

Refer to  
Legislative Secretary



CARL T.C. GUTIERREZ  
GOVERNOR OF GUAM

Office of the Speaker  
ANTONIO R. UNPINGCO

Date: 8/17/98

Time: 11:15am

Rec'd by: *[Signature]*

Print Name: ANNIE FRANCIS

AUG 14 1998

The Honorable Antonio R. Unpingco  
Speaker  
Mina'Bente Kuattro na Liheslaturan Guåhan  
Twenty-Fourth Guam Legislature  
Guam Legislature Temporary Building  
155 Hesler Street  
Hagåtña, Guam 96910

OFFICE OF THE LEGISLATIVE SECRETARY

ACKNOWLEDGEMENT RECEIPT

Received By: *[Signature]*

Time: 8:45am

Date: 8/18/98

Dear Speaker Unpingco:

Enclosed please find Substitute Bill No. 652 (LS), "AN ACT TO ESTABLISH THE GUAM HYDROLOGIC SURVEY AS A PERMANENT PROGRAM TO BE ADMINISTERED BY THE WATER AND ENERGY RESEARCH INSTITUTE OF THE WESTERN PACIFIC, UNIVERSITY OF GUAM", which I have signed into law today as **Public Law No. 24-247**.

The General Appropriation Act for Fiscal Years 1998-99 directed the Water and Energy Research Institute of the Western Pacific (WERI), located at the University of Guam, to establish the Guam Hydrologic Survey, and appropriated \$200,000 for 1998 only.

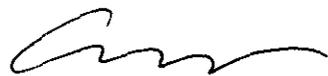
The duties of WERI under this legislation are essentially the same, which is to conduct the Guam Hydrologic Survey, however, this legislation is more specific by including the respective roles of WERI, Guam Environmental Protection Agency, and the Guam Waterworks Authority.

The legislation directs WERI to create and administer the Guam Hydrologic Survey, and appropriates \$265,000 for Fiscal Year 1999. The intent section states that the legislation is to establish a permanent program for collecting, consolidating and storing all of the water resource data on Guam, and making all of this information readily retrievable for use by the people of Guam. The "permanency" established is the provision that WERI

00963

prepare and submit an annual budget request for the Guam Hydrologic Survey to the Legislature by August 1st of each year.

Very truly yours,

  
Carl T. C. Gutierrez  
I Maga'lahañ Guåhan  
Governor of Guam

00003

Attachment:     copy attached for signed bill  
                  original attached for vetoed bill

cc:    The Honorable Joanne M. S. Brown  
       Legislative Secretary

MINA'BENTE KUATTRO NA LIHESLATURAN GUAHAN  
1998 (SECOND) Regular Session

CERTIFICATION OF PASSAGE OF AN ACT TO I MAGA'LAHEN GUAHAN

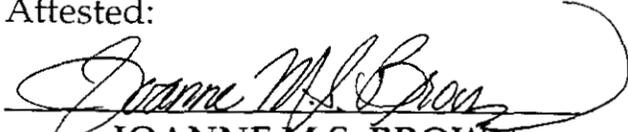
This is to certify that Substitute Bill No. 652 (LS), "AN ACT TO ESTABLISH THE GUAM HYDROLOGIC SURVEY AS A PERMANENT PROGRAM TO BE ADMINISTERED BY THE WATER AND ENERGY RESEARCH INSTITUTE OF THE WESTERN PACIFIC, UNIVERSITY OF GUAM," was on the 29<sup>th</sup> day of July, 1998, duly and regularly passed.



---

ANTONIO R. UNPINGCO  
Speaker

Attested:



---

JOANNE M.S. BROWN  
Senator and Legislative Secretary

-----  
This Act was received by *I Maga'lahen Guahan* this 3rd day of August, 1998,  
at 9:05 o'clock 9 .M.



---

Assistant Staff Officer  
*Maga'lahi's Office*

APPROVED:



---

CARL T. C. GUTIERREZ  
*I Maga'lahen Guahan*

Date: 8-14-98

Public Law No. 24-247

**MINA'BENTE KUATTRO NA LIHESLATURAN GUAHAN**  
**1998 (SECOND) Regular Session**

**Bill No. 652 (LS)**

As substituted by the Committee  
on Natural Resources and amended  
on the Floor.

Introduced by:

J. M.S. Brown  
T. C. Ada  
A. C. Blaz  
F. B. Aguon, Jr.  
Francisco P. Camacho  
Felix P. Camacho  
M. C. Charfauros  
E. J. Cruz  
W. B.S.M. Flores  
Mark Forbes  
L. F. Kasperbauer  
A. C. Lamorena, V  
C. A. Leon Guerrero  
L. A. Leon Guerrero  
V. C. Pangelinan  
J. C. Salas  
A. L.G. Santos  
F. E. Santos  
A. R. Unpingco  
J. Won Pat-Borja

**AN ACT TO ESTABLISH THE GUAM HYDROLOGIC  
SURVEY AS A PERMANENT PROGRAM TO BE  
ADMINISTERED BY THE WATER AND ENERGY  
RESEARCH INSTITUTE OF THE WESTERN PACIFIC,  
UNIVERSITY OF GUAM.**

1           **BE IT ENACTED BY THE PEOPLE OF GUAM:**

2           **Section 1. Legislative Intent.**     *I Liheslaturan Guahan* recognizes the  
3 need for accurate baseline data and up-to-date analyses of Guam's water  
4 resources. As Guam's population and economy continue to grow, the Island  
5 must develop new sources and improve existing sources of drinking water.  
6 There is currently no permanent and comprehensive program in place to ensure  
7 information on Guam's water resources is systematically collected, stored,  
8 analyzed and reported so that the people of Guam can be supplied with up-to-  
9 date and accurate information and scientific advice.

