STENO

Minutes of Hearing - Environment and Public Resources Committee - March 18, 1971

Fifty-Sixth Nevada Assembly Session 267

Present: Bryan, Olsen, Lowman, Dini, Getto, Ronzone, and Homer

Absent: Fry and Swackhamer

Others: Mary Kozlowski, Open Spaces Council; Eileen Henson, American Ass'n of University Women; Jean Ford, League of Women Voters; James L. Lambert, Department of Motor Vehicles; Dr. Tom White, Department of Commerce; R. M. Hutchins, Reg'd. Professional Engineer; Proctor Hug, Jr., Soap and Detergent Ass'n; George Carleu, Soap and Detergent Ass'n.; Bill Arclip, Associated Building Contractors of Northern Nevada; Ray Knisley, Self; Daisy Dalvitie, League of Women Voters; Thorne Butler, State Board of Health; Dr. Otto Ravenholt, Clark County Health District; Phil Solaro Sierra Pacific Power Company.

Chairman Homer called the hearing to order at 8:15 A.M. for the purpose of hearing testimony on A.B. 482 which "Enacts new water pollution control law."

Testimony began with Mary Kozlowski representing a task force of the Open Spaces Council that was organized to gather information concerning air pollution control statutes.

In the Governor's Natural Resources Council report which was issued this last spring, it was stated that there was a need for a definition of water pollution, penalties for pollutors and an up-dating of the Water Pollution Control Act that we now have in Nevada. The Nevada Open Spaces Council organized a task force of interested citizens to look into statutes as they exist throughout the states. To this end, statutes were gathered from throughout the United States and information was requested from F.W.Q.A. It should be noticed that it was really not very easy at all to find material on water pollution control statutes. The statutes themselves differed greatly and it was quite a problem to find a model statute. After some months, we did come upon a suggested state statute from the F.W.Q.A. This suggested state statute along with the statutes we already had in existence from other states was used as the basis for the statute A.B. 482. There were Assemblymen who felt that there was a need for a water pollution control law and they supported us in our efforts. We interviewed people as we could throughout the State, Ernie Gregory and Roland Westergard, and other people involved in water in the State, requesting their concerns and their ideas for putting together a proposed statute. The material we have we sent to the bill draftor and the bill was drafted and immediately introduced without anyone having had a chance to go over the draft. Since the bill has been introduced, I have gone over the bill with many people, with Roland Westergard from Water Resources, with Ernie Gregory from the Bureau of Environmental Health, John Ohrenschall, the Deputy Attorney General with the Health Department, Ray Knisley and Hal Smith and many other individuals who are interested to discuss possible amendments.

The bill itself authorizes a board to develop a comprehensive program to deal with the problems of water pollution in all the waters of the State. Under this approach, the board, having determined permissive limits of waste discharges into the waters of the State, uses its enforcement procedures to abate existing pollution and restore the quality of polluted waters while through a system of permits, it prevents any increases in waste discharges which would impair desired water use. The act was designed to give the board broad discretion in the administration of the program and it makes its jurisdiction complete over all waters of the State. It avoids restrictive practices such as the exemption of particular industries or geographic areas.

After having gone through this bill with people who were interested, I feel that there are areas in the bill that need amending and I have copies of suggested amendments here. (See attached).

Lowman: Mrs. Kozlowski, you said this was a model act and I don't know who the initials are that you used.

Kozlowski: We used portions of the model act as a very, very basic guideline and it was from the Federal Water Quality Administration, a department which is now under E.P.A. (Environmental Protection Association).

Lowman: They did then provide a model act available for anyone who wanted to use it?

Kozlowski: Yes, we did get a hold of that and then we used other statutes, portions of the Colorado statute, portions of California, a small portion from New York, some from Wisconsin, feeling that we could take items from statutes that were more applicable to Nevada than just adopting a model act which was really basically a guideline we used and filled in with other material.

Lowman: We were told by Mr. Calkins during testimony of A.B. 392, that unless we did our duty, according to him, in the air pollution field, we were going to lose control of the air pollution problem in Nevada and it would be taken over by the Federal Government. Is that also true with water pollution?

Kozlowski: To a certain extent, it is also true. We don't have in water pollution, I believe, as strong a law as the Clean Air Act that has been passed. But I think you will find that in certain areas that is so. I was talking with Paul DeFaukle, who is the Pacific District Director for Federal Water Quality and it was his feeling that there were certain areas that they could come and have Federal prerogatives in if the bill did not cover it and that is what they are deciding now is whether the bill does cover all the portions that they feel are necessary.

Eileen Henson - State Legislative chairman for American Association of University Women.

Recently, we polled our branches which are 11 branches including over 600 members. We are very definitely interested in seeing that this bill is supported. We realize that to get at the base of ecology, we are going to have to start at the source— in the home before it gets to the place where we need to control it in the waters. I think this is basically the concept that we are all working for— the source—the prevention rather than a cure. We do support this bill and I am sure that every housewife who is concerned with environment and pollution will.

Getto: You are speaking as a housewife. Do you feel that you as a housewife are willing to give up your detergents or whatever you use to promote clean water?

Henson: Recently, the Department of Agriculture put out a list banning detergents and our group has definitely started doing this. In fact, even to the point that they suggested we use white instead of colored tissues. To this extent, we have started to do this. Last year, in our group study, "This Beleagered Earth - Can Man Survive?", we had a rude awakening that he couldn't if we didn't start doing something. As a group, we have consciously started doing this—using the non-degradeable and using different things that the United States suggested that we do.

Olsen: Have you advised Safeway or other providers of detergents of your desires?

Henson: No, we have not. At this point, we should have. But I think eventually if enough of us band together the providers will realize. We have a large group in the United States.

Getto: Do you think a law is necessary to ban these detergents or do you think this can come about by education?

Henson: I think education is a definite part but I think not everybody is going to be as ecology-minded as some groups.

Olsen: Does your organization feel there should be laws on truth in advertising in regard to detergents?

Henson: Yes.

Getto: Do you think that we should ban all detergents in the State of Nevada and all other items that pollute waters.

Henson: Yes, I definitely do.

Homer: This would include water softeners.

Henson: Yes. Back in the days before, we didn't have these problems. We had no problems back then. I think basically we are going to have to go back to preserve the future.

Jean Ford was present representing the League of Women Voters. She said "We feel the present law needs to be amended. There needs to be a definition of "water pollution". There needs to be penalties. We did not receive the bill in time for all the League to go over it.

James L. Lambert, Superintendent of the Law Enforcement Division for the Department of Motor Vehicles.

We have some strong objections to certain parts of the act, namely, Section 27 beginning on Page 7. If you go through Section 27 beginning on Line 42, they make it illegal to deposit any human waste in any waters of the State of Nevada or within 100 feet thereof. I don't think anyone can disagree with that. In Subsection 2, it stipulates that any person who violates this act shall have committed a misdemeanor and they also assign the duties of enforcing this act to the Nevada Highway Patrol and this is the first objection. First and foremost, we don't patrol in areas wherein we would find these violations. Secondly, if we are going to begin enforcement in other than highway acts, we have a bugetary problem since our budget comes 100% from highway funding, and we are obligated to spend this funding only for the maintaining and enforcement of laws on the highway. It would require a general fund appropriation for our participation. Secondly, we don't have the manpower available to assign to this type of enforcement since it would take us out of our normal enforcement areas. We would have to set up a special force to accommodate the enforcement of these provisions.

In Subsection 3, they stipulate how the violator will be handled and in our laws as a misdemeanor, you must bring the man immediately before the magistrate of the jurisdiction in which he is cited. The way this is written would force us rather than to do this to handle it more as a civil matter. We would issue a warrant, we

would have to come back into Carson City through the Department of Motor Vehicles, and keep track of these citations if the person did not voluntarily pay within 14 days. Then the officer would be required to go back to the court of jurisdiction and request a warrant to be issued, a bench warrant, and then you would have the problem of serving the bench warrant. This is problem enough with Nevada residents but the 14-day provision and the time elapsing before you can go back to a court of jurisdiction, obtain warrants and then serve them, this would prevent any enforcement whatsoever on the tourist population which is quite heavy in the areas you wish enforcement upon--deer hunters, etc. It would make it a rather unenforceable bill.

In addition to that, in Subsection 4, getting into the bookkeeping procedures, it would make the Department of Motor Vehicles act in the manner of a court and I don't feel if we're going to have a misdemeanor violation that the power of jurisdiction should be taken from the courts and placed with the Department of Motor Vehicles. Additionally, if you are going to do this, it would take a staff to maintain the bookkeeping problems and procedures as they would be quite heavy in this area.

Ronzone: Do you have an idea of who might be the agency to enforce the act?

Lambert: I feel that your listing the Fish and Game in the enforcement area would be a proper listing since they are working in the field where the boaters are operating the motor boats around the lakes, they are enforcing the laws as they pertain to the hunters and this would take them into the areas where your streams are and your law stipulating that it shall be illegal to deposit this waste within 100 feet of the streams. I would feel that this would be a proper area.

Getto: Fish and Game receive most of their funds from hunting licenses and fees. They do not receive any of the gas tax from gas used in boats, etc. Do you feel that we could justify putting the complete enforcement on Fish and Game without any special appropriation to them?

Lambert: No, Mr. Getto, I don't because I feel this bill lacks appropriation for enforcement and this is the point I tried to make without becoming too forceful on it. In order for us to enforce it, we would have to have general funds and manpower allocations in order to accomplish it. I think the Fish and Game would be faced with the same problems. I think any bill of this scope that doesn't have appropriations attached to it is guaranteed to be a failure.

Lowman: I assume, Mr. Chairman, that this will have to go to Ways and Means if this bill is passed here. Homer: Yes.

Getto: This is a cooperative enforcement. In other words, if the Highway Patrol were to receive or you were to have some budgetary consideration, don't you feel that maybe it could be better done with the cooperation of the Highway Department and the Fish and Game because you people are involved in some areas where Fish and Game is not?

Lambert: This is true. We are not against the concept of the bill only that Section 27 has been written that at the present, it would be rather unenforceable. Our manpower problems today are probably 10 to 15 years behind in needs for the traffic problems that we have to handle. I think any enforcement of this nature, I can't visualize any area that a patrolman would actually be able to enforce this on while carrying out his Highway Patrol duties. This is the point I am trying to get to.

Getto: In other words, it would take additional manpower especially assigned to this kind of a job?

Lambert: Yes.

Bryan: Assuming that we could clean up the language in Subsections 3 and 4 on Page 8, it would provide a system analogous to the citation of the traffic offender. In other words, you could either arrest or issue a citation without reference to any particular department. Don't you think that we could make that workable? That is, the officer who detects the violation, assuming the offender is present, did have cause to make a misdemeanor arrest. Don't you think it would be possible to write into the bill alternative provisions, either the issuance of a citation just as you do for traffic offenders or the power to arrest at the discretion of the officer and the Department of Motor Vehicles maintain the collecting and fining processes.

Lambert: I think this is done by statute already if you make it a misdemeanor. And I think the additional language as in 3 and 4 only complicate the effecting of the arrest and the prosecution of the violator. I can't see where any agency without additonal manpower would be able to comply with what you are requesting because you would have to set up a complete file on this and run it as a separate file to keep current in order to keep up with the violations and the 14-day statutory period. But it could be done. It could be cleaned up.

Bryan: What type of system to you usually issue a citation on for a highway offender? What type of internal control do you use in order to calender when the individual is supposed to appear?

Lambert: We set this up through the judicial entities, the courts. In some justice courts, they have one day a week that they will hear traffic citations and it varies from district to district. Basically, we have to assign. In Las Vegas, we have one officer assigned full time to nothing but controlling citations. It takes another full-time officer to serve warrants - nothing other than warrants. This I bring out just to give you the scope of the problem that you get into in this type of an operation. It still is within the patrolman's discretion if he feels a person needs to be brought before the magistrate immediately and handled in this manner, he may do so. In most instances, we handle it on a citation basis. But due to this, in that one area alone, it takes two officers full time just to keep up with the citation activity and the warrant service.

Bryan: Would you have any objections if you were authorized in conjunction with others to issue citations, assuming we could change this language and place it under the judicial system rather as provided here with your department taking care of the internal fining and collecting processes. Would you have any objections to the bill if we could do that? It would not place the primary responsibility with you but would give you the authority if you do come across a violator.

Lambert: We would not object to that, no. We would not object to having the authority to enforce so long as we are not required to allocate manpower specifically to this activity.

Lowman: It would seem to me that you might run into some real problems at least in the Lower House on that because in the past there has been a real antipathy toward making anything like a State Police and this is beginning to take them off the roads and give them other duties.

Dr. Tom White, Director of the Department of Commerce.

If I may, I will speak to you more as an economist than as the Director of the Department of Commerce. I am not speaking in opposition I do not oppose the bill. I am speaking, I hope, usefully in regard to some fairly technical points. Two to be exact. One, the definition of pollution. It is a very difficult thing to define pollution. It has not been done satisfactorily anywhere in the United States, in any discipline, physical sciences or social sciences. The best we can do and it takes, if I may be a little bit academic, some pretty serious and tough thinking to even try to get a good definition. I think two points are important. One is that in our society, our whole lives are an interaction between man and his environment. Our planet has been characterized as a reluctant earth and if you live in Nevada, you know the earth can be very reluctant in supporting man and we have to use land for agriculture. It causes moisture in the air that causes an increase in air pollution but we eat. We are continually required to make difficult choices in balance between the things we do to the environment and the things we take from our environment in order to survive. One should not get the idea that an economist or American business either is interested only in taking and only for himself. In fact, an economist is interested in anything that people want and helping them get it whether it be clean air or clean water or fishing water and this means that he is just as interested in opposing air pollution as anybody else. He is also characterized as somebody who doesn't want to do that. Now, American business is interested in providing what the people want. It makes its profit by providing what the people want not by providing what the people don't want. In the process of thinking about this over the years with a little help from some Austrians a couple hundred years ago, there is a formalized structure sometimes good theory is the most practical thing in the world This theory says that you should expend all of your efforts or your funds or whatever you have, your work hours, in the various directions to satisfy your various needs until you get the same benefit from the last dollar you have no matter where you put it. This is called the Doctrine of Equal Marginal Utility, if I may be excused to use a technical term. What it means in effect is that we don't put a dollar over here on this problem when the satisfaction, the utility, the usefulness of that dollar is not so great as if we put it over here on this problem These choices are difficult to make sometimes, but the basis, the idea that you are always choosing from among the possible alternative uses of your resources until the choice made in all parts are equally attractive or you diminish the negative utility that you have. It is true, of course, that if you can clean the air for a asthma sufferer who needs air conditioning, you can clean the air in his home by giving him an electrically operated conditioner but in the process you might have to burn coal which will pollute the air outside. It is true that whenever you purify anything, you almost always concentrate wastes. When you take wastes out of water, you create a pile of these wastes, often in the water that you leave behind. Now, you must do that to the extent

of balance and until you have that basic theoretical framework, what happens to these bills, and with programs and with boards and committees and agencies charged with doing something about it, you get bogged down in difficult choices. You'd like to do something but you can't do it. It's a frustrating thing. I think it is a good idea for the committee to have this basic framework in mind as you do work on it. I would most emphatically state that there should be some concept in the definition of pollution here to state except as is justified in the public interest to allow sometimes to pollute a stream in order to clean up and provide potable water or to pollute the air in order to clean up a stream. You must make these choices.

The only other thing that I have, Mr. Chairman, is with respect to Paragraph 2, Section 16, it has already been recommended for deletion. Most emphatically, this board should not have the right to decide the future most beneficial uses in the interest of the public, that is for the public to decide. It has already been recommended that be deleted. I would like to support that recommendation.

Lowman: Do you have any formula by which he gets the public to understand what he just told us.

White: It is tough. This is one of those problems. I don't believe that we can solve this problem if someone said, let's close every factory in the United States, we know that. Really, we need a basic understanding that these are hard choices and they must be made. It is not as simple as saying we want everybody to quit polluting the air or everybody to quit polluting the water. It must be done. How much do you want to spend on it? By the way, we cando this, the country has the resources if it is going to do this with income, with its productive capability. It can do this job but it is not going to do it by closing every factory in the United States and I am not in favor of closing Kennecott Copper's smelter in McGill. I don't think that is the thing to do but we can make a lot of progress, we will pay more for our electricity but it can be done.

Richard M. Hutchins, Registered Professional Engineer, owner of Water Works Inc. in Reno which deals with water and water problems and the treatment of water.

The preceeding, I couldn't agree more that there has to be a balance of some of these things but by the same token, you are currently looking at A.B. 482 and I spent most of last night going over it and I find it in general terms that this bill is after the fact. Assuming we are going to pollute. It also is tied into the Federal Water Pollution Control Act which also assumes that we are going to have all systems go. That is that all sewers, all collection devices, all septic tanks, everything is going to work just the way it is outlined. I find exception to this sort of thinking. I think that we are faced with eliminating the pollution at the source rather than to go into the expense of having to continually monitor. I look at a state with less than a half million people and we are going to go into a contest with major manufacturers to decide whether they can or cannot supply something by tests. I think we are on dangerous ground. I think the budget of the State Police is minor compared to what we could get into if we

are forced to evaluate every product that hits the market and decide whether or not that product should or shouldn't be used. This is where I think the Federal Government can help us. They have already conducted a lot of these tests that I think we in Nevada should take advantage of and use.

Now, we have also reached a new high in Madison Avenue's technique. I think the housewife's testimony a short time ago I like very much. She said they are willing to give up detergents, for instance. I think the most universal pollutant in the entire world could very well be detergent. We now have through E.P.A. and through Federal testing under WATER QUALITY CRITERIA, definite proof that certain things that we have accepted by Madison Avenue's advertising are toxic and they will kill. This area which I have just said that we are getting into that I think could be very dangerous is that a lot of the housewives, for instance, are led to believe that if they use a certain product that this product is safe. This product will assure clean water. I am speaking right now of some comments made by the very gentlemen to whom the letter of transmittal was made, Secretary of the Interior, Steward L. Udahl. He was supposedly handed all of this information before anybody else. But when Secretary Udahl can get on mass media and say "Use Sears' detergent, it is non-polluting", we are in trouble in this country. Because the Secretary forgets that on Page 35, the very report that he supposedly had privilege to before anybody else, says that the wetting agent is toxic and will kill. That man says that simply because you take the phosphates out, you are going to clean up the water. This, gentlemen, is a lie. We have others who have taken the opportunity in the ecology kick to bring out products, one of them - the very latest - is one called Ecolo G. This is put out by the North American Chemical Company who has had a very dubious and colorful past. This detergent is, by test, the highest alkalinity. It is in the caustic range. It has a P.H. of about 11.4 which is ten times more caustic than any other detergent on the market. If they have the gall to use the very word ecology and with a wetting agent in it as a toxic product on top of it and try to woo the housewife into thinking she is doing her bit for ecology by using the product.

