from that than I thought I was at the time, because I learned the kind of work he was doing and the kind of work the department did. I learned a lot about the people, the workers in the department. I learned about their respect for him. I came to respect my father a lot through those associations. I don't think he did it for that purpose, but he may have sensed that I was the one, of the three boys in the family, that was pointed in an engineering direction. He was probably fostering that somewhat. Particularly the trips he did take me on in the Owens Valley and out in the field. I began to get, at a very early time, the background and the posture the department had in the Owens Valley in those early days. This is in the very late twenties and early thirties, from then on really. I got to know people who were working there, some of whom I later worked with and some of whom I later supervised--which raised some difficulties in its own right.

BASIAGO: What was the department's posture in the Owens Valley? Some of the formal history suggests that at that time the Owens Valley residents were still very antagonistic. Is it true?

PHILLIPS: Yes, some of them were. Yes, some of them were. I hope I don't

have too biased an attitude, because the attitude began forming, as I say, when I went up there as a boy; but it grew all through the years that I worked for the department. But I began to find out that a great many people up there--they're not the ones who blew up aqueducts and so on--were grateful to the department. The Owens Valley back in those days was primarily a rural, agricultural area. They raised cattle there, cattle raising has always been the prime agricultural activity, and the growing of some alfalfa and a lesser amount of corn to support the cattle. Until the city went in there to build an aqueduct there was no railroad into the Owens Valley except a narrow-gauge road from the north, from Nevada, which terminated in the Owens Valley. There was no paved highway into the Owens Valley. The first time I went into the Owens Valley in 1927, from Mojave on it was all dirt road. The point being that their access to the outside world was very limited. If they had any crops, a great amount, it was difficult to get them out of the Owens Valley. Much of the activity, the agricultural activity, in the Owens Valley was for its internal use. There was some fruit grown in the Owens Valley, particularly in the Manzanar community. But some of those people had a very hard time. My wife's father had a general store at Manzanar. (My wife [Janie Phillips] was raised in Manzanar and went to school in Manzanar.) His comments to me, discussions I had with him and with my wife, were to the effect that people struggled--it was difficult. This is the reason why an awful lot of the farmers up there in the valley were indebted heavily to the Watterson brothers, [Mark Q. and Wilfred W. Watterson] who ran the [First National] Bank in Bishop and who later embezzled funds and put them into a mine up there and were found out. A great many of the people whom the city bought out during those years--this is again back in the late twenties, early thirties--lost their money. That's where a lot of the problems started.

BASIAGO: So you trace some of the bitterness to the embezzlement of the

funds by the Watterson brothers.

PHILLIPS: No question about it, yes. Some of the dynamiting of the aqueduct, the Alabama Gates dynamiting-- I talked to people that were there. It was a big party. People brought picnic lunches to this big occasion where they were going to dynamite the aqueduct gates and let the water out. A lot of this was done not because of antagonism toward the city taking the water; it was antagonism towards the city for not paying enough for the ranches. It was argument over the price the city was paying for the ranches, and yet those prices were very substantial. So there was a whole lot of stuff going on that never got put into all the stories that have been written about in there.

BASIAGO: You really think it was a matter of them having been paid off and then putting that money in the bank and then losing it to the Wattersons.

PHILLIPS: Yes, I think that had a great deal to do with it. Because then they had nothing, they didn't have their land or their money. Although wherever possible, the city had a program, a practice of leasing. If they bought land from a rancher, they would turn right around and lease the land back to him.

BASIAGO: What about jobs? With this large aqueduct construction going on, the formal histories report that most of the workers were migrant laborers from elsewhere. Were there a lot of aqueduct jobs that became available to the Owens Valley residents?

PHILLIPS: There were some. There weren't too many Owens Valley residents, of course, that could do that kind of work, but I know people that worked on the aqueduct [first Los Angeles Aqueduct] originally. They're dead now, but I know their families. They were farmers in the Owens Valley, in the same Manzanar area. They went to work for the city on the aqueduct as welders, equipment operators, mule skinnors, electricians, whatever. They stayed on with the city, had good jobs, good careers with the city, and retired from the city.

BASIAGO: Did they ever talk about the trips that Fred Eaton [mayor of Los Angeles, 1898-1900] had gone on up there, allegedly posing as working for the federal government, but in fact was investigating the area for the city? Were there any comments about the Lippincott-Eaton Affair, as it's called? You know, with J. B. [Joseph Barlow] Lippincott working up there?

PHILLIPS: And the [Federal] Bureau of Reclamation?

BASIAGO: Yeah.

PHILLIPS: I never heard too much about it. Of course the books that have been written about that situation up there are full of it. I knew J. B. Lippincott, I had met him. When I first got out of school I talked to him about career opportunities and that sort of thing. I did not know Fred Eaton. I knew William Mulholland. I have no doubt that when Eaton and Mulholland, particularly Eaton, first went up there for the purpose of acquiring water rights that it was done undercover. I don't think that it was done maliciously undercover. I think that it's the same thing with the San Fernando Valley. If the word had gotten out as to what was happening, prices would have escalated and they would have gone out of sight. The city would have been held up. Those people are no different from anybody else, in those days, or nowadays. They would have gotten everything they could out of it. So I think this thing was kept quiet initially for that reason. I think that's also the reason why it was kept quiet down here for a long time. Because even so, there were charges about speculation in the San Fernando Valley because of the water coming in.

BASIAGO: You think had they mentioned it, it would have driven prices out of sight and the whole project would have been impossible?

PHILLIPS: Yeah, right.

BASIAGO: What were some of the things that you learned under your father's tutelage, technically, that you later applied as an engineer for the aqueduct

division and later as general manager? What were some of his ways of operating, the kinds of jobs he did up there, in terms of acquiring water?

PHILLIPS: I used to go out on construction work with him; the first time I ever went into an underground tunnel was with him. I was not an employee; I was his son. He was taking me on the job. And I learned things then about tunneling or about well drilling. They were drilling a lot of wells in the Owens Valley at that time. But I think what I learned more from him that stood me in good stead later was the way he treated men and women on the job. The kind of rapport he had with them, the way he handled them, the way he discussed things with them. Sometimes I'd drive his car while he was talking with people in the car. I think that was a much more significant education to me. That I didn't know at the time. At the time, probably, the technical and the construction features of it were much more interesting and fascinating. I learned something about well drilling, artesian wells, and a little about hydrology. But I think, later on, the thing that really was valuable to me was seeing how he worked with people.

BASIAGO: Gerry [Gerald W.] Jones mentioned that J. B. Lippincott and William Mulholland were very much down-to-earth kinds of men who were out in the field a lot of time and treated everybody as an equal.

PHILLIPS: Right, yeah. I tried to do that. You've talked to Gerry Jones?

BASIAGO: Uh-huh.

PHILLIPS: Yes, they were very much down-to-earth people. They came up the same way. All of us did. I regret nowadays people starting in at the top, so to speak. I think a lot is lost that way.

BASIAGO: Let's discuss the pros and cons of that. What were the pros of having people come up from the bottom? Obviously they knew the whole system.

PHILLIPS: Yes. When I got to be general manager, in fact after I retired, I was

an adjunct professor here [UCLA]. I was talking to classes, mostly on "The Engineer in Society," that Al [Alfred C.] Ingersoll had and later others, [such as] Russ [Russell R.] O'Neill. I told the students that I felt the important characteristics of a supervisor, particularly in society, were, one, to know his job; two, to be absolutely totally honest in the things he said, intellectual honesty. And I think that, well, getting back to your question-- Lost it for a minute.

BASIAGO: We were just discussing pros and cons of working up your way up through--

PHILLIPS: Oh, yeah, I think that's one of the things, that in working your way up you have a background.

BASIAGO: You know your job.

PHILLIPS: You have to be respected by the people you supervise when you're a manager, or at any level of supervision. You have to be respected by the people you supervise. Otherwise you're lost. One of the things that people respect is somebody who knows his job, who can even answer questions about their job, who can bring up the past or refer back to things that show that he knows the job. And coming up in the outfit is important that way. It's also important to people to think, "Well, gee, he's chief engineer now, but he started out just like I did. He worked from the bottom up." Now a lot of people might spoof at that, but it's important. It means a lot, I think, in an organization such as we had.

BASIAGO: What were the other things you mentioned? Knowing your job from working your way up and being intellectually honest. What were some of the other traits of being a supervisor that you thought were important?

PHILLIPS: Well, one of them is-- Well, that's part of knowing your job.

BASIAGO: Was there ever an incident, particularly as you started to get into the upper echelons of management, where the horizontal kind of promotion--?

Where someone who would come into the organization without having started at the bottom actually created a problem or led to some kind of mishap or breakdown?

PHILLIPS: Not so much. The department was pretty much an outfit of career people, you know, people who had long tenure in the department. There were a few cases which were not a problem. One of the most notable is at about the time-- This would have been back in the early sixties, I think, when I became head of the aqueduct division, which was the job my father had when he died. He died in 1940, and I came to work for the department in 1940. Our careers overlapped about six months. But, anyway, I was head of the aqueduct division in charge of everything from the cascades north. We had a chief financial officer in the department [who] retired, and he had been a career person, longtime employee. To replace him, they brought in a man from over in city hall. "City hall" was a kind of a bad word around the department. That meant politics, and the department was an outfit that did not like to be political. That wasn't always true in more recent years. So they brought in a man named [William] Sachau as chief financial officer. There was a lot of apprehension about this--what was he sent over here to do and so on. He turned out to be a "department man"; I'd put that in quotes too. [laughter]

BASIAGO: Like a "company man."

PHILLIPS: Yeah, a "company man." He became enthusiastic about the department. He was a very capable-- /s a very capable man (he retired a few years ago), and became a supporter of the department just as much as the rest of us. As I mentioned to you the other day, we've had commissioners [Los Angeles City Board of Water and Power Commissioners] come in who were (we knew they were) sent over to straighten out this department, find out who was getting the money, where all this money was going. And we had the same experience

there. I brought over a young man, when I became general manager, who was in the city hall, in the city administrator's office. Very sharp, very forward thinking. Some people viewed him with suspicion. I brought him over. I wanted him.

BASIAGO: What was his name? Was that Mike [Michael] Hollander?

PHILLIPS: Mike Moore.

BASIAGO: Mike Moore?

PHILLIPS: Yeah. Mike Hollander was the commissioner, one of the commissioners. Mike Moore, who's still there in the same job. A lot of people were very suspicious about that. I said, "Don't worry." They didn't have to be. Mike became a "department man"; he saw the virtues of the department.

Another man that was brought in, again by me-- We set up a position to consolidate and coordinate all of our computer activities. Prior to this time, the power system had been taking the lead in computer activity for the department. The accounting division had a little bit of computer activity. The water system borrowed or used the power system's computers. There were some problems related with this diversity--too many people involved--and we felt a need for consolidating all this. Because we could see it was going to be a tremendous activity, the whole computer program, data processor. So we brought in a man, from Detroit, actually. The power system didn't like this at all. For one thing, we were destroying their autonomy in the computer area, and for another thing we were combining and bringing in somebody from outside to run this. This man's name is [Robert] Giffrow, he's still there. But it worked out all right. It turned out to be the right thing to do.

BASIAGO: So what you're saying is, people who came in horizontally, even if they had reservations going in, they became real company people and became real boosters in the department.

PHILLIPS: In all of the cases I can think of offhand, yeah, they did. I attribute this to the nature and the stature of the department, and the people in the department.

BASIAGO: Maybe we should go back and treat things more chronologically. Your first job in 1940 was as a chainman. What did that entail?

PHILLIPS: That's the lowest man on a survey party.

BASIAGO: Holding the chains?

PHILLIPS: Holding the chains and the measuring tapes. Doing the measuring related to surveying.

BASIAGO: Then you went to work. Was that on the Colorado River Project?

PHILLIPS: No, on the Colorado River Project, that was a summer job in 1935. I worked in the tunnels, Copper Basin tunnels way out near the Colorado River, for a contractor. I truly admit my father got me the job, but it was good experience for me. I was strictly a laborer in the tunnels.

BASIAGO: What were they called?

PHILLIPS: Muckers.

BASIAGO: Muckers, tunnel stiffs.

PHILLIPS: Tunnel stiffs, yeah.

BASIAGO: Is that dangerous work?

PHILLIPS: Could be, part of the time. My job was-- They were concreting the tunnel, one tunnel I was in out there. Big steel forms, and then the rock and timber support for the tunnel and the steel forms inside. They had concrete machines. That was one of the first uses of concrete machines, where they pump concrete in over the top of the form and concrete would come down around the form. Well, in order to be sure that the concrete got into all the tunnel support system and down against the curb on the sides, they had people behind the forms, between the tunnel form and the rock, with shovels to puddle

this stuff, to work the concrete in around everything. That was my job partly. You crawled through a little hole in the side of the form, and then that hole was closed up so that the concrete wouldn't run out.

BASIAGO: Where did you make your jump from a laborer into more of a white-collar role in the department? Was that under the tutelage of Burton [S.] Grant?

PHILLIPS: No, that was probably still up in the Owens Valley. When I became a junior civil engineer, I began doing drafting and a little bit of design work, mapmaking, calculating.

BASIAGO: These were applied things that you were learning at UCLA.

PHILLIPS: Yes, and at [University of California] Berkeley. However, I still was not-- I had a little supervision. In 1948 I was appointed a waterworks engineer, still in the Owens Valley. That was the first level at which you're required to be a registered civil engineer in the state. I had gotten my registration two years after I graduated. So most of the time that I was working as a chainman or as a hydrographer or as a junior civil engineer, I was a registered engineer in the state. But in 1948 I was appointed to this position, which was truly a supervisory position requiring registration. It was at that point that a number of people were put under my supervision whom I had known when I went up there with my father, and whom I had worked for at lower levels. That was a difficult time and a very educational time for me, because I had to supervise people that had known me as a little boy. This was a difficult adjustment for them to make--and for me. But that's the first truly-- I had a secretary then. I did a lot of work on the budget for that district up there, by this time.

BASIAGO: This is the Owens Valley district?

PHILLIPS: Yeah. Preparing the annual budget.

BASIAGO: Did that work lead into the development of the *Phillips formula*, in terms of diverting tax monies?

PHILLIPS: Not exactly, although I think the thing that probably led into the development of the Phillips formula and that was not until the early sixties--

BASIAGO: Maybe we should wait to talk about that. There were two people who seemed to help your career, whom you worked with pretty extensively during and before the forties. They would be Burton Grant and Ralph [R.] Procter. What do you recall about each of these guys? Who were they, what did you learn from them, and what were you working with?

PHILLIPS: Burton Grant had been an assistant to my father. That's where I first knew him. When my father died, he assumed the job that my father had--a job which I later assumed in the early sixties. And then in 1953, when I came down from the Owens Valley, he was chief engineer of the water system. I worked for him as the staff engineer. Mr. Grant--I still call him Mr. Grant--did not have a complete engineering education, although he was registered. He had gone to UCLA here and taken some engineering. He was a very hardworking man, a very ambitious man. He had the demeanor of an executive, possibly more than he had the capabilities of an executive. He was a very good man, hardworking, but in my later view, he was having to work over his head a lot. He carried it off pretty well, but it caught up with him later when he wanted to be general manager and he was sidestepped. This was devastating to him.

BASIAGO: What were some of the things that you learned from him then that you think were important to you later in, let's say, becoming general manager?

PHILLIPS: I learned how to do some things and how not to do some things from him. He was an example of somebody who, technically, didn't have it really. If you discuss Mr. Grant with Mr. [Samuel B.] Nelson you may get a strange reaction, because Mr. Nelson is the one that moved in front of Mr. Grant. Very traumatic times, particularly for Mr. Grant. But I learned a lot about handling people from Mr. Grant: he knew how to work with people. He was

very quiet. As I say, he played the role of an executive very well. This can be important in some areas. He worked hard, he was honest, but overambitious I think.

BASIAGO: Let's talk about Ralph Procter. With him you co-invented the Procter needle.

PHILLIPS: Oh no, no, no.

BASIAGO: No? You worked, not co-invented, but worked--

PHILLIPS: I came along much after that needle was invented. I don't know where you might have gotten that.

BASIAGO: That was in one of the corporate biographies I found that connected you working with Ralph Procter.

PHILLIPS: I worked with him--

BASIAGO: But didn't co-invent the needle?

PHILLIPS: --from 1953 until 1958 for five years, but the Procter needle had been invented long before that by people that I knew and later worked with. But I did not co-invent-- I wouldn't want to take any credit for that at all. But I learned a great deal from Procter.

BASIAGO: What did you learn from him about soil compaction and dams and stuff?

PHILLIPS: Most of what I ever knew. Although I did, I told you, I took a course, graduate course, in soil mechanics here at UCLA. But as far as the practicalities of construction of dams and earth embankments, I learned those from Procter.

BASIAGO: If you were taking a young civil engineering student by the hand and telling him the three, four, five biggest rules about soil compaction and earth structures and earth dams, what would they be? What are some of the things that are most important to remember when you're building?

PHILLIPS: Well, the selection of the soil, for one thing, is extremely important, and where it goes in the dam. Generally you want a dam that's impervious on the upstream side (we're talking about an earth dam) and slightly pervious on the downstream side, allowing water to move through the soil, permeable. So on the upstream side, you want a clay soil, very thoroughly compacted-- Not too clayey, because it can swell and shrink and crack if it's all clay, but enough clay in it that it's pretty watertight when it's compacted. On the downstream side, a somewhat more pervious soil. Sometimes drains are put in. The whole concept of this, you know, Procter made clear to me.

Another thing, of course, is the moisture content of the soil when you compact it. This is what Procter developed, the moisture curves, compaction curves with varying-- He varied the moisture in a soil and compacted that soil under standard methods in the laboratory and then measured the density of the soil. Having known how much water is in it, he knew the percentage of moisture in the soil, and then he got a density curve which rose to a peak at the optimum density--or near it--and then tailed off again. And there were a great many refinements; it was a sophisticated system of analysis of how to place these soils. Different soils had different characteristics. So the moisture in the soil is extremely important. The amount of compaction is measured in foot-pounds per cubic foot of compactive energy, the drawbar pull on a roller, on a tractor pulling the roller. All these things he really did a great deal to develop.

BASIAGO: The Saint Francis [or San Francisquito] Dam burst, I guess, when you were about ten or eleven, when you just started traveling with your father.

PHILLIPS: One of the places my father took me was up to see that dam when it was under construction. I remember that very vividly.

BASIAGO: Do you have any idea why that might have broke, killing four hundred people? I mean, with Procter working on the science, was that tragedy--?

PHILLIPS: Procter did not work on that one. That was a concrete dam.

BASIAGO: Oh, I realize he wasn't working on that project but that--

PHILLIPS: Really the failure of that dam-- Which was replaced by the Bouquet Canyon Dam, an earth dam. The development of these compaction methods by Procter and others at that time for Bouquet Canyon Dam, these really started the [Procter] needle and the Procter system of soil compaction.

BASIAGO: The dam that replaced the concrete one that was there.

PHILLIPS: The Bouquet Canyon Dam that replaced the concrete San Francisquito Dam. San Francisquito Dam failed--with all due credit to a great man-- because Mulholland was a promoter, a dreamer, a visionary. Good solid practical man in engineering, but he was self-taught. He was not really a technical engineer. He went ahead and did things that shouldn't have been done. He built a concrete dam on a faulty foundation.

BASIAGO: So you think he did share some technical blame.

PHILLIPS: I think so.

BASIAGO: Were there other facets that were lacking in that dam technically, that might have led to it breaking?

PHILLIPS: No, I think the whole problem in the dam was in the foundation soils. Some of the foundation, which later proved to be rock that looked very hard when it was dry, and seemed good, the minute it got wet it began to melt. That should have been caught. I think Mulholland was a gruff old guy. He had people around him who might have told him that--possibly did tell him that--but he probably said, "Nah, it's all right. Good hard rock."

BASIAGO: So you think some of his optimism, his progressive optimism, might have blinded him from the fact that it wasn't the best idea in the world to design it that way?

PHILLIPS: I think that's highly likely.

BASIAGO: That's very interesting, because some of the histories kind of report that he assumed responsibility and resigned--

PHILLIPS: Experience for him?

BASIAGO: Right. Out of the goodness of the heart, so to speak, and that maybe it wasn't his fault. But you're saying that you think he actually shared some blame. That's very interesting.

PHILLIPS: I think so. This comes from comments of engineers with our department who were there.

BASIAGO: One thing I want to talk about is the development of certain careers in the department. What role did things like family connections and Masonic ties play?

PHILLIPS: I don't think too much, although that certainly existed, particularly in the Owens Valley. I became a Mason in the Owens Valley. In a small community like that, before the days of television, that's about all there was. That was the social activity.

BASIAGO: That was the social network, the Masons.

PHILLIPS: Yeah, it was the [Inyo] Masonic Lodge, also Odd Fellows Lodge and the women's counterpart to that, [Order of the] Eastern Star. I'm a past patron of the Eastern Star; my wife and I were very active in it up there in the forties. But I never saw where that was carried too far. The Independence office building, which was built in 1927, I think, and was just recently demolished-- The front steps to that office building were three, five, and seven steps. That has Masonic significance. It was done by people who were good Masons who built it that way. I don't think it meant any more than that. I never saw any instance where a man who was Catholic, for example, was discriminated against by Masons in the department at any level I ever worked at.

BASIAGO: So the fact that a lot of the top brass were Masons was by virtue of

their social background, but not necessarily a key indicator.

PHILLIPS: Because a lot of them started in the Owens Valley, just as I did. I spent a total of sixteen years in the Owens Valley, from 1940, when I first went to work, until 1953. Then I came back in charge of the northern district in 1960 and was there until '62 or '63. So that's a total of sixteen years. A lot of people that-- H. [Harvey] A. Van Norman started in up there. He's a past patron of the Eastern Star, same chapter I was in. That's where you got a lot of social contact. A lot of the people in the valley, the prominent people, farmers and ranchers who were on the other side of the fence, so to speak, were also active. I knew many of them when I was active in Eastern Star. It was a common ground. It was a good influence in that respect to bring the department people and the local people up there together in that kind of-- It was a healthy situation I think.

As far as the families are concerned, there were a lot of family associations in the department. The Van Normans, there were three or four Van Normans that had careers in the department, and only one went to the top. The rest were just workers. They never, as far as I could see, were given any great benefit because of their family association. The Boueys you mentioned the other day. They were all middle-level foremen, superintendents, and very good people.

BASIAGO: Getting back to the issue of the social structure of the Owens Valley. You served as a trustee for the school board from 1946 to '52. What do you remember about any of Father [John] Crowley's efforts to resurrect the self-image of the valley with certain promotions? Almost making a joke out of the water situation. Do you remember any of the affairs that he held, any of the church bazaars and things?

PHILLIPS: I remember some of those. I went to one or two. I think he did try

to ameliorate the whole problem. He started, or he was one of those who was instrumental in starting, a group called the Inyo Associates. This was like a valley-wide chamber of commerce. It was (and still is) an effective organization. It was designed to do just what you say. To help solve some of the problems, bring about some peace. In return for which he got a lake named after him, Crowley Lake.

BASIAGO: What were some of the lingering problems that he was attacking up there? I read that he helped resolve some of the polarization, but what really was he confronted with? He was somewhat controversial when he began the latter part of his ministry, focusing back on the place of his birth.

PHILLIPS: Yeah, he was an aggressive man. I don't know how much of that I know, but there were still problems. There will always be problems in the Owens Valley because it's the kind of issue that-- There are always people coming into the valley--or outside the valley even--who find this a fertile ground to plow again and again and again, bring up these old issues and keep the old animosities going. Which is too bad. But in those days there were problems of the department's policies with respect to the leasing of lands that it had previously bought (both business land, business properties, and ranch properties); the level of rents charged; how rents were charged; the availability of water; and how water was supplied to these various leases. The Inyo Associates and Father Crowley tried to address a lot of these. The tax issue came along after he was gone, but that would have been an issue that he would have, I'm sure, addressed.

BASIAGO: Why don't we talk about the issue of taxation and compensation for water usage in the Owens Valley. You mentioned that you developed something called the Phillips formula, which became very important.