10           Public Law Number 24-161, which instituted the Guam Drought  
11 Management and Comprehensive Water Conservation Plan, took an important  
12 first step toward alleviating some crucial shortfalls in basic data collection by  
13 establishing the Comprehensive Monitoring Program, which rehabilitates and re-  
14 activates the joint, fifty percent (50%) matching Federal funds, program under  
15 which the U.S. Geological Survey ("USGS") will collect key data on rainfall across  
16 the Island, ground water levels, salt water intrusion and water lens thickness in  
17 northern Guam, and stream flow in southern Guam. Important deficiencies  
18 remain, however. In particular, there is no standard for collecting and  
19 interpreting geologic data on new wells drilled on Guam. Such data are crucial  
20 for locating new sources of fresh water and for determining where the fresh-  
21 water lens is vulnerable to contamination by salt water or surface contaminants.

22           The most important deficiency, however, is that Guam has no permanent  
23 program in place to consolidate and preserve the data that are being collected so  
24 that they can be readily retrieved to support local scientific and engineering

1 analyses, or other needs of local decision-makers and citizens for timely  
2 information on Guam's water resources. Data collected by the USGS are  
3 currently archived in Hawaii or on the Mainland. Data collected by local  
4 agencies currently accumulate in various repositories without being  
5 systematically cataloged or archived so that potential users can find it when they  
6 need it, or even determine what data are available. There is thus no means for  
7 rapidly and economically locating and retrieving hydrologic data for use by  
8 scientists, engineers, public agencies, private businesses, educators, or the general  
9 public to support scientific analyses, public or private projects, or educational  
10 programs on Guam.

11 The intent of this legislation is to establish a permanent program for not  
12 only collecting, but also for consolidating and storing all of the water resource  
13 data on Guam, and for making all of it readily retrievable for use by the people  
14 of Guam. The program established under this legislation will also ensure that  
15 ongoing analyses of local water resource concerns are conducted by local  
16 scientists so that the Island's water resource policy-makers, managers, regulators,  
17 educators, businesses, and citizens have timely information and readily accessible  
18 advice for sound decisions regarding use, conservation and development of  
19 Guam's water resources.

20 **Section 2. Establishment of a Permanent Guam Hydrologic Survey**  
21 **Program.** The Water and Energy Research Institute of the Western Pacific  
22 ("WERI") shall create and administer the Guam Hydrologic Survey ("GHS").  
23 The mission of the GHS shall be to:

24 a. locate, inventory and evaluate all hydrologic data pertaining to

1 Guam and consolidate the data into a single computer-based data library  
2 from which information can be easily accessed and retrieved;

3 b. establish a direct working relationship with each organization  
4 collecting hydrologic data important to Guam, and maintain a permanent  
5 flow of new data from each organization to keep the data library up to date;

6 c. conduct analyses to assess the status of Guam's water  
7 resources, and publish annual and other regular concise reports on water  
8 use, trends and key concerns for use by *I Maga'lahaen Guahan, I Liheslaturan*  
9 *Guahan*, public agencies and private business, and citizens of Guam;

10 d. provide educational materials and regular forums for Island  
11 educators and the general public to raise the level of public understanding  
12 of Guam's water resources, problems and the issues that must be addressed  
13 to solve them; and

14 e. conduct research into selected water resource problems of  
15 current concern, and publish reports to provide scientific data on which to  
16 base sound corrective policy, regulations and management decisions.

17 **Section 3. Exchange of Data. (a) Comprehensive Monitoring**  
18 **Program.** WERI shall determine data collection requirements and administer  
19 the joint WERI-USGS Comprehensive Monitoring Program on Guam, as  
20 mandated by Public Law Number 24-161. WERI shall coordinate with the USGS  
21 and other Federal agencies to ensure that data collected by Federal agencies are  
22 immediately accessible to the Guam Hydrologic Survey. All government of  
23 Guam agencies shall provide WERI and USGS access to such public property and  
24 facilities as are required to implement the Comprehensive Monitoring Program.

1           **(b) Guam Hydrologic Survey.** All government of Guam agencies,  
2 including, but not limited to, the Guam Environmental Protection Agency  
3 (“GEPA”) and the Guam Waterworks Authority (“GWA”), shall transmit a copy  
4 of all nonproprietary data to WERI for consolidation by GHS. Each agency  
5 collecting water-related data shall maintain an active point of contact with the  
6 GHS regarding the collection, transmission and archiving of data. Agencies may  
7 execute a Memorandum of Understanding (“MOU”) with WERI to facilitate  
8 scientific hydrologic data collection.

9           **(c) Drilling and Geophysical Data Collection.** WERI shall assist  
10 GEPA in preparing and maintaining a standard for geologic data collection  
11 during drilling on Guam. Prior to the start of the drilling, the permit applicant  
12 shall coordinate with WERI so that on-site data collection can be supervised by  
13 a WERI geologist and recorded by the GHS. A copy of any down-hole or  
14 geophysical data collected on Guam shall be archived with the GHS.