I have asked to have a blackboard because I think there are a couple of things that I would like to point out that are very pertinent at this time. First of all, there are two terms that I think we should get real clear. One of them is the word "degradeable" and the other word is "bio-degradeable". Some wetting agents are degradeable. It varies on how they are handled - whether they are handled in a formal sewer plant or whether they are handled in a septic tank. In a septic tank, it is questionable if they are degradeable in the least. When we talk about bio-degradeable, we are talking about a living micro-organism attacking it as the Lord has provided us for years to take care of our natural waste. There are some detergents and Wards and Sears are an example that claim bio-degradeability. At the very least, it is a myth. They might be partially degradeable by ariation in a secondary treatment plant of a formal waste treatment plant. This bill, 482, assumes that if we properly design a septic plant, for instance, we have a safe vehicle to handle human waste. When the waste goes into the septic tank, we are very affectively killing off the natural organisms that the Lord provided us with when he created a supposedly

friendly environment that digests our natural wastes. Again, when we worry about what we are going to dump into a stream, when we talk about human waste, I am not so concerned with that human waste as I am with what that human may carry home and dump in out of a package or a box or a bottle. Because human waste can be properly digested by natural processes and has for thousands of years or we wouldn't be here today. We are assuming in this bill that the septic tank is going to work. But we forgot to tell the septic tank. It's trying but with the chemical deposition we are dumping into it, it cannot be effective. Along with that, there is leakage and spillage. I would like to see this problem solved at the source. I would like to see Nevada eliminate all detergents. There are many suppliers of products who want you to believe that their products are bio-degradeable or degradeable. It might possibly be degradeable under certain formal waste treatment plants but I can find no chemist or anyone else in the industry that can say that any of the products with a wetting agent is biodegradeable.

Where did it all start? It started during World War II when Germany was cut off from necessary oils to make soaps. They are the ones that really came up with the first wetting agent for the first detergent. In about '47, our industry, the oil industry in this country, went into production The first ones commonly referred to as ABS were the ones that foamed more and were not degradeable by over areation and not as easily broken down in formal waste treatment plants. In the Federal Water Quality in 1962, we have limits of one half a part per million of this product. We went beyond this. This was grounds for rejection of the water supply for potable water.

The LAS is more readily degradeable but by Federal tests it is five times more toxic. The tests listed it as two-tenths of a part per million for a maximum of 48 hours concentration as being the median tolerance level. This means that on whatever living organism it was applied to that 50% of the organisms died and 50% survived. So the level has to be kept below this level or we are going to lose 50% of the organisms listed. Another finding was that when this ingredient is combined with other chemicals, it can create an extremely toxic and even deadly reaction.

We now know that when we degrade a chemical which is your detergents and your wetting agents, that actually what you are doing is by over ariation, it is being put into the atmosphere. It is being taken out of the water and put into the atmosphere.

Gentlemen, I think agriculture has looked at industry all over the world and said we are not the pollutors, you are. Industry turns right around and says you are. We have to look at ourselves, we have to look at every house. We have to protect the public who is trying desperately to find something and when they get the product Ecolo-G, which is one of the worst, and they are told to use that. I believe in eliminating it and as far as policing it, by taking it off the shelves. As far as I am concerned, detergents are the worst pollutants today.

Kozlowski: I would just like to add that A.B. 482 does not outlaw phosphates or the sale of phosphates. If you want to outlaw the sale of detergents, that should be a separate bill. This should not be part of the water pollution control agency. I just want to clarify this because this bill was not introduced with that in mind.

Proctor Hug, Jr. then spoke. He was present representing the Soap and Detergent Association.

The rather "shotgun" accusations just made by Mr. Hutchins, I think are quite unfair to industry. Frankly, I want to congratulate the people of this committe and the introducers of the various bills for their concern about the purity of water and doing something about it. I think the most important thing that we are going to have to recognize is that what we do about it must be responsible. As Dr. White said, we have got to recognize that it is a balancing process. There are certain things that you can do that affect other things creating undesirable consequences and in the end, you may have worsened our environment. In thinking about this, we have got to consider in any law that we pass, if the evidence is all heard, that the studies have been made before we quickly outlaw particular element or substance in any product, we want to make sure that what is being substituted in its place is going to be better. Not only am I concerned but I am also very pleased that the Soap and Detergent Association itself has been a very responsible group. This is a non-profit trade association which is composed of 125 members who produce more than 90% of the detergents sold in the U.S. Mr. Carleu is the research director and a chemical engineer. He is out here from New York to answer some of the specific questions relating to the bills that are before us. First of all, we have A.B. 10. A.B. 10 is Dr. Homer's bill. It has some aspects that I think are good and that is the idea of reviewing, investigating, looking into it the same as 482 has. That is really what has to be done. I really don't think at a legislative hearing such as this you can determine what substances are harmful and what ones aren't, what you want to eliminate or not. I think we can rely to some extent upon the extensive work that is being done by the Federal Government in these studies and in the hearings that they are conducting.

A.B. 10 is seeking to control one of the agents, ABS. That substance was a big problem because it didn't bio-degrade. In fact, it wasn't and it did cause some foaming and it did cause some problems. The thing about it, though, that is not commonly recognized is that industry itself voluntarily took that substance out, found a different substance that is bio-degradeable and put it in in 1965. So there is no detergent to our knowledge, at least none of the detergents that are represented by the Association, have this ABS substance in it. It has all been replaced by a substance that is bio-degradeable and that is the LAS. That really takes care of the thing that A.B. 10 was aimed at. That particular substance that was in detergents at one time and was removed from all detergents since 1965.

The second problem that we are dealing with is one that is Mr. Getto's bill, A.B. 295. That concerns phosphates and it would require first the limitation for a year and then the ultimate complete removal of all phosphates. The problem that this is seeking to reach is that phosphates are one of the three essential elements in the utrification process. Phosphates, Nitrogen and Carbon are the elements. The hope is by eliminating one or part of one, you can stop the production of algae and the utrification of waters and the idea is good. The problem is to determine if we are really going to accomplish that. First of all, by removing phosphates, we are removing a substance that is harmless to human beings and animals. It is a very common substance. It is in our bodies now. The only problem is that it does promote the growth of algae along with nitrogen and along with carbon. But if you take phosphates out, which this bill does, what do you put in its stead? What do you substitute? One thought was that the product, NTA, would do this. So the detergent industry which has committed itself to attempting to remove the phosphates as soon as something else can be found to substitute for

it that will do the cleaning job. It was hopeful that NTA was it and so they are happy to comply with the idea of removing phosphates and putting in this NTA. So, if the order is, in order to prevent utrification or hopefully retard it in some way by reducing the amount of phosphates that go into bodies of water, that is fine. But I think we can question whether that objective would be reached because there are a lot of other producers of phosphates other than the detergent industry. There are phosphates in fertilizers, they are in animal and human waste and there are a lot of other areas where there are phosphates and it is really questionable whether in eliminating even the phosphates in detergents we are going to significantly reduce the amount of phosphates in bodies of water and thus reduce the algae production.

I think the next important thing to realize is that the detergent industry is agreeable to taking out phosphates if you can find something to put in its place. NTA was substituted but now the Surgeon General finds that in some tests that were performed there is a question as to whether it might not be dangerous to human life so it is being taken out. The phosphates will again have to be used because it is a completely harmless item. So unless we can find something safe, you don't want to take out the phosphates until you can find something to put in its stead. I think everyone is working on the problem but nobody has found anything.

Now, a word about Ecclo-G. That is one of the elements that is not a member of our organization and I think that shows this is an organization that did remove phosphates. It wasn't safe. It was taken off the market because it was dangerous. With that introduction, I would like to for a more complete statement and I hope you will ask questions because Mr. Carleu is a qualified chemical engineer, a graduate of Princeton, and as I mentioned, the Research Director of the Soap and Detergent Association in New York.

Mr. George Carleu then spoke in opposition of A.B. 295. (See attached)

Hutchins: My whole question is why not go back to soap?

Carleu: This is the common question. Why not soap? The answer can be mentioned on three different levels. First of all, raw materials for the manufacturing of soap are not in sufficient supply to manufacture enough soap to satisfy the needs of the people of the United States. So, we couldn't make it. If we could, washing machines that we currently have in homes and institutions would not do a sufficient cleaning job if they were charged with something other than a detergent. And lastly, the Illinois Water Pollution Control Board has tabled all legislation of this sort because they feel that recycling soap over agricultural land would be detremental to it because of soapy content.

Bill Arclip of the Associated Building Contractors of Northern Nevada then spoke.

This is not on detergents. This is on A.B. 482 and as far as we look at the bill, it pretty much duplicates everything the State Health Department has and the State Health Department does not have the equipment, the personnel nor the finances to investigate or police the State. So where are we going to acquire money for environmental control? This is our question and this is going to be a costly program. We are just trying to find out where A.B. 482 comes in and what it would do. Not only for detergents but for arsenics, sulphates and everything that we have that we drill into. We can't even get a test on water without paying for it. The State Health Department doesn't have the personnel to do it.

Homer: The suggestion has been made to us that the present structure of the State Government be charged with this rather than setting up a separate commission or power to do this. It would be less expensive and whatnot. This, of course, is one of the suggestions and I have testimony here from the Water Engineer and from the Public Resources Department that we have to consider too. They are objections to A.B. 482. So, it is a complex matter and there is a feeling amongst the committee that in order to be effective, any of this legislation is going to have to be funded whoever does it whether it is the Board of Health or the Health Department or the Environmental Control or a new agency being created. And there is a lot of resistance to new agencies being created. I do feel that if this bill does come out in any form it will have an appropriation amount tacked onto it and it will be re-referred to Ways and Means because it is useless to spend our time in worrying about this matter and not fund it.

Testimony will continue on A.B. 482 on Tuesday, March 23, at 8:00 A.M.

This portion of the hearing was adjourned at 10:10 A.M.

March 23, 1971 - Environment and Public Resources Committee Hearing Continued on Assembly Bill 482.

The continuation of this hearing was called to order by Chairman Homer at 8:15 A.M.

Ray Knisley, an ex-legislator representing all the people who voted against all of these people, testified.

Mr. Chairman, on A.B. 482, I am for the bill with substantial amendment. I think it is a good framework act that should be amended and passed this session.

On Page 1, Section 4, Line 9, I suggest that the board means the Governor's Environmental Council as set forth in his proclamation on February 11, 1971. I am in favor of the amendments which Mrs. Kozlowski submitted so there is no need repeating those. However, there are one or two others that should be inserted.

On Page 2, Section 12, after "waters of the State" insert "as used herein". This would take out any question of this Nevada State Water Law.

Line 41, after "waters of the State", again make the same insertion.

I think it very important that on Page 3, Subparagraph 2, Section 16, which begins on Line 36, that that entire section be stricken otherwise the bill will modify practically all of our existing water laws.

On Page 5, Lines 49 and 50, refers to the Federal Water Pollution Control Administration. There has been a recent order changing the name of this agency to the Federal Water Quality Office.

On Page 8, Line 4, strike the words "the Nevada Highway Patrol and". Beginning with Line 8, strike the next three sections in their entirety down through Line 32. This would take out the Nevada Highway Patrol and the Department of Motor Vehicles. This is an invasion of gas tax money and earmarked funds and it creates an impossible situation. It requires the patrolmen to go off the highways. It would seriously invade those funds.

Lowman: Do the Fish and Game officers have sufficient powers to carry this out?

Knisley: Yes. Also, any peace officer may make an arrest on this. It does not eliminate the ability of the Highway Patrol to make an arrest if they catch a violator.

Dini: Is that the Governor's Environmental Council that you want to put this under?

Knisley: Yes. That was created by his proclamation of February 11, 1971.

Homer: In other words, what you are saying is that you feel that we should utilize that group rather than create an entirely new group?

Knisley: Yes. These are all knowledgeable people in the field.

Getto: Do you think the definition of "pollution" in Section 7 is adequate?

Knisley: I think it is rather lengthy. Dr. Tom White of the Department of Commerce has one that I personally like much better but I doubt very much whether it would be acceptable so I didn't make any attempt to put it in here. I think he does have a much better definition on pollution but I think the one that is in here is adequate.

Daisy Talvitie, Environmental Quality Chairman of the League of Women Voters of Nevada, then testified.

The League of Women Voters of Nevada feels that there is a need for legislation of the type proposed in A.B. 482. We are particularly concerned that there be a good definition of water pollution adopted by this session of the Legislature as it is our understanding that this is one of the major lacks at the present time in existing water control in the State. We believe the definition used in A.B. 482 would be satisfactory if it were changed to read "pollution means such contamination or other alteration of the physical, chemical or biological properties or characteristics of any waters of the State including but not limited to" and then going on down to "or render such waters actually or potentially harmful" and then moving on down and inserting the word "municipal" to "or to domestic, municipal, commercial, industrial, agricultural, recreational, esthetic or other beneficial uses.."

We support the concepts found in A.B. 482. However, we found a few problems that concern us. There are some questions that we feel we need some answers to. The League makes no pretense at this time of having made an in depth study into Nevada Water Law. I hope that I will be more expert two years from now if this comes up again. But we have been in the field of water pollution on the national level for many, many years. In fact, we were one of the first to enter the field as a citizens' group.

On Page 1, Line 9, the administrative board established here is, of course, intended by the sponsors as being the same board as would be adopted in A.B. 392 relating to air pollution. We see a problem in this area inasmuch as the board in this bill, there is nothing that specifies the actual membership of the board, how they are to be appointed or terms of office or anything. It is, of course, dependent upon the passage of A.B. 392. All of you know how eager I am to see A.B. 392 passed so you know how much I would endorse that but I do see that if that bill failed to pass, then there would definitely have to be something done about this particular board.

I would disagree with Mr. Knisley's statement that it should be the Governor's Environmental Council. There are two different functions that a governor could have served by two different bodies. One is the advisory group to look at the total impacts of ecological affects of the different actions of government. Too, for the governor's benefit, they are not administrative in the sense of being an official enforcement body for adoption of regulations, etc. That council is not structured in that fashion. So, there has to be a board that is structured to acutally adopt, administer and enforce and, therefore, there is a need for an environmental board. Naturally, the League of Women Voters would hope that A.B. 392 would be passed and then the same board could be used here. You might be interested since we are basically talking about a board for two functions — air and water — I have been working with various members of the Legislature and have had some conferences with the Governor and with the Senate Ecology Committee and we are attempting at this time to work out some re-structuring of the proposal in A.B. 392. One of the things in order to solve some of the budgeting problems that we propose is that the control officer be designated to remain as it is now which would be the Chief of the Bureau of Environmental Health and that would then get you back to within the framework of the present Governor's budget. This is something that we are discussing in regard to A.B. 392 as a way to go. I would like to emphasize again that the League stands firm in such a board as this, should have no conflict of interest on it although we are willing to agree to some changes of the membership of the board as proposed in the bill. We definitely feel very strongly that a person who is likely to appear before the board for judgement should not be sitting on the board acting as judge over his own case.

We have also found in reading this bill several references to health authorities as well as to the board which has created a little confusion in our minds and this isn't that we oppose that it is just that we are asking for a clarification here. For example, on Page 8, Section 28, we find a health authority is to inform the board of any violations if it finds an investigation is thereby to be made. In Section 29, health authorities are given the right to issue cease and desist orders. And in Section 30, we find that all appeals and orders that are issued by the health authorities are to be heard by the board. It is our understanding that under Nevada law, health authority includes all local health authorities. It is also our understanding that at the present time that the State is supreme in water questions in the State. So, to me, this is not clear as to exactly how this is being structured because of the terminology. We wonder if the intent is that local agencies may now begin to issue cease and desist orders with an appeal and the State board having the final say or just what is the structure. As I say, we are not opposing the provision as it is, we would like a clarification of the structure.

Section 24 makes the board responsible for the issuance of all licenses and permits for the construction of septic tanks and in that particular section, we do not find references to the local health authorities and it is our understanding at the present time that some of the workload on permits of septic tanks is carried by local health authorities. Again, we ask the question what is the intent here? Is it the intent that that would continue in that fashion or is the intent of the bill that all applications for septic tank permits would have to go to the State board? Again, this is a question where we are requesting a clarification as to just exactly what it is.

We would like to suggest that the penalties in Section 27 may be somewhat high. It has been suggested by some people that we change the wording to read "up to $150" but when we looked at that and we found a method of enforcement by which the peace

officer is to issue a ticket with the penalty spelled out, if you say up to $150, then the question in our mind is who is to make the decision. Is it to be the peace officer on the spot making a value judgement? The principle there of having the thing issued and the person being able to pay if he wants to plead guilty and just getting it out of the way by taking his check to a centralized office or mailing it in. This is a principle that is coming into use generally throughout the country as a way of trying to settle a lot of things where people don't want to go to court. We think it is a good method, a good administrative approach, of doing things but we question that if you change it to "up to $150" it is putting the decision of just how much it is going to be right in the hands of the peace officer so it seems a better approach to simply lower the penalty down to something that would be a more acceptable figure for general application and then have it spelled out that this is what the penalty would be.

Section 43, Subsection 2, on Page 12, Lines 20 to 24, provides that all rules, and this is a major question that we have to ask, and that is the very end of the bill, that all rules, regulations and standards promulgated by the state board of health and the health division are to terminate on January 1, 1972. We assume that this is meant to be simply a transfer and the new board being expected to simply re-adopt the standards until such time as the new board can just simply re-adopt the standards and that it is a transfer mechanism but we question the use of this mechanism or this wording as being it. We wondered if perhaps there was any danger that we might wind up with a period of time in which we didn't have any regulations at all because the board didn't get moved quite that fast or something and wondered in the transfer could be made with the provision that would be written instead in a positive fashion such as "existing regulations shall remain in effect until such time as revised by the board under the procedures established in this act" or something of that nature in order to be sure we didn't have a gap. It is, frankly, a matter of our not understanding the wording in the manner in which it is put. We also find that there is no provision establishing an effective date of the bill and I think that this in normally attached to any bill that the Legislature passes, or is it necessary to have it on there?

Committee: If it is not in there, July 1 is the effective date.

Talvitie: We wish to re-emphasize that we support the concepts of A.B. 482. We do feel a great need to move forward with legislation on water problems. We hope that the Legislature will at least adopt a definition of water pollution and establish an agency with authority to move forward. We call your attention to A.B. 118* which has just passed the Senate and will be coming over here. It deals with some very specific water problems arising from point sources. We believe it to be worthy of your consideration.

Thorne Butler, member of the State Board of Health, then spoke:

Mr. Chairman, I would like to emphasize support of the general concepts of A.B. 482 while the current water pollution laws that exist in the state have been used extensively to establish rules and regulations that pertain to inter and intra state waters. The statutory base that was used to create these regulations does have some basic weaknesses in it and the result being that those people who have been brought under control by some of these regulations have been somewhat disturbed by the position that the Division of Health has taken and I believe there is currently a complaint suit before the judiciary of this state on this basis alone. So, in that way, the adoption of a bill similar to or A.B. 482 as it is,

*S.B. 118

is certainly a step forward in controlling a very important environmental pollution problem in this State.

In particular, I think the phases of definitions which are in the first parts of the act if in the process of having this bill amended and worked on that we end up with some other form of it. One of the weaknesses that we have in the current State law is that there just aren't any definitions. Just what is pollution and what are we trying to bring under control or to abate?