PHILLIPS: Yeah, this was in the late fifties and early sixties when this really

began to develop. A district attorney in Inyo County named Loundigan, Robert Loundigan, became aware of some cases over in the San Francisco Bay Area where a small water utility was transporting water from outside the city and county of San Francisco inside-- If I remember this. I may be a little vague on this. But the point of it was the county of origin there made an assessment against this water company or water district--the Spring Valley case I think it was called--for the value of the water being transported out of the county of origin into the county of use, San Francisco, or the district of this little water agency. The courts upheld this assessment, this tax. Bob Loundigan became aware of that and suddenly realized that the same thing was occurring in his case on a much, much larger scale, vastly larger scale. Why couldn't he, why couldn't Inyo County put an assessment on the value of the water being transported out of Inyo County into Los Angeles? He determined that there was no reason why they shouldn't, and they did. The basis for the assessment, the valuation of the water, was that-- Let me back up a minute. When the city of Los Angeles first bought all this property in the Owens Valley, that property could have become tax-exempt the minute the city acquired it. Because under the law at that time, if a municipality owned property anywhere, it was tax-exempt, even in Inyo County or Mono County. Well, that would have been devastating, of course, to Inyo County, because most--

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PHILLIPS: So with the help of the city of Los Angeles, the state law was changed to make it possible for a county to tax the properties of a municipality where the municipality existed outside that county. For years and years the city had paid taxes on all those ranchlands that it had bought. In fact, through an agreement that Harvey Van Norman made with the county people up there, they paid the tax on the assessed value as though the farm properties were still farm, even though the farm properties had dried up. Which, incidentally, we later found-- We studied all the tax rates; we found out which properties were farmed and which properties were not. We found that by a long shot the majority of the properties had not been farmed. But, anyway-- So the city was paying taxes on the lands that it [had] purchased, including presumably the water rights on those lands. Because we paid as though the water was still used on the land, as though they were still being farmed. So we felt that we were paying a fair tax in Inyo County. Well over half the county taxes came from the city of Los Angeles.

However, Loundigan then started assessing the export of the water. The right to export the water is what he assessed, finally, at our insistence. The way this was valued was on a substitute-source theory. In other words, if we didn't get the water from Inyo County, we would have had to buy the water from the Metropolitan Water District [of Southern California (MWD)]. We would have paid so much per acre-foot for that water. The water from Inyo County was costing us so much per acre-foot to deliver in Los Angeles. Same point of delivery for both systems. If you deduct the cost of Owens River water (which

was less than MWD's cost even at that time) from the cost per acre-foot of the Metropolitan Water District water, the difference would have been the value of the water-export right. That difference times the total number of acre-feet diverted per year-- The product capitalized became the value of the water, the water diversion. We paid that for a number of years under protest. What bothered us was that we knew that the cost of Metropolitan Water District water was going to increase very substantially, particularly after the state [California] Aqueduct came into use--and it has. We would have been paying a tremendous amount in taxes to Inyo County, far beyond any proportion to their need. In fact, the first assessment was made at the point of diversion from Inyo County at Haiwee, down at the south end of the county. All the assessment was made at that point. There was a little school district down there, the Olancho school district, that became the wealthiest school district in the nation immediately, just tremendous funds. Well, that didn't help Inyo County much, so an agreement was made that this assessment would be spread over the whole county. But we still paid it under protest.

My philosophy all the years I worked in the Owens Valley--and as a manager--was, with respect to the Owens Valley, that we had a duty to protect the city's interests up there, the city's water rights, the city's land rights, but we had no right to run roughshod over the county. And they had no right to run roughshod over us. I felt we should always be as fair as we could in our dealings up there with those people. I guess, you know, I had a background in the land use up there; I had done a study, I think I mentioned to you the other day, on the grazing prices. And I knew the country, having lived there about fourteen years, and I got involved--the city attorney's office got me involved--in this issue of export tax. It appeared to me that going ahead with a substitute-source theory of valuation was just ridiculous. There was no logic, no rationale for it at

all. It would have just been the rape of the city of Los Angeles, rather than the alleged rape of the Owens Valley. So it seemed to me that what we were really after was to escalate-- We accepted the idea of a tax on that water--that had been established in the law--and that we should escalate that by some reasonable rationale that depended on parameters outside of the valley itself and the city itself.

I won't go into all the research and studies and thinking that I did, but what I came up with was that if we went back a few years before this hassle started to a time when there seemed to be some stability in the tax picture, that we were paying a reasonable share of the taxes on land and water in Inyo County and Inyo County was satisfied with that level of tax. And then [if] we escalated that level of taxation without respect to the substitute-source cost or without respect to anything else except just escalating that according to some acceptable formula, that would be a fair way to do it. The purpose, I felt, was to provide our fair share of the governmental costs of running Inyo County and to escalate our share of that cost in proportion to the increasing costs of running government. So I decided that we would go outside the county, take the whole state (and there's lots of statistical data available over a period of years), take the total assessed value of land in the state of California, plot that year by year, divide that by the total population in the state, and see how it changed. The idea being that we were only interested in land (which would include water rights), not in improvements. Because the total assessed value of improvements is going to increase. But just the assessed value of land. And we took that, plotted it, and found that it was a very reasonable index of increasing cost to government. So that became the Phillips formula. We went back a few years to a level of taxation that the city was paying in Inyo County that everybody agreed was reasonable, and then we took the total assessed valuation of

land per capita in the state of California each year compared to that base year as an index. And we multiplied the assessed value of land and water in Inyo County--of city land and water in Inyo County at that base year--by that index, and increased our taxes accordingly.

BASIAGO: Why was that particular year appropriate? In other words, what was the rationale behind establishing your baseline, your first ratio?

PHILLIPS: The only rationale was that it was a level of assessment that we agreed was reasonable, that they agreed was reasonable.

BASIAGO: And therefore was applicable to other water cases where you had transit across county lines?

PHILLIPS: Yes. During all this, the city and county of San Francisco was involved in this; the East Bay Municipal Utilities District was involved in our studies on this; the California Municipal Utilities Association coordinated a lot of this work. There were several irrigation districts that came under this same thing, although we were the largest. We were the major taxpayer involved. They all accepted this idea. They said, "Yeah, that will work, that will control it. We'll go along with it." It is a rational escalation of taxes based on something that the city of Los Angeles can't manipulate. And Inyo County can't manipulate it or any of the other rural counties. It's a statewide tax figure and an index based on that figure. Proposition 13 affected that some, but I understand that basically that [the Phillips formula] is still applied to taxes in the Owens Valley and is working very acceptably.

BASIAGO: So it's still operating. Is it true that it was written in the state constitution?

PHILLIPS: Yeah. The only way we could tie it down so nobody could tamper with it was to make a constitutional amendment out of it. At that time, and I suppose still, there's a great reluctance in state government to put anything that

specific into the state constitution, but we did. We wrote this rather very specific rule, formula, into the state constitution and put it on the ballot as a constitutional amendment. And peculiarly enough, it did not pass in Los Angeles County--just barely did not pass. It *did* pass in Inyo County and throughout the rest of the state.

BASIAGO: That's odd. Because you said it struck a pretty fair deal for Los Angeles.

PHILLIPS: It did, yeah.

BASIAGO: Why do you think it didn't pass?

PHILLIPS: I think it didn't pass because people didn't understand it.

BASIAGO: It was too complex.

PHILLIPS: Yeah, they didn't know what was going on. And the people of Inyo County were much closer to it, a smaller group of people. Their county officials supported it, so they supported it. The people in L.A. didn't know what it was. It was tax, you know, more taxes.

BASIAGO: We're really talking about a tool with which water transfer can now occur between varying bodies without much conflict or litigation.

PHILLIPS: As far as the assessment of that right to divert, no, it's under control.

BASIAGO: Creates a rule to follow.

PHILLIPS: We made some comparisons. The increase in the taxes we paid to Inyo County were very favorable, compared to other indices like the cost of living index or that sort of thing. [Compared to] any other cost-increase index, this came out very well, both for Inyo County and for us. They didn't suffer. But if we had continued to pay that water-export tax on the basis of the value of the substitute source (the cost of MWD water), we would have been swamped. We would have been paying hundreds of millions of dollars.

BASIAGO: So it's a way to prevent extortion by one county over another, [one]

that needs water and one that has a surplus.

PHILLIPS: But one reason that we were able to sell it was that it was based-- And this was my full intention right from the beginning. It was based on treating everybody as fairly as possible. Trying to find something that was fair to everybody. Nobody trying to screw anybody else--excuse the language.

BASIAGO: That's why you chose a common denominator that didn't involve either party, but the total state.

PHILLIPS: Right. It was an independent index that we couldn't tamper with, and they knew we couldn't tamper with it.

BASIAGO: There was another important project that you worked on in 1958, in terms of surveying livestock and the grazing lands the DWP [Department of Water and Power] owns out in Inyo and Mono [counties]. What was that all about?

PHILLIPS: Well, the board at that time was-- We do lease an awful lot of grazing land up there. Of the 300,000-plus acres of land we own in Inyo and Mono counties, probably 250,000 of it was leased. Well, maybe not that much, but 200,000 is leased for grazing. It's all kinds of land. Some of it's desert-brush grazing land, very low carrying capacity; some of it was good irrigated pasture, either native pasture or cultivated pasture, some of it alfalfa. All producing feed, which is measured in animal-unit-months: the amount of feed to carry one animal one month (one animal being a cow). Six sheep equal one cow. But anyway, we had a pretty good system. We valued the grazing price per acre depending on the quality of the feed; the higher the quality of the feed, the higher the price per acre. We escalated that from time to time by comparing it with prices being charged elsewhere by the [Federal] Bureau of Land Management or others. We would get some static from cattle ranchers up there, the cattlemen, and we would get some static from our own board or management

that, you know, the prices-- "Were we getting enough for the land?" Of course the cattlemen figured, "You're getting too much."

One thing that complicated this, as compared to other agencies, was that we only wrote five-year leases. So the cattlemen couldn't plan ahead more than five years. This was particularly important if they were growing alfalfa, because you reseed alfalfa every five years or so. They wouldn't know-- Generally they knew they would get the renewal lease, but they could never be real sure. Or seeding pasture, they would want-- They wouldn't want to seed pasture or alfalfa without knowing that they were going to be operating there for some time in the future. So they felt that they should get a lower price because of those uncertainties and also because of the uncertainty of water. We would put water on the lands, try to keep them in business, but if we got a very dry year, their lease called for drying up the lease. Even if they had just seeded the alfalfa, we could dry it up. They felt that they suffered for that reason, which they did.

Anyway, the board decided that we should really resolve this, try to resolve this once and for all. They asked me, and I took another man with me, to make a survey throughout the western United States of grazing-price practices, how grazing land was priced. What it was based on, what was being charged, and why. So we spent about three weeks, as I recall, with a car, just hitting all of the-- We really got into some remote areas, talking to large ranchers, talking to Bureau of Land Management people, talking to [United States] Forest Service people.

BASIAGO: Excuse me, where were you doing your surveying?

PHILLIPS: Northern California, eastern Oregon, southern Idaho, Nevada.

BASIAGO: These were to survey farmlands that you could compare with the lands that the department owned?

PHILLIPS: Yeah, yeah. We would go out to land where cattle were being grazed, and we would apply our methods of evaluation of that land. We would rate it [per] animal-unit-months of feed production on it. We would check ourselves with others, with BLM [Bureau of Land Management] experts or ranchers, as to whether or not our estimate was right on the food value of that particular brush- or pastureland being evaluated. And then we would find out how much they were paying per acre for that pasture, or how much they were charging, and what some of the other considerations were. For example, did the owner of the land furnish the salt and repair the fences, or did the lessee have to furnish the salt and repair the fences, and that sort of thing. All that data was digested, and I was able to make a logarithmic chart, which was a straight-line chart showing price per animal-unit-month and carrying capacity of the land per acre. Got a very good correlation, which tailed off some at the higher values, and the reason for that was that we did charge less per acre on better pasture and alfalfa lands. Generally we were very consistent: it showed that we were all right in our pricing in the dry grazing lands, the brushlands, and the dry pasture. But in the irrigated lands, irrigated pasture and particularly the alfalfa, our prices were less. But the reason for that was that we had the right to take water off the land, and we ended up leaving the prices pretty much the way they were.

BASIAGO: It seems like you were employing a certain statistical theory or science in terms of always surveying a larger picture. For instance, in the development of the Phillips formula, you went to the assessed value of land throughout California, and in this instance, you surveyed farmlands in three states. How did that develop? Was there some kind of influence there?

PHILLIPS: The reason was that we had a genuine desire to treat people in the Owens Valley fairly. I always did. I'm still respected up there, I think, for that. I

still have friends up there.

BASIAGO: You were certainly widening the statistical base for the decisions that would directly influence them.

PHILLIPS: Right. We were trying to demonstrate that we wanted to be fair. In my estimation, that was the city's only salvation in the Owens Valley, regardless of what other people might say or write. It was for us, while defending our own position, to be as fair as possible with those people up there.

BASIAGO: Those are two areas where they were compensated: first, water and, in the second instance, land and livestock. Primarily grazing land I guess we're talking about.

PHILLIPS: Yeah.

BASIAGO: Was there another area, or other areas, where you widened the statistical base, so to speak, to compensate them for something, maybe structures or something, that might have been purchased by the department?

PHILLIPS: I don't know how familiar you are with the history, apparently you're pretty familiar with it, but when the city bought the ranchlands to get the water rights, the people in the valley were very apprehensive about what would happen to their valley. The business people--people who ran hardware stores, grocery stores, dry goods stores, barbershops, and service stations up in the valley--felt that we were going to dry the place up. Everything was going to move out, and their income as businessmen would deteriorate. They were very apprehensive. So the department agreed-- And they wanted reparations, they wanted help. So the department agreed to go in and buy their businesses, and did--again at a very handsome price.

BASIAGO: How were those prices arrived at?

PHILLIPS: Well, appraisals were made initially. This was during the Depression, right when the Depression was starting.

BASIAGO: That's where everybody jumped on the bandwagon, didn't they? I found some paperwork in the department with a few hundred, maybe twelve hundred names. Even transients were suing for compensation.

PHILLIPS: A lot of them said, "Well, you know, you're appraising this in depressed times. The value really was much higher a few years ago." So the department, after it appraised the properties at the value of that time-- And these values would have existed with or without the department, because the Depression hit everybody. But even so, they went back and raised those valuations as though the property existed in better times. In other words-- I've forgotten, they had some formula. But they were raised as much as 20 percent over what the appraisals showed.

BASIAGO: So in another instance, the statistical base was magnified on behalf--

PHILLIPS: Yeah, and they purchased these properties from the business people at that price. Then if the business people wanted, they turned right around, as they had done with the ranchlands, and leased the business back to the same person. And in many cases they did. Well, after a few years of that-- We had leased the ranchlands back. The department had seen to it when they built the aqueduct a few years later that the road was paved into the Owens Valley, and the railroad had been built, and the ranchers were still in business to a large extent. The paved road, which the department pressured the state into putting up there, brought more tourists, more vacationers into that country. The country was economically healthy, it was going fine. So then the people said, "We want to buy these properties back. We want to own our own property again." Some of the same people that had insisted on the department buying the land originally said, "We want to own our own business. We don't want to lease from you." So the department started selling them back, including

homes. In that case--this is a long answer to your question--but in that case, we hired outside appraisers to come in, a very responsible appraisal firm, and appraised all the nonagricultural properties in the valley and started selling the properties back based on that appraisal, which was not made by us. It was an outside appraisal firm that everybody was satisfied with, using outside statistics, not internal valley statistics, to set the price on the property to sell them back.

BASIAGO: What can you say about the relationship between the building of the aqueduct and the general development of both the city of L.A. and the state of California, having viewed it from a child from right after the aqueduct was built and seeing the development of L.A. into a world metropolis?

PHILLIPS: Don't make me too old. I was born in 1917 in Los Angeles. So I'm a native.

BASIAGO: Well, that was four years after the aqueduct was finished, yeah.

PHILLIPS: At the turn of the century Los Angeles was growing, had maybe 100,000 people or so. I've forgotten exactly, but something of that magnitude. Maybe 150,000, say, in 1900. There had been some dry years. The city had developed a water supply--mostly from groundwater from the San Fernando Valley and the L.A. River resources--with wells up in the narrows there where Griffith Park is now and gradually going farther out into the valley and drilling wells to supply the city, building reservoirs [and] distribution systems. But they ran out of that resource beginning the turn of the century. Some dry years right after that, and it became apparent that if the city was to develop at all, they had to go someplace else for water. So they made some studies of surrounding areas in the San Gabriel Mountains and elsewhere.

It was at this time that Fred Eaton, who had been mayor of the city [Los Angeles] and was familiar with the Owens Valley--owned some property up there and raised cattle--developed this idea of bringing Owens River water

down. He had begun purchasing water rights, I think with the idea, probably true, of making some money on it. He brought Mulholland into it from the engineering standpoint--Mulholland's knowledge of the city's needs--to go up there and look at it. Mulholland immediately saw the feasibility of it, that it would be possible, that there was ample supply of water there for a million and a half or more people, that this should be done. Now, what his relationship with Eaton was, as far as the water rights, the land values, and how to acquire this, I don't know. There was the reclamation project being studied up there. Lippincott was a part of that, and as such, Lippincott had a lot of information about the water supply in the Owens Valley. From things I've read and studied, I never thought there was all the subterfuge that might have been attributed to that.

BASIAGO: Particularly less with Lippincott.

PHILLIPS: Yeah.

BASIAGO: He was sitting with the information as a federal employee. He wasn't fronting for the city when he began his work.

PHILLIPS: And I think my own evaluation is that there was not-- The Bureau of Reclamation was studying lots of different possible reclamation programs at that time. The federal government was studying a lot of different reclamation possibilities, and the Owens Valley was one of them. I don't think-- Even if the city had not come along, that was not one of the high priority projects, for reasons I mentioned before. One, it was a long way to any market. There was no railroad in there, no paved road. All that would have had to have been done in order to really make a viable project out of that. And the prospects for agriculture were not that great up there. It was a short growing season. There were very strong winds in the spring, which raised Cain with fruit growing. Also, the soils, especially in the south half of the valley, were highly alkaline. There was some fruit grown, but it was very spotty. They had some very bad years,

as well as good years. It was not a real good prospect. I know that, from my own experience with fruit trees up there, half of the time you lost fruit, either from high winds or late frost. So I don't think that it was really a viable irrigation reclamation project.

But Mulholland certainly saw the value in it as a water supply. They went ahead and developed it, purchased water rights in the lower part of the valley, where there wasn't much agriculture anyway. As time went on, they moved up the valley in later years. But the aqueduct was really built and based on the water rights in the south half of the valley, where there wasn't much agriculture.

Anyway, that immediately took the lid off growth in Los Angeles. At that time, not only was Los Angeles having the water supply shortages, but surrounding communities were too. The aqueduct went into service in February of 1914--initially in November of '13, and then they had to shut it off and, I think, start it up again in '14. But anyway, immediately from that time on, for the next few years, the city of Los Angeles grew from something on the order of 40 or 50 square miles to 350 square miles, with the annexation of communities in the San Fernando Valley and on the coastal plain solely for the purpose of getting a water supply. Within a relatively few years, by 1920, the city had an area of close to 400 square miles. That's now 460-some square miles. So the growth there was tremendous, and the city council and the Public Works Board at that time determined that water would not be delivered outside the city boundaries. If somebody wanted the water, they had to become a part of the city of Los Angeles, which was probably a wise decision. It may have been politically motivated in part, but I think it was a wise decision.

BASIAGO: Why? Because so then the city wouldn't subsidize other cities, as a water supply?

PHILLIPS: Yeah, and the city had no business going into the water business

for other communities, you know.

BASIAGO: They kept it all a public venture.

PHILLIPS: Yeah, within one municipality.

BASIAGO: Didn't allow the city to privateer.

PHILLIPS: If they had not done that, they would, I think, have had to form some kind of a district to administer all this, which is ultimately what happened with the Metropolitan Water District. But anyway, the city began to grow very rapidly, and its growth and the economy it developed had an impact on surrounding communities. Whether they had a water supply or not, they were scratching for water, but still this tremendous economic buildup in the city of Los Angeles, very rapid, impacted on the surrounding areas. It provided a market for the surrounding areas, citrus and all that. Those communities began to grow, and they ran out of water. In 1923, then, it became apparent that the city needed more water, and also the outlying communities. That's when Mulholland, who had had his eye on the Colorado River, got permission to go out there and make a survey. And he determined that indeed there was a feasible way of getting water in there. At this time, it was determined that this should not be done by the city of Los Angeles, although the city of Los Angeles was taking the lead in it and did for a while. But all of the communities in the coastal basin that wanted to could participate. As a result of that, the Metropolitan Water District was formed, after the Metropolitan Water District Act was formulated and passed, and the Colorado River Aqueduct was built. I won't go into a lot of detail on the history of that, because I don't think I need to. But the point is the development of the Los Angeles Aqueduct from the Owens River fostered the growth and the development of an economic base which not only required, but allowed, the construction of the Colorado River Aqueduct--which, of course, provided for the growth of all of Southern California, even including San Diego.

That growth, and the economic base that developed from that, again required and provided for the wealth to justify the building of the state aqueduct [California Aqueduct] which they had been thinking about since the forties and more seriously in the fifties and planning for it in the sixties and building in the seventies or so. I think this is consistent with any area which is basically an arid area requiring a water supply. That's all it takes. When you have everything else-- You have a climate that attracts the labor pool that's necessary, that's a delightful place to live, and this is what happened. So the building of the Owens River aqueduct, originally, probably had more than anything else to do with the shaping of the state.

BASIAGO: You're tracing it almost like the branches of a tree.

PHILLIPS: Right.

BASIAGO: One aqueduct, L.A., and then what grew from L.A. allowed water to be delivered from the Colorado River to almost the whole southern half of the state. The southern half of the state developed so much that the whole state aqueduct was then necessary and also profitable.

PHILLIPS: The state aqueduct was being proposed and the arguments for it being formulated. The main argument was-- You know, at that time half the population of the state was located south of Oxnard Street in the San Fernando Valley, but half the water was north of the Tehachapi Mountains. Now, of course, even more. Well, I don't know what the distribution is, but still the water supply in the state was in the north and the population was in the south. People in the north were very jealous of this, the old San Francisco-Los Angeles rivalry and-- It's somewhat deeper than that and still is, you know--the Peripheral Canal issue. But the pressure was there, major economic pressures with the tremendous development in Southern California, which came about largely during World War II. Tremendous development, and the economic pressures

that resulted from that overriding the concerns of the people in the north and providing for the building of the aqueduct.

BASIAGO: L.A. as a city has been called "forty suburbs in search of a city." Do you think that's a peculiar product of the annexation scheme, in terms of how the city grew in such a sprawling fashion?

PHILLIPS: I don't really think so. I think the city would probably have grown in that fashion given the water supply to grow. I think that's more the nature of the topography than anything else.

BASIAGO: You mentioned the MWD. It stole some of the thunder away from the DWP. How did the MWD originate, in terms of getting control of certain pockets of Los Angeles? For instance, how you'll have the MWD controlling a small fiefdom in Pasadena and other pockets throughout the city. How did that originate, that rivalry between DWP administration of water to L.A. and MWD?

PHILLIPS: I don't know that I sense too much in the way of rivalry.

BASIAGO: Aren't there cases--?

PHILLIPS: Where did this come from?

BASIAGO: I've seen maps in water atlases where you'll see that in terms of who is administering the use-- You'll see a map of Los Angeles where there will be circles of MWD water and--

PHILLIPS: Well, there--

BASIAGO: Is that strictly a development of technology, or is that--?

PHILLIPS: No, no. That's because the Department of Water and Power serves water and electricity only within the city limits of Los Angeles.

BASIAGO: Those would be the nonannexed areas then, the unincorporated--

PHILLIPS: When all this growth was taking place that I described a little while ago, when the aqueduct was first built, there were a lot of communities that did not choose to annex. Beverly Hills, because it had its own wells and was

getting along all right--although they were lousy wells and still are. But it was getting along. Pasadena, because it had developed a water supply from the San Gabriel River and had some wells too. Burbank and Glendale, because, while they were struggling for water, as soon as Los Angeles started putting water in the San Fernando Valley, the water went into the groundwater basin, either because in the early days some of it was used for irrigation or because there was no sewage out there and the leach fields for individual septic tanks contributed to groundwater.