15           **Section 4. Appropriation for Guam Hydrologic Survey.**           Two  
16 Hundred Sixty-five Thousand Dollars (\$265,000.00) is appropriated from the  
17 General Fund to WERI for the continued implementation of the Guam  
18 Hydrologic Survey, as created by §29 of Chapter III of Public Law Number 24-59  
19 for Fiscal Year 1999. Henceforth, WERI shall prepare and submit the annual  
20 budget request for the Guam Hydrologic Survey to *I Liheslaturan Guahan* by  
21 August 1st of each year.

22           **Section 5. Comprehensive Monitoring Program.** In accordance with  
23 Public Law Number 24-161, WERI will work with the USGS to prepare the  
24 annual work plan on budget for the Comprehensive Monitoring Program. WERI

- 1 will submit the annual budget request for Guam' fifty percent (50%) to the
- 2 Comprehensive Monitoring Program to *I Liheslaturan Guahan* by August 1st of
- 3 each year.

24-247



Office of Senator  
**Joanne M. Salas Brown**  
Twenty-Fourth Guam Legislature

✓  
July 22, 1998

Speaker Antonio R. Unpingco  
Twenty-Fourth Guam Legislature  
155 Hesler Street  
Agana, Guam 96910

Dear Speaker Unpingco:

The Committee on Natural Resources, to which Bill No. 652 - An Act to Establish the Guam Hydrologic Survey as a Permanent Program to be Administered by the Water and Research Institute of the Western Pacific, University of Guam was referred, wishes to report back to the Legislature its recommendation **TO DO PASS** as substituted.

The voting sheet is as follows:

TO PASS	<u>7</u>
NOT TO PASS	<u>0</u>
ABSTAIN	<u>0</u>
TO PLACE IN ACTIVE FILE	<u>0</u>

Copy of the Committee Report and other pertinent documents are enclosed.

Thank you for your attention to this matter.

Sincerely,

JOANNE M. SALAS BROWN

Senator Office of the Speaker  
ANTONIO R. UNPINGCO

Date: 7-23-98

Time: 11:20

Print Name:

Enclosures



Office of Senator  
**Joanne M. Salas Brown**  
*Twenty-Fourth Guam Legislature*

---

July 22, 1998

MEMORANDUM

To: Committee Members

From: Chairperson, Committee on Natural Resources

Subject: Public Hearing on Bill No. 652 As Substituted by the Committee on Natural Resources - An Act to Establish the Guam Hydrologic Survey as a Permanent Program to be Administered by the Water and Research Institute of the Western Pacific, University of Guam.

Transmitted herewith for your consideration and action is our Committee Report on the above subject matter.

Please indicate your choice on the attached Voting Sheet and return the documents to my office for transmittal to other members.

Your attention and cooperation in this matter is greatly appreciated.

  
JOANNE M. SALAS BROWN

Attachments



Office of Senator  
**Joanne M. Salas Brown**  
 Twenty-Fourth Guam Legislature

**Committee on Natural Resources**  
**Joanne M.S. Brown**  
 Chairperson

**VOTING SHEET**

**Bill No. 652 As substituted by the Committee on Natural Resources - An Act To Establish the Guam Hydrologic Survey as a Permanent Program to be Administered by the Water and Research Institute of the Western Pacific, University of Guam.**

MEMBER COMMITTEE	TO DO PASS	PASS	ABSTAIN	TO PLACE IN INACTIVE FILE	SIGNATURE
Joanne S. Brown Chairperson	✓				
Tony Lamorena Vice Chairman	✓				
Tom Ada Member	✓				
C. Leon Guerrero Member	✓				
Mark Forbes Member					
Francis Santos Member					
M. Charfauros Member	✓				
Anthony Blaz Member	✓				
J. Won Pat-Borja Member					
A.R. Unpingco Speaker Ex-Oficio Member	✓				

Committee on Natural Resources  
Senator Joanne M. S. Brown, Chairperson

**Public Hearing**

**Bill No. 652 - An Act to Establish the Guam Hydrologic Survey as a Permanent Program to be Administered by the Water and Energy Research Institute of the Western Pacific, University of Guam.**

**July 9, 1998  
10:00 a.m.**

**Committee Report  
Summary**

The Committee on Natural Resources held a public hearing on Bill No. 652, An Act to Establish the Guam Hydrologic Survey as a Permanent Program to be Administered by the Water and Energy Research Institute of the Western Pacific, University of Guam.

Present were:       Senator Joanne M. S. Brown  
                          Senator Tom Ada  
                          Senator Frank Camacho  
                          Senator Frank Aguon, Jr.

**Senator Brown** commenced hearing on Bill No. 652 and requested Mr. Bert Johnston to come forward to begin testimony and encouraged others who have not signed up to do so.

**Mr. Herbert Johnston** stated his name for the record, representing Guam Waterworks Authority, Richard Quintanilla and the Board of Directors. He read the written testimony and stated the Authority, and Board of Directors strongly support passage of Bill No. 652. (For more detailed information, see attached)

**Senator Ada** inquired into the private well fees and is GWA collecting on the fees?

**Mr. Johnston** responded GWA submitted the proposed rate fees to PUC, and received approval for the interim rates, but not the private water wells as well as the system development charge rates.

**Senator Ada** questioned the tariff showing the per thousand gallon water rates. It showed fees charged and also the system development charge which was used to base the decision on the lawsuit filed by the Palace Hotel.