I would like to spend a little time on the first part of the act in Section 4 which is the administrative structure. My comments are similar to those I gave on A.B. 392. That is, where this agency exists, who is it administratively responsible to is not clearly spelled out. The proposed bill deletes 45050 which says the Department of Health, Rehabilitation and Welfare is the water pollution control agency for the State and, therefore, in that department of the executive branch of the government is where lies the administrative responsibility for this. The way the current bill is proposed and the suggestions of either having the Governor's Environmental Council or the board of environmental control proposed in A.B. 392 be the responsible administrative agency leaves you with the question of where does it lie and who is responsible to who and in what direction. The way the government works today at least in a sense you have the governor, you have his executive branches and under that, are very operational divisions and they have lower agencies. In this way it is a little more complex and certainly a lot more cumbersome in the sense that the board, which is the administrative board and a regulatory board, is directly responsible to the Governor. Therefore, they become, in a sense, another department. Whether we want to go this way or not I think is a question that has to be decided. However, the administrative agencies and the technical agencies that would have to do day-in and day-out work of carrying out these statutory requirements spelled out in 482 and I should add, in 392, becomes difficult to invision because you have to go into some other agency of the government find those people and then ask them to do the job for you. The question is, who are they directly responsible to each time? I believe that I once submitted to this committee an organizational chart which was my interpretation of how it would look administratively under the proposal on 392 and I think 392 was much more clearly spelled out than 482. I do believe that this is a problem. It would be my recommendation that on 482 and 392 that we leave it in the current administrative structure which is well defined, which is now funded and is, in essence, operational. That is that the both in air pollution and water pollution, the Department of Health, Rehabilitation and Welfare be left as the responsible agency and that the Division of Health, which is a Division under that department, would carry out the various statutory requirements as spelled out in both of these two proposed acts.

Lowman: Are you suggesting that the control board for both of these bills be the same and be a constituted division of the Department of Health?

Butler: I would propose at this time that the board be the State Board of Health which is the current regulatory board. In other words, the current regulations in existence on air and water pollution were established by that board which is an advisory board to the State Health Officer who is the administrative officer to the Division of Health which is a division under the Department of Health, Rehabilitation and Welfare.

Lowman: You proposed that it be the same for both air and water pollution?

Butler: Yes. It would seem at this time with some of the requirements, in particular, the 1970 Federal Amendment dealing with water pollution, that we only have

a few months now, roughly about nine to meet the January 1, 1972 requirements for planning and implementation programs. It does take time for a new program to work with a reasonable degree a smoothness. So, I would think that during this period, it would be to our advantage to keep it where it is.

Lowman: How is the board presently constituted? What are their backgrounds?

Butler: It is composed of six people. The current members of the board are one dentist, one veterinarian and one layman. These three are well-defined positions. The other three positions are more or less open.

Lowman: That would seem to me to be an objection. You are over-weighted, of course, in the health services on the board.

Butler: I think this is a legitimate criticism and I think that in the long run, all boards should not be so narrowly defined.

Getto: Do you feel that if the Health Board were the controlling or administrative board for air and water pollution that the membership on the board should remain the same or do you feel it should be enlarged or changed to more lay people?

Butler: All these have crossed my mind and I think they all have merits. At one time I thought it would be advisable to have a bigger board and break it up into some kind of subcommittees that would take on very specific responsibilities and then meet with the board in general on very broad policy matters. The other side of the coin would be to leave the board small because I think small boards tend to be more functional and to change its composition. In other words, have fewer defined members to that board and leave it up to the Governor who he would appoint to that board. I think that, unfortunately, the idea traditionally was that these boards were to represent certain vested interests in these administrative agencies and I don't believe that is the way to go. The way to go is the board should have broad public interest and, therefore, broad public responsibility.

Lowman: It doesn't offend me to have the State Board of Health be the control board providing it is the policy board with some expertise available to it in areas of engineering and law, etc. But if you do not have that sort of expertise, you have a different problem entirely.

Butler: This is a valuable comment. I think that what has happened during the last three or four years in spite of the composition of the board, it hasn't been able to make use of its expertise in the Division of Health in these particular matters of air and water pollution and the use of its legal advise in establishing a rather wide variety of control regulations in the State. The problem is that those regulations are not well supported by statutory base. We may have over-stepped our bounds slightly.

Homer: (After reading from the Nevada Statutes on the authority of the Board of Health) It seems to me that you have had the power to control all these things all along.

Butler: I think that in generalities, yes, but when you get down to specific abatement programs or specific rules and regulations if you don't have proper statutory definitions exactly where you are, you then end up having the particular program refereed in the courts instead of carrying it out on an administrative basis.

Homer: What you are saying, then, is all we need is this very definite definition of pollution and you can go ahead?

Butler: I think to have a really good program, you need more than just a definition. Definitions are a good start but you need many of the provisions provided for in 482 are a much neater type of package than just starting out with definitions. I admit 482 is a complicated and rather lengthy and sometimes difficult to understand type of bill but I think the need has clearly spelled out. The need for proper definitions, methods of regulations, the establishment of permit systems, methods of how you enforce these regulation and, of course, some method of penalty. These type of steps are needed for any type of environmental control measure of this form of statutory base. Otherwise, you end up with difficulties bringing the problem under control.

Lowman: If I understand you correctly, you said if you had 482, the State Board of Health has at its disposal sufficient expertise to administer the act?

Butler: Yes. But if I might back off a little, I don't really disagree with a environmental protection agency. I think it is probably a good idea in the long run. I think at this stage in time with the current structures that we now have in terms of administrative people, technical people, laboratory support and the funding, that we can certainly for the next biennial period carry out the statutory requirements that are in 482 and get some of these program in better shape than they are now. I believe that the Governor has asked his Environmental Quality Council to look into the administrative, functional structure of these problems right now. I think that they will have the time to look into this and find out exactly how this should be done. My concern is I think we need to move forward, forward rapidly, I think that to try to create another system will really confuse the issue and make it difficult to operate at this time while I think we already have a system that is operating, does have the people in it, does have the expertise in it, engineering, legal and we do have the proper funding to carry it out. Yet, I would like to emphasize that the basic provisions that are in 482 (and 392) are the kinds of environmental pollution statutes that are needed in order to do this job properly.

Hutchins: Under the provisions of this act, would you take advantage of other agencies and testing that has been done or would you feel that all this testing would have to be done at the State level?

Butler: I think, in general, the intent would be to take all the technical information compiled by anyone. We would take any bit of information that we could get our hands on.

Dr. Otto Ravenholt, the District Health Officer of Clark County Health District then testified.

A.B. 482 is of concern to us primarily in how it affects us at the district level and how modifies or would modify the role of the District Board of Health in the carrying out of the purposes. One point, in particular, seems to us to pose a problem. This is if the proposed board becomes the authority for granting or denying all permits on septic tanks and this type of thing. This is a very time consuming, daily chore at the local level. I don't personally see how this board in the absence of an executive staff at the local level could process the minutiae that has to do with the septic tank in somebody's corral. The type of thing we do is just on a weekly basis. It goes on everyday—the problem, the design, the field check is made and the decisions have to be made sometimes with varios questions about it. I don't see how this could readily be communicated by a State

board that meets monthly or periodically for action without a considerable delay and I don't see that reason for it as far as the practical matter of it. The District Board has recently placed a moratorium on septic tanks in one area down there where we had the old inpass between an area outside the city of Las Vegas that has no connection to the city sewer system. The price of connection is that they annex to the city. They don't want to do that. The Board needs to act and has acted by forbiding further septic tanks to be installed until we somehow resolve the question of hooking up to a sewer system. Some of this is a problem that goes on on the continuing basis at the local level and needs a local response. I think that the District Board of Health has at least been able to grant this. I don't like to see this get transferred to a State board that meets periodically but has no executive staff because to us, it would be just holding up action until somehow an answer was received from that State board. The same applies to some extent to the provisions that in Sections 28, 29 and 30 apparently provided that this could persuade, conciliate and can issue a cease and desist order but that any court action which results from this comes only through the State channels or through the Attorney General's office. Our experience with this legal channel is not one that has been speedy in participation to get results on an issue. The wheels of the court turn slowly and those of the State legal office likewise to where you I think you would want to seal down the process considerably. Beyond that, I would be concerned with the basic problem of a board set up and granted broad responsibility and duties without an executive staff or an explicit staff relationship for getting this done. This bill pushes for things to be done but it does not provide a means for getting them done. It is the means that is the problem right now, not the objective. I would very much like to see if 482 were adopted that the option for local action with minimal time loss be continued in the present structure of the Health authority in the State. And, secondly, that attention be given to the cost and the means for getting the job done.

Phil Solaro of Sierra Pacific Power Company then testified. He is the Administrative Assistant to the President of this Company.

Being in the water business, we agree whole-heartedly to the concepts of A.B. 482. However, we do have one comment in Section 4 regarding the board. You are giving the board a lot of duties to perform and it is our assumption that the State Board of Environmental Control will be the same as the State Board of Environmental Protection as indicated in A.B. 392 and S.B. 275. At the time those bills came out, we went on record as stating that we opposed the makeup of the board. This was primarily because of the fact that it eliminated any expertise on the board We feel that people involved, people knowledgeable in the pollution business, are going to usually be working for governmental agencies, consulting firms or industry itself and we would ask that you consider the makeup of the board and spell out the makeup of the board and that it inclue its own expertise. We feel that the expertise is needed on the board to make it affective.

Getto: When you say spell out expertise, could the requirement be that the board shall be made up of people who are knowledgeable? Is that a strong enough definition or do you think it should be spelled out more definitely?

Solaro: I don't think that it should necessarily be spelled out by definition but I don't think it should eliminate anybody either. As the bill is, it is eliminating certain people and is discriminating against those who we feel are the expertise on the subject.

Getto: In other words, in your statement, you feel that there should be a separate board? Or do you feel that the Health Board with some miner changes as to the membership would be an adequate board?

Solaro: We would prefer that it not be made a separate board. There is no funding for a new board as it is set up now. As far as we are concerned, as long as there is expertise on the board, and I think the Health Board has this expertise, that we would be more than satisfied.

Daisy Talvitie: I would like to comment here to clarify that there is a bill draftor's error in the makeup of the board. Where it says "no industry, no stockholder, etc.", it was supposed to be qualified "that have direct conflict of interest". This was left out inadvertently.

Dini: (to Dr. Butler) If you revamped the structure of the Board of Health into a broader base and take care of the various interest in the State and be sure the general public is represented on it a little stronger than they are, then spell out an advisory board and with this you can bring in your Fish and Game and your other people into this advisory board. That way, the source of the problems could be directed to Board of Health without the Board of Health having to do all the ground work.

Butler: I think, in a sense, this happens in an informal way. You are suggesting the formation of a more formal machinery. In an informa way, when these regulations have been adopted in the past, the opinions and advise of the other governmental agencies who would have varieties of expertise in this area are sought. In particular, I would say that the Fish and Game people are always involved.

I think the problem of the board is causing endless miles of discussion It would seem, at least at this stage, that sticking with the same machinery we have now may be an imperfect solution but is a solution that we know something about. We know where it is, we know how it operates, we know that it is capable of operating and I think a review of that by the Governor's Environmental Council which is made up of members of the administration will be able to look at this for the next couple of years and decide if this is or is not a workable system and come up with more concrete recommendations. I think, now, we are in such an area of limbo that we really don't know how it would work if we created a new one. I think if we really want to solve the problems that sticking with the current system will, at least, get us moving forward and get something done.

My recommendation to this would be that the system used in the two District Health Divisions and appoint a five-member hearing board to referee discussions of the rules and regulations that are established by the Division of Health in such a way that this board would have broad, general public representation.

Bryan: I am a little disturbed by the fact of having the regulatory board be its own refereeing board. If you are going to make your own rules and regulations and think when you have to get to referee them, I think you are going to tend to referee them in the direction you establish the rules and regulations.

Lowman: I presume anyone who doesn't like it, has access to court?

Butler: Yes, of course. But I think the intent of all abatement programs is to avoid the judiciary necessity.

Lowman: The opposite view of what you are expressing is that this is going on right now in every regulatory agency in the State.

Butler: Yes.

Lowman: Maybe it is abrogation of due process but on the other hand, you have to come to an end of these things sometimes. You can hear and re-hear, and then you can hear again and by the time you get the decision made, it is academic.

Knisley: Mr. Chairman, I would like to point out the growing pains on both water pollution control and air pollution control. Inevitably, we are growing to a department of environmental control. All these agencies will be in one department eventually. If we can place these agencies and a knowledgeable group of administrators and make haste slowly, we will end up with much better results and meantime, we can start cleaning up the mess that we have in both air and water. People that are now in the field obviously, for the Department of Health with full control of water with its miriad of uses is not going to be very versitle. Certainly, they must be in there but not be a predominant part of it. I am quite sure if you place the Governor's Environmental Council in the bill as your board and there are funds sufficient to tak care of the costs, you will have a thoroughly workable program. When the Legislature returns in two years, you will have something to get your teeth into and set up a true department of environmental control. I am not suggesting, as such, that the Council be recognized as the board, but that, statutorily, you name the same heads of departments in the bill the Governor has named in his Environmental Council. You will then constitute more power to act and this will give a board knowledgab people, it will cover the State, they will be people who are known public servants. You will have less shock in transition on this than you will naming a group that will have to get out here and learn all of the operations and things connected with this.

Getto: What is the Council's composition now?

Knisley: It is made up of the heads of departments. There are seven members. None of which are laymen

Proctor Hug, Jr. then spoke in regard to A.B. 10. (He passed out booklet)

This booklet addresses itself to the fact that with regard to the one problem which is the problem dealing with the wetting agent that in 1965 when the conversion was made from ABS to the LAS substance, that the industry, in general, and all the government people who were there and concerned, recognized the problem for the most part had been solved. One of the documents I gave you shows the chronology of the events that led up to the removal of the ABS and the substitution of the LAS substance which is bio-degradeable. The comments just by the public officials, you will notice the Assistant Surgeon General, representative of Congress, the Engineering Laboratories section, mention the fact that the industry is to be commended and they are pleased that the bio-degradeable substance has been substituted for the one which previously had caused problems. It is mentioned also in the literature that this doesn't solve all foaming problems in other areas of the State because there are some other natural processes that contribute to it. The Soap and Detergent Association does have nine Chemical Engineers who go around

the country and investigate the foaming incidents that occur. They have not found that any of them are contributed to by the actual detergent that has been substituted, that is the LAS surfactant. The one thing that you might have a question about that I would just like to talk about briefly and that is the Suffick County situation. In Suffick County, New York, which is at the end of Long Island, has 1.2 million people and for some unknown reason, these people are all served not by a sewer system of any sort but all by cesspools - at least 95% of them - not septic tanks, but cesspools - so you really hav a situation where the raw sewage is being dumped within a very short process into the ground water supply. There we've got people that are roughly 2,000 people per square mile. You have a very difficu situation which is only going to be solved by proper sewage treatment but to adopt the philosophy that they adopted there, they had to enact some sort of an emergency measure in all areas and one of the things they said is that all detergents are out. They did a number of other things and by the way, the Soap and Detergent Association is working with those public officials to try to solve their problem and try to get their bond issue for their sewer system, etc. That is the only way it is going to be solved there.

I think that I would like to also mention just a word about the phosphates and that is to caution that before you tell all the housewives in the State that their dishwashers are obsolete and before you inflict upon the housewives of the State the considerably decreased efficiency of their washing machines, you ought to be very sure that what we are doing is going to accomplish what we hope it will accomplis That is to prevent the utrification of lakes and waters. I think we have got to find out for sure whether the elimination of phosphates that are in detergents alone is going to have any significant impact at all and the other thing is what product is going to be substituted in its place and what impact is it going to have on the environment? Federal legislation is probable the key answer to it and the reason why is because one state cannot make any significant impact, one state doesn't have the resources to conduct the curings. If Nevada were to undertake this itself, it would have to appropriate a significant amount of money and therefore if you just sort of arbitrarily by a legislative action remove a substance that hasn't had the appropriate tests conducted on it, I think we would have a real problem. I think what I am asking is to go slow, to go with the approach of something like 482 or through the Department of Health or through any agency that can conduct hearings and can determine what substances really are harmful, what can be accomplished by additional improvements in the sewage treatment which would take out phosphates, by the way, without too much problem and what can be accomplished through these agencies through hearings. If this is done, then I think we will have a good environmental control in this state and this is the best way to approach the water and the air problem in this State - appropriate agencies conductin appropriate hearings.

Getto: If we haven't any regulations or actually setting a time limit that we do these things in, what I am saying is for an example about air pollution is the automotive industry. They have had a lot of time to do something about it but because we have allowed them to go on and on, if we would have set a deadline, instead of by 1975 or sometime, we will outlaw this, I am sure the technology in industry would have taken care of this. I feel that we, the legislative bodies of all the states, have been to negligent in just allowing and I am saying the same thing

about your industry that if we would give some certain time I believe the techology of industry would accomplish it if they are made to do it.

Hug: I appreciate that problem. I think that what you sought to do with your bill relating to phosphates was ... Getto: I know that is not the answer but I think it is one step... Hug: Right. And I think that before NTA was taken off the market that would have been a perfect appropriate act because that substance looked like it was going to be the appropriate substance to take the place of phosphates. The problem of putting a time limit as your act has is with the question of a substance that is being substituted for it and can absord an arbitrary time limit for 1972 for it to be completely removed, the question is, have you got anything that you can stick in its place? That would be my answer - let's make sure we've got a substance and then put the pressure on to take it out.

Getto: I am not saying that 1972 is the right time, but I am saying one thing and that is just to propose legislation is having some results because I know that the industries are saying, "Wait a minute, we've got to get the word." If some of these laws are passed, it will have some affect.

Butler: I was just going to comment on A.B. 10. I think that the problem of detergent, when you are talking in terms of the surficant, which is the ABS, LAS problem, is that in essence, that is probably brought under control by just the Federal requirement to transfer to the bio-degradeable, LAS, form. The other side of the coin is the phosphate filters.

R.M. Hutchins, A registered professional engineer, then spoke, (booklet

Contrary to some of the remarks made here this morning, in the literature I have supplied the Chair, and members of the Committee, is that I think the Suffick County report is very pertinent. The only differenc between Nevada and Suffick County is a question of time and population. We keep talking about the industry coming up with a solution from the synthetic detergents standpoint. My point is that we have had a solution for over 2,000 years - a natural soap. It is bio-degradeable. I must take exception with Dr. Butler and with Mr. Hug, that, as they point out in here, (booklet) that it is not bio-degradeable in any conventional home treatment plant. Also, in reading this report, there were not just cesspools, there were septic systems and they point out that the septic systems failed just as rapidly as the cesspools. In my opinion, ther is no need to check septic tanks or anything else if we continue to chemically pollute the very thing we have designed to handle waste treatment.

At the close of our last meeting, when I asked the question of why not soaps, I was told that there were not enough soaps manufactured to take care of the State of Nevada. I called one of the smallest soap manufacturers in California, the Calaben Soap Company, and he directed me to have the Chairman of this Committe call him collect and he will assure this Committee that he, alone, can produce enough soap to supply Nevada. And as far as the raw products being available to make soap, that his door is besieged by all type of brokers wanting to sell the raw material for making soap. As far as the degradation of the water

supply by soap, I think the record stands for itself, for over 2,000 years we haven't caused any big problem. It's been really since the advent of the synthetic surficants that we have had problems. And, secondly, as is pointed out in the Suffick County report the soap does not persist and they have already seen a marked improvement in their ground water in the short time. True, they have cesspools that have been there for probably since they took the land away from the Indians and they have operated to not create this problem except since the synthetic surficants have been added. A reminder again to the Committee - that under the Federal Water Quality Criteria, the surficant, LAS and ABS, is listed and defined as toxic and I think that this along with all the other reports, it certainly behoves us to modify A.B. 10 or to draft a new bill for the abolition - the same as Suffick County has - of these materials out of our ecology.