BASIAGO: So you're saying a lot of the areas--

PHILLIPS: And so Glendale and Burbank saw the increase in groundwater supply coming and remained independent for that reason. Some of this was the basis ultimately for the San Fernando suit [*City of Los Angeles v. City of San Fernando*]. Other communities didn't annex because they were too far away, for that reason. Then in the early twenties, when it became apparent communities outside the city, as well as the city, were going to have to have more water, Mulholland went to the Colorado River. It was determined feasible, and Mulholland filed on 1,500 second-feet from the Colorado River. That was a city of Los Angeles water filing; they had the water right. So the city of Los Angeles could have hogged the whole thing, but they didn't need that much water. They couldn't afford, probably, to build that big an aqueduct all by themselves. They might have but mainly there was a feeling that this should be a community-wide effort--I mean a regional effort, not just an effort of the city of Los Angeles--because other areas needed it. And the proposal was made that other communities, if they wanted to, could come into this Metropolitan Water District. Pasadena kind of took the lead in developing this, although with the full support and promotion of the city of Los Angeles too. The thirteen original cities that decided to come into it, including Glendale and Burbank and Pasadena

and Beverly Hills and Long Beach and San Marino--I've forgotten who else--  
decided to form this district and did. Much of the original work was done by the  
City of Los Angeles Department of Water and Power during the formulation of  
the Metropolitan Water District Act.

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BASIAGO: Do you think anybody was involved in the formation of this district, the MWD [Metropolitan Water District of Southern California], besides just the [Los Angeles City] Department of Water and Power? Would there be any interests in the city who would want to see some of the business taken away from the department?

PHILLIPS: No, I don't-- Well, if you include electric business, I'm not sure of that. Let me go back and cover what I was saying before. When the Metropolitan Water District was originally formed, its offices were in the Department of Water and Power's office building. Some of its leaders came from the Department of Water and Power: W. B. [William Burgess] Mathews, the attorney; Bill [William P.] Whitsett. [pause] Names aren't coming to me. But anyway, a number of engineers and attorneys from the Department of Water and Power came over and were the nucleus of the organization of Metropolitan Water District. The Metropolitan Water District is different from the Department of Water and Power in that MWD is a wholesaler of water; they don't distribute. That was an initial determination made way back when the thing was first formed, that they would not get involved in distribution to individual customers, they would be a wholesaler of water to the agencies of which they were formed. So that's why you see the spotty pattern of water delivery. There may be some-- The Metropolitan Water District grew. There was provision for it to grow, and it became a monstrous thing. And in that sense, it may politically overwhelm the Department of Water and Power.

BASIAGO: Against their best intentions?

PHILLIPS: No, just a matter of fact. Just a fact of their size, really, and their sphere of influence. I wouldn't associate any animosity with this.

BASIAGO: Oh, I see.

PHILLIPS: Maybe some individual jealousies. The department does everything it can not to use MWD water, but that's simply an economic choice. That's the most expensive water the department has, so it tries to expand its resources as much as possible without buying MWD water.

BASIAGO: Why is it more expensive? What would drive up the cost?

PHILLIPS: Well, nowadays, with the building of the second aqueduct, which we haven't talked about (and I was somewhat instrumental in that) Los Angeles now gets 80 percent of its water from the Owens Valley and generates some power in the process. And it's all gravity, and generates power. No pumping. MWD has always had pumping costs, and as the costs of power and energy has gone up, their costs have gone up substantially.

BASIAGO: So basically energy for pumping--

PHILLIPS: It's a big part of it. And then the Owens Valley system was built at an early day. The capital investment is now small by comparison. Even a second aqueduct was built for \$90 million, you know, increasing the water flow from that source by 50 percent and generating additional power to boot. The second aqueduct paid for itself, I think, within a matter of ten years or less. So the cost of water from that source remained very small, and as the value of the power increases, it becomes an even more valuable resource. That's why we fight so vigorously to maintain every bit of it. And, as I say, meanwhile the Colorado River Aqueduct costs have gone up, because of energy costs largely. And now MWD has to get much of its water from the state project [California State Water Project]. Again, it's a later project, a very costly project, tremendous capital investment, tremendous pumping costs--and those pumping costs

are going up. So MWD water is now, in the area of domestic, treated water, \$200 an acre-foot. The cost of Owens River water is-- I haven't checked lately, but it's probably around \$60 an acre-foot now.

BASIAGO: Before the DWP [Department of Water and Power] could provide energy, electricity in Los Angeles was provided by companies like the [Southern California] Edison Company and Pacific Gas and Electric [Company]. Would they have had any interest in fostering the MWD to curb the growth of the city and thereby--?

PHILLIPS: Well, Pacific Gas and Electric would not. They're clear outside any service area involved here, but the-- One effect--from what I've said before, it would be apparent--one effect of forming the Metropolitan Water District to take over the Colorado River Aqueduct was immediately to stop the need for annexation to the city of Los Angeles in order to get water. So the city--the growth of the city stopped as of that time, to all intents and purposes. Mr. [Samuel B.] Nelson will tell you-- Have you gotten in touch with him?

BASIAGO: Yes.

PHILLIPS: As he will probably tell you in his words, MWD built a fence around the city of Los Angeles. If they didn't see that coming, they certainly should have. This may be one source of the animosity you've heard about. But the city of Los Angeles was in total support of this formation of the MWD--they were the spearhead in it. And it did build a fence around the city of Los Angeles. The city of Los Angeles, before MWD was formed, was probably 420 or 430 square miles. Now it's 460, you know. So it's virtually stopped the growth of the city. And this was much to the benefit of the [Southern California] Edison Company.

BASIAGO: What actually were the dynamics that put a cap on the growth?

PHILLIPS: Because people didn't have to--

BASIAGO: Annex to get water?

PHILLIPS: --annex to the city to get a water supply anymore.

BASIAGO: Why would they choose to go to MWD instead, if it's so expensive?

PHILLIPS: Because they didn't have to give up their identity as a separate government entity. All they had to do was contract with MWD to purchase water. They had to become a member of MWD. And there's a complex relationship there. The original thirteen cities in the Metropolitan Water District began to get petitions for water. People who didn't choose to join the district originally decided, "Well, this is a good thing. It's the only way we're going to get water now." So they determined that they would allow annexation if people would pay all the back taxes and so on. I'm getting away from your question, but I'll get back to you. So anyway, these cities--communities, districts, water districts, whatever--were able to maintain themselves as political entities, not give up their political identity and have to join the city of Los Angeles. So that was the pressure, or the opportunity, that allowed them to grow without having to give up being the city of Burbank or the city of Glendale or the city of San Marino. They could still be an independent city and have a water supply.

Now the city source of water and power is the Department of Water and Power. As I said earlier, under the city charter they supply water and electric energy within the city of Los Angeles; they can't supply water or power outside. They went through a very traumatic, vigorous political hassle back in the twenties and before, when the city became a municipal power supplier and bought out the L.A. Gas and Electric [Company] and some other small electric utilities and finally took over the Edison facilities within the city. This was a very political period for the department and within the city--the municipal-ownership versus private-ownership power interests. Anyway, this left pretty bad blood between the Edison Company and the city--particularly the city Department of

Water and Power--because the city pushed the Edison Company out.

However, since they only supplied electricity within the city, when MWD built this fence around the city as far as growth is concerned, that, I'm sure-- although I find nothing documenting it--was viewed very favorably by the Southern California Edison Company. If the alternative had happened, if the city of Los Angeles had not fostered MWD and had continued the only way-- If the city of Los Angeles had built the Colorado River Aqueduct and continued annexing all these cities that needed water, then the city of Los Angeles would have supplied those cities with power, not the Edison Company. Although Glendale, Burbank, and Pasadena do have their own power systems, San Marino doesn't, Beverly Hills doesn't, Arcadia doesn't. And now the tremendous area covered by the Metropolitan Water District is served power by Southern California Edison Company for the most part, out of San Bernardino and the Riverside and San Diego areas. Well, San Diego is supplied by San Diego Gas and Electric [Company], but still there are tremendous areas in Southern California which the Metropolitan Water District supplies water to and which have grown because of that water supply and in growing have increased the load for Southern California Edison Company. So Edison Company very definitely, in my view, benefited and prospered from the decision to form the Metropolitan Water District, although I find nothing to indicate that they took a major hand in it. I think they supported it, but I don't find anything where they--

BASIAGO: Engineered it.

PHILLIPS: Engineered it. Right. In fact, I'm a little surprised that they almost seem not to realize what was happening to them. [laughter]

BASIAGO: What benefit it would bring them.

PHILLIPS: Yeah, right.

BASIAGO: Earlier you mentioned the change that occurred between the

Department of Water and Power's relationship to the city right before you began your tenure as administrator. What was it that changed how the department related to the city?

PHILLIPS: Well, the change was that the city government got into a position where it had much more control over the department.

BASIAGO: How did this happen?

PHILLIPS: Well, when you consider the Department of Water and Power, it's a peculiar animal. The water system is a much smaller half, or part, of the Department of Water and Power--financially, as far as wealth or money is concerned, and politically, particularly in the past. The power system had been much more of a contention than the water system. There was a kind of a halo around the water. They were supplying the water, this precious commodity. There wasn't a lot of money to be made in water, nobody really cared about it. There was no great issue with other water purveyors when the municipal water system was formed. In fact, they bought out a small municipal, or private, water company. But when the city went into the municipal power business, that was a tremendous political issue. There were all sorts of intrigues and stuff going on there. I think the total annual revenue of the water system is \$700 million or \$800 million. Revenue of the power system is a \$1.5 billion or \$2 billion. So the power system is of much more interest politically, for that and, I guess, other reasons.

Anyway, for years the city was growing rapidly in size, in area, as I say, up until the MWD-- But even after that, it grew as far as power load was concerned and water load, water use--but particularly power use. And during World War II the growth in sales of the power system were tremendous because of all the industry that suddenly moved in, all the people that came in, the growth in the city, populationwise, and housing and all that. The power system was growing

very rapidly, so its revenues were increasing. Inflation was low back in those years, interest rates were low, and the power system was able to build its own generating facilities. Various steam plants around the basin here were designed and built entirely by the power system. So it didn't need any rate increases.

The city charter provides for the department being a somewhat autonomous agency of city government, and this was for the purpose of trying to keep politics out of it. That is the 1925 city charter. The mayor appoints the Board of Water and Power Commissioners, and the [Los Angeles] City Council has to approve those commissioners. The commissioners run the policy of the department. If they're strong commissioners, they run the department more than they have to; weak commissioners, they don't. But anyway, the council, the rest of the city government, doesn't have too much control over the department beyond that. They do have to approve rate increases, and there are certain types of contracts, major contracts, that the city council has to approve. And fundamental things like you can't sell water rights without approval of two-thirds of the vote of the people, and that sort of thing. But by and large the city council didn't have too much control over the department. When the department was growing so rapidly and didn't require rate increases-- This is the point: its revenues were increasing much faster than its costs were during this period, and it didn't have to have a rate increase. And that's where I was making notes here. The power system primarily--

BASIAGO: Right, right.

PHILLIPS: The electric rates were increased in December of '59, and that was the second increase in thirty-nine years. There was a small increase in '59. Electric rates were decreased 3 percent in 1965, and then they were increased in 1970, 1971, 1972, 1973, and 1975. A total change in the pattern. I became

general manager in 1972. Now, part of the reason for this was that the growth in the city was leveling off as the population and building in the city was leveling off. The growth was occurring outside the city, not so much inside the city. It was becoming much more costly to do things, to build power plants. Larger power plants were being built jointly by various power agencies or power utilities. The department would go in with the Edison Company and other utilities to build a power plant, and the costs were getting very high. Interest rates were going up, inflation was going up. And additionally, in the early seventies the Arab oil embargo came along. The cost of oil went up from \$2 or \$3 a barrel to \$10 and \$20 and now \$30 a barrel. And so all of a sudden this pattern was reversed. The costs of running the power system were exceeding the revenues, and the power system had to start having rate increases.

That meant that whereas before, the power system could in effect thumb its nose at the city council, all of a sudden they could no longer do that. And the power system was particularly inclined to thumb its nose at city council and anybody else that got in its way. They got a reputation--and I'm talking about thirty or forty years ago--for being quite arrogant, and I think they were. There was all this hassle between [Ezra F.] Scattergood and [Harvey A.] Van Norman fighting over control of the department. And that carried over-- There's still a little of that, not so much anymore. And yet some of the best managers--and I say this as objectively as I can, without undue pride--came out of the water system, not the power system. And this is recognized. But anyway, suddenly the department had to go to the city council to get rate increases. And the city council did not give those rate increases. Some of the councilmen in the early days, back in '65 and '70, recalled what they felt was the arrogance of the department and rubbed their hands in glee now that they had a chance to get their hands on this department. When I became general manager in '72, you

could see that was in the middle or at the beginning of this need for rate increases. And this need has continued. The power system and the water system go almost every year for a rate increase.

BASIAGO: And you attribute it to real costs, like more expensive plant construction and the lack of sustained growth to supply new development and stuff. Is there a political dimension that you're suggesting, in terms of the city council's influence on pushing up the rates?

PHILLIPS: No, the city council, of course, doesn't want the rates to go up.

BASIAGO: That's their political football.

PHILLIPS: They don't like this because the people turned to the city council. You know, "Why are our rates going up now?" And this becomes a problem, a political liability for city councilmen to have to explain why the water and power rates are going up. So they don't like the rates to go up and they do their best to make it clear that this is the fault of that big bad Department of Water and Power.

BASIAGO: So what you're suggesting, in terms of the change in the political climate, is the possibility of future hostility or political strife.

PHILLIPS: Yeah. And, for this reason, control of the department by the political element of the city being now possible, more than it was before. Because [before] they couldn't get their hands on it.

BASIAGO: Formerly it was more sacrosanct.

PHILLIPS: Right.

BASIAGO: And the engineers were making a lot of the decisions.

PHILLIPS: Could do whatever they wanted.

BASIAGO: So you're really suggesting the politicization of the issues, the engineering issues and things like that.

PHILLIPS: Right. And that is bad, you know. That is bad.

BASIAGO: Has it been your experience that people from city hall really aren't qualified to make the important decisions for the department, in terms of rate structures and--?

PHILLIPS: That's my unqualified opinion. Well, one of the things that irritated me greatly when I was general manager-- Shortly after I became general manager, we needed a rate increase. So we have to go over to the city council and the mayor and have them approve the rate increase. We quickly learned that we had to start this well in advance, start talking with the councilmen and the mayor saying that we were going to have a rate increase six months from now or more and why the increase was needed.

And this all ties in with the financial integrity and reputation of the department with the people we borrow money from, Wall Street. And our bond rating-- If we don't maintain certain levels of revenue relative to our indebtedness and our capitalization costs, the financial community frowns on this, and they may say, "Well, this outfit isn't running itself properly and we'll downgrade their bonds." So this is of concern to the management of the department, that our revenues be kept commensurate with our costs and with our debt obligations and the whole picture or financial structure of the department. And again, you're talking about borrowings of \$100 million a year, \$150 million a year or more for both systems, and tremendous projects. So to have these issues tampered with politically is very aggravating to me or any manager of the department.

Well, back in-- I think it was probably '71 or '[7]2 '72 or '[7]3, probably. Anyway, we needed a rate increase. And we went over, well in advance, to the city council and the mayor and told them that--I think this was like in August-- that we were going to have a rate increase that fall, that we would need a rate increase. We had all the data laid out, how much the rate increase would be

and why all this was needed, the whole bit, all the financial data to support this. And we went over there. This was the year that Tom [Thomas] Bradley had a Proposition A on the ballot in November, which was his transit-- Tom has been dedicated all of his career, all of his tenure as mayor, toward public transportation, and he had a ballot measure on for this Proposition A for transportation. Well, his position was, "No way are we going to have a rate increase on the same ballot with Proposition A. Figure out something else, because I'm not going to approve it." Pure political manipulation of the management of the department.

So we had to go back and refigure the rate increase, because the next time would be in April of the following year, the next election when we could have a rate increase. Not an election, because they're not voted on, but we scheduled it for the following April. Then we could refigure all this, and figure we had time enough to again educate the council. It had to be a larger rate increase because we were delayed in it. So we went back to the mayor and the council and we said, "We're going to have this rate increase in April now." Half the city council said, "No, you're not, because we're up for election that year, and no way are we going to support a water and power rate increase on the ballot when we're up for election."

BASIAGO: So really it's possible that the short-term political considerations of some city councilmen would influence the actual--

PHILLIPS: Absolutely.

BASIAGO: --fiscal integrity of the department.

PHILLIPS: Precisely. That's precisely the point, and that's the point that I had made at the time.

BASIAGO: What can the department do to respond? Is there a public route they can take? Can they take their case to the voters?

PHILLIPS: You can try, but the voters don't understand these things, you know. The press doesn't care. And so it was a year later than we wanted that rate increase that we got it, because we had to defer it twice because of the political interests. In one case, the mayor; in the second case, half the city council. They don't hesitate to do that, and this is what-- One of the primary functions of the general manager and, hopefully, of the Board of Water and Power Commissioners--but you don't always get the support there--but of the general manager, is to shield the department from political tampering. And it's very difficult to do. And that's why, as I told you the other day, I got a little criticism from some quarters about my having to go to the city council and talk--and pay any attention to the city council--from some old-timers who had retired and relayed it back to the days when they, again, thumbed their nose at the city council, because they didn't have to pay any attention to the city council. Now all of a sudden you've got a rate increase, since 1970, virtually every year a rate increase. And that puts you under the city council.

About that time, also, we were a partner in the Navajo power plant [Navajo Generating Station] in Page, Arizona. Good power plant project, real good project for the city, and now a valuable source of power. But we had to get the city council to approve the participation agreement that the city had to sign so that we would be a participant. This had to be approved by the city council. A lot of the environmentalists were against that project. We were having to move some Navahos--the project, not the department. The department was 20 percent owner in the project, a little over 20 percent. In developing the coal-fields of Black Mesa by Peabody Coal Company, a handful of Navaho families had to be moved, relocated. Everybody was willing to pay, buy them new houses, but the Navahos didn't want to move. This was their home. This was their traditional land, you know. They have a right to think that way, but-- The

environmentalists took it up, and this was an ideal way to stop this power plant--they don't like coal-fired power plants. So the environmental interests found a very willing ear in the city council, who saw this as a great opportunity to appeal politically to the environmental element of their constituency. And they did. We almost lost our interest in the plant because the city council would not approve the participation agreement. In that case we were able to go ahead, and we operated without signing the participation agreement. But this was-- And I don't know how many people recognize it. It was a major change in the posture of the department within the city, when this came about.

BASIAGO: The Navajo power plant?

PHILLIPS: No, not the Navajo. The whole matter of our coming more under the control of the city council.

BASIAGO: So really you're tracing two trends, the growth of political dominance or influence by the city council and also by special interest groups.

PHILLIPS: Well, the point is that the special interest group-- Whether they're environmentalists or somebody else, you know, maybe developers, but they politically can impact on the city council more than they can on the Department of Water and Power. The Department of Water and Power, left to its own devices, can do what it thinks is right for the city in managing the department in a businesslike way and not be influenced by these political pressures from special interest groups, whatever they are.

BASIAGO: And you see that--

PHILLIPS: However, they could do that when they weren't so much under the thumb of the city councilmen. With this change that I'm describing back in the beginning of the early seventies, these special interest groups now can go through the city council and bring pressure onto the department, because the department has to go to the city council for its rate increases and certain other

things.

BASIAGO: So with the change in their rate increase situation with the council now, the department has less defenses against special interest politics.

PHILLIPS: Political manipulation, yeah. And that is not good.

BASIAGO: Is there anything you can suggest to counter it? I kind of asked that already, but what would be your advice to managers?

PHILLIPS: Well, a lot of people don't know this, but I don't know any reason why I shouldn't say it. We had had a very capable attorney--chief assistant city attorney for Water and Power is the name of the chief attorney. All of the attorneys in the Department of Water and Power are really members of the city attorney's office. Fortunately, the city attorney has pretty much left the department alone. We have nineteen or twenty attorneys in the department, and a chief assistant city attorney for Water and Power becomes more a department employee than he does a city attorney employee. As I say, fortunately the city attorney's office has not tried to meddle in this. We had a very capable man named Gilmore Tillman, who for years was chief assistant city attorney. A very sharp guy. He and I got along very well, although he retired a year or two before I became general manager, so I didn't have that close a relationship with him. But all of the years that I was head of the water system, he was chief assistant city attorney, and he was in on the development of the Phillips formula and some other things that I did. He, I think, respected me and liked me, and it was mutual.

When I became general manager and some of these things regarding rates at last began to develop and he-- Tillman was a very strong municipal-ownership guy. I called him (he was retired) one day and I said, "Gilmore, I want to ask you something and," I said, "you may not like it." But I said, "What would the department have to do to put itself under the public utility commission

[California Public Utilities Commission (PUC)] of the state? Now, throughout the department's history there had from time to time been suggestions, and some of these from the council or from ratepayers, that "by god, you know, the department's rates ought to be controlled and it ought to be under the PUC." And we'd always fought that vigorously. But I think Gilmore Tillman saw the same thing that I saw here. Even though retired when I called him up and asked him that--and I was apologetic, because I felt I was stepping on his toes--he said, "No, I know exactly what you're thinking." And he said, "I'm all for you." And I said, "Well, just--" I wanted to go to him. I did not go to the city attorney because I didn't want to upset too many people. And Tillman knew a lot and I had a good relationship with him, so I went to him and asked him this question. And he said, "I'll get right on it, and I'll get together with you and give you some answers."

And two or three weeks after that-- He was a man who had smoked heavily all his life, drank pretty heavily but never embarrassed himself by it, just didn't believe in exercise and that sort of thing. Anyway, two or three weeks after this--and I had one conversation with him, one follow-up--two or three weeks later he caught a cold and died within a couple of days. So that ended that. But that is one thing that could happen, and I never got his answer for the best way to go about it and never talked to anybody else about it.

BASIAGO: Just changed--

PHILLIPS: It would be to put the department rate matters under the Public Utilities Commission, just the state of California.

BASIAGO: Have it administered by the state.

PHILLIPS: Just the rates, like any other public utility. And our rates would be approved by them, not by the city council. And that would pull out that stinger, you see?

BASIAGO: Would you say that Los Angeles is more of a council-heavy city than a mayoral city? In other words, that the council has more political power than the mayor? Having worked with both, who do you think is more powerful?

PHILLIPS: Well, I think it's pretty well balanced in the city of Los Angeles. It depends largely on who is the mayor. City council is fifteen people?

BASIAGO: Fifteen. Yeah.

PHILLIPS: So there's always some good ones and bad ones, some strong people and some not so strong people. You've always got a fairly uniform level in there. The mayor, you've got one person. He can either be a very strong guy or he can be a washout. And if the mayor's a strong guy--and Tom Bradley is a strong guy--he's used to having strong people around him. Tom Bradley is a guy who I like personally. We were good friends. I have a letter from him asking me to stay on with the department when I wanted to retire. I don't like his politics and I-- The thing that I found lacking in his administration was that he had a knack of getting the wrong people around him, people who did not truly reflect Tom Bradley. Personally, I think he's a man of integrity and a likable guy. As I say, he's a friend of mine. But he is a strong person and the city council isn't going to push him around, and he isn't going to push the city council around much either. But there have been mayors who didn't do much, and there have been ones that dominated the city council.

BASIAGO: It's always been said that the council, because of the structure of the city charter, has actually more power than the mayor.

PHILLIPS: Probably they have more power, yeah, but the mayor, politically, can be a very potent figure, as Bradley has demonstrated.

TAPE NUMBER: II, SIDE TWO

SEPTEMBER 25, 1985

BASIAGO: Related to these issues of the relationship between the department and city government is the nature of the department employees as city employees. What were some of the lessons to you as general manager, following the employee strike of 1974? What did you feel that taught us?

PHILLIPS: Well, that strike, of course, was a very difficult time and a blow to me personally. I mean, I took it that way. I don't think I was an unpopular general manager. I think I was probably a popular general manager. A number of things have continued to tell me that. And I think I was a respected general manager. I didn't let myself be pushed around by anybody. But the strike was a devastating experience. I don't think that it was necessarily a reaction against me as general manager. I had a lot of people tell me afterwards that they were sorry that it ever happened--leaders, employee leaders.

But of course, one thing it taught me was that the public employee-- particularly in a sensitive area--should not have the right to strike. It was absolutely alarming to me the degree to which the strikers and the unions had the department at their mercy--and the whole city. That should never be allowed to happen, that a group of people can dominate an important agency like that, and a whole city, as those people dominated the department and the people who are dependent on the department. In a matter of a very few days they had brought the department to its knees. One of the reasons for this was that about seven thousand employees walked out, whether by choice or they didn't have any choice. Which meant that we had close to four thousand employees who still worked, most of them management people. But we began to lose-- There

was sabotage in some of the power-distributing stations and some of the water-supply facilities, which the union denied but which there was no doubt they did. Throwing chains across racks in distributing stations to knock out the whole station, closing valves that shouldn't be closed and that sort of thing. And power plant operators left, so we couldn't operate power plants.