**Mr. Johnston** agreed, but further stated that the PUC did not approve either of the two tariffs. The PUC order specifically stated there was not enough evidence to support the two rates, and will entertain them when GWA have the evidence presented to them.

**Senator Ada** requested to have a copy of PUC's response provided to the committee because there was no evidence submitted for the water rates other than that. GWA needed \$31M dollars, and worked backwards to determine how much the water rates had to be to arrive at \$31M.

**Mr. Johnston** responded it was correct, and that PUC is reviewing GWA's existing rates. GWA did a rate study some time ago and concluded there was not enough financial information and needed to do several things to support and justify the rates.

**Senator Ada** continued to say that is the reason why the PUC allowed GWA an extension on their interim water rates. Surprised to learn that GWA is not collecting monthly fees from companies such as Foremost, which operates a private water well, from the golf courses and other water well operators. These fees were to go into a fund that will be used as a source for water research to fund conservation programs and others. What he was alluding to is that Bill 652 does not have a funding source for the program. If the bill can be placed on track, then it will provide an assured funding source for the program and not have it funded at the whim of the General Fund may have to offer at the time. The program is in safe hands as long as Senator Brown is the Chair, but if she is not, and somebody takes over the committee who is not as strong about these issues, the program could go by the wayside as it did many years ago.

**Senator Brown** inquired if there were any more questions of Mr. Johnston. She

stated the issue was a follow-up to a bill Senator Ada authored in the 22<sup>nd</sup> Guam Legislature. The intent of the bill was to collect monthly fees for these purposes, And reiterated Senator Ada's request to provide a copy of PUC's response to the committee. The committee will need to get an idea of how much is to be charged, and how much are they looking at generating and determine if the fees are adequate to fund the program. Funding of this program is estimated to be about \$300,000 or more a year.

**Senator Ada** inquired how many exploratory wells have been drilled this year and Mr. Johnston responded 11. Out the 11 wells, five (5) are productive. He also inquired into the basis of where GWA goes to drill for exploratory wells.

**Mr. Johnston** responded GWA works with GEPA and WERI to help determine the most prominent areas. The largest overriding factor was making sure it was on government property.

**Senator Brown** commented that with the information and resources we have available, there is probably a way we can ensure that when GWA drills there is 80% -90% chance of ensuring that you will come up with a successful well. There talent in this room to make sure that happens.

**Mr. Johnston** stated that some of the exploratory wells program is working with WERI to make sure that the information that GWA gather from this exploratory well sites is used by them to improve the accuracy.

**Senator Brown** inquired if a Memorandum of Understanding (MOU) between GWA and WERI has been finalized to have WERI assist GWA in the identification of potential well drilling sites.

**Mr. Johnston** responded as far as he knows, the MOU was not finalized. GWA was looking at a three year plan.

**Senator Brown** inquired if GWA is still going to look at getting the MOU finalized.

**Mr. Johnston** responded that GWA needs to.

**Senator Camacho** commented that he was at the ground-breaking ceremony with

Earth Tech, Inc. and inquired how long is the program to build the 3M gallon per day well. Is that a 2 year project?

**Mr. Johnston** responded it was not. They are accelerating the project and are looking at getting first drop in the tap within three months. This will improve water sources.

**Senator Ada** inquired if GWA is going to reduce purchase from the Navy by the same amount.

**Mr. Johnston** responded, a fraction of that because the water that is being produced in the north cannot be moved to areas that are being serviced entirely by Navy water, which is Agat and Santa Rita.

**Senator Brown** informed the members of the committee that GWA will have an oversight hearing on the 23<sup>rd</sup> of July, and took the privilege of relieving Mr. Johnston because he was only there to testify on Bill 652.

Mr. Salas was there to testify on behalf of EPA on Bill 652

**Mr. Jesus Salas** stated his name for the record and read his written testimony. Guam EPA supports Bill 652 if the following sections of Bill 652 are modified. (Please refer to attached testimony for more detailed information).

**Senator Ada** inquired with reference to paragraph 3 of his testimony regarding the geologist, and asked if WERI, in fact, has a geologist.

**Mr. Jensen** responded he and Dr. Galt Siegrist are geologists.

**Senator Ada** commented that GWA does not drill wells every day and was concerned that projects do not get held up because of a lack of geologist being on site to supervise the drilling.

**Mr. Salas** added that WERI has to coordinate with GEPA on weekend to work with them. That is the reason why GEPA stipulated the additional paragraph of the MOU. He brought to the committee members' attention that aside from having a territorial hydrogeologist or Guam hydrogeologist on staff, GEPA is looking at picking up

another geologist.

**Senator Brown** stated that WERI will elaborate on more on the issue. Some of the problems drilling for water wells is that data has never been collected and is not sure whether they are properly securing the dry hole. A more collective effort is to ensure that data is maintained because the amount of study that can be gained from these different boreholes is lost. Through the coordinated process, GEPA cannot only gain for regulatory things that are needed as far as approving these things, but continue to get the amount of information needed as far as keeping the data and start evaluating our water system. Hoped that through this legislation, it will become a formalized process and actually institute the program and make it more permanent of WERI's operations, and build a collective relationship with Guam Waterworks Authority, Guam EPA, and USGS.

**Senator Aguon** shared the very same concern that Senator Ada stated earlier with reference to the actual supervision and also the geologist. He inquired if it can be rephrased to read "to be supervised by WERI", because there are students that could possibly assume that particular responsibility, whether it be in a temporary nature.