I point out to you the necessity for eliminating some of the mercuric compounds out of our ecology which has been done by some of the other states. The environmental people, when I contacted them, said they would much rather see this on a state action but they will be watching all state action and Federal will come forth if necessary. From practical purposes, we have had the natural soap belittled. We have classic examples of the switchover, voluntarily, in Northern Nevada, to soaps by private individuals and industry. If you would like to contact the Deluxe Laundry in Reno, they will show you what they can do with soap. They have switched over to an entire program of soaps and they are saving better than $50 a day in chemicals alone. People who have been broken out in the laundry with detergent burns are now healed. People who previously had to buy replacement shoes every two months remark even how their shoes last when they are not subjected to the harsh ingredients. The most important thing is that this is so timely and that there are so many detergent industry people who are taking advantage of our ecology and the need for ecology and are building products marked ecology and they are not. They are very serious pollutants.

This concluded the hearing. It was adjourned at 9:45 A.M.

jb

Page 2- Line 34 - After "erosion" change "period" to semicolon and add - "but does not include return flow from agricultural lands."

Page 3- Sec. 14 - Broad power is given by this section -suggest it be limited by continuing sub. 2 " Nothing in this paragraph shall be construed as authority for the Board to incure any costs or make any expenditures on behalf of the State, to acquire any land, or to acquire or construct any treatment works, sewerage or disposal systerns."

Page 3- Sec. 16 - Omit Sub 2 - Lines 36-43 incl. incl. Does not appear necessary for purposes of Act creates new water law and gives Board power to establish priorities for use.

Page 4- Sec. 17 - Sub. 9 - This is probably here because of broad powers of Sec 14 - perhaps could be restricted by inserting (page 4 - line 31) after "installed" By Any Person, other than the State",x. If not- suggest it be stricken (lines 29-32 incl) as it implies many things. x

Page 5- Line 4- seems redundant (perhaps strike "100 percent of"

Page 7- Sec. 24- Has no provision to authorize Board to issue permit to Fish and Game to poison Trash Fish - suggest sub 3 to allow poisoning under terms and conditions satisfactory to and at discretion of Board.

Page 8- Line 2 - (Sec 27 - sub 2) This creates mandatory fine allows no judicial descretion- a single urination within 100 feet of a stream if proven makes full fine necessary x suggest "not to exceed one hundred fifty dollars" (not $150).

IMPORTANT

Section 18 - sub 2 - should be extended to require that costs incurred by departments rendering services be paid from funds of the Board, by reimbursement or otherwise.

Statement by George H. Carleu,
Research Director of The Soap
and Detergent Association
before the committee on
Environment and Public Resources
of the Assembly of the State of
Nevada

Gentlemen, my name is George H. Carleu, Research Director of the Soap and Detergent Association, a trade group with 125 members who produce more than 90 per cent of the detergents sold in the U. S.

We believe that legislation which curtails the use of, or bans detergent phosphates will not solve any eutrophication problem. Current scientific knowledge does not exist to permit the elimination of phosphates in detergent products and still maintain safety standards for human health and the quality of our environment.

The detergent manufacturers have no financial interest in phosphate plants and vested interest in promoting phosphates. Detergent processing plants are flexible. We are not, therefore, protesting the elimination of phosphates to protect a vested interest in plant and equipment. We wish to emphasize, however, that phosphates are absolutely safe for people. In fact, they are essential to life and are present in every living cell. Any replacement for phosphates must be equally safe in the vast quantities which will enter our public waters. Despite an intensive research effort, we have yet to find such a safe material. If a safe, thoroughly tested phosphate substitute were available, it could and would be incorporated into laundry and dishwashing detergents.

SAFETY ISSUE

The essential issue is safety - not economics. The risk of being wrong is great. The U. S. Surgeon General and the

Administrator of the Environmental Protection Agency agree. On December 18, 1970 they cautioned:

> "In responding to one environmental problem great care must be exercised to assure that the alternative does not pose equal or greater hazards to the environment or to human health. This is certainly the case with detergents in view of the massive quantities produced and ubiquitous nature of their distribution. It should be recognized that regulatory efforts by Federal, State and local officials must be conducted intelligently with full awareness of potential secondary effects of those efforts."

We do not believe that most people understand the potential safety risks the proposed legislation creates.

In October, 1970 the detergent industry outlined its commitment to find a replacement for phosphates in a report to the U. S. Government. In support of this commitment, the industry had already begun partial replacement of phosphates with one material, NTA, which had undergone extensive and long-term testing. Despite the precautions taken, preliminary data was recently developed which led to the Federal government requesting that the industry discontinue using NTA pending further testing. The industry voluntarily agreed to do so on December 18, 1970.

Although some products have been introduced using other materials, these materials have not been fully evaluated by governmental authorities for their safety and effect on the environment in mass use.

On this point, the two federal officials further stated:

> "Intensive study of other (than NTA) substitutes will be necessary to assure, to the extent possible that they do not present a similar predicament."

Senator Jennings Randolph, Chairman of the Senate Public Works Committee, said (on December 19, 1970):

> "There is clearly a critical need for preassessment of the toxicological and environmental implications of all proposed solutions to eutrophication, including phosphate substitutes other than NTA. This will be the subject of hearings before Senator Muskie's Subcommittee on Air and Water Pollution next year."

The industry's commitment to aggressively seek phosphate replacements still stands, but the problem of finding a satisfactory, safe replacement material appears even greater than before. In the face of this, a law that forces the industry to abandon phosphates before any proven, safe equally effective alternate material has been developed cannot be in the best interests of the public.

At this point, I believe you would be interested in the comments made January 15, 1971 at a press conference by Dr. Gordon J. F. MacDonald, one of the three members of the President's Council on Environmental Quality, and by Christian A. Herter, Jr., Chairman of the U. S. Section of the International Joint Commission.

Dr. MacDonald stated that the Council would not recommend that phosphates be removed from detergents on a mandatory basis until it satisfied itself that there were adequate substitutes.

He said further, "We are adopting the approach that until we do get an adequate substitute that will not harm the environment, we will continue with the phosphates in the detergents, and remove a substantial fraction of that phosphate through the tertiary treatment, or the follow-on treatment beyond the secondary."

Mr. Herter, in commenting on the International Joint Commission's recommendation for detergent phosphate removal by 1972, noted that

its report had been written prior to the request that further research on NTA be conducted.

ROLE OF DETERGENT PHOSPHATES

It seems appropriate to list at this point the important role played by phosphate in detergents. Phosphates provide the following important functions:

- Increases the efficienty of the surfactant, i.e. the biodegradable LAS.
- Keeps dirt particles in suspension once they are removed from surface.
- Furnishes the necessary alkalinity for efficient cleaning.
- Maintains the required alkalinity level.
- Softens water by tying up objectionable minerals, such as iron, magnesium and calcium.
- Contributes materially to the reduction of germ levels on clothes, reducing the possibility of cross-infection.
- Emulsifies oily and greasy soils.

The availability of soft water does not eliminate the need for phosphates. Hardness minerals are brought into the washing machine as a part of the soil on clothing as well as in the water. There are sufficient minerals in the average bundle of soiled laundry to convert soft water to water of medium hardness.

With the foregoing in mind, what would be the consequences of a required removal of phosphate before an adequate substitute is available:

IN NEVADA HOMES

1. Automatic dishwashing machines would be useless. Soil removal from dishes and silverware would be incomplete. The obsolescence of these appliances would work a severe economic

hardship in many thousands of homes.

2. In home laundering, cleaning of soiled fabrics would be inadequate.

3. The ability to clean bathrooms, kitchens, floors, and walls would be sharply diminished.

4. The basic level of sanitation in Nevada could decline. The ability to remove and destroy disease-causing germs such as salmonella will be reduced. This loss is important in laundering but could be most critical in cleaning bathrooms, kitchens and sickrooms.

IN NEVADA INSTITUTIONS

Hospitals, restaurants, hotels, schools, and other public facilities in Nevada would encounter serious difficulty in meeting the cleanliness and sanitation of linens, trays, floors, counters, bathrooms, etc. could result. Here again, automatic dishwashing equipment would be made obsolete.

In Dairies, Breweries and Food Processing Plants

Much of the equipment used in these facilities is designed to be cleaned in place. It would be extremely difficult and expensive to clean these pieces of equipment adequately without phosphates.

The importance of this aspect was emphasized at a recent hearing before a committee of the Pennsylvania Legislature when a representative of the State Department of Agriculture said, "We do caution, however, against mandating a halt to cleaning products that are absolutely and directly vital to providing dependable, wholesome foods, including milk to the adults and children of the Commonwealth, before we are certain that we shall not do more harm than good by acting before we know the facts we need to know."

One pertinent example of a critical food processing task which could be jeopardized is the cleaning and sanitizing of eggs. Egg sanitizing is particularly important because of the danger of salmonella contamination.

PRODUCT LABELING

Finally, it should be noted that the industry has previously announced, on November 9, 1970, its intention to label voluntarily on a national basis the phosphorus contents (in the formula by percent weight and in grams per recommended use level) of all household laundry and dishwasher detergents.

CONCLUSION

We feel that legislation of this nature is premature and would not be beneficial to the people of Nevada. We hope in the light of the foregoing, that you will not take action on the proposed legislation.

Thank you for giving us this opportunity to present these facts.

LEAGUE OF WOMEN VOTERS OF NEVADA
STATEMENT OF DAISY TALVITIE, ENVIRONMENTAL QUALITY CHAIRMAN, AT HEARING ON A.B. 482 IN COMMITTEE ON ENVIRONMENT AND PUBLIC RESOURCES

The League of Women Voters of Nevada feels that there is need for legislation of the type proposed in A.B. 482. We are particularly concerned that there be a good definition of water pollution adopted by this session of the Legislature as it is our understanding that this lack of definition is one of the major problems in existing law. We believe the definition used in A.B. 482 would be satisfactory if it were changed to read:

Pollution means such contamination or other alteration of the physical, chemical, or biological properties or characteristics of any waters of the state, including, but not limited to, changes in temperature, taste, color, turbidity, or odor of such waters, or such discharge of any liquid, gaseous, solid, radioactive, or other substance into any waters of the state as will or is likely to create a nuisance, or render such waters actually or potentially harmful, detrimental, or injurious ~~or potentially harmful~~ to public health, safety, or welfare, or to domestic, municipal, commercial, industrial, agricultural, recreational, aesthetic, or other beneficial uses of water; or to livestodk, wild animals, birds, fish, or other aquatic life.

The League supports the concepts in A.B. 482. However, we have found some problems that concern us and some questions that we feel need answers.

On page 1, line 9: The administrative board established here is, of course, the same board being proposed in A.B. 392 relating to air pollution. We are, of course, hopeful that A.B. 392 will be passed in this session. The name of the board is,however, not the same as found in lthis bill. We suggest that the two bills should be consistent and recommend that the word control be changed to protection.

This bill also gives no information regarding the membership of the board, their terms, how they are to be appointed. Again it is dependent upon the passage of A/B. 392. Perhaps the simplest thing to do would be to await the passage of that bill, but certainly we should consider the board as it relates to this bill. The League has proposed to the Senate Ecology Committee that the board be seven members with demonstrated knowledge in environmental matters, one of whom should be a lawyer and one a professional engineer. We have also recommended that the control officer be the Chief of the Bureau of Environmental Health with the personnel, technical services, etc. being supplied by the Depaartment of Health, Welfare, and Rehabilitation. This has been our method of determining the funding and keeping within the proposed budget. Perhaps something of this nature needs to be worked out for the water pollution program as well. In any case, there should be no conflict between the two bills and the League will stand firm on its commitment to the establishment of an environmental protection board. — with membership having no conflict of interest.

We have also found in reading this bill, several references to health authorities as well as to the board, which create a little confusion in our minds as to the exact structure and chain of command being proposed. For example, on page 8 in Section 28, we find that the health authority is to inform the board of any violations it finds and ~~find an~~ thereby cause an investigation to be made. In section 29, health authorities are given the right to issue cease and desist orders. In section 30, we find that all appeals from orders issued by health authorities are to be heard by the board. It is our understanding that health authority is defined under Nevada law as including local health officers. ~~We would certainly agree that the local health departments should be involved in water pollution control, but we wonder exactly what the structure is as proposed. Is it intended that all orders issued by any local authority are to be referred to the State Board?~~ That local agencies may issue cease + desist orders? Is this a reasonable structure?

Section 24 makes the board responsible for ~~for~~ the issuance of all licenses and permits for the construction of septic tanks. We find no reference to health authorities which would indicate some participation by local agencies. Is it intended that local agencies should

]
carry some of the work load for issuance of such permits or is it intended that all such permits would actually be handled exclusively by the State staff? If some of the work is to be delegated to local authorities, what would be the criteria for judgment of the local capability? Is this the existing procedure or does it constitute a change? Our asking these questions does not indicate opposition to the provisions, but a wish to clarify them in our own minds. We do not pretend to be authoritative on the subject of existing Nevada water law, but we are aware of some existing weaknesses in that law.

We would like to suggest that the penalties in Section 27 may be somewhat high. One possible change would be to make the wording on page 8, lines 1 and 2 to read "up to $150" but this would then create what we see as a new problem. The penalty which the person may pay rather than go to court is to be stipulated by the enforcement officer at the time he gives the notice of violation. Under this procedure we think this the amount of the penalty should be specified rather than at the discretion of the officer. Therefore, we feel that the better approach would be to simply lower the penalty to a more acceptable figure for general application.

Section 43, subsection 2 on page 12, lines 20 to 24 provides that all rules, regulations, and standards promulgated by the state board of health and the health division, etc. are to terminate on January 1, 1972. We assume this is meant to be simply a transfer with the new board being expected to simply re-adopt the standards until such time as they can re-examine them to bring them into conformity with the new law. Or is the intent that the board will be expected to have a complete set of new regulations, etc. by the date established? The time given is rather short. Could the transfer be made with a provision keeping existing regulations in effect until such time as changed under authroty and procedures established in the new law?

We also find no provisions establishing the effective date of the new law. This should be added as a final section to the bill.

Again, I wish to emphasize that the League supports the concepts of A.B. 482. We feel that there is great need to move forward with legislation on water pollution problems. We hope that the Legislature will at least adopt a definition of water pollution and establish the agency with authority to move forward on the Vegas Wash problem in Clark County. We call your attention to S.B. 118 which has just passed the Senate and which deals with specific water problems arising from point sources. It is a bill which we believe to be worthy of your careful consideration also.

COMMENTS BY PUBLIC FIGURES AND THE PRESS ON THE DETERGENT INDUSTRY'S VOLUNTARY AND COMPLETE CONVERSION TO BIODEGRADABLE DETERGENTS

"Still another notable development, which culminated in 1965, is the action of an industry, which has not only achieved a major accomplishment in the interest of clean water, but has set a precedent in its thinking in regard to industrial responsibility. On conversion to new 'soft' materials in all washing and cleaning products made for U. S. consumption. This $150 million changeover to readily biodegradable products of high quality, which resulted from more than a decade of research and the construction of new plants, has been praised by experts as a 'scientific breakthrough of major importance in the field of water quality,' 'a notable achievement of industry,' and 'a response to the call of the conservation minded.'"

--Rep. John J. Gilligan
Congressional Record
October 27, 1965

"This is the first time that a product changeover of this magnitude has been made -- solely to resolve a water pollution problem."

--Dr. Gordon E. McCallum, then
Asst. Surgeon General & Chief,
Division of Water Supply &
Pollution Control, USPHS, 1964

"Detergent manufacturers have now substituted a soft or degradable surfactant, which is attached by biological organisms at about the same rate as other organic materials...it is a positive step in the struggle to reduce environmental contaminants."

--Russell E. Frazier, Chief,
Engineering Laboratories Section
Minnesota Dept. of Health, 1967

"Firms in the soap and detergent industry transformed the chemistry of detergents so that sewage could be more easily broken down. This is but one example of the type of approach we ought to be striving for."

--Rep. Edward J. Gurney, in the
Congressional Record, Feb. 22, 1967

"The foam is gone now, because of industry co-operation, permitting efforts to be thrown against real pollution... Detergent manufacturing firms have changed voluntarily to the manufacture of soft detergents."

--T. A. Filipi, Nebraska State
Sanitation Director, 1966

"Suds in tapwater is not the problem it once was because industry met the challenge by changing its product."

--Editorial in Philadelphia Inquirer
September 6, 1966

"The soap and detergent industry merited the thanks of each American by conducting an accelerated program over the past few years to convert from 'hard' detergents to 'soft' degradable ones."

--Secretary of the Interior
Stewart L. Udall, 1967

Original document is of poor quality

"It isn't often that an entire industry earns the praise of the nation for organizing itself to collectively practice industrial responsibility. That is exactly what has taken place over the past fifteen years, however, in an industry very close to home -- the soap and detergent industry. Somehow we feel that this is a feather in the cap of the entire system of free entreprise, upon which our nation's way of life is based."

--Editorial in "Modern Maintenance Management," July 1966

"One of the most successful examples on record of industry cooperation in solving water pollution problems is given by the manufacturers of detergents."

--Editorial in St. Paul Pioneer Press May 18, 1966

"The dramatic aspects of the detergent problem... seem solved, and this is good. Now our people and the Congress can turn to the substantive problems of water pollution."

--Editorial in "Science," May 20, 1966

"Industry is tooling up to meet this challenge (pollution)... the soap and detergent industry spent over a million dollars last year to minimize the role of detergents as pollutants."

--Rep. John A. Blatnik, before the Midwest Governors' Conference, February 17, 1966

"We in the federal government have experienced with your industry the kind of total and complete participation and cooperation in solving this problem (Water pollution abatement) that we must have."

--James M. Quigley, then Assistant Secretary of HEW, now Commissioner of the FWPCA, 1966

"The prompt attention by industry in research and development of a non-foaming detergent resulted in a biodegradable product that erased the problem."

--Statement by Jack Reich, Chairman and President of the Indianapolis Water Company, in a magazine article introduced by Sen. Birch Bayh in the Congressional Record, September 26, 1967

Facts about detergents / The Soap and Detergent Association

THE CONVERSION FROM ABS- TO LAS-BASED DETERGENTS

A Chronology

Mid 1930's - The first synthetic detergents became available for commercial and home use. They are considered specialty items; soap is king.

1941 - 1945 - During World War II, it is difficult to obtain the natural ingredients that go into the making of soap (tallow, fats, oils). Suppliers and manufacturers begin to look for other more readily available raw materials.

1946 - 1950 - Post-war boom in consumer goods, e.g., automatic washing machines. Consumer demand for new types of formulations to go with the modern appliances in the home. Housewives begin to realize the greater efficiency of detergents over soap products in the prevailing hard water areas of the nation. Market is now approximately 80% soap, 20% detergents.

Early 1950's - Increased use of detergents in place of soap coincides with increasing number of "foaming" incidents on some rivers and streams. "Scare" stories begin to appear in nation's press.

1951 - The Soap and Detergent Association establishes the Technical Advisory Council -- a fact-finding and information gathering body. A program of cooperative and sponsored research is set up to: improve existing and develop new analytical methods; determine the effect or lack of effect of detergent product constituents on water and sewage treatment processes and on acquatic life and water resources. Actual investigative work is carried on by the industry, federal and state agencies, universities, and independend research organizations.