You might have thought that we could put in supervisory personnel. Well, we came to find out that a lot of our supervisors, our top-level people, Assistant General Manager Carl Tamaki or-- He was my top staff man--office right next to mine--who had come up through the power system. They had been members of [International Brotherhood of Electrical Workers (IBEW)] Local 18 and they had retirement benefits in the union retirement plan. And the union had the power to terminate their membership and their retirement benefits. And this is why a lot of our supervisory employees who had come up through the department ranks were members of the union and had retirement benefits in the union plan. And the union threatened to divest some of those retirement benefits-- and *could*. Shocking, you know. And I couldn't, and I didn't, blame these people for not manning those stations, with that kind of a threat hanging over them.

BASIAGO: They were being blackmailed.

PHILLIPS: They were, yeah. And the whole thing was just a devastating and shocking experience, to see how thoroughly the unions controlled the department. So in my view the main lesson was, to me, that that should never be allowed to happen again. It did happen again, not as badly, but--

BASIAGO: Who would have jurisdiction in setting that kind of prohibition? Would that be the city council or the department's own internal--? Are there any policies?

PHILLIPS: The law has to say that the public employee shall not strike. The

law did say that, but the law didn't have any teeth in it. I think now the law has some more teeth in it, but not enough yet.

BASIAGO: How much teeth would you like to see? Jailing the people for striking in a vital public service?

PHILLIPS: Lose their jobs. Lose their jobs.

BASIAGO: Loss of work or termination?

PHILLIPS: Yeah.

BASIAGO: Like President [Ronald] Reagan's firing of the air-traffic controllers, let's say.

PHILLIPS: Yeah. The settlement was that the department would relinquish any right it had to discipline these employees in any way or to refuse them their jobs.

BASIAGO: What were the pros and cons of this settlement from your perspective? What did you like about it, and what did you dislike about it?

PHILLIPS: The issue was over wages almost entirely. I think that-- I've forgotten the exact figures, but the union wanted something like a 12 percent wage increase at that time. This was in a period of pretty high inflation, and I think I was trying to hold it to 8 or 9 percent. And my main problem was that I just didn't think that the department should take the leadership in allowing that big a wage increase, because it would be an example for other utilities: It would be an example throughout the city for other city employees. It was inflationary, it was bad for the economy, it was unwarranted, undeserved, and it shouldn't happen in the interest of good management. That was my position. The man who is president of Local 18 of IBEW, which was our local at that time (the main local), was up for reelection and needed a cause, and that was the cause that he fabricated.

BASIAGO: Isn't it true now that the DWP and the Harbor Commission have the

highest wages of public employees in Los Angeles?

PHILLIPS: Yeah, in some areas.

BASIAGO: Top management?

PHILLIPS: Yeah. The general manager of the Department of Water and Power is the highest-paid official in the city. When I was general manager, he was the highest public official in the country almost, aside from the president. You may have seen in the [*Los Angeles*] Times recently this hassle over the general manager of the Metropolitan Water District. The MWD board proposing to raise him from, I think, something like \$115,000 to \$145,000, which would put him higher than the general manager of the department, [who] now gets, I think, \$138,000. So the department general manager still is the highest-paid official in the city of Los Angeles, in California certainly.

I don't think it's too high. When I was general manager, Jack [K.] Horton was the chief executive officer of Edison Company. They had a stockholders meeting--I heard this from Jack Horton--and somebody at the stockholders meeting was complaining about all the high salaries that the executives were getting. How come Jack Horton got \$250,000 a year, while Phillips, who was running the whole Department of Water and Power (two systems), was getting \$75,000 a year--which I was getting at that time. And Jack Horton said, "Well, the answer to that is easy. Phillips is underpaid." [laughter] And if you went by the same criteria that's supposed to apply to other city salaries, the general manager is underpaid, because city salaries are supposed to be set equal to the prevailing wage outside the city. And if you did that, why, the general manager of the department would be getting \$238,000 dollars a year or more now.

BASIAGO: What would motivate a talented person to seek employment with the department rather than the private sector, if their wages aren't competitive

with the private sector? Sense of service or--?

PHILLIPS: Yeah, I don't know. I think this is one reason why not many people come in from the outside. Most general managers in the department have come up through the department, have spent a career with the department. I am no exception. I went with the department because of my background: My father was with the department, I knew the department, I liked what I saw. It looked like a good organization, and I went to work for it with no thought of becoming a general manager, no thought at all. Most people go to work for the department with no thought of becoming a general manager. It's a good place to work, it's interesting work. Generally, in the lower and intermediate levels, it pays as well or better as work on the outside. It's secure. It's a high-level endeavor. You stay with it ten, fifteen years, and when you get up to middle management or even middle-upper management levels, usually you've been there long enough that that's your career. You're not going to change. Not many people are going to go outside, because then they would be competing with people who had been in private industry for those fifteen or twenty years. So when you begin to realize that maybe you're getting up to where you might be a top management member, that becomes your goal, not becoming the general manager or the CEO of Edison Company or Standard Oil whatever. You've made your commitment to the department, and your best bet is to stay there and, if you can and if you want to, become general manager. I did not particularly want to become general manager.

If you want to get into some quiet, unpublicized history of the department-- When I was head of the water system there were some changes made, and I began to see that I might well be considered for general manager. [Edgar L.] Kanouse, the general manager at that time, was retiring, and the assistant general manager was-- Well, I've forgotten just what the specifics were, but I

could see that I might be moved into the job as assistant general manager, with a view to becoming general manager in a few years. And I wrote a letter to the general manager at that time--I had a trusted secretary type it and hand-deliver it to Kanouse--stating that I saw this possibility coming, that I might be considered for general manager, and I did not wish to be considered for general manager. I wasn't at all sure that I wanted to be general manager, that I was capable of it or that I could handle it. Well, I heard no response to that letter for two or three months, no comment at all, no acknowledgement even of it. I didn't know what had happened to it. I did know that he had gotten it, because it was hand-delivered to him by the secretary. I said I did not want to become a living example of-- Which law is it that says, if given the opportunity, every man will rise to his own level of incompetence? What law is that?

BASIAGO: I think that's the Peter Principle.

PHILLIPS: Peter Principle. That's it. Well, I didn't want to become a living example of the Peter Principle. Finally, I was approached by one of the members of the [Board of] Water and Power Commissioners at that time, a man whom I liked and admired, and I guess it was a mutual feeling. He said they had been kicking this letter around, the board and the general manager. And they had even approached one person on the outside about being general manager because I didn't want it, and he was not interested. He's a good friend of mine, in fact, coincidentally, a classmate of mine at Berkeley. And they said that they did not want to go outside, that they did not see anybody else in the department that they wanted to be general manager and they very much wanted me to be general manager. And they thought I had no reason to be concerned about any inabilities. I took a trip to the Owens Valley with this man in a privately chauffeured car. We spent two days talking about it, and finally I said I would. That's the way things happen, you know, in the-- Nobody knows

that, but I think it probably is a facet of this particular interview that might be interesting.

BASIAGO: That you didn't seek the position?

PHILLIPS: Yeah.

BASIAGO: Do you think that made you a better manager, that you hadn't had any ambitions?

PHILLIPS: A manager, in my view, of the department--or anyplace else, but as I view the department, a manager of the department--partly, as I said earlier, has to be a knowledgeable person. He has to know what he's doing. He has to have the background and the technical knowledge to handle it and be respected by the people who are working for him. People know, you know, whether he knows what he's talking about. And they'll do what you say, they'll follow you. You're their leader, they respect you because you know what you're talking about. So he has to have the knowledge and the background and the training to be competent in that area. He has to be a strong person that can make up his mind and pursue a course. But he in no way must be an arrogant person; in no way should he be an arrogant, domineering person. I think my reluctance to become general manager reflected that lack of any desire to dominate. I had no desire to be general manager just so I could be powerful and say I'm general manager, you know.

BASIAGO: Do you think that made you someone who could deal better with a wide variety of employees?

PHILLIPS: Yeah. For one thing, you're not afraid of losing your job. [laughter] Well, you're not.

BASIAGO: Yeah.

PHILLIPS: You say what you think. You don't like it, or "You hired me as general manager and I'm saying what I believe."

BASIAGO: Do you think that the people who have gravitated towards upper-echelon positions in the department are somewhat different than the men who started it? For instance, Gerry [Gerald W.] Jones tells me that J. B. [Joseph Barlow] Lippincott and William Mulholland were very animated, strong, self-made men. Well, we know they were self-made men, but-- He mentions, as you did, that they were very democratic and would treat everyone as an equal or respect them, and that they were on a first-name basis. But do you think that as the system has gotten more complex and bureaucratic, its leaders have changed at all in terms of their personalities? Has there been a selection process?

PHILLIPS: I don't think so.

BASIAGO: Self-made men are still gravitating toward the upper echelon?

PHILLIPS: Yeah. I think any man that is a good manager, that gets up there, is a self-made man. Any man who in any way is given the job may or may not be a good manager. But if you've made it yourself-- Even if you're from the outside and have made it, you've made it from the outside because you're in some sense a self-made man. In other words, you have the characteristics that make a good manager.

BASIAGO: Do you think it's such a good thing that in these modern organizations like this that the top personnel are people who can get along with a lot of people? Isn't there some need for maybe more autocratic leadership, for instance in crisis or--?

PHILLIPS: I don't want to imply that you're a good manager if you get along with everybody. I didn't get along with everybody. I think generally I was-- Well, I was liked by a lot of people, and I was respected by most of the people. I think you have to be respected; I don't think you have to be liked.

BASIAGO: Oh, I see the difference.

PHILLIPS: When people have to acknowledge whether they like you or not, "Well, the guy knows what he's doing."

BASIAGO: So really what you meant when you said nondomineering is not particularly affable, but just not petty, someone who didn't seek the position for power for its own sake.

PHILLIPS: Yeah. I think the word I used was arrogant.

BASIAGO: Right, right.

PHILLIPS: Well, you don't want to-- It *is* domineering, but if you depend on your position because you have to be arrogant or domineering, then you're in trouble.

BASIAGO: Let's look at some of the issues that you confronted as general manager. We've already touched on it briefly, this issue of majority rule, whether it's fact or fiction. Have you seen a general trend toward more influence by special interest groups? What are your general feelings on that issue?

PHILLIPS: Well, I think maybe-- Of course, it's been ten years since I was with the department. I think maybe it's beginning to swing the other way a little bit. The special interest groups are having a little less impact. If so, that's a good thing. The reason I wrote that paper "Majority Rule: Fact or Fiction?" was my frustration--and the fact that I knew a great many other managers in similar positions were equally frustrated--with the apparent domination of the trend of things by the special interest groups, particularly the environmentalists. And the fact that those of us who saw the environmental movement as a dangerous thing were immediately branded as antienvironment. And that is very far from the truth, you know. I spent many years up there in the Owens Valley. The environment there, the natural beauty of the country, was and always has been very important to me. I don't want to see it destroyed. I think the department has done a great deal to preserve it, as a matter of fact. All you have to do is

look at the areas of land up there that are--have always been, and still are--in private ownership to see what might happen if the department didn't own most of the land up there. I don't want to see smokestacks pollute the sky from power plants anymore than anybody else does.

What disturbs me is the apparent imbalance, at least for a while there--to some extent still--the imbalance between the desires and goals and purposes of these really numerically small special interest groups, compared to the balanced best interests of most of the people from whom you never hear, you know, the great "silent majority." It's very true. The majority is silent, all too much so. And they're getting pushed around in my view, because of what happened, for instance, in the case of the Navajo power plant that I mentioned. These environmentalists got a young Navaho woman--or at least a woman dressed in Navaho dress--with a baby in her one arm and a lump of coal in the other and paraded her in front of the city council. Immediately the TV lights in the council chamber go on, the TV cameras start, and the media focuses in on that sort of thing right away. Turned out the woman wasn't even a Navaho, but they make a big point of this sort of thing. And the issue gets entirely distorted with that. Propaganda is all it is.

BASIAGO: Kind of a vocal and symbolic politics.

PHILLIPS: Yeah. And unfortunately, politicians are swayed by that. Many of them have no guts at all. Their position is swayed because they're looking two years ahead, or at the most, four years ahead.

BASIAGO: So the first beef that you have with special interest groups operating this way is that they misuse the media in a symbolic way.

PHILLIPS: Right, right.

BASIAGO: You can call it propaganda. What are some of the other problems you have with them, in terms of their intrusion into DWP?

PHILLIPS: That they really don't understand what they're talking about.

BASIAGO: About the complexity?

PHILLIPS: They're not technical people, for the most part.

BASIAGO: So they're ungrounded critics. And, of course, most people are ungrounded. So what the special interest group says in a technical area is not challenged, or if it is challenged, it is challenged by the people they are fighting, namely the utility or the big business people who are--who they are making to look like the bad guys.

PHILLIPS: Yeah. They put the black hat on, and then the only challenge they get is from the guy that they put the black hat on. And they say, "See, I told you so." So it's very frustrating. And I don't mean to say that some of the utilities and big business people are free from fault. But I have very seriously considered in some of the things I've seen--I think the antinuclear program is in this category--that these are not isolated sporadic eruptions of little groups of do-gooders. These are carefully orchestrated nationwide programs to damage this country. I've seen enough to believe that that's happening.

BASIAGO: By--?

PHILLIPS: I don't know of a better way to bring a country to its knees than to attack its energy resources or its water resources.

BASIAGO: So who are you suggesting would organize it? Leftist politics here or Soviet agents or--?

PHILLIPS: Either one.

BASIAGO: Or both?

PHILLIPS: Or both, yeah.

BASIAGO: Yes. It's been suggested that there have been many Soviet agents involved in what's called "psychoguerilla warfare."

PHILLIPS: Yeah. I feel very strongly about that. I know enough about this

particular area to know where a country could be vulnerable, a highly industrialized country.

BASIAGO: With centralized utilities.

PHILLIPS: With centralized utilities, yeah. You destroy the capability of those utilities, and you've shot the country down. You don't have to bomb it, you just shut its power supply off.

BASIAGO: Now, is that a suspicion or one of the things you learned as an--?

PHILLIPS: Nobody has come up and told me, you know, "I'm a Soviet agent and I don't like your power plant plans." What I see is the same people, you know. As I say, it's not sporadic little uprisings of little old ladies in tennis shoes around here and there shaking their umbrella and saying, "I don't like smog." It's the same people, on the East Coast, on the West Coast, in between.

BASIAGO: Do you wonder where--

PHILLIPS: Basically the same people. I mean the same individuals. Not the same kind of people, but the same individuals. They show up here, they show up there. Wherever there's a cause, the same people show up.

BASIAGO: Is it possible that they're just highly committed political activists who are getting by on a shoestring? Or did you ever have evidence that they might have had an untoward amount of funding, let's say, to jet around the country and be advocates?

PHILLIPS: No, I couldn't say that.

BASIAGO: I've often wondered about that possibility. If they're really on the payroll, it gets expensive.

PHILLIPS: They might be. I'm not saying they're not, but I'm not saying they are. I don't know. But I think-- I see too much continuity, not only as far as people are concerned, but as far as methods and arguments are concerned. Too much, it's too well orchestrated.

BASIAGO: Do you think that the resolution of many of the small energy battles, the motivation or the end in itself for some of these, is basically, as you said, just to cripple the energy production? Rather than to clarify the debate, you have them confusing the debate. Have you ever seen examples of misinformation, where you as an engineer knew really what the facts were?

PHILLIPS: Oh, lots of that. Lots of misinformation, yeah.

BASIAGO: Not put forth in a constructive way, but just mere misinformation that you thought they should have known better?

PHILLIPS: Yeah, and I can-- If you ask me to cite it, I probably couldn't cite an individual. You know, it's been a long time. But certainly, in many cases where just pure misinformation was put out and you respond to that misinformation, then they come up with some other misinformation. For a long time they had us-- Well, they likened the power plant to an atomic bomb. You know, you can blow it up; it'll blow up just like you got a bomb sitting right in your front yard. Technically that's impossible. Purity of the uranium in a nuclear power plant is nowhere near the level of purity that uranium has to be in a bomb. No way you could get a chain reaction bomb in a nuclear power plant; a meltdown, yes, but a bomb, no. Yet they led you to believe this, until it was demonstrated that that couldn't happen. So then they come up with some other story. Shoot that down, they come up with something else.

BASIAGO: What do you think the department's role should be in developing nuclear power? How do you rank it in terms of safety, let's say?

PHILLIPS: The department had three nuclear power plant plans. Each one was a sequel to the previous one that had been shot down for one reason or another. They had a power plant out here in Malibu, Corral Canyon nuclear power plant site. They acquired the land and had plans for it and it got shot down. The movie actor who became a senator out from that area was no help

on that.

BASIAGO: George-- George something. George Smothers?

PHILLIPS: No. George Murphy. Anyway, then we had a site up near Porterville, and that was abandoned for geologic reasons. And then we had a site, the San Joaquin plant up near Wasco, northwest of Bakersfield--that's one I was very much involved in--and that got shot down purely for agitation with the local politicians up there who couldn't stand the heat from the antinuclear forces.

BASIAGO: How does--? How do you believe--? Let me rephrase this--

PHILLIPS: Well, let me go on a little bit. So the department has not built any nuclear plant of its own. However, it is now participating in other nuclear plants, the Palo Verde plant, notably, out in Arizona. The department will own a share of that plant. The department itself supports nuclear power. My own belief on nuclear power is that we're just very fortunate to have it and it should be utilized. I have no concerns about safety of nuclear power. Three Mile Island does not bother me at all, because it was a bad example, but it was contained. Nobody died from it. There's no evidence yet of any increasing incidence of cancer in that area. And I don't think the risk in nuclear power is any greater, or as great, as in a great many other technical devices.

BASIAGO: Such as?

PHILLIPS: Such as the automobile. Such as very large dams around the country. I have said many times, given the choice of living below a major dam in California or downwind a mile from a nuclear power plant, I would take the nuclear power plant any day.

BASIAGO: What about other forms of power plants? Are they safer in terms of radioactivity than coal plants, as has been suggested? Coal-burning plants?

PHILLIPS: What was the question again?

BASIAGO: Having studied nuclear plants for their development under the DWP do you think it's a legitimate statement that nuclear plants are less dangerous and radioactive than plants which burn coal or than strip mining, let's say, in terms of releasing radioactivity into the environment?

PHILLIPS: I have understood that a coal-fired power plant can put a lot of radioactivity into the air, and I believe that. How it relates to-- Well, I think the amount of radioactivity emitted by a nuclear plant is probably less than that by a coal plant. Now, I'm not an authority, but I really believe that's the case, because the particulate matter from a coal-fired boiler or an oil-fired boiler is trapped. Some of the gases are cleaned out. Can be nitrogen oxides and so on. As far as I know, radioactivity can and does escape into the atmosphere, not in any dangerous amounts, or that would be stopped too. From all I've seen and read and experienced, I have no concerns about the safety of a nuclear power plant.

BASIAGO: It's been suggested by some moderates in the nuclear power debate that, although the plants aren't as dangerous as the antinuclear camp suggest, that there is a legitimate question about protecting the storage of the radioactive waste that's produced. Marvin Goldberger of Caltech [California Institute of Technology] once told me that one of the tragedies of the Vietnam era was that we didn't answer certain vital questions about nuclear power: What do we do with the waste? Is there a safe and clean procedure? And he suggested subterranean caverns, great fissures in the earth where the radioactive wastes could be stored without being jeopardized by seismic activity. Were there any routes that you studied, or DWP studied, for that issue? Because even people who support nuclear power say, "Well, sure, this stuff's going to remain radioactive for centuries."

PHILLIPS: Millennia.

BASIAGO: For millennia.

PHILLIPS: Yeah.

BASIAGO: Isn't that in some sense a deferred risk?

PHILLIPS: It's a problem that has to be answered, but it can be answered. In my view, there is the burial, deep in the earth, in salt domes or granite formations where the security is assured. You know, all this stuff came out of the ground. Uranium comes out of the ground. Years ago when I was living in the Owens Valley and when the nuclear issue was young, particularly as far as power's concerned, there was great activity in mining uranium. There were people all over the country up there in the Owens Valley and the Sierra Nevadas, as well as the Inyo Mountains and other mountains east, with Geiger counters, going around checking wherever there was high-level radioactivity, indications of uranium deposits. And some mines developed. People have been going up there for years and camping in areas where there might be a very high radioactive count.

TAPE NUMBER: III, SIDE ONE

SEPTEMBER 27, 1985

BASIAGO: We might as well start off this session on the second day with a general breakdown of what you think the politics are between the water division and the power division. After listening to the tapes from the last session, I realize there's kind of a distinction there. What are the spheres of influence there? What has traditionally been politics?

PHILLIPS: Well, it's changed. Of course, the department started out as a water system. There was no power system, no municipal power. When [William] Mulholland conceived--or Fred Eaton or whoever you want to credit--conceived the aqueduct, there was a need for a water supply. And power was being supplied by [Southern California] Edison Company and other private utilities. However, as the aqueduct project went forward, they hired this man [Ezra F.] Scattergood, who was a very domineering figure, to handle the electrical part of [the first Los Angeles] Aqueduct construction. They used a lot of big electric dredges and built some little power plants up in the Owens Valley. The first power plant the city ever built was on Division Creek up in the Owens Valley (sixty mega- or sixty kilowatts) to power dredges that were digging the aqueduct channel. And Scattergood was hired to handle this. Then he--I guess, I don't know who else would have done it--saw the power generation potential on the aqueduct, and that was incorporated into the construction of the aqueduct. So he foresaw this power potential very early in the game. Fairmont Reservoir was built on the south side of the Antelope Valley. The Elizabeth Tunnel, which went through the mountains on the south side of the Antelope Valley between there and San Francisquito, was constructed originally as part of the aqueduct

to 1,300 cubic feet-per-second capacity, almost three times what the normal capacity of the rest of the aqueduct was. And that was to provide peaking through power plants. Then the construction of Little Dry Canyon Reservoir below the power plants in San Francisquito Canyon was made to reregulate this back to the 420 or so second-feet that the aqueduct was designed for.

So the potential for power development entered the picture right when the aqueduct was being built. However, I don't think it was determined at that time whether or not this power would simply be sold to benefit the city or to reduce water rates, or whether it would become a municipal function. However, that issue was joined fairly early. The aqueduct went into service in 1913 or February 1914, as I said the other day. And by 1917, the public power versus private power issue was rearing its ugly head in the city, and a whole lot of politics developed over that. And municipal ownership ultimately won out.

Associated with this was the rise of Scattergood and the development of the-- Well, there was the Department of Public Works and the Bureau of L.A. Aqueduct originally, and then there became the Bureau of L.A. Aqueduct Power Supply. Then this gradually through the years developed into the [Los Angeles City] Department of Water and Power [DWP], with the power system and the water system. But Scattergood rose up to become the head of the Bureau of Aqueduct Power, and that became a larger and larger entity with the decision to go ahead with the municipal ownership of power. Then there became a power struggle between, first, Scattergood and Mulholland, and later on between Scattergood and [Harvey A.] Van Norman, which went on until the end of the forties, when they were still scrambling over who was going to head the Department of Water and Power.

And, of course, as with most such utility agencies where there's both water and power--and there are a number of them--the power activity becomes much

larger politically and financially than the water activity. There's no money in the water business. There are very few privately owned water systems, largely because the capital expenditure required to generate a dollar of revenue annually in the water business is twice what the capital investment for that purpose is in the power business. And that's why you have a lot of privately owned power systems and not too many privately owned water systems. And a great deal of money and power is involved in that.

So the tail began to wag the dog. The power system became the dominant feature of the Department of Water and Power. And yet no one has ever been able to escape the fact that the most critical supply to the city is water rather than power. And also, for some reason, as I think I touched on the other day and was observed by Gilmore Tillman, among others whom I mentioned the other day, there seemed to-- Tillman stated this to me, and he was a sort of an impartial observer, being part of the city attorney's office. Stated to me himself or raised the question, "Why was it that the better management material seemed to come out of the water system rather than the power system?" And the two general managers that you're interviewing in this program, [Samuel B.] Nelson and Phillips, both came out of the water system.

BASIAGO: I was going to ask you about that. The general managers have tended to come up through water, right?