**Dr. Jensen** stated that WERI worked with GEPA to choose the words very carefully, so that it reads "on-site data collection can be supervised by the word "geologist". This does not mean the geologist has to be on site during the whole time. Our plan is to train some of our graduate students who will be on site along with the drillers. The drillers are responsible under the regulations that GEPA has in place to collect data and have a person who is responsible for actually stepping up to the drill stem and scooping up the samples out of the boreholes. As long as it is being done correctly and data is collected, both GEPA and WERI's needs are satisfied.

**Senator Aguon** stated that his interpretation on the use of the term "on-site" gave the general impression that the geologist has to be "on-site" doing the supervision of the collection of the data. He would like to give WERI the flexibility so that the students can carry out some of those responsibilities. If the term was acceptable to WERI and Guam EPA, then it was fine.

**Dr. Jensen** stated that he was asked by **Mr. Mark Cramer** who faxed his testimony to read his statement for the record. Mr. Cramer is the Regional Office Manager for **Earth Tech, Inc.** and supports Bill No. 652. (Please refer to his testimony for

detailed information).

**Dr. Jensen** also read **Dr. Galt Siegrist's** testimony who is off-island and supports passage of Bill No. 652. (Please refer to written testimony for detailed information).

**Dr. Jensen** read his testimony in support of Bill No. 652. He pointed out how important it is for the island to have hard data on the amount of rainfall. (Please refer to written testimony for detailed information).

**Ms. Julianne T. Duwel, P. E.** submitted written testimony in support of Bill No. 652. (Please refer to written testimony for detailed information).

After **Dr. Jensen** read his testimony, he proudly introduced the graduate students and identified the type of research program they are involved with at WERI. He concluded his introduction by calling upon Mr. John Jocson to start off the presentation.

Each student came forward to give a brief synopsis of their research project and answered questions asked by committee members.

**Mr. John Jocson** explained the six types of data collection each student had worked on. They are: (1) Meteorological, (2) Ground Water, (3) Coastal Water, (4) Surface Water (5) Water Distribution and (6) Geologic Data. The students are developing data reports and analysis starting with data library.

WERI will be conducting a mini-conference on July 15, 1998 on water resources on Guam, which is part of the hydrologic survey. Some of the research projects the students have been involved in is the revision of the basement volcanics, chloride levels and production wells, evaluation and trends, revision of the Guam Northern lens sustainable yield.

**Peter Dumaliang** gave a presentation on the meteorological data collection for Guam and pointed out on the illustration which stations collect and record daily rainfall data. Contributors of data include USGS, National Weather Service, military, private sector, and UOG. Study concluded that distribution of meteorological data collection can be found in these stations. The data is important for ground water and drought studies and current and proposed meteorological sites need to be retrofitted to

withstand high winds such as typhoons.

**Dave Dawn** gave a presentation on surface water and water distribution as stream flow gauging. Stream gauging has dual purposes on Guam: (1) provides data that allows scientist at USGS and at the local level to determine how much of the rainfall at the south actually leaves the island. This information is used by water managers to model the Fena water shed and reservoir's potential and gives an overall picture of the water budget. (2) Information is used to determine the potential yield of any number of watersheds in the south, if sources were to be developed.

**Mauryn Quenga** gave a brief synopsis on chloride. Her project included tracking down three main types of water data: (1) water level measurement to see how the top of the aquifer responds to well production; (2) well production data, to see exactly how much water they are extracting from the aquifer and (3) chloride concentration, to see where they are having problems with salt water intrusion. She referred to the map and pointed out the observation wells owned by GWA & GEPA. Out of the 6 water sub basins, only two are being measured for water levels..

**Senator Ada** raised a concern with reference to the monitoring of private water wells.

**Mauryn Quenga** responded that every year the water resource management program at GEPA conducts annual inspections of all the production wells on Guam. Any discrepancies are noted and owners are asked to correct the discrepancies. Every 5 years when a permit is removed, the well owners are required to test their water for certain parameters. Every year all production wells on Guam are tested for chlorides and GEPA monitors certain wells to see if there is salt water intrusion.

**Senator Brown** inquired if the use of her data will help GWA facilitate and identify as to whether or not some of the wells should be shut down or decrease the level of water being pumped? How is this impacting the overall water lens in that particular sub basin?

**Mauryn Quenga** responded her research work is actually looking at each well to see what is happening at the source rather than what is coming out of the tap at the end of the line, instead of looking at the sub basin or the distribution system. By doing this, we can determine what effect it is having on the aquifer.

**Senator Ada** commented regarding Mr. Mark Cramer's linear curve developed a couple of years ago on the ground water capacity which projected where we are at now and how much water is being drawn and the assumed capacity of the aquifer. If GWA continues drilling at the rate of 30 wells, the limit of the aquifer will probably be reached. Secondly, is the possibility of a funding source for this program. Asked the Chairperson to put the funding provision in the bill, and if WERI can come up with a reasonable formulation, would want to see some of the funds put aside for water conservation program.

**Mr. Dongco Tabowrosi** presented his research on the geologic data on Guam. Geologic data is extremely important in a hydrologic sense because it influences the recharge of the aquifer. Presently, physical access of data is available at locations where stored, but will become available through the Guam Hydrologic Survey web page. Two main types of geologic data that are hydrologically significant are basement volcanics and the surface geology.