475 Park Avenue South at 32nd Street, New York, New York 10016 . (212) 725-1262

1956 - The basic research shows that ABS -- alkyl benzene sulfonate -- the surface active agent used in most household detergents is causing that portion of the foam problem attributed to detergents. (At the same time, it is pointed out that foaming on streams had existed long before the introduction of synthetic detergents, and will probably continue long after the introduction of the new "soft" detergents.) After the expenditure of many millions of dollars and the devotion of hundreds of man-hours to this study (on company tests over 750 different replacement materials submitted by suppliers), the first test tube sample of an ABS substitute is developed in the laboratory. It is a straight-chain surfactant, as compared to the branched-chain molecular structure of the older material. Initial research indicates that the new surfactant -- later named LAS (linear alkylate sulfonate) -- has a potential of high biodegradability when it is subjected to adequate sewage treatment or when proper natural conditions are present; also has proper performance characteristics in use.

1956 - 1963 - Labwork and sampling continues. Normal period for development of new detergent products is seven to ten years. Extensive testing of straight-chain material for biodegradability and washability. Formulation problems in process of being worked out.

1961 - 1964 - Hearings held by federal and state legislative bodies on overall problem of water pollution. Representatives of detergent industry appear before these bodies to discuss progress in their voluntary program to develop "soft" or biodegradable products.

1962 - 1963 - Technological breakthrough (e.g. molecular series) permits consideration of large scale, commercial production of a straight-chain surfactant

April, 1963 - Detergent industry spokesmen announce to legislative bodies and the public that the suppliers and manufacturers will embark on a program to convert all ABS-based products to LAS, with an expected completion date of December 31, 1965.

1963 - Raw materials suppliers carry out process and plant design; engineering and cost estimating; begin construction of new plants (more than $100,000,000 will be spent to build these installations and to convert existing plants); first drums of LAS shipped to end-product manufacturers. Latter group begins preliminary pilot plant operation; samples used in plant formulation and field tests.

1964 - New plant construction continues; some suppliers begin to come on stream; intermittent tank car shipments. Household products producers begin full-scale pilot plant operation, make preliminary storage and shipping tests; scale-up work and equipment modification underway.

August, 1964 - Detergent industry announces that the target date for conversion has been moved ahead to June 30, 1965, as a result of increased shipments of LAS to manufacturers.

Late 1964 -
Early 1965 - Manufacturers phase-in new surfactant as replacement for ABS in existing brand-name products.

June 30, 1965 - Conversion completed. All washing and cleaning products manufactured for U.S. household and industrial use now based on LAS and other "soft" or biodegradable materials.

# # # # #

SUFFOLK COUNTY
DEPARTMENT OF HEALTH
SUFFOLK COUNTY CENTER
RIVERHEAD, NEW YORK 11901

DIVISION OF ENVIRONMENTAL
HEALTH SERVICES
EASTERN DISTRICT OFFICE

PARK 7-4700

AREA SERVED:
TOWNSHIPS OF
BROOKHAVEN
EAST HAMPTON
RIVERHEAD
SHELTER ISLAND
SOUTHAMPTON
SOUTHOLD

March 19, 1971

Mr. R. M. Hutchins
c/o Water Works, Inc.
35 East Taylor Street
Reno, Nevada 89501

Dear Mr. Hutchins:

Enclosed please find the information which was the subject of our phone conversation of this morning.

I am very interested in the outcome of your proposals on the ban of detergents in the State of Nevada and would appreciate any and all information you have on the matter at the present time.

Your timing on this proposal is very good as anything that has to do with the betterment of the environment is very popular today. Although the problem has been very serious in the past few years, I doubt very much if any such ban would have been approved prior to the current wave of interest.

An interesting side-light in the enforcement of this law is that many of the reports on violators which are received come from the housewives in the County. The law has only been in effect for less than three weeks, and our investigation has shown a better than 95 per cent compliance. In other words, the detergent ban is being accepted and in fact appreciated by the public at both the merchandising and consumer level.

If I can help you any further in your endeavor, feel free to contact me at any time.

Good Luck.

Very truly yours,

Robert J. Sheppard
Senior Sanitarian

RJS:jmh
Enclosures

In order to preserve and protect the quality of the water resources of ~~Suffolk County~~ NEVADA, the sale and/or use of specific types of detergent products should be limited or prohibited by ~~local~~ State legislation.

It should be recognized that the water resources on Long Island, especially in the eastern County, occur and are developed in a unique manner. Groundwaters are the only source of water supply at the present time and from an economic standpoint, for the foreseeable future. Because of the lack of public sewerage facilities, the continuing population growth, the occurrence of the water table within relatively shallow depths, and because of the very slow movements of groundwater to discharge to salty water, groundwaters are vulnerable to contamination. Curtailment of the development of the glacial aquifer may have serious long-term effects on the availability and adequacy of the supply for the future. Restrictive measures are warranted to prevent further deterioration in the quality of the shallow aquifer.

Sufficient evidence has been compiled to demonstrate that general household detergents containing only surfactants manufactured from soaps or sucrose esters are degradable in private cesspools or septic tanks and leaching facilities. Since voluntary regional distribution of such soap products has not been practiced by the industry in soft-water areas, such as Long Island, it appears necessary for restrictive measures to be enacted to regulate the distribution of the objectionable benzene sulfonate detergents. It is recommended that a County law be adopted to prohibit household detergents which are manufactured with benzene sulfonate surfactants and to permit the sale only of those detergents containing surfactants manufactured from soaps or sucrose esters since only they are degradable in private cesspools or septic tanks and leaching facilities. Such a law would serve as an interim measure until the construction of sewage collection and treatment facilities is complete or sufficiently advanced to prevent deterioration of the water resources.

The following definition and historical background are cited:

1. By strict technical definition a detergent is anything that cleanses, including ordinary bar soap. In present usage the term "detergent" now excludes soaps and is commonly applied to the packaged household products which include a "synthetic detergent" surfactant protion manufactured from by-products of the petroleum industry, phosphates, silicates, bleaches, and other minor constituents, including enzymes.

2. Since the end of the second World War, synthetic detergents have virtually replaced soaps as washing compounds. The early formulations were manufactured from polypropylene, a by-product of the petrochemical industry, and are typically alkyl benzene sulfonates or ABS-type surfactants.

3. These ABS-type surfactants are resistant to biological decompositon (or biodegradation), especially in the anaerobic environment in private subsurface sewage-disposal systems prevalent in Suffolk County. Their widespread use and disposal through septic tanks and cesspools resulted in increasing concentrations in groundwaters so that reports were received in the late 1950's and early 1960's regarding foaming of private and public shallow wells.

4. Responding to numerous reports of foaming in sewage-treatment plants, water-treatment plants, and lakes and streams, the soap and detergent manufacturing industry began an intensive program to develop a substitute surfactant which would be more degradable under these conditions. By mid-1965 the industry had converted to a newer molecular configuration of ABS, which included a linear or unbranched alkyl group and was termed linear alkylate sulfonate or LAS.

5. In 1962 the New York State legislature mandated the State Temporary Commission on Water Resources Planning to investigate several considerations regarding the detergent problem, including "the dangers that such

discharges of 'detergent wastes' may create to the adequacy and safety of the water supply now and in the future". Numerous meetings of the Commission resulted in the formation of special and technical committees, including:

A. "Special Advisory Group for the Study of the Detergent Pollution Problem", including representatives of the State Senate and Assembly; the State, Nassau County, and Suffolk County Health Departments; numerous Federal, State and local agencies, including the Suffolk County Water Authority; and the Soap and Detergent Association and its member firms.

B. "Technical Advisory Group on the Long Island Studies", chosen from the above Special Group.

C. The Nassau-Suffolk Research Task Group, consisting of New York State, Nassau County, and Suffolk County Health Departments; the Lauman Company; and the Suffolk County Water Authority.

This latter Group (C) prepared a justification - and procedure - report outlining the areas in which additional information was required. A contract was established with the State Health Department in order to carry out the proposed field studies. A Federal grant was obtained from the United States Public Health Service, and the cooperation of the Soap and Detergent Association was assured to provide sample formulations of the various surfactant products tested.

6. Results of the extensive and comprehensive study conducted under the auspices of this Group (C), published under the title "Final Report of the Long Island Ground Water Pollution Study", April 1969, contain the conclusions that the degree of degradation of ABS and LAS compounds, and to a lesser extent the AS or alcohol sulfate compounds, was deemed insufficient to prevent contamination and that the surfactant fraction of synthetic detergents persists in quantities and travels distances sufficient to endanger the adequacy and quality of the water resources. Sucrose ester surfactants and soap compounds have a relatively superior degradability to ABS, LAS, and AS on the basis of reduction of chemical oxygen demand in travel of sewage

through a subsurface disposal system. LAS-type detergents have been demonstrated to be biodegradable under aerobic conditions in a stream or secondary sewage-treatment plant where aerobic bacteria and dissolved oxygen are present but they do not adequately degrade in the anaerobic conditions in a cesspool or septic tank.

7. Municipal sewerage systems have been authorized for a portion of southwestern Suffolk County, and construction schedules are discussed in terms of decades. It is therefore apparent that considerable time will elapse before the resource is adequately protected from contamination.

8. In this interim period restrictive measures are necessary to prevent further discharges of relatively stable detergent products into the groundwater resource. This is especially tenable since Long Island groundwaters are quite soft and soaps are efficient washing compounds in these conditions.

Prepared by A.A.G.

12/23/69

SUFFOLK COUNTY WATER AUTHORITY
SUNRISE HIGHWAY & POND ROAD
OAKDALE, NEW YORK

LEGISLATION to CONTROL POLLUTION of SUFFOLK COUNTY GROUND WATER

The Legislature of the County of Suffolk, in November 1970, enacted a local law prohibiting the sale of certain types of detergent products within its borders.[1] This dramatic act, the first of its kind undertaken in the United states, was deemed necessary because of a combination of unique conditions. The location of the County, being the easternmost two-thirds of Long Island, and virtually surrounded by salt water, its extremely rapid population grouth, especially in the last decade, and the lack of public sewerage facilities have made the ground water resource particularly vulnerable to contamination.

It should be recognized that the water resources in Suffolk County occur and are developed in a unique manner. Groundwaters are the only source of water supply at the present time and from an economic standpoint, for the foreseeable future.[2] Replenished solely from precipitation and existing in equilibrium with the saline waters surrounding it, the volume of ground water available for development is limited and directly related to precipitation and consumption levels.

Geologic conditions encountered in Suffolk County are also unique, with as much as 2000 feet of sedimentary deposits overlying bedrock, and above them, 100-150 feet of a mixture of sand, gravel and boulders deposited by glaciers of fairly recent time, probably Wisconsin Age of 30,000 to 40,000 years. This hetero-

geneous mixture along with the resultant glacial outwash plain formed by the melting ice is very permeable and accepts precipitation very readily. Rain water percolating into the soil occupies the spaces between grains of sand and comprises a large reservoir of ground water. The relatively slow movements of ground water to discharge to salty surface water (measured in terms of only a few feet per day) make it very vulnerable to contamination.

There are few communal sewage collection and treatment systems in Suffolk County. The highly permeable soils will accept almost all liquids including sewage so that disposal is largely accomplished through "individual sub-surface systems". It is estimated that less than 5% of the County's population of 1,100,000 is served by a sewerage system. The great majority utilize cesspools or septic tanks and leaching pools or tilefields or combinations of these. "Individual sub-surface sewage disposal systems provide insufficient treatment of wastes with the result that objectionable concentrations of sewage constituents, both biological and chemical, reach the water table".3

"Detergents are the most persistent and most commonly found pollutants of sewage origin in the Glacial aquifer and the most frequent cause for rejection of Glacial wells as a source of water supply".3 Synthetic detergents residues, even when other sewage constituents are very low in concentration, have been so aesthetically undesirable as to force water suppliers in the more densely populated areas to curtail their development of the Glacial aquifer.

Restrictions on the use of the Glacial aquifer has immediate and far reaching effects on the future of the residents of Suffolk County since it is estimated that this aquifer contains more than

half of the water in storage. This lost capacity has been replaced by drilling deeper wells into the next formation, called the Magothy aquifer. Overdevelopment of the Magothy may chance the risk of increasing the rate of downward movement of the contaminated water from above or the possibility of inducing salt water movements.

In 1962, the New York State Legislature mandated the "New York State Temporary Commission on Water Resources Planning" to "investigate the dangers that such discharges of detergent wastes may create to the adequacy and safety of the water supply, now and in the future".[4] From this a Nassau-Suffolk Research Task Force was set up with Federal assistance. The results of the Task Forces' studies published in 1969, point out the "widespread use of certain detergents constitutes the gravest of threats to the sources of water supply in Suffolk County". This study involved the installation of more than one hundred observation wells surrounding several types of disposal systems and in varying soil conditions. Thousands of samples were collected and tens of thousands of analyses were made during studies involving the use of different types of detergents which were supplied by the industry for the purpose.

Among the conclusions and recommendations contained in the "Final Report of the Long Island Ground Water Pollution Studies" are: "Extensive testing has proved beyond doubt that, with the use of individual sewage disposal systems, certain detergents are not sufficiently degradable and that, upon disposal, they immediately travel downward polluting and contaminating the water table which possesses poor recuperative capabilities".[3] "The ideal solution to the problem of continued contamination of the ground water

resources of Island by synthetic detergents and other sewage constituents is the rapid installation of municipal sewage collection treatment and disposal facilities, especially in those areas in which discharges of insufficiently treated domestic waste threaten the quality of the resource".[3]

"Notwithstanding all efforts to expedite the installation of public sewerage systems . . . delay of many years must result before completion of projects of the complexity and magnitude involved".[3] It is now more than two years since the referendum for Suffolk's Southwest Sewer District was approved at the polls. Contracts were only recently signed engaging the services of consulting engineers to design the sewage treatment facilities and detail designs of sewers and trunk-lines. Several more years will elapse before construction begins and there are practical limitations on traffic disruptions, interruption of other services and the ability of related crafts to make service connections and repair streets, etc. Until these facilities are available, the "only practical method of preventing extensive contamination and pollution of the ground water resources of Suffolk County by certain detergents is to make them unavailable".[2]

All of the regulatory agencies involved recognize that synthetic detergents are only one constituent of domestic sewage and that making them unavailable to the housewives of Suffolk will not eliminate the need for community sewerage systems. However, they are controllable constituents as opposed to bacteria or nitrogen, which are natural to body functions. Their chemical stability allows long term passage through the enviromental systems. Although they are not* toxic at the concentrations found, they foam actively

* Federal Water Quality Criteria LAS TOXIC @ 0.2 ppm

at levels less than 1 part in a million parts of water by weight and render the water unpalatable.[4]

Soaps are satisfactory washing compounds in soft water areas such as Long Island and a return to their use will not prove a burden to the housewives of Suffolk, but will aid in preventing further deterioration in the quality of our water resource and in fact hasten its recovery from the effects of pollution caused by human activities.

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Final Report Of

THE LONG ISLAND GROUND WATER POLLUTION STUDY

April 1969

STATE OF NEW YORK

DEPARTMENT OF HEALTH

Nassau County Department of Health

Suffolk County Department of Health

Suffolk County Water Authority

The Lauman Company, Bethpage, N.Y.

ABBREVIATIONS

ABS	alkyl benzene sulfonate
AS	alcohol sulfate
BOD	biochemical oxygen demand
COD	chemical oxygen demand
DO	dissolved oxygen
LAS	linear alkylate sulfonate
LAS_1	initial use of LAS at test site
LAS_2	second cycle of LAS use at test site
Los Avg MPN/100 ml	logrithmic average most probable number per liter
MBAS	methylene blue active substance
MGD	millions of gallons per day
mg/l	milligrams per liter
MPN	most probable number
SCWA	Suffolk County Water Authority
SDMA	Soap and Detergent Manufacturers Association
SWL	static water level
TSCWRP	Temporary State Commission on Water Resources Planning
USGS	United States Geological Survey

General

The 1962 mandate of the New York State Legislature stipulated that the New York State Temporary Commission on Water Resources Planning investigate four basic considerations. The Long Island Research Project concerned itself with two of these considerations, namely:

1. "The dangers that such discharges (detergent wastes) may create to the adequacy and safety of the water supply now and in the future." and,
2. "If the area of contamination from detergent wastes is more widespread from the point of discharge than is usual in the cases of other forms of wastes."

The general conclusion of the Long Island Ground Water Pollution Study addressed to these basic considerations are as follows:

Some degree of degradation or other means of change - reduction of the active surfactants in the test products occurs in typical sewage disposal systems and the adjoining soil-water. The degree of degradation is deemed insufficient to prevent the contamination with synthetic detergents of the upper Glacial aquifer, now the major available source of individual water supply for homes, commercial establishments, and some public water supply wells in the Nassau-Suffolk area.

Detergents are the most persistent and most commonly found pollutant in the Glacial aquifer and the most frequent cause for rejection of Glacial wells as a source of water supply. Synthetic detergent residues, even when other sewage constituents are minimal, have forced public water purveyors to abandon or curtail their use and development of the Glacial aquifer. The restriction on use of this aquifer has immediate and far-reaching effects on the availability of water supply to present and future residents of the Nassau-Suffolk area, since

acial aquifer is estimated to contain more than half of the locally available source. All comprehensive planning reports on the Nassau-Suffolk area, cially those relating to safe yields of water supplies and the population t may be served from this limited resource, indicate that the Glacial aquifer st be utilized to serve present and future populations.

Relief from the contamination in the Glacial aquifer is secured by placing water supply wells in the deeper Magothy stratum. This procedure has been followed to a large extent but poses the risk of overdevelopment of the Magothy aquifer. Overpumping of this aquifer will result in the increased transfer of contamination from the overlying Glacial formation to the underlying aquifer, and may also induce greater salt water intrusion from surrounding waters into the fresh water resources of Long Island.

It is concluded that the MBAS fraction of synthetic detergents persists in quantities and travels distances sufficient to endanger the adequacy and quality of the water supply resources on Long Island and further, that these characteristics are more typical of detergent wastes than the other constituents in domestic sewage.

ttainment of Objectives of Project

The project sought knowledge on certain specific items and those are eported on in the order in which the items are listed under scope and objec- ives in the Introduction on page 3-14.

1. Techniques and methodology have been developed for the conduct of nvestigations of ground water contamination in unconsolidated geological ormations. Most significant of these were pump modifications to collect D.O. amples, methods of collecting waste water from unsaturated sands, measurement ound water movement and use of radioactive tracers. Details on specific echniques are contained in the body of the report.

2. The waste leaching from a cesspool moves essentially downward after entering the unsaturated soil. The wastes do not extend laterally more than two feet beyond the pool circumference.

Upon entering the saturated sands, the waste takes the form of a ribbon-like plume and moves with the prevailing ground water. In its travel, the waste is vertically depressed in the ground water table by factors relating to the nature of the subsoils, the relative density of the waste recharge phenomena, and influence of pumping wells in the vicinity.

3. Under the test conditions, no evidence was obtained which would indicate that the presence of methylane blue active substances cause bacteria and other sewage constituents to travel faster or further than they would in their absence. During the use of the various test detergents, a significant change in bacterial population was evident in the waste disposal systems. An increased disposal system population resulted in a greater migration of bacteria to the downstream test wells. Viable bacteria do pass through the unsaturated subsoils into the ground water table and travel downstream as a part of the waste.