PHILLIPS: Yeah, although it's been the policy of the department through the years (and still is) that they try to alternate the general manager: one from water and the next from power, and the next from water and the next from power. Which had been, I think, fair enough. Nobody's ever objected to that. And it has tended to modify or ameliorate any of the system jealousy. But there's no question but that in the early years-- I'm talking about the twenties and thirties and into the forties--there was a lot of system jealousy, and particularly related

to the matter of rates that I discussed the other day. Is it all right to refer to my previous points?

BASIAGO: Sure.

PHILLIPS: The water system had to go to the city council for rate increases, even in the thirties and forties, much more so than the power system did, for the reasons I mentioned the other day. And the water system therefore learned to work with the city government. And maybe that experience is partly why water system managers were a little more humble, a little more careful, and became a little better managers than power system managers. Because the power system did not have to go anyplace or to anybody for a rate increase, because they weren't having rate increases. And they became somewhat arrogant--they would run the city. And for a time, in many respects, they did run the city. I can remember well a time when city councilmen came over to the department to talk to the department management, not the other way around. Now it's the other way around for both. I mean, a city councilman or the mayor or whatever tells the department head to go over there. Didn't used to be that way. The power system management tended to look down and let alone the water system management, and yet the water system management seemed to be able to hold its own very well. Now, that is partly because of the rate history I mentioned the other day, where since 1970 the power system has had to go for a rate increase almost every year and continues to do so--both water and power. Partly for that reason and partly because of other political and social changes, or changes within the department where the two systems have come more to respect each other, there isn't quite that much [rivalry].

When I became general manager of the department in 1972, the head of the power system then was a man named Floyd Goss, a very capable man and a friend of mine. I liked him and I think he liked and respected me. But I hadn't

been in the general manager's chair more than a week when he came up for a friendly discussion and advised me that he wanted to help. He was glad I was in the job. Why he wasn't chosen, I don't know, but he wasn't. And he was older than I and in many ways a more logical choice, except that the previous general manager that I replaced had come from the power system. I don't think that would have swayed-- I don't think that factor was the decisive thing. I'm not sure what was. But anyway, he came up and told me that we were going to get along fine, but that he didn't need anybody to tell him how to run the power system. And I said, "That's fine, Floyd. I'll try not to tell you how to run the power system. I'll be busy running the department." [laughter]

BASIAGO: So you mentioned yesterday, in terms of revenue, it seemed that the breakdown was something like two to one in terms of the power collecting more revenue than the water divisions. Is that about right?

PHILLIPS: Yeah. It's at least that. It might be two and a half or three to one now.

BASIAGO: Power collecting more than the water?

PHILLIPS: Yeah.

BASIAGO: What did the water division do to hold on to its advantage in a world where money tends to talk? I mean, what were some of the strategies? For instance, this trade-off in terms of general managers. How were those compromises arrived at?

PHILLIPS: That was historically since--

BASIAGO: It's a tradition?

PHILLIPS: Yeah, a tradition in the department. Well, the battle between the two general managers, Scattergood and Van Norman, back in the thirties, really culminated in the mayoral campaigns. And the man by the name of [Frank] Shaw--you probably are familiar with that history--was put in, and this related to

the struggle between municipal ownership and private ownership of the power supply for the city. Shaw was put in and Shaw turned out to be not a very nice person. He tampered with a lot of different things and finally got thrown out and Fletcher Bowron came in. Shaw started out to be a department man. The department liked him because he was protecting the department and the municipal ownership. But there was a lot of unsavory activity in those days.

BASIAGO: Such as?

PHILLIPS: I got some of that through my father. Political appointments, political tampering, and the firing of very good department employees in both the water system and power system simply for political purposes. Just the stuff that the department has never tolerated. It has fought vigorously to stay clear of it. I think that left a bad taste in everybody's mouth, and that may be one of the reasons why this tradition of alternating general managers started. It was a way to break up any possible entrenchment on one side or the other and to help sustain the posture of the water system in this whole big department.

BASIAGO: And you think that's healthy, even though the power has traditionally generated two, three times as much revenue?

PHILLIPS: Oh, yeah, I think it's healthy.

BASIAGO: Oh, I was wondering about the nature of your main headquarters down there across from City Hall. Is the split between water and power physically represented in the makeup of the building? I know there's an elevator on one side and an elevator-- Is that the power division on one side and the water division on the other?

PHILLIPS: No.

BASIAGO: No?

PHILLIPS: The power division, just for convenience and efficiency of operation primarily, occupies certain floors in the building and the water system other

floors. The power system is bigger, personnelwise, than the water system by, again, three to one or so, so they occupy more of the building. But that division is mostly a matter of operating convenience.

BASIAGO: So water and power have offices on either side of that corridor in the middle?

PHILLIPS: Could be.

BASIAGO: Oh.

PHILLIPS: Oh, yes.

BASIAGO: I just wondered.

PHILLIPS: Oh, yeah.

BASIAGO: It would be interesting architecturally if the balance of power was split.

PHILLIPS: And you've got the city attorney's people, all the attorneys, on part of one floor, the top floor. Actually, the new building helped in this regard, because it used to be that the water system was in the original headquarters building at 207 South Broadway in Los Angeles. The power system had taken over another building a couple of blocks away, in fact several other buildings, because they grew so much. And so you had the power system physically isolated from the water system, and that wasn't too good. Now they're thrown together in the same building, which I think is better.

BASIAGO: What are your feelings on political tampering, in general, with the department, perhaps in terms of city hall trying to use the department for a welfare machine?

PHILLIPS: Yeah, as I indicated the other day we've tried to avoid that. Before we had to go over there so much for rate increases, we were in a much better position to avoid it. And in fact the department--and particularly the power system--carried that probably to an unhealthy extreme by becoming somewhat

arrogant regarding their independence from the rest of the city. But now we do have to go over there for rate increases, and there have been other changes where we are now more under the gun, so to speak. And I believe a certain amount of that is necessary. Utility is a monopoly, and it should have somebody representing the public that has some oversight responsibilities to that utility. That's why I said the other day I began to take steps to see what would happen if we went under the [California] Public Utilities Commission. The reason that I did that was because the Public Utilities Commission, while it has its political problems, at least has a major technical staff that feeds information into the commission and can try to keep things straight, a technical staff that is knowledgeable about rates and the need for them and so on. In my view, as I indicated the other day, the city council--which is our review body now--has no such stuff, has no such capability, and its reactions to a rate increase are almost totally political, you know: "This is going to hurt us, go away." But they don't want you to go away; they want to tell you what to do. And many times their desire is to carry this to an extreme.

For example, they put a municipal tax on utilities some years ago. This tax was raised for purposes other than the operation of the utility. The city council was anxious to adopt the lifeline rate concept. I don't argue with that, if it isn't carried too far--for a while it *was* carried too far. The city council tends to want to use the department for political purposes, and one of the ways they can do this now is through the rate-making process. That is, distort rates, get rate blocks to favor the poor people and hit the rich people. I do not believe that the department should be used for welfare purposes. I think everybody probably ought to pay what their utilities are worth. The economists have told us--used to tell me all the time--that rate making was-- You sent signals out to the populace, through rate making (and all pricing), as to what various services and

functions are worth. And the public then can make a judgement as to how they want to spend their money. And if you start distorting these rates to disguise what they're actually worth, then you send misinformation out to the public in this way and the public gets the wrong idea.

BASIAGO: Let's focus on this some more. What you were talking about is this idea of long-run incremental cost structuring--

PHILLIPS: Yeah, that was part of it. You have that paper I wrote?

BASIAGO: --versus short-run marginal pricing. Now, you came out on behalf of the latter, right? The short-run marginal pricing. The economists were asking you to send signals to the public on future use or consumption. What was the deal there? I don't really understand that.

PHILLIPS: I really think the rates should reflect the actual cost of service.

That's what I think. This is the message that you send out. Some of the economists say, no, you should go on the marginal costs. In other words, whatever the cost of the last increment of water you get and supply the public, that should define or establish the rate that everybody pays. Now this completely ignores the fact that seventy-five years ago we built an aqueduct system. We had that foresight to build an aqueduct system which now provides the bulk of our water supply at a very low rate. I mentioned the other day that it probably is \$60 or \$70 an acre-foot now. While our marginal costs-- MWD [Metropolitan Water District of Southern California] water is \$200 an acre-foot. Why should we charge all of our ratepayers \$200 an acre-foot for water when 80 percent of our water is costing us \$70 an acre-foot? That's what you would do if you carried marginal pricing to the extreme, and I don't like that. For one thing, what do you do with all the surplus money you make? And they didn't have a very good answer to that.

BASIAGO: So, really, were the economists asking you to commercialize the

system and charge prevailing rates, such as those that would no longer be more cost-effective than MWD? Were they saying because MWD gets \$200 per acre-foot, we should--?

PHILLIPS: That's the price that we should charge all of our customers for. That's the marginal-cost pricing concept.

BASIAGO: And you were saying let's charge what it's costing us to supply.

PHILLIPS: Yeah, including whatever we have to pay for MWD water. But why deprive the citizens of Los Angeles of the benefits of the low-cost water from the L.A. Aqueduct and the Owens River aqueduct system which the city had the foresight to develop? Why should they be denied that low cost?

BASIAGO: What interests were asking you to do this? Who were the economists? Were these academic people or department people?

PHILLIPS: Largely the pressure came from environmental types--not from within the department or the economic purists--who said that by doing this you send the message out that water costs a lot of money and, therefore, people won't use as much. See, by putting it at a high price, they depend on the price elasticity of the commodity to force consumption down. And then you don't have to go out and build these very costly projects.

BASIAGO: So an analogy would be S. I. Hayakawa's idea during the gas crisis, that we should charge two dollars per gallon because gasoline is precious. And therefore drive consumption down and conservation up.

PHILLIPS: Right. Now, that's all right, except that if you do that, then the people who can least afford gasoline are the ones that save on gas, not the people who can afford two dollars a gallon. Same thing's true with water. The people that can least afford water are the ones who get stuck with this, unless you go to some distortion that puts you in the welfare business, see?

BASIAGO: So they were urging you to do this for environmental reasons, and

then maybe take some of the profit, the extra dollars you would make on the middle pockets of the--

PHILLIPS: That could go back into the general fund and support the city, see?

BASIAGO: And support welfare ventures on the part of the city.

PHILLIPS: Yeah. So my basic philosophy always has been you charge what the commodity's worth. That's what the people should know. What does it cost to supply the city with water? The actual true cost from all these various sources. Mingle these costs, and that's what you charge. Now if some of the people can't afford that cost, then in my view, there ought to be a tax or something else labeled, "This is welfare costs. We're taxing you for welfare." And then that money could be used to pay the water bill for these poor people, so everybody knows that the poor people are being subsidized by a welfare tax. If you try to lower their price of water or distort the water rates in order to do that, nobody knows. Everybody thinks, "Well, gee, the cost of water is too darn high," you know, the people that are paying the high end of the scale. The cost of water isn't high; the cost of welfare is high. So those things I think have to be very carefully treated. But getting back to the original topic, it's in this area where the politicians like to meddle with the department, in the setting of its rates or other policies, where they are made to look good. Because there are a lot more poor people voting than there are rich people voting. It's easy to figure. So you help the poor people; then they come out and reelect you. It doesn't always work that way, but this is the kind of thing that-- And going back to the Navajo power plant [Navajo Generating Station] again, the council--as I mentioned the other day--meddled in our negotiations to participate in that very valuable power plant on the grounds of environmental reasons and protecting the Navaho Indians. But this appeals to an element that they feel is very influential, i.e., the environmental element and do-gooders. I'll put that tag on

them, the people who-- There are an awful lot of people who have no responsibility and they don't hesitate to tell other people how to run a business, and that's very aggravating. And I realize I'm talking about the big, bad big-business people with the black hat on. But still, it's true. You know the old saying about, "It takes a good carpenter to build a shed; any jackass can kick it down." It took some pretty good people to build the water system of the city of Los Angeles; any jackass can *try* to kick it down.

BASIAGO: Buckminster Fuller said that it takes a great deal of information to be positive, but very little information to be negative.

PHILLIPS: That's right.

BASIAGO: You think the key there in a lot of those special interest environmental cases was the veracity of the information that the activists actually had at their fingertips? Was there always a bit of an information problem? From your point of view, what--

PHILLIPS: Oh, I think so, yeah.

BASIAGO: From your point of view, what are some of the ways that the activists traditionally have been critically underinformed about the department?

PHILLIPS: Well, going back to the Owens Valley, which was probably my best knowledge. You read all this stuff about how this was a beautiful valley: It was full of agriculture. The whole valley was covered with pasture knee-deep or belly-deep to the cattle grazing, and beautiful fruit and orchards and a gorgeous valley; and the city went up there and raped it. Well, that's just not true. There were isolated areas in the valley where that was true. There are still isolated areas in the valley, probably to the same extent there were in 1910 or '20. The city has large areas of beautifully irrigated pasture and alfalfa fields up there with cattle standing belly-deep in grass. I can take you up there right now and show you--as much as there was before.

But the distortion is that the whole valley was that way and we ran people out. We didn't run people out. People were climbing all over each other to be bought out because they couldn't make it, for the reasons I mentioned the other day: No transportation. They were remote from any big market; they couldn't compete. Weather conditions were not conducive to fruit growing particularly; it was and always has been primarily cattle grazing. And as I've told you the other day, the dynamiting of the Alabama Gates there was by a group of Bishop people. They're the ones that drove down with their picnic lunches and picked up sympathizers in the various towns on the way and dynamited the gates. The reason they were unhappy was because they weren't getting the price they thought they should for the lands, not because the city was taking the water out of that area. They wanted the price for their lands.

It was not a wealthy agricultural area, never would be. And I can cite technical reasons for a lot of this. The whole south end of the valley back in glacial times was covered by a tremendous lake. Owens Lake used to be many times larger than it is now. It covered the whole south end of the valley. And it was dry, a dead sea, no outlet. There was a tremendous amount of evaporation. And because of that, the whole south end of the valley is highly alkaline, very alkaline, except up on the fringe above where the lake used to be. That's why the little community in Manzanar was a good farming community. But down on the floor of the valley, where the vast acreages are that we bought, it's all alkaline. Can't grow anything there. Nothing ever did grow there. Any attempts that were made to grow there were not successful.

So I know these things (a lot of people know these things), but the attractive story is that the city went up there and raped a lot of people and their farms. We never-- There was no condemnation in the acquiring of the water rights in the Owens Valley. None of those lands was condemned. Every sale was

voluntary. And most of the people, as I say, were tickled to death to find somebody to bail them out and get out of there. And I've been told that by people on the other side. People that were there, people that sold it to the city. I've been told that.

BASIAGO: Who were the outside influences or agitators who have always kept alive this controversy from 1913 to the present?

PHILLIPS: Well, there's a group in the Owens Valley now that's doing the same thing, you know, propaganda. If you write an appealing book, you make a lot of money. And that's a cause up there that has been milked until-- I would think it's dry, but it never will be dry, it will always be a story. Somebody new can always come along and write a book about it, sell it, and make some money. They can't do anything else--write a book about the Owens Valley. That's a good thing to do.

BASIAGO: Let's talk about water quality. You mentioned the high alkaline content in the southern rim of the valley because of the prehistoric lake. When the aqueduct was originally put through, people critical of its construction in the Owens Valley tried to question the quality of the water. They said it's just an agricultural sewer full of alkali. How did the department take that out of the water and purify it?

PHILLIPS: Well, you didn't have to. There are a lot of places up there where I could take you right now to a very saline pond or alkali sink with cow manure dropped all through it, and it would be pretty foul water. But streams that provide the supply for the city come out of the mountains on the west, and nothing comes out of the mountains on the east. They come out of the mountains on the west through granitic sands and gravels on a tremendous piedmont or alluvial outflow plain. Streams come down across that, and it's very clear, pure water.

BASIAGO: Snowmelt.

PHILLIPS: Yeah. The aqueduct was built along the westerly side of the floor of the valley, approximately where this piedmont slope, this alluvial fan, intersects the flatter floor of the valley. And the streams are confined to channels, so they're not exposed to all this alkali, or very little of it. They're in well-established channels. If you spread this water out for irrigation and try to grow crops in it, then you run into the alkali. And where the streams are flowing down over this steeper alluvial fan there wasn't much place for good agriculture. It was full of boulders and was steep and the area-- There are a few areas, as I say, where there was good agriculture. The only one in the south end of the valley, south of Big Pine, was the Manzanar community, possibly 2,000 acres of the 230,000 that we own in the Owens Valley there. The rest of what we own is in Mono County. There were some good agricultural lands up around Bishop and Big Pine, and they are still good agricultural lands for the most part. The water quality from that source is excellent, always has been.

BASIAGO: Before getting onto other issues of water quality, let's talk about water use, because it relates directly to the high quality of the snowmelt that is channeled into the aqueduct. If it's so pure and so excellent for drinking, isn't it a bit wasteful to employ it in other functions down here in L.A., like watering freeway shrubbery or using it in industrial processes? Do you see that as a question of waste?

PHILLIPS: Yes, I think so. And, of course, in the early days-- Well, for one thing, we didn't have freeways and we had ample supplies of water. Now this is becoming a more and more critical thing. There are efforts being made to reduce-- For example, there's a sewage reclamation plant in the narrows, operated by the city of Glendale and the city of Los Angeles, where reclaimed sewer water is being used for freeway irrigation. Some of it's being pumped

over and used for golf course irrigation. There are certain very stringent state laws that prevent the use of reclaimed sewage for a lot of that, even for irrigation. And those I think have to be softened so that more reclaimed water can be used for that kind of irrigation. This high quality water is also used for fire protection. But, while a lot may be used on one fire, the amount of that that's used for fire protection compared to the total is infinitesimal, very small.

BASIAGO: Where does the big waste come in either residential use or industrial use? When we think of water not being drunk or used in cooking or, let's say, in someone's toilet, where maybe you wouldn't want high quality water-- Where does the biggest waste come? I guess swimming pools would have to be your purest water, because you drink that and bathe in that. Where's the--?

PHILLIPS: Well, swimming pools, the only loss from swimming pools is evaporation. The biggest domestic use in Los Angeles historically has been yard irrigation, landscape irrigation on private homes.

BASIAGO: Would you advocate reclaimed water being used on people's lawns?

PHILLIPS: No, because unless it was reclaimed on site, that would require a whole duplication of the--

BASIAGO: Delivery system?

PHILLIPS: Delivery system.

BASIAGO: Would it be that hard to place binary delivery systems in at the residential level, where you could have part of the pipes in homes going toward the kitchen sink and such?

PHILLIPS: I think it would for two reasons. One, it would be very costly, and the other is that that water would not be fit for human consumption and it shouldn't be that accessible.

BASIAGO: Might be a mishap.

PHILLIPS: Yeah. If you're going to use reclaimed sewage water, then clean it up enough that you'd put it right in the domestic system. And that will come about gradually.

One of the best ways to do that now--and it's being done with this new Tillman reclamation plant [Donald C. Tillman Wastewater Treatment Plant] up in the [San Fernando] Valley there--is to reclaim the water enough that you can put it underground, replenish the groundwater basins, and then pump it back out. And you get two advantages there: One, this long, long period of storage-- It takes groundwater a long, long time to move from a spreading area to a pumping area, so that you have that advantage in killing off bacteria or viruses. And the other is that you get the benefit of the natural filtration.

BASIAGO: Has the department ever explored purification efforts at the house-to-house level, so that people--?

PHILLIPS: No. Because it's so much more effective to purify it at the source or near the source. We've never had a problem with water quality on our system. We have had some problem with turbidity, which I think I mentioned the other day, and we're building a filtration plant now to correct that.

BASIAGO: Let's talk about some of the water quality issues. There's turbidity, asbestos from pipe linings, and oil spotting. What can you tell me about each of those? How did they develop and what was your involvement?

PHILLIPS: Well, the original aqueduct tunnels that come into the city from the Owens Valley (the tunnels immediately upstream from the cascades up here) go through oil shales which are-- The Newhall oil field is related to that. It's part of the Newhall field. And the tunnels were drilled right through these shales. As the tunnel linings crack with age, the oils would seep into the tunnels there and get into the water system and go throughout--

BASIAGO: Is that the Elizabeth Tunnel?

PHILLIPS: No, this is south of the Elizabeth Tunnel.

BASIAGO: South?

PHILLIPS: There are tunnels right up alongside the Golden State Freeway just above the cascades there. In fact, some of them practically almost go under the Newhall refinery, not quite, but right in that area. And where the water dropped down into Van Norman Reservoir, that oil had a chance to be dissipated, and we have no problem with the main supply coming out of the Van Norman Reservoir now, the Los Angeles reservoir complex. But some of the water was diverted off into trunk lines feeding the upper sides of the San Fernando Valley, before it went into the Van Norman Reservoir. That water did not have that advantage, and that's where we ran into the trouble with spotting white shirts and that sort of thing--paid laundry bills. Finally, we shut off the aqueduct and went in there and built some French-drain facilities behind the tunnel lining and then replaced the tunnel lining. And these pipes that were in these drains behind the tunnel lining were then let out to the portal of the tunnel, and we collected the oil in drums there and, in fact, sold it to the Newhall refinery. [laughter]

BASIAGO: What are French drains?

PHILLIPS: Well, that's where you put a drain in with a--

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PHILLIPS: Is where you would dig a trench, backfill the trench with gravel, lay a pipe on that gravel that's perforated, and then fill the rest of the trench, cover the pipe with the gravel, and then pave over the top of the drain. And the drain collects seepage coming into it; usually it's for water, but in this case it was for oil. Any oil or water that seeps into it then would be collected by the pipe and could flow out underneath the floor of the tunnel to the tunnel portal. And that's where we collected this oil and water and separated it and sold the oil. The advantage here was that the pressure in the French drain behind the tunnel lining was less than the water pressure in the tunnel when the tunnel was full. By putting the drain in there we had reduced the pressure behind the tunnel lining so that if there were any cracks in the tunnel, the flow was always outward from the tunnel, whereas before it had been inward into the tunnel. And by reversing that flow we kept water from going into the aqueduct.

BASIAGO: What about the turbidity problem? That's been a long-standing issue.

PHILLIPS: Yeah, and that comes from heavy runoff, primarily in the Owens Valley. For decades the Haiwee Reservoir, which is at the south end of the Owens Valley and at the lower end of the water-collecting system and the beginning of the closed aqueduct-- From Haiwee Reservoir to Los Angeles, which is about 175 miles, the aqueduct is completely closed, either in steel pipe or covered concrete conduit or tunnels--lots and lots of tunnels--and no opportunity for runoff water to get into it, or very little. And Haiwee Reservoir was a large reservoir, 58,000 acre-feet originally. And it was a long, narrow reservoir,

so water coming in at the upper end of the reservoir had ample time to drop its load of silt or any turbidity. And for a long time that was very effective.

Several things happened to change that. One, we began taking more water after the second aqueduct was built and put it in service--we increased the flow through the reservoir by 50 percent. So we were bringing in more water when there were storms and lots of turbidity in the Owens Valley. We were bringing in more turbidity. The velocity through the reservoir was higher, so less of the silt had a chance to settle out. The second thing that happened was the earthquake in-- First in 1952, although we didn't lower the reservoir much then. But the 1971 earthquake prompted the state and us to look at other dams. And as a result of that, the water behind Haiwee Dam was lowered, so we had less elutriating capacity in the reservoir, less chance to slow the water down and give it time to--

BASIAGO: Settle out.

PHILLIPS: Settle out, yeah. And the third thing was that the state, well, the federal government actually, made much more restrictive the turbidity requirements of the surface water supply. So while our turbidity increased a little (it wasn't all that much), the turbidity limitations posed by the federal government were much more stringent, and we no longer met them a sufficient amount of the time. So that prompted the construction of this filter plant up at the Van Norman Reservoir complex, which is now under construction.

BASIAGO: I missed the explanation of what the state did. The state had some new requirement, one on standing water?

PHILLIPS: Well, it was the federal water quality standards, which the state adopts, of course, and the state can even go harder, go more stringent than the federal water quality standards. The state sanitary engineer that had control of such things some years ago felt very strongly that all surface water supplies in

the state should be filtered, just as a general rule. We didn't think that when we were not having a problem with turbidity, that somebody's general rule should require us to build a hundred million dollar treatment plant if it wasn't necessary. And at that time it wasn't necessary. This man, incidentally, was on the Federal Water Quality Advisory Board, which raised the standards for turbidity. So he finally got what he wanted partly.

BASIAGO: What was his name?

PHILLIPS: I've forgotten what his name was.