**Senator Aguon** inquired with reference to time frame as to when the capacity of the aquifer will be exhausted.

**Dr. Jensen** responded that the research work the students are involved with will give WERI the capability of forecasting more precisely when problems will be encountered at a given place and time. WERI's objective is to have a regular report, on the state of the aquifer, surface water resources and southern Guam, so policy makers, regulators, and decision makers will have the latest information on the forecast. Forecast will be revised when the development needs change. The first report should be available in approximately 6-8 weeks when they have the FY'98 findings. He continued to say that the advantage of having the hydrologic survey in place and making it permanent is that the scientific data collection and analysis are being done by people who live here are raising their families here and who drink the water.

**Dr. Camacho** made the following comments:

- She testified as the Dean of Graduate School and Research to round out the representation from the University of Guam to support Bill No. 652.
- She is the Administrator that oversees WERI and from the very beginning when she heard Senator Brown was working with the

Director and the Faculty at WERI to establish the Guam Hydrologic Survey, she was in support of it and has continued to communicate with the President, the Academic Vice-President and the Board of Regents that they need to support this project.

- Results that are coming forward at this point are very encouraging and need to go forward and have Bill 652 go before the Legislature and be passed.
- In agreement with small changes that Dr. Jensen and Mr. Salas worked through and also noticed that Mr. Salas is proposing the MOU and will take the information back to the President and make certain that their legal counsel and President are a part of the MOU as it is developed.
- Noticed Mr. Jocson had a Section IV that he wanted to deal with in terms of the budget. Need to concern ourselves with budget. The proposal to come forward with that money once a year on the 1<sup>st</sup> of August is a good suggestion.
- Encouraged everyone to go forward with the passage and the permanent establishment of the Guam Hydrologic Survey.

**Senator Brown** appreciated testimony because it is important to have the support of the University, the Board of Regents, and the President. Important thing is to address funding for this program for this upcoming fiscal year because the money that was appropriated is expiring. Recommended that they schedule an appointment to meet with Vice-Speaker Blaz, who is the Chairman of Finance & Taxation, and has been supportive in funding WERI, and also the drought legislation and provided the money for the USGS funding. Hopefully, the funding can be addressed for this upcoming October 1<sup>st</sup> fiscal year for WERI so that you can continue to work. Need to make this a permanent part of our operations. Very impressed with the work and the presentations that were done.

**Senator Ada** inquired into the sustainable yield.

**Dr. Jensen** referred to the map which showed six hydrologically distinct sub-basins. Geologically, the conditions are such that water that is kept captured in one sub-basin flows from its sources to where it is discharged and does not interact with the water in the other sub basins. With the limestone aquifer, this may not be true with the water coming down from the surface into the lens. It is being studied. For planning purposes, WERI can evaluate sub-basin by sub-basin, what is the sustainable yield

for a given set of conditions (refer to chart). 60% of the aquifer is being utilized. Yigo, Tumon sub-basin accounts for about 30%, The production being taken out of the aquifer now accounts for about 75% of the estimated sustainable yield. This is the heavily used sub-basin.

**Senator Ada** inquired into the 1982 sustainable yield and asked if it has been updated given the physical changes that have taken place on the land.

**Dr. Jensen** responded that in 1992, the same firm, Barrett Harris, in particular, John Mink, who oversaw the geologic study on the first report update and provided a report that did not get circulated widely in 1992, and the chart showed the current production by each sub-basin. 1992 sustainable estimates were higher and purposely conservative and based on estimating the recharge or by taking the rainfall, the span of evaporation rate for each sub-basin, and arbitrarily saying 60% of that recharge is probably available for production, and that is how those figures were arrived.

**Senator Aguon** inquired if the figures were also conservation in terms of taking into consideration the same factors in 1992 report.

**Dr. Jensen** responded that they took the 1982 report and used the computer model of ground water by which they were able to take the same data and based on the way they expected the wells to behave dynamically, they said we probably could pump more out of these wells.

Earth Tech contributed with WERI, the first time, WERI will be assisting an organization in locating the sites for their wells before they send to assist the driller to the site. Sub-basins should be left alone for now because it is expensive to develop and the capacity is small and high risk.

He concluded by showing the long term 14 year averages of monthly rainfall for northern Guam. He pointed out between what the rainfall has been and the normal rainfall over the 14 year period and has heard stated that the El Nino is over. In order to get a normal amount of storage back into the Fena reservoir, you have to get rain fall above normal in order to make up for the fact that we have been below normal rainfall for a long time. This is more the reason to continue to be vigilant and conserve the water resources.

**Senator Brown** thanked the audience for coming out for both the confirmation hearing of Ms. Miriam Gallet and Bill No.652. Confirmation hearing and Bill No. 652 will be on the session agenda at the end of this month.