4. The finer soils at Site 4 were the only subsoils significantly different from the material usually encountered in the Glacial formation in Nassau and Suffolk Counties. These finer soils contributed to higher reduction in MBAS materials, ammonia, sulfates, phosphates, alkalinity and specific conductance than other cesspool sites. Other variables were also present however to account for higher efficiencies at Site 4.

5. Typical Long Island Glacial soil does not have significant adsorptive capacities for ABS. Adsorption and desorption of the ABS molecule on the subsoils in situ was found, however, to be significant and well defined for various surfactant formulations. This was best demonstrated by branch chained ABS retrieval from test wells even after the homeowner had been using soap for periods of 2 to 3

months, a time lapse which was sufficient for complete passage of the waste slug at known movement rates. This was further confirmed by infrared differentiation analyses which indicated the retrieval of branched chain (ABS) materials long after the waste slug carrying the straight chain surfactants (LAS) had passed the observation wells.

6. Biodegradation of ABS in the anaerobic environment of subsurface waste disposal systems does not produce any significant reduction in the levels of MBAS or other sewage constituents from the system entering the unsaturated or saturated subsoils.

Some degradation in terms of MBAS occurs in passage of the sewage effluent from the cesspool into the unsaturated soil zone of one. No significant reductions follow in further travel through the unsaturated zone and into and through the saturated soils.

Sucrose ester and soap have a relatively superior degradability than ABS, LAS and AS, on the basis of significantly larger reductions in chemical oxygen demand of sewage in passage through a subsurface disposal system and soil-water horizon. Lack of a MBAS fraction in these detergent products also obviates the need for degradability in terms of MBAS.

7. Phosphate reductions are rapid and almost total in the distances studied. Phosphate reductions parallel the coliform reduction curves. The nitrogen cycle proceeds at a rate dependent upon the availability of oxygen, length of travel through unsaturated soils, ground water velocity and in some cases the detergent formulation in use. Sulfate concentrations increase in passage through the zone of aeration and the saturated soil zone to a peak

value whereupon levels tend to decrease in further travel downgredient due primarily to dilution.

8. The tracer materials studied for measurement of ground water flow rates were hexavalent chromium, sodium fluoride, sodium chloride and tritium. Sodium chloride was found to be the most practical because of consistency of results, availability ease of handling and analysis, non-toxicity and stability in the ground water environment.

Tritium and sodium fluoride give comparable velocities to those obtained by sodium chloride. These tracers are less desirable, because they require special handling and analysis, because of their toxicity and their susceptibility to interfering substances.

Hexavalent chromium proved to be very unsuitable as a tracer in that even the large concentrations which were introduced were not retrieved at short distances from the point of application.

9. A complex combination of physical, chemical, and biological phenomena occur from the entrance of domestic wastes into a subsurface disposal system, and through the system, the unsaturated soil and the saturated soil. Sorption, dilution, diffusion, chemical reaction, precipitation, filtration and biodegradation phenomena take place in varying degrees.

Improvement in efficiency of sewage treatment within the sewage disposal system may be achieved to a limited degree by research into optimum dimensions and arrangements. Reduction in sewage constituents within the soil-water horizon is a function of prevailing conditions and cannot be altered practically.

10. No specific tests were made of soil clogging and subsequent leaching system failure. It is believed that failures are primarily a function of the organic and particulate loadings on the soil caused by the sewage and the characteristics of the surrounding subsoil relating to interstitial size and availability of oxygen at the sewage-soil interface. On those sites where

em failure was imminent, relief was obtained by scouring the pool bottom h compressed air.

11. Individual subsurface sewage disposal system provide insufficient treatment of wastes with the result that objectionable concentrations of sewage constituents, both biological and chemical, reach the water table. More sophisticated types of individual disposal systems, namely, septic tank in combination with leaching cesspool and septic tank in combination with leaching tile field systems, do not provide any significant improvement in the effluent quality compared to single cesspools.

12. Ground water is highly vulnerable to pollution by untreated sewage wastes and possesses poor recuperative capabilities. In the event that recharge of treated sewage effluents were to become a reality for water conservation practice, virtually complete treatment to* drinking water standards will be necessary for almost all constituents to preserve the ground water quality. This is particularly true in the case of synthetic organic compounds, such as the refractory materials contained in synthetic detergents.

*Fantastic Price Tag - & tax burden.

1. The ideal solution to the problem of continued contamination of the ground water resources of Long Island by synthetic detergents and other sewage constituents is the rapid installation of municipal* sewage collection, treatment and disposal facilities in those areas in which discharges of insufficiently treated domestic sewage threaten the quality of the resource. Planning for municipal sewerage systems should be intensified in all areas of both counties. Further, every effort should be made to provide municipal sewerage service for all new homes. In those instances where a new community of homes is insufficient in number to successfully support a sewage treatment plant, procedures should be adopted to assure economies and homeowner acceptance of sewers when they do become available. Such measures should include construction of "dry" sewers where collection districts are established, provision of land area for future sewage treatment facilities, and setting aside of funds for future construction.

2. Notwithstanding all efforts to expedite the installation of public sewerage systems in Nassau and Suffolk Counties, a delay of many years must result before the completion of projects of the complexity and magnitude involved. In Nassau County approximately 25 percent of the area is now sewered and work has commenced on an additional 40 percent. The most optimistic predictions place completion of this 40 percent at 20 years and the remainder is unscheduled at this time. In Suffolk County less than 4 percent of the population is presently sewered. A comprehensive plan was prepared for the five western towns, an area of 566 square miles. It is improbable that this sewer construction can be completed even on a crash program in less than 30 years. It is therefore obvious that a substantial time period must elapse before sewer construction is advanced to the degree that adequate protection will be provided to the ground water resource.

* effluent discharge from LAS Vegas treatment 1.9 ppm MBAS & 9ppm phosphates questions even this. Kurt...

Sufficient evidence is at hand to indicate that soap or a sucrose ester surfactant may be used as a general household detergent in the interim period until municipal sewerage is installed and thereby discontinue the incessant discharge of detergent products into the ground water. This would be best accomplished by a voluntary regional distribution of satisfactory detergent products by the industry. If such is not forthcoming, then legislative or other restrictive measures should be immediately employed to adequately regulate the use of detergents.

3. A continuous and vigilant program of ground water quality monitoring should be carried out by New York State and Nassau and Suffolk Counties. Such monitoring work will enable the two counties to evaluate and detect water quality deterioration in time to take whatever corrective action they deem necessary to protect their water supply resources in the public interest.

4. The soap and detergent industry should intensify research and development efforts to produce and market suitable synthetic detergent products which will biologically and/or chemically degrade under conditions existing in the admittedly ineffective sewage disposal systems now in use.

5. Studies should be made of the local applicability of more effective individual sewage disposal systems for use in new home construction in sparsely populated, remotely located areas to determine their effect on the overall ground water pollution problem.

6. Public water supply facilities should be extended to replace individual wells in populated areas.

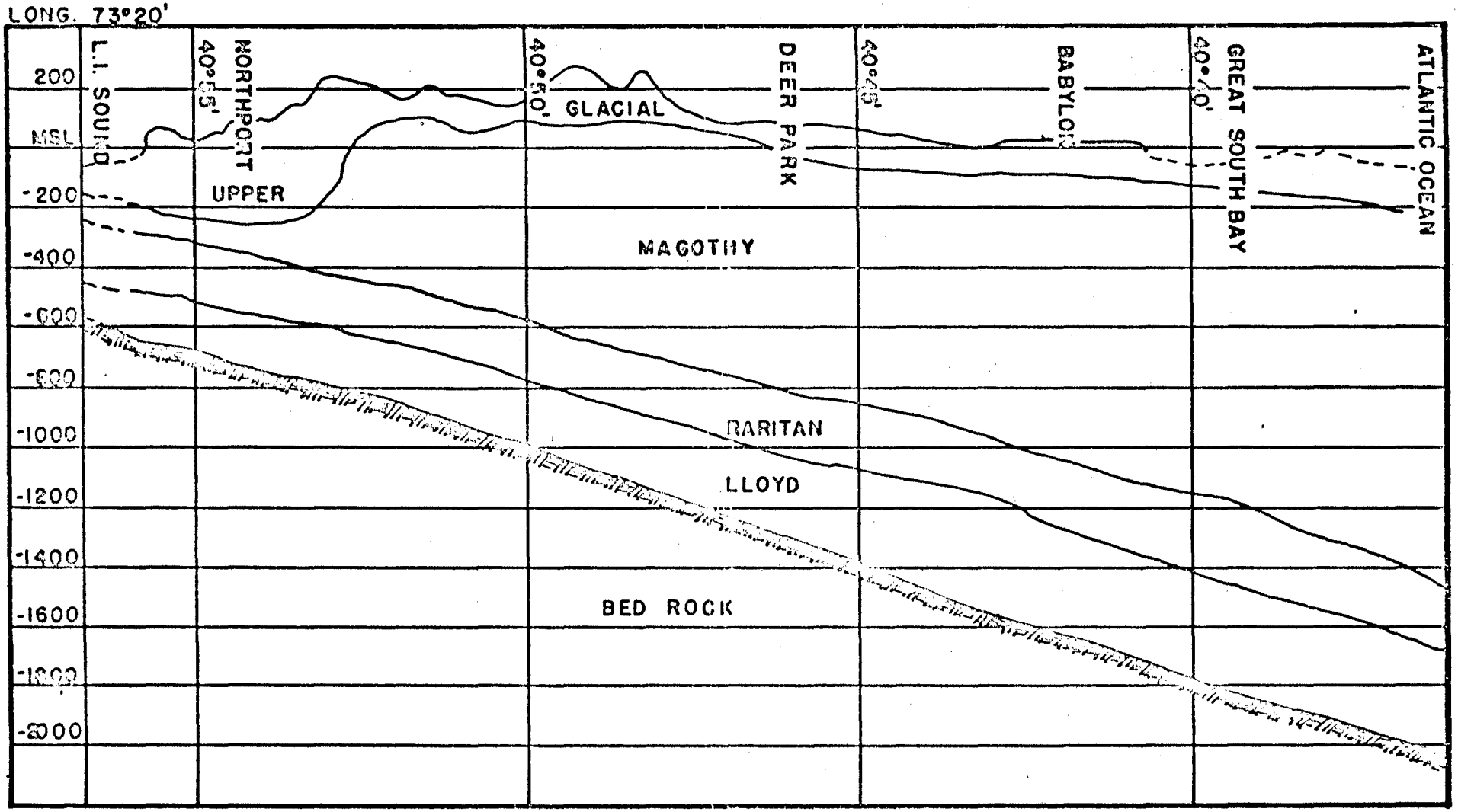
Need for Research

1. Long Island geology and water resources.

Long Island is geologically a part of the Atlantic coastal plain, and on the basis of origin, age and structure is more directly related to the coastal regions of New Jersey than to the nearby areas in New York and New England.

Geologically, Long Island is composed of several distinct and identifiable formations of unconsolidated sand, gravel and clay laid down in more or less parallel beds on a hard bedrock surface. Because the rock floor of the island dips gently and uniformly in a southeasterly direction, the overlying unconsolidated materials are relatively thin along the north shore and thicken appreciably toward the Atlantic Ocean. These relations are shown in a general way in Figure 3-1. At some localities in the extreme western part of Long Island, the bedrock floor is only a few tens of feet below land surface and is actually exposed at the surface in some areas in Northwestern Queens County. However, in southeastern Suffolk County the bedrock floor is more than 2,000 feet below sea level.

The bedrock floor beneath Long Island is generally composed of the same types of rock that are exposed at many places on the nearby mainland. The bedrock floor is actually the deeply buried seaward extension of these inland rocks. In most areas the bedrock consists of schist and gneiss, although other types of rock have been encountered at places. The surface of the bedrock slopes in a southeasterly direction at the rate of about 60 to 80 feet per mile. Along the north shore of Suffolk County, such as at Lloyd Neck and Orient Point, the bedrock surface is about 500 to 600 feet below sea level. Along the south shore at the western tip of Fire Island, the bedrock lies more than 2,000 feet below sea level.



GENERALIZED CROSS SECTION

L. I. SOUND TO ATLANTIC OCEAN

The stratigraphic units underlying Long Island can generally be distinguished from each other on the basis of stratigraphic position, color and mineralogic composition. Other characteristics of the individual formations, such as lithologic make-up and permeability, are specially important from the ground water standpoint and play an important part in controlling the recharge, movement and discharge of ground water.

The Lloyd sand member of the Raritan formation, the lower most water-bearing unit, is composed mainly of white medium to coarse sands and gravels. The top of the Lloyd occurs at a depth ranging from about 200 feet below sea level along the north shore to approximately 1600 feet below sea level on the south shore. The total thickness ranges from about 100 feet in the north to more than 200 feet in the southern part of the Island.

Due to differences in elevation and a substantial thickness of overlying clay beds, the water in the Lloyd sand is under artesian pressure in much of the area of its occurrence. Apparently, the Lloyd is overlain everywhere in the two counties by the Raritan clay member of the Raritan formation, which separates the Lloyd from the shallower sands of the Magothy formation.

Due to its occurrence at generally great depths and the limited recharge, most of the production wells that obtain water from the Lloyd sand in the two counties are either located in the northern part where the formation is encountered at relatively shallow depths or in the southwesterly portion of Nassau County where salt water contamination has made the overlying formations unusable.

The Raritan clay member of the Raritan formation overlies the Lloyd sand. The Raritan clay is composed chiefly of silty clay with some interbedded layers of sand. Its thickness ranges from about 100 to 300 feet. Along the north shore the clay is encountered in depths of about 100 feet below sea level. To the south its maximum depth is estimated to be more than 1400 feet below sea level. Because the Raritan clay generally is highly impermeable, it forms a confining layer that produces artesian

rions in the underlying Lloyd sand and limits the recharge of water into the
fer.

The Raritan clay member is overlain by the Magothy formation, which is generally composed of irregular lens like beds of gravel, sand, sandy clay and clay. Most of these sediments are fine-grained and contain considerable amounts of mica and streaks of lignite. The individual beds in the formation generally do not have a wide lateral extent, and few of the beds have been correlated over distances of much more than a mile or two. However, deposits of coarse sand and gravel have been encountered near the bottom of the Magothy in many wells. The Magothy formation dips to the southeast and thickens in that direction. Along the south shore the Magothy is believed to be more than 1300 feet thick, although in some places along the north shore, it is less than a hundred feet thick. The elevation of the upper surface of the Magothy is highly irregular, indicating that the formation was subjected to considerable erosion before the deposition of the overlying materials.

In Nassau County more than 80 percent of the water supply is withdrawn from the Magothy formation. In Suffolk County, although the Magothy has a large ground water supply potential, it has not been extensively used because adequate yields could be obtained more cheaply from shallow wells screened in the overlying Glacial deposits. However, because of increasing pollution in the Glacial formation most new public water supply wells have been drilled into the Magothy formation in recent years. It is likely that this formation will more extensively developed in the future.

The Magothy formation is overlain by Glacial and interglacial deposits, that are quite variable in composition. The Gardiners clay has been identified in places near the bottom of the Glacial deposits, particularly along the south shore area and inland for several miles. The Gardiners clay generally consists of dark gray or greenish gray silty clay, although layers of sand are found in the unit in many places. The Gardiners clay is relatively impermeable and

generally forms an effective confining bed, which produces artesian conditions in the underlying sand.

The deposits above the Gardiners clay consist of Glacial till and Glacial outwash. The till, which generally occurs at the land surface or at shallow depths, is composed of a heterogeneous mixture of material ranging in size from clay to boulders. The moraines that extend eastward to Northern and Central Suffolk County to Montauk and Orient Point consist mainly of till. Beneath the till-covered area and exposed on the surface over much of the two counties, are deposits of stratified sand and gravel known as Glacial outwash. These outwash deposits are highly permeable and constitute the most readily available source of ground water supply. The water table or upper surface of the zone of saturation generally occurs in these deposits within a few tens of feet of the land surface, except in the areas of higher elevation.

As the two Glacial stages represented by the terminal moraine began to melt, an enormous quantity of water was made available, releasing with it great quantities of debris frozen in the ice. The melt water spread out to the south, not only reworking the existing ground cover, but also depositing the well-sorted stratified outwash deposit, the coarseness of the deposits being directly related to the velocity of water at that particular time and place. It is obvious that the quantity and velocity of the melt water could not be uniform all along the length or width of the outwash plain. It is therefore not surprising that the outwash varies in texture from place to place.

The outwash plains, having been built in this manner, containing well-rounded graded sands and gravel, and having been washed, sorted and stratified, yielded a deposit of high porosity and permeability, thus allowing water to enter and conversely be withdrawn with great facility. It is by reason of easily available water in large quantities and at shallow depth that the Glacial stratum is so feasible and economically attractive for exploitation.

rology

Water supply for Long Island is obtained entirely from ground waters. Natural replenishment of this supply is derived soley from precipitation, which averages 42 inches per year. Due to losses from evaporation, transpiration, stream run-off and other factors, only part of the precipitation ever reaches the water-bearing strata. It has been estimated that approximately 50 percent of precipitation is lost due to the above-mentioned factors.

The water that infiltrates into the ground is either retained in the soil zone as soil moisture or passes downward to greater depths until it reaches the water table, where it becomes part of the main body of ground water.

When the recharge from rainfall infiltration reaches the water table, it percolates laterally at very low velocities in response to the slope of the water table. A portion of the total ground water recharge is disposed of by seepage into stream channels. This source of water, (ground water run-off), makes up a large part of the total flow of the streams in Long Island. It is estimated to be as high as 90 percent of all stream flow.

In the middle parts of the Island the piezometric surface of the Magothy and Lloyd formations have a lower elevation than that of the water table, recharge from the shallow Glacial formations takes place by slow downward percolation into the deeper formations. In areas where there is little or no pumping from wells, ground water levels are not depressed and the water table or the pressure gradient in the Magothy and Lloyd formations slope towards the shore areas, where discharge of fresh water takes place into the bays and in off-shore areas. However, in shore areas where heavy continuous pumping from wells is taking place, ground water levels are drawn down and the natural gradient toward the ocean may be reversed and salt water encroachment may take place.

Artificial recharging is extensively carried on in parts of Long Island

through storm run-off basins, subsurface sewage disposal facilities and other recharging installations. All such operations maintain ground water levels at higher elevations than would otherwise exist. Because much of the water pumped from wells is returned to the ground, the consumptive use of water is much less than the total quantity of water pumped. In areas where the consumptive use of water is small, even though the total pumpage may be large, ground water levels may not decline appreciably, except locally near areas of heavy pumping. In the vicinity of the divide running laterally through Long Island, the ground water is approximately 60 to 80 feet above sea level, at its highest point along the ground water divide from which point the ground water table slopes generally north and south.

The ground water is moving continuously into and along the water-bearing strata, all of which are hydrologically interconnected. Its rate of movement depends upon the head of water and the transmissibility of the strata through which it flows. It is estimated to move at a rate which varies from 0.5 to 2.0 feet per day.

In Suffolk County, the most recent estimate of natural safe yield from the ground water reservoir is 501 MGD from a total effective area of 794 square miles. In Nassau County, the natural safe yield is estimated to be 154 MGD from a total effective area of 189 square miles.

History of Ground Water Pollution

The sewage disposal practices predominant in both Nassau and Suffolk Counties are primitive and obviously conducive to ground water contamination. In Nassau County, approximately 44 percent of the population is presently served by public sewage collection and disposal facilities serving approximately 630,000 persons. The construction of a major portion of these facilities was not initiated until 1947. The remaining 800,000 people in Nassau County dispose of their sewage through the use of subsurface disposal facilities, namely, cesspools. Plans are currently being prepared for public sewage collection and disposal facilities to serve another 560,000 people, and comprehensive studies are being conducted for the remaining areas.