BASIAGO: What about the issue of savoriness? During the sixties and seventies, bottled water consumption rose sharply, because people claimed that this water which we assume is really fresh snowmelt didn't really taste very good. Was that a legitimate opinion on their part? For instance, if I go up to the Sierra, the spring water's a lot tastier than what I would get out of my spigot. So the first question is what contributes to the deleteriousness of the taste of the water? What causes the taste to decline?

PHILLIPS: Well, for one thing a lot of-- It depends on the city where you live.

BASIAGO: I grew up in Chatsworth.

PHILLIPS: Okay, you were getting L.A. Aqueduct water, the best quality water we have, all the time.

BASIAGO: From the Chatsworth Reservoir holding station?

PHILLIPS: Yeah, yeah. That's all L.A. Aqueduct water. If you live in the east side of the city, that's where Colorado River water comes in, and that's harsh quality water. That's very hard water, a lot of total dissolved solids in it. If you lived in the south or central part of the city, generally you got water from the San Fernando Valley wells, right there in the narrows of Griffith Park.

L.A. River water.

BASIAGO: The old artesian wells?

PHILLIPS: Yeah. They're no longer artesian, but it's the same source of water. If you lived in West Los Angeles, you got L.A. Aqueduct water. If you lived in the San Pedro area or South Los Angeles, you could get a mixture of these waters. It was in the summertime, when water consumption was high, that we were taking more MWD water from the east. Then the service area of MWD water expanded and the service area of L.A. Aqueduct water retreated into the San Fernando Valley. In the wintertime, when water consumption was lower, then the service area of L.A. Aqueduct water expanded and served most of the city with it. So it depended on the time of year and where you lived in the city. It was possible to go into the city of Los Angeles in the east side, take a sample of water out of the spigot, and say this is very harsh water. And it was because we're getting it from the Colorado River. Most of the people in the city were getting good well water from the San Fernando Valley or good quality water from the L.A. Aqueduct. Now, occasionally you would get the turbidity, particularly in Chatsworth, because the Chatsworth supply was one of those that came off a trunk line above Van Norman Reservoir, where it had a chance to settle out directly into the service areas in the upper San Fernando Valley, particularly in the west end. Same thing in the east side, where we had a highline called the McClay Highline that did the same thing. So it depended on where you lived, the time of year, and a whole lot of things, as to what quality of water you got. And also about that time is when we were having the trouble with the oil, which we've corrected.

But I think a lot of it was simply advertising programs of the bottled water companies. In Chatsworth you were getting good quality water. One of the things is that if you take a bottle of water out of your tap, or a cup of water out of your tap, and drink it, it has a certain taste. If you fill up a bottle of water from your tap and put it in your refrigerator and then drink it, it tastes much better,

much better. Bottled water is usually stored in a refrigerator and kept cool.

BASIAGO: What's the difference? The coolness?

PHILLIPS: Yeah. Cool water tastes better. Same water: if it's warm it doesn't taste good; if it's cool it does. You try that.

BASIAGO: And that's what the--

PHILLIPS: And that's what the bottled water company--

BASIAGO: They supply a refrigerator unit often.

PHILLIPS: Yeah, or out of a water cooler.

BASIAGO: Yeah, water cooler. So you think really all that--?

PHILLIPS: But my answer to the basic question is that it was a high-pressure, hard-sell program by the water companies. In fact, they got, at that time-- And I was head of the water system or head of the aqueduct division. In either case, I was very much concerned about this. Some of their advertising was actually adversely critical of the domestic water system. And I called the Better Business Bureau and the Chamber of Commerce and let them know what I thought. You know, a lot of people in this city can't afford bottled water, and yet they were being given misinformation by the bottled water companies--that there were harmful chemicals in the city water supply. And we stopped that in a hurry.

BASIAGO: Do you think that the water pollution activism in L.A. in the sixties and seventies was strictly a grass-roots movement? Or is it possible that some interests in the city interested in selling bottled water had agents provocateurs who were fomenting fears of pollutants in the water?

PHILLIPS: I don't know that, no, except through their radio and TV advertising programs.

BASIAGO: They were exploiting the environmental fear at the time.

PHILLIPS: Yeah, they were making statements. They still do, but they're very

carefully worded now. But you listen to bottled water ads now, many of them, and they-- For example, one advertisement I remember very well said that "Our water is"--whatever water company it was--"contains--" They didn't say, "No *harmful* chemicals." They said, "There were no chemicals in this water." That's ridiculous, you know. They weren't selling distilled water for drinking purposes. You couldn't drink it, you wouldn't want to drink it. But the implication was--that ad didn't last long, incidentally--the implication was that there were no chemicals in the water that they gave you.

BASIAGO: We know that the L.A. Aqueduct taps the Owens Valley supply. There is very fresh mountain snowmelt. Where do Sparkletts [Drinking Water Corporation] and the other company, Arrowhead [Drinking Water], get their water? Isn't it just from a similar area or--

PHILLIPS: Well, we used to keep a list--and I'm sure the department still does--of our major customers, largest customers. Always at the head of that list for the water system, or very near the head, were Sparkletts water company and Arrowhead. [laughter] Now, that could have been because they used a lot of water for washing bottles. I don't know whether it was or not, but they were very large customers of the municipal water system.

BASIAGO: You think they might be just buying your water and selling it out at a premium?

PHILLIPS: I don't know. They say not. Arrowhead says that they go high above everybody else now and get this beautiful water from above.

BASIAGO: Is the list public record?

PHILLIPS: Sure. Anything that the department has is a public record unless it's a lawsuit matter.

BASIAGO: That's very interesting. You mentioned lawsuits and litigation. Why don't you just trace your whole history of being involved in various litigations

with the department. Didn't you start out very early working on some of the Owens Valley litigation?

PHILLIPS: Yeah, one of the earliest jobs I had was mostly in preparing data and court exhibits, charts, in connection with the Owens Lake lawsuit [*Natural Soda Products Company v. City of Los Angeles* (23 Cal. 2d. 1943)]. Owens Lake used to be the terminus of all this water that we now divert to Los Angeles. Owens Lake, at the south end of the Owens Valley, had an area of about a hundred square miles. And so all this water from Owens River and from these side streams flowed down into Owens Lake and evaporated or it didn't flow out of the lake. And it had been doing that for thousands of years. And that relates to this alkali buildup in the floor of the valley down in that area. But the lake itself had developed heavy saline deposits in the floor of the lake. Even before the aqueduct was built, the lake was there in this magnitude. I mean a hundred square miles and twelve or fifteen feet deep. It was a very shallow lake, so the evaporation rate was very high. Very highly saline, almost crusting. More than the Great Salt Lake is.

There were soda ash plants--two or three of them around the shore of the lake--which took the brine out of the lake and extracted the potash out and sold it commercially.

When the city built the aqueduct and dried up the lake, these soda plants no longer had that brine that they had used. And they sued the city and won, and the city paid damages on that. This is after the aqueduct was built. Then the soda companies found and developed a much more efficient and better process, where they could extract the potash out of the dry salt beds that were left on the lake bottom after the aqueduct was built. Back in the late thirties, early forties, the lake was dry and these soda companies were operating with this new system, much better system. There was a very wet year, high runoff,

and all of the water couldn't be contained or diverted, so it went into Owens Lake and flooded the lake. So then the soda companies sued the city because they had flooded the lake and ruined their ability to produce potash under this new process. And again they won, and the city paid some damages--not great, but at that time it was quite a bit of money. But the main thing was they won the right to keep the city from putting the water in the lake. And I was involved, as I say, as a junior engineer, in putting together a lot of data in connection with that. I was relatively close to the people preparing that case, including for a while my father, in 1940.

A few years ago there was another brine operation started up on the lake. And we had a heavy runoff and the lake flooded, and we went all through this again. I don't know too much about the details of that case, although I was called in as a consultant for the department--this was after I retired--to describe how the aqueduct system was operated to prevent this and why it was impossible to set up a schedule. The engineer from the opposition, a very prominent engineer, Harvey Banks, said, "Well, it would be very easy for the department to set up a schedule of operation where this could be avoided. They didn't have to pump water in the lake." So I wrote a little report for the department showing how this was ridiculous--no way could that be done. And the position prevailed. The whole case was thrown out and decided in favor of the city, and the restrictions on putting the water in the lake have now been lifted.

During the earlier Owens Lake suit there was a new concept of law established called the "new natural condition." The soda companies (and they won their case on this) claimed that we had-- Previously there had been water in the lake and they had operated there. [They claimed] that the city had diverted water from the lake for so long that it had established a "new natural condition" of the lake--that is, the lake being dry. And that since it was a "new natural

condition," the soda companies had the right to expect that to continue. And the courts found that in their favor.

BASIAGO: What about the San Fernando case [*City of Los Angeles v. City of San Fernando* (14Cal.3d 199, 537 P.2d 1250, 123 Cal. Rptr. 1, 1975)]. That was a long, drawn-out--

PHILLIPS: That was a very long case, historic case, a very important case in the water rights field. I testified in that case a little bit, but I was never that close to it because I was busy doing other things.

BASIAGO: What was at issue, and why did it become important water rights litigation?

PHILLIPS: Well, at issue were the rights to the groundwater in the San Fernando Valley and the test of whether or not the *pueblo* right was a valid right that could be relied on. This issue had been tested many times in the past in the history of the water system. The original water right that the city of Los Angeles used was the *pueblo* right. King Carlos of Spain, back in 1787 or whenever it was in establishing the *pueblo* or the city of Los Angeles, granted to the *pueblo* the rights to water from the Los Angeles River. The Río [Porciúncula] or whatever--big, long name--de Los Angeles. And the city's position has always been that that included all the waters of the river, even those outside the city at that time. It wasn't just the rights to the water for that little *pueblo*, it was-- As the city grew, it acquired all the rights to the Los Angeles River. And then also at issue was the right to the groundwater, whether that was part of the *pueblo* right. And also whether imported water-- The city brings in water from the Owens River. That water is used for sewage in the septic tanks, and it seeped into the groundwater basin; and, of course, it was used for irrigation and home irrigation, and it sank down into the groundwater basin. Was that water not the property of the city of Los Angeles to use again, to pump

out? And the cities of Glendale and Burbank primarily--but a whole lot of other private users in the valley, including Walt Disney Studios--joined together to protest that they had been using this water and pumping from this groundwater basin so long that they had acquired a right to it. They had a right to continue to pump.

BASIAGO: Based on precedent.

PHILLIPS: Yeah.

BASIAGO: Just on squatter's rights?

PHILLIPS: Well, yeah. An adverse right. That generally was the basis of the case. And then, of course, the cities of Glendale and Burbank, primarily, were members of Metropolitan Water District, and they had been taking water from MWD, using it, and some of that had percolated into the basin. And didn't they have a right to that? Which it was found, I think, that they did, you know; that portion of the imported water they can expect to have. But the court found--and this was an appellate court, and I guess the [United States] Supreme Court--found that the *pueblo* right was a very broad right, just as broad a right as the city claimed it was. The trial court did not-- The trial court found against the city. I think it was appealed, and the appellate court found it in the city's favor and the Supreme Court supported that. I'm not sure of that history. One or the other.

BASIAGO: So it's a question between the historical title that the city claimed and the more modern uses that individual interests claimed.

PHILLIPS: The *pueblo* right could not be taken away from the city. Now, there's litigation going on now over groundwater pumping in the Owens Valley. When we built the second Los Angeles Aqueduct-- Well, let me back up even more. When the city went up there and bought all the lands in the Owens Valley to acquire the water rights and control of the water rights for export and

began to export them, it was assumed also that they acquired the rights to the underlying groundwater, under water law at that time. And there had never been any major use of the groundwaters in the Owens Valley prior to the time the city went in there and began to develop some wells back in the 1930s, when they were running short of water before the Colorado River Aqueduct was built.

Which is another reason which points up that there was very little irrigation actually in the valley before the city went there. There was no groundwater development. There were, I think, three or four wells on one ranch north of Independence that were deep wells used for irrigation--no more. A lot of little domestic wells that had pitcher pumps on, but no major groundwater development in the Owens Valley. Nor was there any significant storage developed on those Owens Valley streams. If there had been major agricultural development in the valley, they would have had to have storage on those streams to store water for use during dry years to sustain that larger agricultural development. Anyway, that's an aside.

As I say, the city drilled a lot of wells and pumped water to sustain the aqueduct in the early thirties, '31, '32, '33, along in there. And again in 1960, '61, and '62, when we had some dry years, we reequipped those wells and pumped very heavily from the groundwater basins for our supply. Those were isolated instances of pumping. The groundwater basins were very full; there were artesian conditions in some areas of the Owens Valley.

When we built the second Los Angeles Aqueduct, we determined that we could get 210 second-feet mean annual flow for that aqueduct, 152,000 acre-feet a year. From three sources: One, by operating the groundwater basin the way it should be, reducing the freatic losses with the evapotranspiration from high groundwater plains. That would be about a third of it. We could get another third by reducing the irrigated area in the Owens Valley. But in reduc-

ing the irrigated area, we would firm it up so that the cattlemen could count on that much irrigation. We started out with ten thousand acres, and now I think it's about fifteen thousand. But by guaranteeing water for that, virtually guaranteeing it, the cattlemen could improve the quality of the feed produced on that reduced acreage because they would have a better and more assured water supply, and the same number of cattle could be sustained. Now, this was a philosophy I developed, and I fought very hard for it up there. And the third area was that we would utilize the rights we had in the Mono Basin, which were not being used at that time. We had been getting letters from the state saying, "You filed permits for certain amounts of water. You're not using all of it." The reason we weren't using it was because we couldn't move the water south into Los Angeles. And the state was saying, "Either complete your project or give up these water rights." Well, we didn't want to do that. We had no right to do that. These belonged to the people of the city. So we would get another 70 second-feet by utilizing the rights in the Mono Basin that were not utilized. So about a third came from each of those sources.

So we started reequipping the wells again and pumping the groundwater basins in the Owens Valley, and we began increased use of water out of the Mono Basin. We immediately got a lot of flak from environmentalists and local people up there, saying that by pumping more water out of the groundwater basin we were destroying the ecology of the floor of the Owens Valley, because as we were lowering the water table, we were causing the creation of more dust and so on, a whole lot of things there. And also in the Mono Basin we got accused because we were diverting more water from Mono Lake, which is also a dead sea, a highly saline lake, saltier than seawater. It would start going down. And there were a couple of islands out in Mono Lake, one of which was a seagull aviary. Thousands of seagulls nested there every summer and raised

their young. When the lake started going down, there was a land bridge developed between the shore and that island, and the coyotes came across. And we caught hell from the people who liked seagulls. That became a big environmental issue--still is. So immediately we started getting all this flak because we were doing things which to our thinking were entirely legal. We had acquired the rights to do this from the state. The state, indeed, had insisted that we develop our project or lose the water rights, and we did. We were pumping groundwater in the Owens Valley because we were the overlying landowners. We had the right to pump that water. Pump it south and pay a tax on the export. That water would be subject to the export tax. That's okay--part of the deal. So we're in litigation now on these things.

Now the disturbing thing that I wanted to bring up in connection with all this is that the rules are changing, the law's changing. It used to be that water-right law was well established in California. It was complex, but it was well established and it worked and applied to everybody in this state. And the city never did anything up there in the Owens Valley or down here or anyplace else without being totally in compliance with the law at that time. After the second aqueduct was built and we proved up on all these filings we had, we got licenses from the state. I don't know if you're familiar with the procedure or not, but in the state water law, historically, you file a permit to divert water from a stream for some use, either under an appropriative right or under a riparian right. (Riparian right means you own the adjoining land so you divert for that person.) You got the permit and you went ahead with your project, and if you developed the project and used the amount of water, then you got a license. And that was a very permanent, solid thing. That was your right given to you by the state to use that water for that purpose from then on. That's what the state was telling us before we built the second aqueduct: "You got a permit here.

You haven't developed your project totally. Either develop the project or give up the right." So we developed the project. After we developed it, the state looked it over: "Yeah, it's operating. You're using the water." And they gave us a license to all these permits we've filed for this whole purpose. What more could we do to assure the people of Los Angeles of a water supply?

Now we find that the courts are saying domestic use isn't the highest and best use anymore. You have to consider the public interest. There's a public interest law on the federal level that says that if the public interest is higher than your use then you lose your use. And what they're saying is that-- What they would like to say is that the preservation of the seagulls is a higher public interest use of the water than domestic use in Los Angeles. We started, in some recent wet years, to let water out of Grant Lake flow down Rush Creek into Mono Lake. This is a nice stream that flows down through sagebrush from Grant Lake into Mono Lake. And when the heavy year was over, why, we shut that off. Some fishermen up there, fishing clubs, immediately filed suit, [arguing] we had no right under the law to do that. And we had to leave this fish water in the stream even though it hadn't been in the stream for years. And the court is very likely to find that this is a higher public use. The fishermen may have a right to that water, more than the people of the city. Now, this is frightening, because we've developed this water supply entirely consistent with the prevailing law. Everything we did was conforming to the law and what the state told us we had to do, and they gave us the license to divert this water. This is true from the beginning when the first filings were made on the Owens River, back in 1906. And we built a city based on that water supply. There are 3,000,000 people down here who depend on that water supply, and now the courts are saying, "Well, the seagulls and the fishermen may be more important." If we have to leave that water in Rush Creek-- There's enough water

there for 100,000 people down there in the city.

BASIAGO: You're saying the Mono supply supplies 3,000,000?

PHILLIPS: No. The whole system supplies the population, well, of 3,000,000 people in the city here. It supplies 80 percent of it, 2,400,000 people. This little use for for Rush Creek-- 17 second-feet supplies water for 100,000 people.

BASIAGO: Uh-huh.

PHILLIPS: So all of a sudden you find yourself in a very shaky position. And water-supply people throughout the state are watching this carefully and are very concerned about it. Because suddenly the courts are saying, "No, you don't count that much anymore and you've got to go someplace else and find your water." Well, there is no place else to find the water. The same people that protest Mono Lake and the groundwater pumping in the Owens Valley are the people who are protesting the Peripheral Canal, that won't let us build the state [California] Aqueduct up to capacity. Same people.

BASIAGO: The question is what other avenues are there? Desalination plants in the ocean?

PHILLIPS: Well, you can't do that. I mean, look at the energy costs involved there. This water that we're bringing from the Owens Valley generates power in addition to the water supply. For that you use power. If we got the water from the state aqueduct, we use-- What it amounts to, the difference is a million barrels of oil a year. If we reduce the amount of water they want us to reduce coming out of the Owens Valley and buy that from the state aqueduct through MWD instead-- State aqueducts have high pump lifts, while we generate power on the Owens River aqueduct. The difference is a million barrels of oil a year. [whistles] Now, that's an environmental concern. If you desalted all this, the energy costs in fuel oil and the environmental costs in generating that energy would be tremendous.

BASIAGO: Do you think that generally the environmental movement has to establish some priorities? For instance, trying to burn as little fossil fuel as possible will have to come before--

PHILLIPS: It has to be considered, certainly.

BASIAGO: --a pusillanimous attitude toward, let's say, what area of origin for water and stuff like that.

PHILLIPS: Yeah. The same people don't want us to build nuclear power plants. And believe me, they are the same people, as I mentioned to you the other day.

BASIAGO: And nuclear power plants obviously would be one way of harnessing enough energy to--

PHILLIPS: Desalt water.

BASIAGO: --desalinate water.

PHILLIPS: Yeah, but we're not allowed to do that. You've got to burn coal and oil. They don't even like coal-fired power plants. They like windmills and geothermal, which is totally, you know, ridiculous.

BASIAGO: Hydroelectric is very clean energy.

PHILLIPS: Oh, yeah. But there isn't enough of it.

BASIAGO: I see. So you're saying, "Keep as much of it as possible."

PHILLIPS: Yeah. So the underlying point I wanted to make is that it's rather frightening when you do everything you're supposed to do and you develop something as fundamental as a water supply for a large city, and then have that water supply endangered this way, possibly even taken away from you in part. Priorities are wrong.

BASIAGO: You said the DWP has a full-time legal staff of about nineteen or twenty attorneys?

PHILLIPS: I think that's what it is, yeah. It used to be nineteen when I was

there.

BASIAGO: What kind of things are they doing? Are they working on nature cases or are there a lot of--?

PHILLIPS: They're working on cases like this. They're working a lot on major contracts. We're awarding contracts all the time, construction contracts, material-purchase contracts. We're subject to a lot of lawsuits. Our equipment runs into somebody's property or we have an auto accident or somebody feels that what we've done has damaged their property, and they sue us.

BASIAGO: Someone drowns in their pool?

PHILLIPS: Huh?

BASIAGO: Or someone drowns in their pool.

PHILLIPS: Yeah, so it's our fault because it's our water we sold.

BASIAGO: Did you ever get any of those?

PHILLIPS: I don't know whether we've gotten any of those. We've gotten things just as farfetched.

BASIAGO: How many important precedent cases have there been, besides the ones we've already talked about, that the legal staff has to resort to, to develop certain positions for the department. I mean, there was the Owens Valley Lake case, the San Fernando case, the Glendale-Burbank case [*City of Los Angeles v. City of Glendale*] that Gerry [Gerald W.] Jones was involved with so much as a young man. Were there other major cases?

PHILLIPS: That was one of the earlier issues of the San Fernando case.

BASIAGO: Right.

PHILLIPS: I told you that this had come up a number of times.

BASIAGO: Is there another one? Have there been other ones that you can recall?

PHILLIPS: I'm not familiar--

BASIAGO: This is totally off the track, but I want to get back to something from the last interview session.

PHILLIPS: This is on the record?

BASIAGO: On the record. This is just a curiosity. We were talking about the Masonic influence in the department. I think you mentioned that the Independence bank up there in the Owens Valley had three, five, and seven steps.

PHILLIPS: No, this is the Independence office building, the Department of Water and Power's office building.

BASIAGO: How does that connect to Freemasonry, the three, five, seven?

PHILLIPS: I won't go farther than that.

BASIAGO: Really? Do you know?

PHILLIPS: Yeah, that's part of the--

BASIAGO: That's the secret.

PHILLIPS: I don't know if I even should have said that, but I think it's--

BASIAGO: My guess is three for the trinity, five for the fingers of the hand, and seven for good luck. [laughter]

PHILLIPS: I don't know.

BASIAGO: No? Okay. Another--

PHILLIPS: But that kind of thing is, in my opinion, about as serious as any involvement of the department with Freemasonry ever got.

BASIAGO: All right. Something else just to backtrack and get down on the historical record. You mentioned that it's always been at issue whether William Mulholland actually had accepted blame [for the San Francisquito Dam failure] just because he was head honcho or because, as an engineer, he had really messed up. You said that you met engineers who had worked with him who really thought he was technically at fault. Who were they, just to make the historical connection?

PHILLIPS: You asked me that and I said I really--

BASIAGO: You don't remember their names.

PHILLIPS: Well, one of them was a man named [Harold] Hemborg. He's dead now, so I can--

BASIAGO: Hemborg?

PHILLIPS: Hemborg, yeah. The department was a lot smaller then, and Mulholland was a lot closer to the field men. He involved himself much more on that sort of thing. There were fewer highly technical people in the department then than there are now. There weren't all that many. There was no state dam control office. There's one now partly because of this Saint Francis [Dam] failure. Mulholland, as I understand, made decisions in the field--and I think probably my father concurred in [my] opinion--that were unwise decisions.

BASIAGO: Another thing I wondered is that in terms of general managers, it's generally been a white Anglo-Saxon Protestant operation. Was the appointment of Mr. [Carl] Tamaki in the seventies, was that an affirmative action kind of--? I'm not saying he wasn't qualified.

PHILLIPS: No.

BASIAGO: I'm just wondering if it was a public relations act?

PHILLIPS: I appointed Tamaki.

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BASIAGO: The reason I ask is that this was a time when the department [Los Angeles City Department of Water and Power] might have been pressured to hire more minority people and more women. But that wasn't related to that, do you think?

PHILLIPS: Affirmative action was quite active then, but the selection of [Carl] Tamaki was my selection. He had been recommended to me, particularly by some people in the power system, but it had absolutely nothing to do with any affirmative action.

BASIAGO: To his credit.

PHILLIPS: To his credit. He was selected because he was capable, and he *was* capable. When I retired, Tamaki was one choice for successor, one possibility, but he wasn't interested. I gave the Board [of Water and Power Commissioners] several months notice on retirement, which they said would be long enough. They wanted to make a, quote, "nationwide search," end quote, for replacement. And they finally did go outside the department. I made a recommendation inside the department, but they didn't go for that. They went outside the department. They did not make that choice by the date I had set for retirement. So I retired and they appointed Tamaki as interim general manager, until they could make a permanent selection. And the reason for that was that Tamaki did not want to be general manager. He was having some health problems, ulcers, and he just evaluated himself and said he wasn't the man.