**Public Hearing adjourned at 12:50 p.m.**

**Website Address for the Guam Hydrologic Survey is: [uog2.uog.edu/weri/ghs](http://uog2.uog.edu/weri/ghs)**

**TWENTY-FOURTH GUAM LEGISLATURE  
COMMITTEE ON NATURAL RESOURCES**

*Senator Joanne M. S. Brown, Chairperson*

*Public Hearing  
Thursday, July 9, 1998  
10:00 a.m.*

*Bill No. 652 - An Act to Establish the Guam Hydrologic Survey as a Permanent Program to be Administered by  
the Water and Energy Research Institute of the Western Pacific University of Guam.*

**Sign In Sheet**

<b>Names</b>	<b>Representing</b>	<b>Oral Testimony</b>	<b>Written Testimony</b>	<b>In Favor of</b>	<b>Opposed</b>
Mauryn Obenga	WERI	✓		Bill 652	
John Teuson	WERI	✓	—	Bill 652	
John Socson	WERI	✓	✓	Bill 652	
Danko Taborosi	WERI	✓		BILL 652	
Peter G. Dumaliang	WERI	✓		Bill 652	
Jonah Kye	GEPA	—		Bill 652	
Jess Smith	GEPA		✓	Bill 652	
Pavelo Vana	WERI	✓		Bill 652	
MARILYN YANAMARA	GEPA			Bill 652	
NARCISO CUSTODIO	GEPA			Bill 652	
SALLY MARQUELIS	GEPA			Bill 652	



**TWENTY-FOURTH GUAM LEGISLATURE  
COMMITTEE ON NATURAL RESOURCES**

*Senator Joanne M. S. Brown, Chairperson*

**PUBLIC HEARING  
Thursday, July 9, 1998  
10:00 a.m.**

**Re-Appointment of Ms. Miriam S. Gallet, Member  
Board of Directors, Guam Environmental Protection Agency**

**Bill No. 652 - An Act to Establish the Guam Hydrologic Survey as  
Permanent Program to be Administered by the Water  
and Energy Research Institute of the Western Pacific  
University of Guam.**

**A G E N D A**

- 1. Introduction of Committee Members**
- 2. Commencement of Public Hearing**
  - 1) Re-appointment of Ms. Miriam S. Gallet**
  - 2) Bill No. 652**
- 3. Public Comment**
- 4. Adjournment**



## **GUAM WATERWORKS AUTHORITY**

**Government of Guam**

**Post Office Box 3010, Agana, Guam 96932**

**Phone: (671)479-7823 Fax: (671)479-7879**

**HEARING ON BILL NO. 652  
COMMITTEE ON NATURAL RESOURCES  
TWENTY-FOURTH GUAM LEGISLATURE**

**Testimony by:**

**RICHARD A. QUINTANILLA  
General Manager**

GOOD MORNING MADAM CHAIR AND MEMBERS OF THE COMMITTEE ON NATURAL RESOURCES, FOR THE RECORD, MY NAME IS RICHARD A. QUINTANILLA, GENERAL MANAGER OF THE GUAM WATERWORKS AUTHORITY. I AM HERE TODAY TO SUPPORT THE PASSAGE OF BILL NUMBER 652: AN ACT TO ESTABLISH THE GUAM HYDROLOGICAL SURVEY AS A PERMANENT PROGRAM ADMINISTERED BY "WERI" (WATER AND ENERGY RESEARCH INSTITUTE).

THE BOARD OF DIRECTORS AND MANAGEMENT OF THE AUTHORITY AGREE WITH THE LEGISLATIVE INTENT STATED IN THIS BILL. THE ESTABLISHMENT OF A PERMANENT HYDROLOGICAL SURVEY PROGRAM PROVIDES A FOUNDATION OF INFORMATION TO HELP US MANAGE THE USE OUR ISLAND'S MOST PRECIOUS RESOURCE – OUR WATER.

WHILE THERE IS MUCH WE ALREADY KNOW ABOUT OUR AQUIFER, THERE IS MUCH MORE THAT WE NEED TO KNOW IN ORDER TO MAKE PRUDENT AND INFORMED MANAGEMENT DECISIONS. THIS IS EVIDENCED BY OUR SUCCESS RATE OF EXPLORATORY WELL DRILLING PROGRAMS.

THE PRUDENCY OF ANY MANAGEMENT DECISION IS IN DIRECT PROPORTION TO THE LEVEL AND ACCURACY OF INFORMATION AVAILABLE. GIVEN OUR DEPENDENCE ON OUR FINITE WATER RESOURCES, THIS COMMUNITY NEEDS TO MAINTAIN A COORDINATED EFFORT TOWARD INSURING THE INTEGRITY OF OUR WATER RESOURCES.

ON BEHALF OF THE BOARD OF DIRECTORS AND MANAGEMENT OF THE GUAM WATERWORKS AUTHORITY, WE STRONGLY SUPPORT THE PASAGE OF BILL 652.

THANK YOU.

  
for RICHARD A. QUINTANILLA  
General Manager



# GUAM ENVIRONMENTAL PROTECTION AGENCY



AHENSIAŃ PRUTEKSION LINA'LA GUAHAN

P.O. BOX 22439 GMF • BARRIGADA, GUAM 96921 • TEL: 472-8863 • FAX: 477-9402

Used at Government of Guam expense

**Testimony of  
Jesus T. Salas  
Administrator, Guam Environmental Protection Agency  
Before the Committee on Natural Resources**

**Hearing on Bill 652 (LS): An Act to Establish the Guam Hydrologic Survey as a Permanent Program to be Administered by the Water and Energy Research Institute of the Western Pacific University of Guam.**

**July 09, 1998**

Bill 652's intent to establish a permanent program to systematically collect, store, analyze and report information on Guam's water resources so that the public can be supplied with up-to-date and accurate information and scientific advice is an excellent mandate. Guam EPA is tasked with water resources management and WERI is an excellent research institute. However, WERI is not a regulatory agency, like Guam EPA, capable of enforcing its findings on other agencies.

Guam EPA supports Bill 652 if the following sections are modified:

1. On page 3, line 15, please clarify the directive to publish regular concise reports. Are these to be monthly, quarterly or annually? Guam EPA recommends the term "regular" be changed to "annual."