The population of Suffolk County is approximately 1,000,000 persons. Only 5 percent of these million persons are served by public sewage collection and disposal facilities. The remaining 95 percent rely upon the use of subsurface sewage disposal facilities, such as cesspools, which discharge sanitary wastes directly into the ground water table or into the relatively shallow layer of overlying sand and gravels. A comprehensive sewerage plan has been prepared for the five western towns in which more than 75 percent of the population resides. A referendum in 1967 to authorize construction of a sewer district which would serve some 350,000 persons in the most densely populated area was defeated by a ratio of 6 to 1. There is no present indication that an abrupt change will take place in Suffolk's current methods of sewage disposal. It is estimated that Suffolk's population employs 250,000 individual subsurface disposal systems discharging 100 MGD of sewage into the ground water table via cesspools.

In both Nassau and Suffolk Counties, water is obtained entirely from the underlying ground water aquifers. In Nassau County, essentially all of the population is served by public water supply facilities. In Suffolk County approximately 70 percent of the population is served by public water supply, and the remaining 30 percent depends upon the use of individual wells located on each homeowner's plot. There are approximately 80,000 such private well water facilities.

In Nassau County, approximately 85 percent of the water supply wells are screened in the Magothy stratum. The remaining 15 percent of public water supply is obtained from Lloyd wells and some Glacial wells. Decades ago, most of Nassau's water supply was obtained from the readily available and highly productive Glacial stratum. However, the continual discharge of massive quantities of sewage into this uppermost stratum led to its gradual abandonment, and the use of the deeper Magothy stratum. In those areas in Nassau County in which sewers have been installed for some 15 to 20 years, there are indications that the quality of the Glacial is improving.

In Suffolk County, the Glacial stratum is the major source of both public and private water supplies. The current trend, however, is toward an increasing use of the Magothy stratum because of increasing pollution in the Glacial. In a 7-year period commencing in 1959, the Suffolk County Water Authority, the major water supplier operating in southwestern Suffolk, increased its Magothy withdrawals from 20 percent to 80 percent. In order to continue serving a water which meets the U.S. Public Health Service standards, it became necessary for the Authority to curtail withdrawals from the Glacial stratum because of increasing pollution.

Numerous reports by the Nassau and Suffolk County Health Departments and other official agencies, both State, Federal and County, have stressed the continuing and increasing appearance of ABS and other sewage-originated wastes in the Long Island ground waters. The problems have been most severe in the densely populated areas of the county but appear sporadically throughout the entire county. The greatest problems occur in those areas where homeowners must rely upon individual well water supplies. Surveys in such areas have shown 30 to 90 percent of the well water analyzed contained ABS and other sewage constituents. ABS is also detected in public water supply wells which obtain their water from the Glacial stratum in the heavily populated sections. The ABS contamination in these public supplies have exceeded the maximum permissible standards for ABS of 0.5 mg/l. Some public water supply wells examined have contained from 0.3 to 1.2 mg/l of ABS. To date, ABS has been detected in at least 7 wells in three public water supply systems. This has necessitated restricted pumping and/or discontinuance of the use of the water.

In addition, during the drought period of 1961 through 1965, the Suffolk County Water Authority detected trace quantities of synthetic detergents in

* Water Quality Criteria 0.2 ppm LAS

several of its upper Magothy wells in the center of the Island. The appearance of detergents in these deeper wells at these specific locations confirmed that the major areas of recharge to the Magothy are near the areas of maximum elevation of the static water table, under the present piezometric conditions.

The Nassau and Suffolk County Health Departments have carried out detailed surveys of private well water supplies in various areas in both counties. The results of some of these surveys are given below:

Location	Number of Wells Examined	Percent Positive for ABS
West Amityville	74	77%
Wantagh	18	67
Breezy Point, Amityville	55	40
Amityville Harbor	31	55
Copiague	186	32
North Lindenhurst	54	76
Babylon	20	95
West Islip	16	75
West Islip	100	30
West Islip	45	25
Center Moriches	65	30
Nassau Shore, Massapequa	78	81

In the Copiague areas 186 wells were examined, and a detailed report was prepared by the Suffolk County Health Department. In this survey, complete chemical analyses and the bacteriological analyses were made of all samples, and 32 percent of the wells examined failed to meet drinking water standards. Cooperative action between the community, Suffolk County Water Authority and Suffolk County Health Department resulted in extension of public water supply into the affected area.

A survey conducted in October 1958 showed 41 of 54 wells sampled in North

Lindenhurst in addition to all analyses showed the presence of ABS and other sewage-associated constituents. In November 1959, these wells were resampled to determine what changes had taken place in the intervening 13 months. The results of the resurvey indicated:

1. Of the original 34 wells which contained ABS, two were equal in ABS content to the previous year's results.
2. Two wells had decreased in ABS content.
3. Thirty of the wells had increased in ABS content. Of this group, 10 had doubled and 6 had tripled in ABS levels.
4. The initial ABS range in the October 1958 survey was 0.5 to 1.5 milligrams per liter, and two samples exceeded 1.5 milligrams per liter.
5. The range for the November 1959 survey was 0.5 mg/l to 4.5 mg/l, and of the total, 13 exceeded 1.5 mg/l. Seven of the 13 exceeded 2.0 mg/l. When these wells were tested, if the results of the ABS analysis, which was less than .5 mg/l, the well was considered to be free of ABS. This conclusion was based upon the assumption that the ABS test at that time was accurate only for 0.5 mg/l or higher.

In all of the above surveys, complete analysis of the well waters indicated the presence of other sewage-associated constituents. In addition to ABS, all analyses showed excessive quantities of nitrates, free ammonias, alkalinity, chlorides, phosphates, COD and total dissolved solids. Bacteriological examinations showed the presence of the coliform organism in several instances.

A research project which investigated the effect of launderette wastes upon the ground water travel was carried out under a research grant from the New York State Health Department. The results of the project were reported upon in Research Report No. 6 by the Suffolk County Health Department and C.W. Lauman Company. In essence the project indicated that launderette wastes in one area traveled for a distance of 1,000 feet and descended to a depth of 100 feet. The descent of the wastes was halted

by extensive clay lens.

The water quality of south shore streams is indicative of the general water quality of the upper Glacial aquifer, as the base flow of most of these streams is e water from this aquifer. Therefore, a monitoring of the past and present quality of these waters is an ideal indicator of quality trends. A review of the data from 1962 to 1967 shows the detergent levels in the streams in the following towns have increased as follows:

1.	Babylon	133%
2.	Islip	265%
3.	Brookhaven	188%

In three of eleven streams sampled in the Town of Babylon in 1962 maximum concentrations of detergents exceeded the allowable concentration in drinking water. By 1967 every one of twelve streams had concentrations which exceeded the drinking water standards. Sampling of the streams indicated a definite increase in detergent concentration in an east to west direction, the obvious inference being that the greater the ulation the greater the pollution.

Legislative Action

Private and public concern with the increasing contamination of water supply sources by ABS brought the problem into such prominence that legislative action was deemed necessary.

In the 1962 session of the New York State Legislature, the Senate and Assembly, ith the approval of Governor Rockefeller, mandated the Temporary State Commission on ater Resources Planning to make a study of the detergent problem. The instructions o the Commission are expressed in the following terms:

"The Commission shall undertake an investigation and careful study of the effects and the problems arising from the underground discharge of wastes containing deter- nts upon the ground water supply of Long Island, the only source of supply available that area of the State outside the limits of the City of New York. The Commission

shall consider the effects of the continually increasing discharge of detergents into the underground upon the health, safety and welfare of the present and future population and the dangers that such discharges of waste may create to the adequacy and safety of the water supply now and in the future. The Commission shall ascertain if the area of contamination from detergent wastes is more widespread from the point of discharge than is usual in the cases of other forms of wastes. The Commission shall ascertain if similar conditions exist in other areas of the State."

An early examination into the problem by the Commission indicated that:

1. The problem was not peculiar to New York State.

2. Studies had been undertaken by many technical agencies here and abroad for many years and a considerable fund of information was already available as background for the New York State investigations.

3. These data, valuable though they are, could not eliminate the necessity to study water conditions in Long Island and elsewhere in the State under the actual conditions existing in New York.

4. Every principal source of information, knowledge and experience had to be enlisted into service in order to provide authentic findings and the best possible solutions to the pressing problems.

The task groups were integrated into a single technical guidance unit because of the interlocking details of the various studies. Repeated conference meetings were held by the joint groups to plan the progress of field studies and to evaluate findings in terms of their effect on next-step planning of the studies.

The Suffolk-Nassau County field investigation task unit, after conferences amongst its members, prepared a justification and procedure report outlining the areas in which additional information was required and presented test procedures by which such information might be obtained. The report is given below:

Scope and Objectives of Project

1. There will be developed a technique and methodology for studies of this nature. There are techniques of analysis, collection of samples, placement of test wells and other procedures which must be or will be developed in carrying out this project. The information and techniques acquired in the conduct of the project will most certainly contribute to the methodology necessary to carry out such investigations.
2. Additional information will be obtained relative to the horizontal and vertical rates of percolation and direction of flow of levels of ABS and other wastes while traveling through saturated and unsaturated subsoils.
3. Additional information will be obtained relative to the effect of ABS on the travel of other wastes, including bacteria when present with ABS in the saturated and unsaturated subsoils.
4. The effect on ABS and other waste materials brought about by varying subsoils in the zone of aeration and in the saturated subsoils.
5. Additional information will be obtained relative to adsorption of ABS by the various subsoils which are predominant in the Long Island area.
6. Increased knowledge on the phenomena of biochemical degradation of ABS and other waste in saturated and unsaturated soils, in addition to information on the relative biodegradability of alternate surfactants.

7. Variations in the amounts of nitrogen, sulphur, and phosphate compounds in saturated and unsaturated soils and under aerobic and anaerobic conditions.
8. The development of suitable tracers for the study of the movements of wastes into and through the ground waters.
9. Additional information on the mechanisms of how ground water contamination comes about and suggested methods of control. This will also demonstrate long-term and short-term effects of liquid and solid waste disposal methods in ground water areas.
10. Through the study of the waste disposal units involved, it is believed some additional interpretative data may be obtained relative to the mechanics of soil clogging.
11. Knowledge will be obtained relative to the effectiveness of the predominant individual sewage disposal systems in reduction of wastes prior to their discharge into ground water.
12. In addition to the applicability of the knowledges gained about the problems of water supply, this information will also serve as a guide to the return of treated sewage to the ground waters.

Authorization for Project

State Health Department Contract.

In 1963 a contract was established with the State Health Department In order to carry out the proposed field study in Nassau and Suffolk Counties. The participants in the contract were the New York State Health Department, the Nassau County Health Department, the Suffolk County Health

Department, the Suffolk County Water Authority and C.W. Lauman & Company. The Nassau and Suffolk County Health Departments were to furnish field personnel for conducting tests and collection of samples and recording of data. Laboratory services were provided by the laboratories of the New York State Health Department and Nassau County Health Department, Suffolk County Water Authority and Lauman Laboratories. C. W. Lauman and Company were to install the necessary test well equipment. The contract was established in the sum of $30,000. The Temporary Water Resources Commission, its staff and engineering consultant functioned as the base from which all operations were carried out. Conferences and meetings sponsored by the Commission provided for periodic review of the project and its findings.

As the project progressed, the concept evolved of sampling the cesspool discharge as it passed through the unsaturated soils above the ground water table. In order to do so, it was necessary to install a concrete shaft and sampling devices parallel to and below the cesspool. A contract ($12,000) to construct the shaft and install the sampling devices was established between the New York State Health Department and C. W. Lauman Company and funded by a U.S. Public Health Service Grant.

* The above represents money well spent but larger than our staff have can produce. We therefore can't use all findings as written for our action to ban detergents.

MOST OF US HAVE SOFT WATER, BUT

In Harder Water

In the few areas with harder water, it is even more important to follow good laundering practices in regard to sorting, water temperature, and more frequent laundering.

To prevent build-up of and to remove soap curd residue which accumulates in clothes washed with soap and harder water:

First, try a non-phosphate water softener ("precipitating"), such as washing soda or borax.

If the problem persists, you may have to use a "non-precipitating" water softener, which is a complex phosphate.

Even in soft water, a load of very heavily soiled clothes can add enough hardness to the wash water to require a water softener.

Soap curd is more apt to develop in the "wash and wear" cycles.

Thorough and repeated rinses are required to flush away soap curd.

Some families have installed water softening systems; others visit a commercial laundry which has access to soft water.

Wringer-type washers, though more laborious to operate, offer superior cleaning when using soap in hard water.

The sale of detergents for laundering and hand dishwashing is banned in Suffolk County as of March 1, 1971.

This law was passed because detergents are the most persistent and most commonly found pollutant in our ground waters, the only source of water in Suffolk County.

The ban concerns "surfactants," or foaming agents, which do not break down in septic tanks and cesspools.

<u>All detergents - even "no-phosphate" detergents - contain these banned ingredients</u>.

The use of soap will help to solve water pollution in Suffolk County.

* * * * * * * *

Prepared by:
Home Economics Division
Cooperative Extension
of Suffolk County
246 Griffing Avenue
Riverhead, New York 11901

Cooperative Extension is the educational arm of the New York State Colleges of Human Ecology and Agriculture, at Cornell University, and the U.S. Department of Agriculture, relaying practical, reliable information to Suffolk County residents.

Produced and distributed with the cooperation of:
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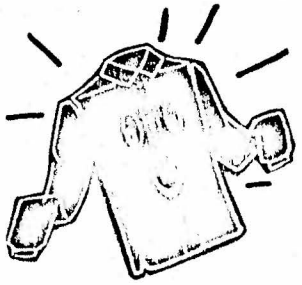


WASHING CLOTHES SUCCESSFULLY WITH SOAP

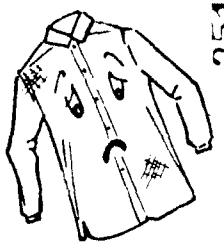
DID YOU KNOW...

Soap is an effective cleaner in soft water?

In fact, it cleans better in soft water than do detergents?

Water in Suffolk County is reported to be quite soft?

Now while switching from detergents to soap, may be a good time to take a look at your laundering methods.



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To Get Clothes Clean

Save and read handtags which give laundry directions. Keep them in a 3 x 5" file box, making a category for each family member. Read the instruction book for your washer and dryer.

Remove stains promptly. Keep a good stain removal chart handy, such as USDA Bulletin G-62, available for 15¢ from the Superintendent of Documents, Washington, D.C. 20402.

Sort clothes by fabric, color, and degree of soil. Wash whites separately from colored fabrics to keep whites from getting a dingy appearance and to keep colors bright. Wash heavily soiled clothes by themselves to prevent dirt from redepositing onto other items. Keep delicate items separate to prevent damage from heavier items. (Wash white nylon only with white items, as nylon picks up color easily from other clothes.)

Pretreat heavily soiled areas such as collars and cuffs. Wet the area and sprinkle it with soap, or spray with a pre-treatment aerosol.

Vary the makeup of a washer load. A load with various sized pieces will wash better than a load made up entirely of large articles.

Don't overload your washer. Clothes must have room to agitate freely.

Most washers clean best if they are filled only about 3/4 full with dry clothes. Clothes will be less wrinkled, and your soap and laundry aids can reach each part of the fabric. Some types of soil are removed only by agitation.

Use hot water. Hot water cleans faster and better than cold. With wash and wear clothes, you may have to choose either cleaner clothes with hot water or fewer wrinkles with warm water. Some recommended temperatures:

Medium to heavily soiled whites and colorfasts	140°
Medium to heavily soiled colors if color is important	120°
Lightly soiled clothes	120-100°
Delicates	100°
Machine washable wools	90°

You can check water temperature in the washer with a candy or fat thermometer. Or - try it with your hand; few can hold their hands in 140° water for even a second or two; 120° feels uncomfortably warm; 90°-100° feels comfortable.

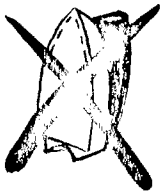
Use the right kind of soap. Light-duty soaps are made for washing dishes, baby clothes, and lingerie. All-purpose soaps are stronger, designed for normal or heavily soiled clothes.

Use the right amount of soap. Too little won't get your clothes clean.

Too many suds won't allow the clothes to move freely in the washer, and may require an extra rinse - a needless waste of the water you are trying to conserve. (A capful of fabric softener will "calm down" an excessive overflow of suds.)

Don't guess - measure your soap and laundry aids (bleach, bluing, etc.).

Follow directions on the box: for best dissolving, some soaps should be added before the clothes; others can be added afterward. Your method will also depend on your type of machine.



To Care for Permanent Press

Wash clothes often to avoid heavy soiling. Pretreat oily soil; this is especially important.

Use higher temperatures to remove the most soil. Warning: temperatures above 140° make soil more difficult to remove.

Wash and wear cycles on your washer and dryer minimize wrinkling. If you don't have such cycles, follow these suggestions:

- Use cooler water for washing and rinsing. Clothes will wrinkle less during the spin cycle.
- Avoid severe agitation as it will weaken cotton fibers in permanent press and cause pilling on polyester and nylon. Use short wash time (about 5 minutes) or slower agitation. Turn garments wrong side out to protect right side

TO STORE MANAGERS: PLEASE POST AT SOAP SHELF LOCATION

WE GET QUESTIONS....

WHAT DO I USE FOR DISHES?

Soap flakes or powder. Rinse thoroughly with hot water.

Light-duty soap is easier on hands and is successful for most dishwashing. You may prefer heavy-duty soap - particularly good for soaking pans and stuck-on food.

If your hands are sensitive, wear gloves. The alkali in heavy-duty soaps can be drying to skin: Always use cream or lotion after use (even when using detergents).

This is a good time to remind you that grease should be scraped or poured off before going into the dishpan and down the drain. Use an empty coffee-can for liquid grease and store in the refrigerator until full.

At this time, we know of no liquid soaps on the market for dishwashing use.

HOW CAN I GET MY CLOTHES CLEAN IN COLD WATER AND SOAP?

With great difficulty. Seriously - we do not recommend cold water for good cleaning. If you've tried it, you've also discovered it's hard to dissolve the soap.

Even lukewarm water cleans better. The hotter the water, the more soil the water can dissolve and the faster the soil is removed. Hot water also softens oily soil so that it is more easily removed. Caution: Protein soils, such as egg or blood, should always be rinsed in cool water first, to avoid coagulation and "setting" of the stain in hot water.

However, recognizing that there are emergency situations, we recommend the following if you must use cold water:

1) Dissolve soap first in hot water (heated on stove, if necessary)

2) Don't let your clothes get too dirty

3) Use laundry aids, such as bleach - if necessary

*** *** ***

For further information:

"SOAP" - Office of the County Executive
Hauppauge, N. Y. 11787

Tel: 724-2500 Ext. 258

or

Home Economics Division
Cooperative Extension of Suffolk County
246 Griffing Avenue
Riverhead, N. Y. 11901
Tel: 727-3046

DETERGENT UPDATE

You know what detergents are?

We told you about them last year, in the June issue.