BASIAGO: That seems kind of like a trend in the department. A kind of an attitude of "If nominated I won't run, and if elected I won't serve."

PHILLIPS: No, because Tamaki and I are the only two people that I know of that felt that way. [laughter] Others who felt, you know, not only "I ought to be general manager,"but,"I should have been general manager sooner." And some people that never were general manager never forgave the department for not being general manager, if you know what I mean. The department was not an assemblage of wallflowers. [laughter]

BASIAGO: As general manager in the early seventies when affirmative action really started to heat up as a domestic issue, what do you think--looking back now fifteen years later, ten years later--the legacy of affirmative action has been? Do you think it's advancing people on the basis of racial criteria rather than other criteria?

PHILLIPS: I think it's an insult to those people to do it. I always have felt so, and I feel so now. I do not support--

BASIAGO: Racial quotas.

PHILLIPS: Racial quotas. I do not support discrimination of people, and I could, if I had time, recite some instances where I exercised affirmative action long before it was popular. But I don't think it benefits the minority people to put them in positions that they're not qualified for, either the individual or the particular race or ethnic group that is being represented by the affirmative action. I don't believe in quotas. I think in the long run you hurt the minority group, because you put them in positions they can't handle. It becomes apparent that they can't handle it, and this hurts, if anything, their ethnic representation. So I just don't believe in it at all. But I do believe-- Tamaki was a case in point. If a man's qualified, I don't care what color he is: put him in there. That's the only reason Tamaki was chosen. And if he hadn't been competent and people said, "Well, he's Japanese, put him in there; it will look good," I would have said, "No way. That's not the way to run this place." In my opinion, it's not the way to

help minority people. And I felt very strongly about that.

BASIAGO: In terms of recruiting candidates, what schools have you been most impressed by, in terms of civil engineering candidates?

PHILLIPS: [University of California] Berkeley is one of the best in the whole country for civil engineering. UCLA is not, frankly. They have a good program, but it's not what Berkeley's civil engineering is. I mean, UCLA is dominant in other areas--rightfully so. UCLA's School of Engineering [and Applied Science] developed in the aerospace environment, you know, Southern California. And that's where they're strong, and in other areas, petroleum, that sort of thing.

Stanford [University] has a strong civil engineering program, always has had.

BASIAGO: Let's go into the impact of the '71 Sylmar earthquake. Let's start off with just what you remember about February 9, 1971, and how the department responded under crisis. What it did poorly and what it did very well, and then what came out of the committee you chaired following it, charged to assess the entire issue. Let's start with what you remember about that day. What happened?

PHILLIPS: Well, I was living in Arcadia at the time. And I remember being virtually shaken out of bed in the morning by the violence of the quake. I was completely aware of what it was. I watched the house around me shake and hoped it was going to hold together. I immediately turned the radio on and began to get some reports. Got up and got dressed, and one of the early reports I got on the radio before I left the house was that there seemed to be some problem in the Sylmar/Van Norman [Reservoir] area. So I tried to call the office and talk to some people, but there wasn't too much information coming in yet as to just what had happened. So I got in my car and went downtown, and I spent the next three days there. And we began to get information in, some of it from the newspeople. I had a television in my office and began to get some

reports that way, to see what was going on, particularly at Van Norman Dam. And it soon became evident that that was the worst spot. We began to get feedback from our field people as to the amount of damage to the system itself--the water system, the distribution system, the tanks and pumping plants in the Sylmar area out there. We had had ongoing, for a number of years, a consulting board for dams. And one of the members of that board was Charles Richter of the Richter scale. So we got ahold of him right away. And he came down to the office, sat in my office for a while, and we began to try to evaluate the situation at the dam. We got some good aerial views of it over the television, from the helicopters. I didn't even go out there. I felt my place was to try to coordinate what was going on.

BASIAGO: Were there some concerns that the Van Norman Dam might burst? Was that the problem?

PHILLIPS: Yeah, that was a problem. The whole upper face of it had slid out into the reservoir, destroyed both of the outlet towers. And there was water-- Well, there was a thin wedge of dirt left at one point in the reservoir, almost vertical on the upstream side and on the normal slope of the dam on the downstream side. Water was within a few feet of that thin wedge of dirt. The main thing we wanted to discuss with Richter was the possibility, or probability, of aftershocks and what magnitude they would be and whether or not that might take more of that dirt and allow the water to start overtopping the dam.

One of the immediate problems was to lower the water in the dam. There was a whole lot of activity at various levels. The mayor's office wanted to get the [United States] Army Corps of Engineers in and put some pumps in the reservoir--which they did. They were almost useless. I mean, it took them a long time to get the pumps in and the discharge pipes, and they didn't pump much water after that. Our feeling was that the best thing we could do was to

take the water into the system, even though it was full of sand and rock. We had no outlet tower, but we did have controls below the dam on these six-foot diameter outlet pipes. So we began taking the water right into the system. The army was pumping 30 second-feet, and we were taking 400 second-feet into the system. So that was a relative-- But you couldn't see what we were doing. All the pictures being taken and the media attention was directed to the Army Corps of Engineers putting in these little pumps.

And, of course, we immediately began considering the safety of the people below the dam and what to do about that, and this is another reason why we got Richter in. We were in close touch with the police department. I had some of the engineers start laying out an impact area if the dam failed--what area would be covered and subject to flooding. And as soon as we had that defined, we got together with the police department, gave them that information, and began setting up plans for evacuation of all the people, eighty thousand people, within that area. Richter couldn't guarantee that we wouldn't have an after-shock that would take the rest of the dam or part of it. And that's all I needed. I told the general manager at that time, and the assistant general manager, who had been my predecessor in the water system, that I felt we should go ahead with the evacuation. And they said, "Okay, you call the police department. You do it." Meanwhile, I was also in touch with Sam [Samuel W.] Yorty's office, the mayor. And I talked to Yorty himself, and I said we should evacuate these people. I said, "The police department is standing by ready." "Okay, you call Ed [Edward] Davis." He wasn't going to call; I was to call. So I called Ed Davis.

BASIAGO: The chief of police.

PHILLIPS: At that time. And I said, "Ed, we've got to get those people out. I don't know what's going to happen, and that's the reason why they have to be moved out." "Okay." So they started this evacuation process.

And then meanwhile, of course, this was a great inconvenience, and the mayor didn't like it. He understood it, but-- And then: "Well, what are you doing to get the water down? The water isn't going down. Can't we get more pumps in there?"

And I told the mayor, "The water that's going down is mostly going into the system through the damaged outlet works. What the corps is doing isn't a drop in the bucket really. I don't think more pumps are going to help any, because it's not a big enough dam. We're taking water into the system as fast as we can, but we can hear rocks and chunks of concrete from the demolished outlet towers banging on the sides of the six-foot diameter outlet pipes which were exposed just below the dam. If we increase the velocity there much more, we're liable to damage those pipes or knock a hole in them with these chunks of concrete. We don't know what's there."

BASIAGO: The outlet pipes had broken away from the dam?

PHILLIPS: No, they were intact.

BASIAGO: So they were exposed. You mean that they were sheared sectionally?

PHILLIPS: No, they were built that way. They were built on top of the ground for a ways below the dam, before they went underground. You had the dam like this: Bottom of the reservoir and the water was up here, and the outlet towers were like this, big, tall, concrete, round towers with gates in them. And then the outlet pipes came out from here. Water came and went through these gates. It then came into these pipes, and the pipes were along the surface of the ground here for a ways before they went underground and crossed the city. And it was here where-- Well, when the dam went out, it kind of went out like that. This whole portion of the dam slid out, and we had water right up against this little peak.

BASIAGO: The side nearest the water supply, the backed-up water, slid down?

PHILLIPS: And these outlet towers fell clear over, so we had nothing here but broken concrete at the base of the outlet towers and whatever was left of the pipe.

BASIAGO: The outlet tower was just a big siphon sitting in the middle.

PHILLIPS: Big concrete standpipe.

BASIAGO: Standpipe sitting in the middle of the water supply. Standing water.

PHILLIPS: Right.

BASIAGO: That broke off, and then all you had--

PHILLIPS: That fell clear over. All we had was the bare end of the pipe here.

BASIAGO: Taking water--

PHILLIPS: Taking water out of the bottom of the reservoir into the system. And taking the sand and mud and chunks of concrete with reinforcing steel and everything else, going down here, banging inside the pipe. And we were scared to death that if we lost this pipe here-- If that broke, if that ruptured, then-- There was a lot of energy. We had this whole head of the reservoir behind us, and it would have shot out here and just torn up the ground. It would have been terrible. So I explained to the mayor what that problem was; I don't know whether he understood it. But we were taking just as much water out as we dared without destroying this pipe here.

BASIAGO: Was that just an intuitional guess? With all that debris in there, what was the right philosophy?

PHILLIPS: We just, if we started--

BASIAGO: Listened to it?

PHILLIPS: We just listened. If we heard too much stuff banging, we backed off on it.

And so, anyway, for the next two or three days the big issue was to get this

water down. We finally got it down and without any further ado, although we had had some aftershocks. So I talked to the general manager and told him I thought we were ready. And I called the mayor and I told him. I said, "You want me to call the chief of police, Ed Davis?" "Nope," he said, "I'll take care of it." You know, the political instinct is remarkable. This was good news: "I'll take care of it." (The mayor would.) The other news was bad news (about the evacuation) so I sent that message over. It was an interesting sidelight on the whole thing.

Meanwhile, our crews had been working trying to repair broken tanks, broken pumping plants, and pumps on wells. The pumping machinery had been shifted off its base, and tanks had jumped up and down. We had some of the strangest reactions from that with large pieces of equipment. And, of course, we had tens of square miles of our distribution systems just all shattered.

BASIAGO: Major tank facilities pitched up in the air and then down again?

PHILLIPS: Yeah.

BASIAGO: Did Richter ever explain what kind of waves caused that?

PHILLIPS: Well, there was obviously a vertical component to this shock wave that came through, because some of the tanks were intact. They were still full of water, but they had a large crimp near the bottom of the tank. You come down on the side of the tank, and then there would be a great big fold like that at the base of the tank and all the way around the tank.

BASIAGO: Crushed down like a Coke can.

PHILLIPS: Yeah. Just this big crimp right around the tank. We had set up a communication system, and I stayed in my office. I felt it was important that I stayed there. I was an authority, and I felt it was important for me to be someplace where people knew where I was and could reach me for decision making. The general manager and the assistant general manager took a helicopter ride

out over this stuff and looked at it: actually, they didn't see any more than I saw on the TV. And I felt that it was very important for me to stay in the office so that if questions came up they knew where to go for some authority and could be answered. A coordinating center. And that's what I did.

BASIAGO: What were some of the hang-ups to getting things back on line? Were there some issues that were raised there about contract work? Whether the department should handle these problems or--?

PHILLIPS: No, not at that time, because nobody questioned--I mean, it was just obvious what had to be done. The important thing in that regard is that we did have field crews who were knowledgeable. We had excellent map records of our system, gate books for showing where every gate and valve on the system was and what its condition was supposed to be and actually where it was located. So we were able to dig up the system very quickly where it was necessary. We started at the lower end of the damaged area and just worked upstream, worked up to the higher areas in that Sylmar area, the higher elevations. So that when we got pipe repaired, why, we could feed water into it and supply people, and then we'd move further up the slope, repair that pipe and valves--

BASIAGO: Was there a way to check to see where the gates and pipes and things were intact, without digging them up first? Could you test those?

PHILLIPS: No.

BASIAGO: You had to always dig them up?

PHILLIPS: We'd move water into the area, and where we found leaks, then we'd back off the water and fix the leak. And then we'd move more water into the area. In one case, we opened up a fire hydrant to see if water would come out, and gas came out. The gas mains had ruptured and the gas had gotten into our water main. So we were working very closely with other utilities that

had underground facilities. The system functioned very well. It really did. Of course we immediately had people from other large water systems wanting to come down and see what we were doing. And I tried to accommodate. We had people from the city of San Francisco, from East Bay Municipal Utilities District, the city of Sacramento, and the city of New York. People flew in from all over the country to see the nature of the damage, to look at the reservoir, get a picture of what was happening, and how we had handled it.

BASIAGO: Was there some use of water trucks to supply domestic water?

PHILLIPS: Yeah, in the damaged area where we didn't have a water system we sent a call out. That was one of the first things we did. We had people working in all different areas--water bottling companies for one--who responded very well. And milk companies that might have stainless steel trucks available. We took any trucks we could get that weren't contaminated with some other product--that could carry clean water--and we put little adapters on the front of them. We brought a piece of pipe around and put a bunch of hose bibs on that piece of pipe, and we filled those trucks with water where we had it and hauled them into this area. We would just come to a street intersection and people would bring their bottles and open the tap and get water. We had dozens of trucks donated for that purpose.

BASIAGO: Was there any future-preparation design there, following that lesson? Is there a standing agreement now between the department and anybody like the dairies or the bottled water companies to have emergency trucks?

PHILLIPS: Yeah.

BASIAGO: There is now?

PHILLIPS: Yeah. This is part of the earthquake preparedness program, to have all things like that arranged ahead of time. The thing I did determine from

this experience-- And this is what I put in the papers I wrote and into a committee I headed. As a result of this work that I did, actually, the American Society of Civil Engineers set up what was called a Lifeline Earthquake Engineering Council, a permanent council in the society that covered these matters. And one of the things that I made a point of, as strongly as I could, was that earthquake preparedness from then on, to me, would mean being prepared for anything. In other words, having personnel who know what they were doing and knew the system very well; having records that were up to date and adequate, accurate records and maps of the whole system (where everything was, how to find it); construction capability to make the repairs in-house; personnel able to handle the construction work, knowledgeable people that knew how to repair pipe, lay pipe, and all that; an adequate communication system that could be independent of the public telephone system.

BASIAGO: That had become a problem, right? You had to tape down the switches so you wouldn't get cut off.

PHILLIPS: Yeah.

BASIAGO: That's what Gerry [Gerald W.] Jones mentioned.

PHILLIPS: Because if you start having a precise plan that people report--this guy's supposed to report here, this guy's supposed to report here and do this and that--invariably that guy won't report there. He's home taking care of his family or something. Or you can't get word to him. He's off on vacation or any number of reasons. Your carefully laid plan is shot to smithereens because it won't work! The key is flexibility, having people who know how to do the work. Because the earthquake effect can be so capricious. We found that out. You can't tell what the nature of the damage is going to be or where it's going to be.

BASIAGO: So is that a matter of having people who are as comprehensively trained as possible in the various areas of the system?

PHILLIPS: Knowing their job. Moving people around in various parts of the system. The system is divided into five major operating districts. The superintendent of each district, who is running a large water system all by himself, really, is very knowledgeable, and he has knowledgeable superintendents and foremen and workers under him. These people moved around from one district to another.

BASIAGO: Did these exist before the earthquake or were these implemented after?

PHILLIPS: Well, we did it before, but even more so now.

BASIAGO: More of a constellation of--

PHILLIPS: Yeah. So that at the time of the earthquake we had people in the San Pedro district who knew this Sylmar district. We could pull people from San Pedro up to help who knew this Sylmar area (the eastern Valley district) well. And we could pull people in from other areas. This is another reason why I've always maintained that we did not want to go to a totally contract basis in our operations.

BASIAGO: Because that requires too much deliberation?

PHILLIPS: You don't have this cadre of knowledgeable people that you can immediately call into service and move around and who know how to do the work and meet the emergency. Carried to an extreme, it would be ridiculous to have to go out for bids to get work done to repair earthquake damage. Where we've been criticized by contractors for doing forced kind of work, this is one of the main cases in point that I bring up. And yet, of the total amount of capital work and construction the department does, the vast amount of it is done by contract. Because most of the high-cost work is in large trunk lines, major trunk lines. We don't do those. We do those by contract. But if one of those is ruptured, we could repair it; we've got people to do that too. Still, much of the

money spent by the water system is paid to contractors.

BASIAGO: So what were some of the good things that came out of the tragedy of the earthquake? The first is that the water trucks from outside contractors like the bottled water companies are set up in advance now. The district divisions became more established, the spheres of power--

PHILLIPS: And knowledgeable--

BASIAGO: The knowledgeable personnel. The relationship of the department to contractors got clarified.

PHILLIPS: Well, I don't know. In my mind it did, certainly, and I think in the minds of most other people in the department it did.

BASIAGO: The department became less prone to contract?

PHILLIPS: Not less prone, but less prone to succumbing to going all contract.

BASIAGO: What else? Were there any other developments?

PHILLIPS: The relationship with the departments in the city was terrific. The police department, the sewer department [Department of Public Works], and other utilities. We learned a lot, and the relationship with other utilities and other departments in the city through this earthquake preparedness program is improved as a result of that.

BASIAGO: Any work, technologically, on different kinds of water mains and pipes and things, to withstand certain kinds of--

PHILLIPS: We had some very interesting failures in air relief valves where the surges just-- An air relief valve has a large spindle through it on a float where it relieves air that might be trapped in the pipeline, in the main. We got surges in some mains. There's a metal dome that covers these relief-valve things. Air that comes out is directed down. These spindles, in some cases, went right up through that dome. And this is a piece of steel that's half an inch in diameter. This spindle was right up there sticking that far out of the top of the dome.

Gerry will tell you more about that.

BASIAGO: Because of the--

PHILLIPS: The pressure surges induced in the pipelines by the earthquake. By the ground surge in the earthquake. This is shaking of the pipeline.

BASIAGO: The column of air inside the pipe was just picked up and--

PHILLIPS: This wasn't air. This was water inside the pipe which was compressed by the action, by the ground wave impact on the pipe.

BASIAGO: So the compression of the water drove the spindles up.

PHILLIPS: Yeah. Water hammer.

BASIAGO: Anything else, in retrospect, that the big earthquake put the department on notice, about different ways of operating?

PHILLIPS: Yeah, but I don't know that I can recollect all of that. Gerry Jones can give you better background on that than I can.

BASIAGO: Generally you don't think too highly of environmentalists, because of various reasons that we've talked about.

PHILLIPS: Yeah, you know-- And this puts a black hat on me again, I suppose. Again I repeat, I like to protect the environment as much as anybody, I really do. But I don't endorse going overboard, being ridiculous and rejecting all other interests of society in order to protect the environment. And I see that happening in many cases.

BASIAGO: I was going to ask you about your role in the environmental preservation of the eastern Sierra [Nevada] watershed. What was that all about? You received several awards.

PHILLIPS: A lot of it in regard to land-management policies up there and support for a lot of things, such as use of department lands for recreational purposes.

BASIAGO: There's a rain shadow over there, isn't there? There's not much

vegetation on that side, the eastern side.

PHILLIPS: No, that's right. Most of the storms that come across, the moisture's bled out.

BASIAGO: By the west---

PHILLIPS: Yeah. The Sierras are so high that they force the storms up, which cools them and causes the moisture to precipitate out in rain and snow.

BASIAGO: On the western side?

PHILLIPS: On the western side. And by the time the storm moves across-- I used to refer-- In explaining this to local people up there and others, I would refer to the Sierras as the threshold of the desert. Because that's where the storms drop their load and come on in. And there's no more moisture, so your rainfall drops tremendously--five or six inches in the Owens Valley.

BASIAGO: So how was the eastern Sierra watershed environmentally endangered? Was it at all?

PHILLIPS: I don't know. I know I received some awards for that. [laughter] I think it was just a general policy of operation out there.

BASIAGO: Has the department tended to stay away from it because the water it does have is very precious? It seems like a very vulnerable area. Pulling too much water out of there, even groundwater, I guess-- Because there's not much there most of the time.

PHILLIPS: Oh, yeah. Probably one of the main things was the position I took with respect to constructing the second [Los Angeles] Aqueduct. In the early sixties I was northern district engineer up there. I had charge of all of the department's operations north of Haiwee Reservoir. And this is when the initial discussions on building the second aqueduct started in Los Angeles--it had been discussed off and on for years. Then in '62 or '63 I came down as head of the aqueduct division, and I was in a much more influential position regarding

planning for it. I came down and found out that the engineers down here planning the second aqueduct were just figuring, well, we'll take all the water that's there now and build another aqueduct. We'll build it big enough to take all the rest of the water. Well, I felt that would be very bad policy. Killing the goose that lays the golden egg, in a sense.

BASIAGO: Not leaving enough water there.

PHILLIPS: Yeah. And I made that feeling clear to the people--to the general manager down here at that time, and the head of the water system, and even to board members. The water system prepared a report in 1963 which was [presented] to the Board of Water and Power Commissioners, endorsing this project and giving the reasons for it. And I wrote a fairly large section of that report. In connection with that, I made it very clear that I felt there had to be water left in the Owens Valley to sustain some agriculture up there and some semblance of an economy. Otherwise, we'd better face the fact that we'd just dried up and run everybody out of there and left no population, nothing there at all. And you know it's a major tourist attraction. You have to have business people up there. And I felt we had to maintain some culture in that area-- agricultural and business. We couldn't just dry it up. I expounded on that somewhat in this report I wrote, but also in some memorandums I wrote. As soon as I got down here and found out what was going on, I got pretty heated about it.

Now, the city charter says that you cannot give up-- It's written in the charter that water rights to the city of Los Angeles shall not be sold, conveyed, bartered, given--a whole bunch of other things--to any person or any entity without a two-thirds vote of the people of the city. You can't give up the water right. And I think that probably is what guided the people down here, you know: "Well, we've got to take all the water. The charter says you can't give away a

water right." My position was that you're not giving away the water right, you're determining what is the best way to use these water rights in leaving some water up there for some agricultural, commercial, and recreational purposes. This is a legitimate use of our total water resource. And in the development of our total water resource, this is a legitimate use of water. We're not giving away the water rights. Although I knew as well as anybody that if we built the aqueduct to a capacity that left some water up there, we'd never bring that water down here. But I felt that that was consistent with my feelings. The general manager, the chief engineer of waterworks at the time, and the commission agreed with me. And, in fact, they thought that that was a pretty statesmanlike attitude to take.

BASIAGO: Striking a balance between the environment and the economy.

PHILLIPS: Yes. But more than that, it's recognizing that using some of our water in the Owens Valley is essential to the management and protection of the total resource for the city. But the line has to be drawn *very* carefully.

BASIAGO: We missed something that might be worth going back to about this earthquake area. You started with Ralph [R.] Procter and had a lot of involvement there with earth dams in your early years in L.A.

PHILLIPS: Mid-fifties, '53 to '58.

BASIAGO: What changes in dam technology came out of the Van Norman [Dam] problem, following the '71 quake? Were there any innovations or modifications to prevent--?

PHILLIPS: Mostly it was determined that a number of dams and some dams on our system had been built years and years ago--when dam technology was in its infancy--by a process called hydraulic fill. That was where you hauled in dirt on both sides of the dam in wagons; the upstream side and downstream side. And between these two dikes that you built across the area, or the channel to

be dammed, they put water. Then they floated a barge there on the water between these two dikes, and with some big hydraulic hoses they washed dirt in from these two dikes into the middle. The idea of this was that when you washed the dirt in, the finest material, the clays, washed out and came in and formed a clay core in the middle of the dam. And the outside dikes were porous; so you had a fill with an impervious core. Theoretically, it had some justification. Practically, it was a terrible way to build a dam.

BASIAGO: Why?

PHILLIPS: Because you had no compaction of the outer embankments for one thing, other than the mules carrying the wagons.

BASIAGO: So the porosity of the outside firmament wasn't a good idea.

PHILLIPS: For another thing, you got no real consolidation of this clay. It was just simply the way it settled in this water you had in the middle. And this was porous; the minute you put water behind the dam it came through this porous upstream side of the fill. The clay never did drain, so you always had water, you always had a soupy mess in the middle of the dam. And so one thing that came out was that all dams built that way had to be either rebuilt or the water surface lowered drastically. That's why we lowered the water surface at Haiwee and we rebuilt the dam at Fairmont. Other things: It was determined that this failure here was due to what's called liquefaction. You had a fill here built, as I have described, with a lot of water in it, not well consolidated. The only thing that saved us was that back in the forties, after we knew something about fills, on the downstream face of this dam we had put a big compacted-earth berm here to support this. And we built that berm up to a certain level, and that had to be the level where this little peak was. You know, the berm saved the dam really. Otherwise, without that good, well-compacted berm--that fill on the downstream side of the dam--the whole thing would have gone. So

anyway, what happens is you get a soil phenomenon called liquefaction, where you shake the soil and it's got a lot of water in it. The particles of the soil settle a little bit. They readjust themselves. They compact a little bit. And since they compact, there isn't enough room for as much water as there was before. The water's still there, but there isn't any room for it. So the whole soil mass turns into a thick fluid with no strength.