They're chemical water softeners. A formulation of questionable ingredients designed to cope with horrendous cleaning problems caused by hard water. They're "built" products, laced with phosphates, enzymes or other constituents that currently are driving ecologists up the wall.

You remember the problems. Scientists and legislators began telling the American housewife, in early 1970, that her detergents contained nutrients (mainly phosphorous) that, after serving their purpose in household cleaning, contributed to the growth of vegetation in surface water supplies. Eutrophication, a biological imbalance, was the undesirable result. The common image was a stagnant, green pool, draining to a household water tap.

Enzymes, on the other hand, were little bugs which, after eating organic stains from the laundry, continued their glutonous frolic in human organs. At least, a good deal of skin eruptions were credited to these living ingredients.

The whole detergent pollution scare seemed to evaporate in the summer months of 1970. Detergent manufacturers issued disclaimers, enzymes fell in general though quiet disfavor, and things returned to normal.

Behind the scenes, however, a thousand chemists were churning up new creations . . . detergents without phosphates. These could and did take two forms. In the first, phosphate was eliminated entirely. In the second, NTA, another builder, replaced all or most of the phosphates.

The phosphate-free products, without NTA, simply didn't work in hard water. Those with NTA were satisfactory, but far from ideal.

Then, in later 1970, the Chicago City Council decreed a cutback in the phosphate content of detergents sold in the city after February 1, 1971. Products containing more than 8.7 percent of phosphorous, not including certain dishwashing and industrial cleaners, will be banned from sale in Chicago by then.

Shortly after the Chicago action, the New York County of Suffolk banned the sale of over 200 detergents, including most well-known brands, to be effective in March, 1971. In this case, the surfactant, not the phosphates were to blame for the legislative action. It seems the foaming problems, thought to be overcome when detergent manufacturers developed biodegradable ingredients, were beginning to recur.

Phosphates were, however, far from forgotten in New York State. Governor Nelson Rockefeller, in response to concern over eutrophication of State waters, declared that he would, in 1971, ask the State legislation to ban the sale of phosphate-bearing detergents by 1972.

After this pronouncement, New York City disclosed that it, too, was considering a bill to phase out detergents containing phosphates. The best remedy to growing eutrophication problems in and around the city, according to a representative of its environmental administration, is to "block phosphates at the washing machine door, since it would take an awful pile of change to extract them at the sewage treatment plant."

In announcing New York City's feelings on phosphates, the New York Daily News, largest circulation newspaper in the U.S., added this item:

A Warning On Soap Use

"With certain detergents legislated off supermarket shelves, Suffolk County housewives may have to turn to soap to wash the family clothes — however, a washing machine company spokesman cautioned that soap, used with anything but "completely soft" water, forms an "insoluble curd" almost impossible to rinse from clothing. Packaged or mechanical water softeners would help, the spokesman said."

☆ ☆ ☆

The spokesman, in stating that "packaged"' water softeners would help, apparently didn't realize that these products are comprised mostly of phosphates.

The detergent industry's response to growing concern over phosphates was to switch to NTA, albeit with limited fanfare. The few producers who didn't follow, just eliminated the phosphate and took an anti-pollution stance. With the exception of two companies which make soap for use with soft water, no qualifications were put on the use of the latter products. Presumably, housewives using phosphate-free soaps without NTA in hard water, are wondering what's wrong with their wash machines.

On December 18, 1970 somebody dropped the detergent jigsaw following a Public Health Service report that large-scale use of NTA could lead to serious human genetic defects. Enough said, detergent manufacturers agreed. It's back to phosphates until somebody finds something better.

And that's where things stand today. Sears claims to have a detergent that works universally without phosphates or NTA. They don't, however, claim anything new or revolutionary. In fact, they don't say anything about their formula, so if they've found the key it's their secret.

So it is that Good Housekeeping Magazine, in its January 1971 issue, asks: "Why not go back to soap?" The magazine makes the point: ". . . soap is a good cleaning agent only if it is used in soft water. This means that if you live in a hard-water area, you would have to soften the water." It's a good point, a logical point, a practical point . . . it's a detergent alternative. "Soften the water."

You, the water conditioning dealer, have the solution to the detergent mess in your product line. Have you told anybody about it?

PR NOTICE 70-18

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PESTICIDES REGULATION DIVISION
WASHINGTON, D. C. 20250

August 7, 1970

NOTICE TO MANUFACTURERS, FORMULATORS, DISTRIBUTORS, AND REGISTRANTS OF ECONOMIC POISONS
Attention: Person Responsible for Federal Registration of Economic Poisons

Cancellation of Registrations of Mercury Products Bearing Certain Directions for Use

There is accumulating data on the extensive use of mercury and its contamination of the environment. The data shows that residues of mercury in water and marine life are increasing. Mercury compound use which results in water contamination is potentially injurious to man and his environment.

Mercury compounds used for algicidal, slimicidal and laundering purposes result in water contamination. Therefore, in accordance with the provisions of Section 4c of the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 135b(c)), it has been determined that the registrations of all products containing mercury with directions for use as listed below should be canceled for the reason that continued registrations of such products is contrary to the provisions of Sections 2z(2)(c), 2z(2)(d), and 2z(2)(g) of the Act (7 U.S.C. 135(a)(2)(c), 135(z)(2)(d), 135(z)(2)(g)).

1. All mercury products bearing claims and/or directions for use as slimicides.

2. All mercury products bearing claims and/or directions for use as algicides.

3. All mercury products bearing claims and/or directions for use in laundering.

Accordingly, registrations of these products are canceled, effective 30 days following receipt of this notice, unless corrected labeling is submitted within such 30-day period or the other procedures set forth in Section 4c of the Act are invoked.

STATE OF CALIFORNIA RONALD REAGAN, Governor

CALIFORNIA DEPARTMENT OF AGRICULTURE

1220 N Street
Sacramento
95814

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December 1970

REREGISTRATION INSTRUCTIONS FOR ECONOMIC POISONS FOR 1971

Your certificate of registration of economic poisons expires December 31, 1970. Any sale of the products after this date will be a violation of law unless the application for renewal of registration is received with the proper fee.

APPLICATIONS FOR RENEWAL OF CERTIFICATE OR REGISTRATION OF ECONOMIC POISONS

Duplicate copies of the renewal form showing the products registered by your firm, are enclosed. Please review these pages and cross off the name of any product that is not to be reregistered and any that have been changed in name or composition. Keep for your files the duplicate pages marked "copy". Complete and return the white application forms for all new products and those changed in name or composition. Keep a copy of each white form that you return.

LABELS

CANCELLATIONS

The United States Department of Agriculture has withdrawn the registrations of all economic poisons for use on food crops unless a finite tolerance for residue of the economic poison has been established or a specific extension has been granted. The enclosed list of uses, cancelled by the United States Department of Agriculture, will not be accepted by the California Department of Agriculture.

In addition to this list, the following non-food uses are cancelled:

1. All mercury products bearing claims and/or directions for use as slimicides
2. All mercury products bearing claims and/or directions for use as algicides
3. All mercury products bearing claims and/or directions for use in laundering

All cancelled uses must be deleted from the labels of all economic poisons before registration will be issued for the year 1971.

ASSEMBLY

AGENDA FOR COMMITTEE ON ENVIRONMENT AND PUBLIC RESOURCES

Date _____ Time _____ Room _____

Bills or Resolutions to be considered	Subject	Counsel requested*

*Please do not ask for counsel unless necessary.

HEARINGS PENDING

Date MARCH 18, 1971 Time 8:00 A.M. Room 214
Subject A.B. 482 - - Enacts new water pollution control law.

Date _____ Time _____ Room _____
Subject _____

3/18/71

The Nevada Agriculture Live-
Stock Council supports the
amendments suggested by
the 1st speaker to AB 482
this day

Signed
Bill Hicks
Executive Director

Proposed amendments to A.B. 482

In section 7, restate the definition of "pollution" as follows:
"Pollution" means such contamination or other alteration of the physical, chemical, or biological properties or characteristics of any waters of the state, including, but not limited to, changes in temperature, taste, color, turbidity, or odor of such waters, or such discharge of any liquid, gaseous, solid, radioactive, or other substance into any waters of the state as will or is likely to create a nuisance, or render such waters actually or potentially harmful, detrimental, or injurious or potentially harmful, detrimental, or injurious to public health, safety, or welfare, or to domestic, municipal, commercial, industrial, agricultural, recreational, aesthetic, or other beneficial uses of water; or to livestock, wild animals, birds, fish, or otheraquatic life.

In [redacted]

In Section 13, (1) line 49 should read as follows:
life, fish and other aquatic life, and impairs domestic, muncipal, commercial, agricultural...
line 50: industrial, recreational, aesthetic orother beneficial uses of water.

In Section 13, (1) c, as follows:
It is, and the legislature so declares, the public policy of this State to conserve the waters of the state and to protect, maintain, enhance, and improve the quality thereof for public water supplies for the propagation of wildlife, fish, and other aquatic life, and for domestic, municipal, commercial, industrial, agricultural, recreational, aesthetic-or other beneficial uses of water; and to provide that no wastes shall be discharged into any waters of the state without first receiving that degree of treatment necessary to protect the beneficial uses of such waters.

In Section 13, (2), as follows:
The Legislature declares that the prevention, control, and abatement of the pollution of the waters of this state, and the enhancement of the quality of such waters, are of the highest public interest, and constitute beneficial uses of such waters; and the provisions of sections 2 to 43, inclusive of this act, are enacted in the exercise of the police power of this state for the purpose of protecting the health, peace and safety, and general welfare of the people of this state. The legislature further declares that such exercise of the reasonable regulation of all types and forms of property uses.

In Section 16, (1), as follows:
The board shall develop and adopt a comprehensive plan and program for the prevention, control, and abatement of pollution of the waters of the state, and for the enhancement of the quality of such waters, and from time to time, review an modify such plan and program as necessary, and to the extent deemed necessary by the board to classify the waters of the state taking into consideration the criteria specified in section 20 of this act.

In Section 16, (2), as follows:
In order to develop the comprehensive plan and program for the prevetntion,

prevention, control, and abatement of the pollution of the waters of the state, and for the enhancement of the quality of such waters, the board is authorized to classify such waters in accordance with their present and future most beneficial uses in the interest of the public, (etc.)

In Section 19 (1) as follows:

The board shall cause samples to be collected from the waters of the periodically and in a logical geographical manner so as to be informed of the water quality conditions of the waters of the state.

In Section 20 (2) f, as follows:

The extent of pollution or water quality degradation resulting from natural causes, including mineral and chemical characteristics....

In Section 21,(2)a, as follows:

Line 3, substitute "Environmental Protection Agency" for "Water Pollution Control Administration."

Box 653
Incline Village
Nv. 89450
March 23, 1971

Committee on Pollution fo Water
Nevada Assembly

Gentlemen:

I am a housewife in Incline Village and very much interested in air and water pollution.

There are several pertinent facts relating to this discussion:

1. Phosphates have a beneficial use in maintaining cleanliness and health by their action on clothing and in dishwashing. Do not forget the beneficial use of dishwashers in our many restaurants.
2. Phosphates are necessary to the life and health of plants. This is in contrast to many chemicals which destroy life and which might be substituted for phosphates and thus do us great harm.
3. Phosphates can become a scourge in supporting too much life, as in growth of algae and consequent reduction of exygen and light in surrounding waters to the detriment of some types of fish and marine life.
4. Phosphates as detergents can pose a danger to retention of water in wells and lakes because of wetting action.
5. Phosphates can be removed from effluent in tertiary processes.

Inasmuch as there are both benefits and disadvantages from the use of phosphates, I suggest that sale of phosphates not be eliminated but be put under certain conttrols, as follows:

1. Phosphates be allowed for sale in all areas which have tertiary sewage treating systems which remove phosphates from the effluent.
2. Some areas use treated effluent, secondary only, as a fertilizer as well as a source of water. If the water scientists of the State of Nevada find that this agricultural use is damaging streams, lakes, and wells, or threatening them, then sale of phosphates in those areas using that system should be eliminated. If no harmful effects are found, then sales should not be restricted.
3. Phosphates should be eliminated from sale in all areas which have no treatment systems and where lakes and streams and wells are endangered from detergent action.

Signed,

Ruth L. Buckwalter

Ruth L. Buckwalter
(Mrs. John C. Buckwalter)
831-0873

TESTIMONY OF MR. ALAN LESSIN
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SECTION 5:

Delete in its entirety. Insert the following: The term "treatment works" means the various devices used in the treatment of sewage or industrial wastes of a liquid nature, including necessary intercepting sewers, outfall sewers, pumping, power, and other equipment, and their appurtenances, and includes any extentions, improvements, remodeling, additions, and alterations thereof.

SECTION 7:

Delete in its entirety and add:

"pollution" means any discharge or spillage of any liquid, gaseous substance, solids, radioactive waste, sewage or materials or substances of any kind or any combination thereof (hereinafter "wastes"), into any waters of the state, navigable waters of the United States and tributaries thereof, interstate waters, or underground or perculating waters (hereinafter, "waters") for any public or private facility or appurtenance thereof, sewage system, treatment works, marine or land conveyance, or otherwise, whether such discharge or spillage is made directly into such waters or in a manner, by such means, or upon such place as may reasonably be foreseen will cause such wastes to be introduced into such waters or portions thereof in violation of state or federally approved water quality standards, effluent standards, permit conditions or implementation plans authorized hereunder, provided however, domestic wastes discharged into a municipal sewage system, or into an approved septic tank, except as hereinafter otherwise provided shall not be considered "waste" hereunder.

SECTION 10:

Delete the entire section. (See Section 5 - have already given a definition.)

SECTION 11:

Delete in its entirety.

SECTION 12 (2):

Delete.

SECTION 14 (2):

On line 4, insert a period (.) after the word "thereto" and delete the remainder of the sentence.

SECTION 16 (2):

On line 4, delete the word "most".

SECTION 17 (2):

Delete the term "disposal systems" on lines 3 and 4 thereof.

SECTION 17 (5):

Delete in its entirety. The present provisions are unnecessary and too restrictive See the suggested revision of Section 19 (1).

SECTION 17 (7):

On line 2, insert a comma (,) after NRS.
Line 3: Insert "adopt and" after the word "to"; on line 4, insert "or improve" after the word "abate"; on line 5, change the period (.) to a comma (,) and insert the following language: "any limitations thereon contained in said act to the contrary notwithstanding."

SECTION 17 (9):

On line 1, delete the words "when requested".

SECTION 18:

On lines 4 and 5, delete "of the state".

SECTION 19 (1):

Add the following new sentence at the end thereof: "Water samples may also be taken at such times as will facilitate administration and enforcement of this act." That should be added to the end of Section 19 (1).

SECTION 19 (2):

Delete in its entirety. Too restrictive.

SECTION 20 (2):

Delete in its entirety. It is too dilutive of the authority of the board to determin reasonable water quality standards. The application of the criteria could result in the forced adoption of standards which reflect the lowest common denominator and the status quo, and could jeopardize the state vis-a-vis federal approval of state standards as well as continued receipt of benefits by the state under the Federal Water Pollution Control Act as amended.

SECTION 21 (2) (d):

Delete in its entirety. The large size of a waterway should not constitute an invitation to pollute, particularly in view of the cumulative effect which a proliferation of discharge may have upon such a waterway. Standards should be predicated, not upon the basis as to how much pollution a waterway may assimilate, but upon the pollution abatement and water quality improvement theory.

SECTION 21 (2) (f):

On line 3, insert the word "not" between the words "will and "be".

SECTION 21 (2) (g):

Delete. Comment: An intolerable discharge of waste is no more tolerable because it may not be presently treatable or because treatment may be costly.

SECTION 22:

Add the following sentence at the end thereof: "Nothing contained in the Nevada Administrative Procedure Act shall prohibit the Board from adopting and enforcing specific enforcement or implementation plans or schedules, compliance orders, permit systems or permits of less than general applicability or purport."

SECTION 23:

Delete in its entirety (or in the alternative, insert on line 3 after the word "board", the word "may" and delete the words "shall not")

SECTION 25:

On line 2, insert the words "or otherwise be" after the word "state".

SECTION 26 (1):

Delete in its entirety. Comment: This would otherwise be a limitation upon the board's powers particularly inasmuch as the pollution aspect is measured in speculative terms of both "significant" and "justified by the public need".

SECTION 26 (2):

Delete in its entirety.

SECTION 26 (3):

On line 12, delete the words "of the state" and insert a period after the word "waters". Delete line 13 in its entirety. Line 14, delete words "to the extent specified in this section".

SECTION 26 (4):

This is for the drafter, who determines the revision is appropriate. I would recommend an increase in the minimum amount of fine for violations under the act. The present minimum I believe is $150. It should be substantially increased, I think. Particularly when you consider that violation of the bodily waste standards would carry with it the same type of minimum. The elimination, the discharge, of bodily waste from vessels for example, is not nearly as serious as the discharge of the industrial wastes, includes noxious or toxic substances, into a body of water.

SECTION 27 (1):

Add at the beginning thereof the following: "Subject to the standards and regulations of Section 13, Federal Water Pollution Control Act, as amended at such date as such standards and regulations shall become effective," Comment: The reason for this change is to render the Section 27 (1) self-sufficient at the time that Section 13 of the Federal Water Pollution Control Act becomes effective. And the effective date for the standards and regulations under that act as pertains to new vessels - two years after promulgation of the standards and regulations and five years as to existing vessels following the date of promulgation of those standards and regulations

If the regulations and standards that are to be promulgated require treatment devices or established parameters for treatment and since the Section 13 (f) of that said act requires a pre-emption of any state laws or regulations on the same matter, then the Federal standards will take over and as I've indicated, if we adopt something short of no discharge as to all navigable waterways, those standards shall apply and pre-empt any state standards to the contrary.

Again, back to Section 27 (1), continuing on line 4, after the word "conveyance" add the words "whether marine or otherwise".

In the last sentence of that same section, 27 (1), delete in its entirety. Comment: The present provision in the last sentence of Section 27 (1) - its effect would be to permit an on-shore pump-out facility, if we are dealing with vessel pollution, to make discharges which vessels are prohibited from doing. If the state adopts a no discharge standard, holding tanks on vessels will be required and the discharge would have to be made to on-shore pump-out facilities. It would be senseless to require no discharge from vessels if the on-shore facilities will nevertheless discharge such raw sewage. An ambiguity would be created in view of the recommended definition of the term pollution which would include such discharges from on-shore facilities of any kind of sewage or materials or substances such as I have indicated.

SECTION 28 through 42:

Under present provisions of these sections the enforcement procedures for violations of the act appear totally ineffective for purposes of water pollution abatement. Violators would be entitled to conciliatory conferences and delays with regard to implementation of administrative orders, and the like. The boards authority to issue cease and desist orders would be subject to dilatory tactics by violators, and a very cumbersome procedure for referral of violators ultimately to courts of law is all pervasive in these sections. I recommend that violations be subject to prosecution without delay, that the board be clothed with authority to seek immediate injunctive relief, including mandatory injunctive relief and be otherwise provided with emergency authority to conduct clean-up operations. Further, that violators be assessed costs for such clean-up in addition to any other sanctions against illegal discharges or spillages under the act and those otherwise available under the provisions of the Nevada code.

SECTION 43:

I recommend a revision of the provisions therein to provide for continuity vis-a-vis water quality standards which have been previously adopted and on going enforcement procedures, if any, subject to authority of the board to carry out the mandate of the act to revise and update standards, rules and regulations.