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BASIAGO: And so the liquefaction turned the--

PHILLIPS: So the knowledge of liquefaction--how it behaves, what it can do in a dam--was a real advancement, and even in new dams now, much more is done to provide drains in the dam to drain moisture out of the dam. Even in a well-built dam nowadays, the upstream part can be porous and full of water. And if it's shaken hard enough, you could get liquefaction even in a well-built dam.

BASIAGO: And that was specifically after that earthquake at Van Norman.

PHILLIPS: Yeah. A lot was learned about that.

BASIAGO: Moving into our last half hour, I was wondering-- You were general manager during the first energy crisis. We consider it, what, '73, '74, and then the later gas lines appeared, I guess, '78, '79. But during the first energy crisis you directed an analysis of the total energy needs of L.A. Is that correct?

PHILLIPS: No. Well, the power system did some work in that area. I wasn't too closely associated with it other than to say, "Do this." [laughter]

One thing that was difficult about that period was, of course, getting fuel oil for the steam plants. And we were competing with other utilities for this fuel oil. It was a seller's market in the worst possible way. There was fuel oil being produced in the Middle East and in South America and in Southeast Asia, primarily in those areas. There was tremendous demand for it, and we were competing for it. Prices were going up rapidly, and obviously the fuel oil was being withheld to force the price up. We were at a great disadvantage.

Historically, utilities like the [Southern California] Edison Company and

PG&E [Pacific Gas and Electric Company] could enter into contracts negotiated with major oil companies and renew those contracts year after year and develop a relationship with the oil companies for this fuel. Because we were a public agency operating under the city charter, we had to advertise for bids for everything, including fuel oil. So we would put out a bid for a hundred thousand barrels of fuel oil--or two hundred thousand barrels--to supply our steam plants, and we'd award the contract to the lowest bidder. Maybe that was Standard Oil. The next time we needed fuel we'd advertise again. Maybe the low bid would come from Shell [Oil Company] or Texaco [Inc.] or Newhall Refining and Petroleum or some other little outfit, and we'd award that contract to those people. Maybe two or three different oil companies would bid on portions of the contract. Maybe it would be for a million barrels of oil for a year. So we never established a relationship with any one fuel or oil company. They were always having to go through the business of bidding on our contracts. They didn't like it--there was always a lower bidder, and they were always competing with others.

So when the crunch came and it became very much a seller's market, we got left out. We had a hard time. First thing we had to do was get the council to take that lid off so that we could negotiate contracts and not have to put everything out to bid. Otherwise, in that kind of a market, putting out competitive bids, people wouldn't have paid any attention to us. So we did get the council-- They saw that they had to remove that lid and put us to where we could negotiate. We could go out and buy on the open market with everybody else. But still we were not in the friendly position that people like Edison and other big utilities were. That was one of the problems of being a large municipal utility in that case.

And of course up until 1970, '71, just about the time-- Well, when I became

general manager in '72, we were still paying \$3 or \$4 a barrel for fuel oil. It had begun to go up, and people were just horrified that we had to pay that much for fuel oil--but we did. Within two years I took to the board a contract for fuel oil at \$25 a barrel. It was a shipload, 250,000 barrels of oil that we had bid for at one price. This was what was happening in those days: Somebody would buy a shipload of oil. Then they would come to us and say, "I've got a shipload of oil. I'll sell it to you for \$15 a barrel, \$18 a barrel." The ship is on the high seas and we'd negotiate for it. That was our shipload of oil. Well, that guy would find that the market was going up and he could sell that--some of these people I'm sure were operating out of a phone booth, you know--he could sell that shipload to somebody at \$20 a barrel. So he would. And just out of the phone booth he made \$2 a barrel on 250,000 barrels of oil. That guy would sell it to somebody else. And by the time the final guy got to us, it was up to \$25 a barrel. And we weren't sure then whether we were going to get it. But we needed it desperately--they knew we needed it desperately--so I went to the board with a contract for a shipload of oil at \$25 a barrel. That made the press for sure. The board was horrified. I went through this description of what was happening. Just a terrible rip-off. Not only for us but for others, too, during that period. I told the board we either buy this shipload of oil which is on the high seas and will be here in a couple of weeks, or we turn off our steam plants. That's how close we were operating. It was so difficult to get oil.

BASIAGO: Do you think that energy crunch was legitimate in terms of supply or was it an artificially manipulated shortage?

PHILLIPS: Totally artificial.

BASIAGO: What do you think of the claims that there were all sorts of tankers out there in the harbor and, nonetheless, the seven gasoline companies' prices doubled?

PHILLIPS: I don't think they were out there in the harbor; they may have been out on the high seas someplace. The oil was out there. The oil was in the ground, but a lot of it was in the Arab countries and they'd shut it off. It was an embargo.

BASIAGO: The OPEC [Organization of Petroleum Exporting Countries] embargo. What about later, in '78-'79? You had already retired, but there were a lot of claims then-- That's when gasoline went from about 64 cents a gallon to \$1.20 in a few months time, and there were claims that the gasoline companies had all sorts of tankers, even in L.A.

PHILLIPS: I wouldn't want to comment on that time. But of course later on-- referring back to the '73 oil embargo, '73 and '74--the federal government made a very thorough investigation of that. And some people ended up in prison, got caught, but most of them didn't. That was a terrible rip-off.

BASIAGO: I was wondering about any work the department has done on alternative energy sources. Just the general issue of energy supply nationally. Are there any forms of energy that you favor, and why would you favor them?

PHILLIPS: Getting back to your first question, the department is helping with the development of other forms of energy. We're partners in the big solar plant that has been built out near Barstow.

BASIAGO: Desert One?

PHILLIPS: Yes. We're participating in geothermal development, both down at Salton Sea with other utilities and on our own up at the south end of the Owens Valley in the Coso area which is actually in the Naval Ordnance Test Station [at China Lake] gunnery range up there. But there's a hot springs area there that is being developed right now and looks fairly favorable. So the department participates in these things, and as a member of the Electric Power Research Institute it participates in them. Incidentally, I was one of the charter members

of the board of directors of that organization--which has turned out to be a very good organization. So the department is not ignoring these at all. In my opinion--and I think it's shared by the people in the power system now--these things need to be explored, but actually they're very limited in their application, and unless they're heavily subsidized, they're out of sight cost-wise. These wind machines with their--

BASIAGO: Windmills.

PHILLIPS: These windmills that you see scattered all over the country, that's nothing but a tax dodge, you know. Somebody will say, "Well, there's--" In fact, the state energy commission points to this and says, "Well, there's thirteen thousand megawatts of windmill capacity installed." Well, that doesn't mean a thing. You can have all the windmills out there you want. It's the kilowatt hours of energy that they produce that count. And the kilowatt hours of energy that they produce is very small and very unreliable.

BASIAGO: You mean it's harnessing the power that's the problem?

PHILLIPS: Yes, it's the amount of energy that comes out. You can have windmills installed, just like you can have steam plants installed, thirteen thousand megawatts of steam plants installed. If you don't have any fuel oil to burn in them, it doesn't mean a thing. You can have thirteen thousand megawatts of windmills installed, but if they're not turning, if they're not operating, if the wind isn't blowing, you're not getting anything out of them. So I don't see them as significant answers. They're marginal things.

Geothermal, the same way. There is one case where geothermal has been productive in a major way, and that's up at the geysers in Northern California. PG&E has developed substantial amounts up there. That's because they have very clean steam, very clean water, and ample quantities of steam. Environmentally, it's still a horror. You know, it smells and all that. But they

have substantial quantities of energy up there. In most cases the contaminants (the caustic agents that are associated always with the geyser area) just eat up the well casings, eat up the machinery, and it's a bad time.

BASIAGO: How much of the department's power production can you see some day coming from solar or hydro or geothermal or wind energy?

PHILLIPS: Well, existing hydro? Existing hydro is less than 10 percent.

BASIAGO: What about solar. Let's just break them up.

PHILLIPS: Solar--

BASIAGO: A couple percentage points?

PHILLIPS: Two percent. All of them together: solar, wind, geothermal.

BASIAGO: All of those together, only a few percentage points?

PHILLIPS: That's what I would think. It's being misled a lot about how great these things are. The people pushing the windmills are the people who build the windmills because they make money. They sell the property owner, who happens to own property up on the hill in the right place, a windmill. The property owner makes money because he can write that off as a tax write-off for him to build that windmill, whether it generates any power or not. He can write that off against that property. So you've got the property owner and the builder of the windmill: big advantage to them and not much to anybody else. The whole thing underwritten by the taxpayers. If there wasn't a big tax advantage to the owner and a profit to the guy building the windmill, you wouldn't see any of them built, I don't think.

BASIAGO: Do you have any idea--considering that these renewable energy sources seem so limited in your projection--what we will do when the fossil fuels begin to burn out? I mean, we do have only so much coal and oil. What are we going to do for power?

PHILLIPS: We should be using more nuclear power. And of course there are limited amounts of uranium too. That's not going to last forever.

BASIAGO: Perhaps solar technology will go further, out into space.

PHILLIPS: Solar. Of all the renewable resources, solar's probably the best. There could be a movement toward individual power production. That is, each home would have its solar cells or its fuel cell. The fuel cell is a good possibility; this is what they're using a lot to power the space shuttle.

BASIAGO: You mean hydrogen fuel cells?

PHILLIPS: Yes. Fuel cells. The other major answer--the really big answer of course--is fusion power. Our present nuclear power is fission--splitting the atom. There's a tremendous amount of work being done on containing fusion power to generate electricity. Controlled fusion. If that happens, the fuel source is deuterium, and the ocean is full of it. Endless supply of energy there.

BASIAGO: What about hydrogen transportation? That's possible.

PHILLIPS: That's possible.

BASIAGO: From water?

PHILLIPS: I'm not too-- What do you mean, now?

BASIAGO: Where you separate water and burn the hydrogen. It's a very clean form of combustion engine.

PHILLIPS: Yeah, but it takes energy to separate the water.

BASIAGO: Right. Also it's highly volatile in its present form. So you would see a-- You look for individual self-sufficiency, which is what we should be laying the foundation for in preparation for the future.

PHILLIPS: Well, not entirely, but I think-- I'm talking about really viable areas, and I think individual fuels-- Photovoltaic systems is one to get the cost of that down.

BASIAGO: What about home methane production through biomass?

PHILLIPS: I don't think the amount you would get there from your home would meet your energy needs. Of course, conservation, learning to use energy more efficiently, more wisely--

BASIAGO: Have you tended to favor nuclear power over coal-fired power plants in the department?

PHILLIPS: Well, we built mostly coal-fired. We wanted to build nuclear.

BASIAGO: You thought they were more environmentally benign?

PHILLIPS: More environmentally benign and cheaper. Nuclear plants have been saddled with some terrible costs because of the, in my view, largely unfounded safety and environmental concerns. I think the environmental concerns and even safety concerns surrounding a coal-fired plant are as great, or greater, than a nuclear plant. But coal-fired plants haven't been quite saddled with the costs that nuclear plants have for those reasons. Although coal-fired plants--cleaning up the stack gases and the emissions from them--become very expensive.

BASIAGO: Has the department been involved at all in--given all this ocean we have out here off Los Angeles--in ocean thermal energy conversion? You know, so-called OTEC?

PHILLIPS: No, the only way it would have been involved is if the Electric Power Research Institute is putting it into that, and the department is because they help support EPRI. But nothing beyond that. Then I should mention the Bolsa Island project; the department was very much involved in that. This would have been a large offshore island built off Bolsa Chica Beach--sponsored by the Edison Company, the Department of Water and Power, and the Metropolitan Water District [of Southern California (MWD)]--in which nuclear power would have been used to generate electricity and also desalt seawater.

BASIAGO: Oh, we're talking about desalination.

PHILLIPS: Yeah. And that's why-- There would have been a large amount. That's why MWD was so interested in it and putting a lot in it, because they were talking about a very substantial amount of desalted seawater. And the department was very much interested in it, both from the water supply and the power standpoint. Edison was interested because of the power supply. That project got into the conceptual design stage and the cost data shot it down.

BASIAGO: The fresh water on the land is limited by the rain cycle, and obviously as population grows in metropolitan areas, it's possible that it could exceed the available freshwater supply. Do you think there will be a point where these desalination projects will become essential for supplying water for our growing population?

PHILLIPS: It could be. As I say, MWD costs are now \$200 an acre-foot for treated domestic water, the best-quality water that they deliver to cities, and the cost of desalting seawater is coming down. So yes, particularly if you could get a cheap source of energy. That's why I say if fusion power is ever made feasible, then you've got an unlimited source of both water and power. Because the source of the fuel is deuterium, and seawater is the source of the water. You could use that energy to separate from the salts.

BASIAGO: How does that work? The plasma physics of it are such that you produce more energy?

PHILLIPS: They've only just now, in an almost instantaneous reaction, got to the point where they, in one of the experiments going on, got an instantaneous condition where the amount of energy was equal to that coming out. Or the amount coming out was equal to what went in. They're making some progress: Lawrence Livermore Laboratories is doing work on it, General Dynamics [Corporation] is doing work, places back East, the Russians are doing work on it. Progress is being made, but it's a very, very difficult thing.

BASIAGO: Have there been any cases where you took what you learned in L.A. and applied it in the Third World or other countries? I couldn't find any consulting work overseas in your resumé.

PHILLIPS: There is in the latest one. After I retired I went to Cairo, Egypt, for Engineering-Science [Inc.] company, consulting on water supply problems for the city of Cairo. I went to Bangkok for the World Bank, consulting on some problems they had there. I could go into that. It was interesting. They were upgrading their water supply, and in connection with that, they were upgrading the source of water and putting in new pumping plants and raising pressures. But they found out that their distribution system-- Somebody had sold them years ago a bunch of galvanized pipe. They have a very high groundwater table over there which is seawater, so the galvanized pipe was eaten out badly. And they found out that if they put in all this new water supply and raised the pressure with these new pumps, they'd blow up a lot of their distribution system. So they wanted \$40 million from the World Bank to rebuild their distribution system. And the World Bank sent me over there to tell them whether or not that was true, or whether it was worthwhile. I said, "Yes, it is true. Yes, it is worthwhile. Among other things, you're pumping water-- Your unaccounted-for water over there is crowding 40 percent, and if you increase the pressures through this additional pumping, your unaccounted-for water--in other words leaks--is going to increase more than that. You're having to pump all that water that isn't doing anybody any good. And you're going to be pumping it against a higher head, so the increased pumping costs alone are going to cost you \$16 million, and other costs, you know." I wrote a report, said yes, to pay--and earned the undying gratitude of the people in Bangkok because of that.

I went to São Paulo, Brazil, for Montgomery company [James M. Montgomery Consulting Engineers, Inc.] over in Pasadena, as a consultant on

water systems down there. I went back to New Jersey: Trenton, New Jersey, had a horrible accident in its water system, and I went back there as a member of an advisory board to tell them what went wrong there.

BASIAGO: Was that the toxic waste groundwater?

PHILLIPS: No. One of their mains blew up and washed out a pumping plant and washed out one of the main supplies for the city, the pumping plant. It was all because of poor maintenance and politics entering into the administration. The poor superintendent of their water system couldn't get any money to do what he knew needed to be done, but the politicians drained it all. Real mess.

BASIAGO: Maybe we can talk about what happens to L.A.'s water after it's been utilized. The Hyperion facility [Hyperion Treatment Plant] was built for a maximum of 100 million gallons per day which could receive secondary treatment. At this time 400 million gallons a day go out there, naturally only 25 percent of which receives anything more than the most primary forms of settling. Would you say that L.A.'s sewage disposal system has become dangerously obsolete at all? Given someone who's in the neighborhood, you know, with the water and power.

PHILLIPS: Well, yeah, I would say it's certainly become obsolete--probably dangerously so. I'm probably not qualified to judge how dangerous it is, but it's certainly obsolete, inadequate. This overflow down there at Ballona Creek, which has caught everybody's attention lately, is a case in point. I don't know if you read the article in the paper a day or two ago where the mayor said they just had to build these 200,000 gallon holding tanks down there. They had gotten a surge in the sewer system and they weren't sure why. One of the things we found out in the early days of television, in the water system, was that we could expect on the hour and on the half hour very dramatic surges in water consumption. And it was on the records; it was on the charts, on our

hydrographic charts measuring flows at various points in the system. We got so we could rate TV programs just by the amount of increased water. All because people waited till the end of the program to go to the toilet. You had toilets flushed all over the place, and so if that's happening, naturally that surge is going to go right down the sewer too. And I wouldn't be surprised but what either the end of a football game the other day, or something, caused this big surge. I don't know what time it happened, but I would be very interested in looking at their flow charts on the sewer down there when they got the surge and spilled water in Ballona Creek. They didn't know what caused it. I'm sure they are aware of this phenomenon--it's very real.

BASIAGO: So is the department trying to exert any influence to upgrade L.A.'s sewage system? That's not in their domain, right, first of all?

PHILLIPS: No. The only place where we cross paths there would be if they put in a sewage treatment plant for reuse. Then we would come in-- The department would come in to an interest in that as to, one, where the water was going to be reused and how much of it there was and what its quality was.

BASIAGO You mentioned that you personally would like to see more recycling, say, for nonpotable uses.

PHILLIPS: Yeah.

BASIAGO: Do you think that there's a spirit, or an element in the department that would like to see that too?

PHILLIPS: Oh, yes, I think so.

BASIAGO: You mentioned the facility up in the Valley.

PHILLIPS: Oh, the new Tillman plant [Donald C. Tillman Wastewater Treatment Plant].

BASIAGO: So you project more of those kind of plants?

PHILLIPS: I would think so, yeah. And I think something more realistic in the

way of sanitation requirements on reused water should be considered. You know, you don't want to give people bad water, but, on the other hand, sometimes sanitary engineers are a little inclined to lean over backwards to be sure. You want to be sure, but you don't want to be ridiculous.

BASIAGO: One thing that we haven't talked about--it surprises me that it slipped my mind--we haven't really talked about the droughts we had several years ago here. Was there anything you felt that you could do as manager to see that more residential users cooperated? I mean, during the big drought, only about 17 percent of homes took the most minor measures, like putting a brick in their toilet.

PHILLIPS: That was the drought of '76 and '77. That was after I retired. Although we had-- The department had begun doing some work on conservation even before that, quite a while before that. But it's very, very difficult to educate people in these areas, both in saving water and saving electric power. During the Arab oil embargo, of course, we had very stringent regulations on use of electric energy, even punitive measures adopted to control it. And they worked for a while there. But same thing after the drought and the reduction of the water. Water sales were reduced substantially--15 percent or so--but it gradually creeps back up and people get into old habits.

And this brings up a very interesting and, I think, important area to be considered. What standard of living do people have a right to expect? Is it their right to be able to use water to hose off the sidewalk and wash the car? Is that part of our modern standard of living? Should water be provided for this? Is it our right to have flood lighting around our house, or other uses of energy, fancy refrigerators. (You know, the biggest single user of electricity in the home is the refrigerator.) Or are these commodities in short supply and so valuable, and are the efforts to get these supplies of both water and power so damaging to

the environment--or so costly or damaging otherwise--that the people don't have a right to expect it and should be willing to reduce their standard of living? And how far do you go? Do you go down to a Third World nation's standard of living? Those are very real considerations, very important considerations.

BASIAGO: What are some of the carrots and some of the sticks you can use, let's say, in the drought situation? With only 17 percent cooperating, could you possibly license the--?

PHILLIPS: The biggest carrot and stick, of course, in any situation is money. The department right now is proposing a new water rate--maybe you've read about this, it was before the council yesterday--which would, for the first time, change the rate between summer and winter. This is not marginal rate making. As I understand the new rates, the amount collected for water would still be equal to the cost of supplying the water. But the rate in the wintertime would be below an average rate; and the rate in the summertime would be above the average rate. And the sole reason for doing that is to discourage misuse of water in the summertime--it is to try to conserve water in the summertime. I don't disagree with that. It think that's all right. But this is the carrot that you mentioned. The carrot and the stick that I say is most significant is cost. And these commodities up to a point are elastic with respect to cost. The more you pay, the less people use, up to a point.

BASIAGO: Earlier we talked about the fact that you don't tend to favor raising the prices so high that the haves are taxed to pay for the have-nots, who subsequently can't afford to purchase the water anyway at those new higher rates. What about, in terms of striking a balance between a high standard of living and water conservation, having a geometric rate structure, where in certain increments the more you used the more that you were charged per unit of usage. Do you support that at all? So that your basic needs would be at the lowest

rate possible for everyone--drinking water, et cetera.

PHILLIPS: Well, the lifeline rate does that, and that's been in effect for both water and power for some years now, where you have a very low rate for-- Anybody who lives in the city, you assume, deserves some water. You put them at a very low rate, and in this new rate increase, that lifeline rate is not being increased, at least not very much. And you are putting in a time-of-use rate between summer and winter. That's all right. I see no-- You do that in the power system, too, between off-peak and on-peak loads. And I don't object to that. I have no problem with that. It used to be that both water and power--let's talk about water--was in rate blocks, and the lowest consumption had the highest rate, and as your consumption went up, you went through two or three or four rate blocks. The more you used, the less your rate was. A large consumer, an industrial company, had an even lower rate. Now, this was strictly cost-of-product, cost-of-resource pricing.

BASIAGO: Economies of scale.

PHILLIPS: Because the big consumer, it didn't cost any more to read his meter than the guy who's using a tenth of what the big consumer's using. It costs the same amount to read his meter, it costs the same amount to send him his bill--a lot of the capital costs are the same. So that was strictly cost-of-service pricing. There were a lot of people who wanted to reverse that: the more a guy uses, the more he should pay, because then he won't use so much. I didn't go along with that too much, and most other people didn't either. I think now most rate blocks are flat--charge the same for everything. I don't know whether they have what they call an inverted-rate block, which is you pay a certain amount for the first amount of water you use, and as you use more and more water, you pay more and more for it instead of less and less. Pay more and more for it--that's called an inverted-rate block. (It's inverted as compared to the basic

cost-of-service rate.) No, I don't go for the totally inverted rate block. Flat-rate block, I can see some basis for that.

BASIAGO: In the inverted one, the more you use, the less you pay per unit, right?

PHILLIPS: No. In the old direct-rate block, the more you use-- Everybody paid the same amount in the first rate block, but if you went beyond that and used more, your rate for that additional amount went down. If you wanted to use even more-- Even the big industrial consumer, for the first little bit he paid, which was equal to the same amount a residential user paid, they were the same. But as the industrial user used more and more, his costs went down.

BASIAGO: So now there is a rationing principle that's inherent in the system, right? The more you use, the more you pay. Is that correct?

PHILLIPS: No. That would be an inverted-rate block, and that hasn't happened yet, to my knowledge.

BASIAGO: Also, now it's just a static rate.

PHILLIPS: I think now it's what's called a flat rate. Pay the same rate no matter how much you use. But there, in fact, the large industrial user is subsidizing the small user, because it doesn't cost as much to serve him that additional water.

BASIAGO: He pays more and his meter still gets read once. Right. At a lower cost per water. If you were called in in a drought situation to consult for the department and you weren't told how much water the department had nor how many people were cooperating in rationing, which domestic uses would you say should be forbidden and which would you say should be allowed?

PHILLIPS: I would make it against the law, I'd put a hundred dollars fine on anybody caught washing their car in the street or with their hose, and I would have a very stiff fine for anybody washing off sidewalks with a free flow of water. It would take a little more work, but I would institute a schedule of irriga-

tion, and the greater the drought was, the more I would reduce outside irrigation. I would let some people irrigate on Thursdays and some on Tuesdays or Sundays--

BASIAGO: You mean water their lawn?

PHILLIPS: Water their lawns. And if anybody was caught watering their lawn when they weren't supposed to, they'd pay a hundred dollars fine. That's the way I'd approach it.

BASIAGO: The last question--I guess we have a few minutes left--is what do you think your greatest accomplishment was with the department? Following forty years of service?

PHILLIPS: I don't mean to be facetious, but lasting thirty-five years and six months was my greatest accomplishment! I don't know. There are a lot of things I'm glad I did for the department. These relationships in the Owens Valley were important. The building of the second [Los Angeles] Aqueduct was important, although viewed with great distaste by a lot of people. But it was an important thing. You've got a very valuable water supply for low cost without really doing great environmental harm--although we're accused of it.

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