**"ALL LIVING THINGS OF THE EARTH ARE ONE"**

2. On page 4, section 3(b), lines 9 and 10 - after discussion's with WERI, it is recommended that this line be changed to read as follows:

"Authority ("GWA"), shall transmit a copy of all nonproprietary data to WERI for consolidation by the GHS."

3. It should be noted that Guam EPA does have standards for geologic data collection during bore hole drilling in its regulations and permit requirements; therefore, on page 4, section 3(c), after discussion's with WERI, it is recommended that this paragraph be changed to read as follows:

"WERI shall assist Guam EPA in preparing and maintaining a standard for geologic data collection during drilling on Guam. Prior to the start of drilling, the permit applicant shall coordinate with WERI of the proposed well drilling so that on-site data collection can be supervised by a WERI geologist and recorded by the GHS. A copy of any down-hole or geophysical data collected on Guam shall be archived with the GHS."

4. Finally, Guam EPA would like to request that the following subsection be added:

"3(d) To implement 3(b) and 3(c) above, WERI and USGS shall execute an MOU with Guam EPA specifying each agency's jurisdictional scope of responsibilities in the collection of data to maximize their efforts to ensure the most efficient and effective way to collect vital information regarding Guam's water resources."

The changes recommended above will assist in clarifying that WERI's role in Bill 652 is strictly to consolidate and archive data and not to overlap with Guam EPA's regulatory prerogatives.

Thank you Madam Chairwoman and members of the Committee for the opportunity to testify before you today.

  
JESUS T. SALAS

**M E M O R A N D U M**

**Date:** July 09, 1998  
**To:** Twenty-Fourth Guam Legislature  
**From:** Mark Cramer, PE, Regional Office Manager  
**Subject:** Bill No. 652 - Public Testimony

As an engineer in the water resource industry here on Guam, I have utilized data collected by USGS, WERI, GEPA extensively in my work in planning surface and ground water resource development. The availability of sound data provides the opportunity to calibrate empirical calculations to historical events, as opposed to the use of gross assumptions and other methods of educated guesswork. We missed a great opportunity by not obtaining groundwater data during the recent drought event.

Furthermore, I have advocated the creation of a central repository for water resource information for several years. WERI is the most logical location for this repository. The quest for existing data is a very time consuming undertaking that must be budgeted into each project. The availability of a central repository will reduce costs to both government and private sector clients and reduce the likelihood that critical data is lost in the process.

In a final comment, I do not believe the exchange of information should be tied to the issuance of a drilling permit, as indicated in Section 3(c). GEPA is the regulatory agency in responsible charge of well development. A better approach would be to require the applicant to inform WERI of the site and when drilling will commence. This could be accomplished by either adding it as a condition of the permit or by modification to the existing regulations. The exchange of information between GEPA, GWA, and WERI could be accomplished by a Memorandum of Understanding, as opposed to legislative action.





UNIVERSITY OF GUAM  
UNIBETSEDAT GUAHAN



WATER AND ENERGY RESEARCH INSTITUTE  
OF THE WESTERN PACIFIC

303 University Drive  
UOG Station, Mangilao, Guam 96923  
Tel: (671) 735-2685 / 2688 • Fax: (671) 734-8890

July 9, 1998

Senator Joanne M.S. Brown, Chairperson  
Committee on Natural Resources  
Twenty Fourth Guam Legislature  
Suite 200, 130 Aspinall Street  
Agana, Guam 96910

Dear Senator Brown,

I am pleased to be able to respond to your invitation to present testimony on July 9, 1998 on Bill No. 652 – **An Act to Establish the Guam Hydrologic Survey As a Permanent Program to be Administered by the Water & Energy Research Institute of the Western Pacific, University of Guam.** Unfortunately, however, I will be off-island from June 29-July 24, so I will submit the following testimony for reading at the hearing.

---

Chairperson Brown  
Distinguished Senators

I am Galt Siegrist, Director of the Water & Energy Research Institute of the Western Pacific (WERI) at the University of Guam

The Guam Hydrologic Survey has been in operation about nine months. In that short time it has made impressive strides in successfully completing its first year's mandated objectives.

These objectives can be summarized as follows:

- 1) Seek out and compile into data base format all available historical data pertinent to our island's surface and groundwater resources. This effort required the activity of three full time graduate students, working under the whip of Dr. John Jenson, but was successful only because WERI enjoyed total cooperation from a number of Guam agencies and private firms that are treasure troves of historic data.
- 2) Summarize and distribute the available data in forms and products that will be useful to a variety of stakeholders, such as educators, students, planners, and researchers at

WERI and elsewhere, key agencies, and our elected representatives. To that end, WERI has already sponsored a number of seminars, a workshop, and later this year, will introduce a 3-credit graduate evening course at UOG for our island schoolteachers. This course will be called *Water Resources of Pacific Islands*, and I have attached a course flyer to your copies of my testimony. As you can see, it involves the entire WERI faculty. WERI is presently compiling about twenty colored GIS maps, additional hydrologic diagrams, and supporting text that, when bound, will constitute the first edition of the *Guam Hydrologic Atlas*. This publication will be made available throughout the island by the end of this year. Another nearly completed effort under this Objective is the total restructuring and updating of our Institute Web Page to reflect WERI's newest water resource initiatives and capabilities, and to present information compiled by the Guam Hydrologic Survey.

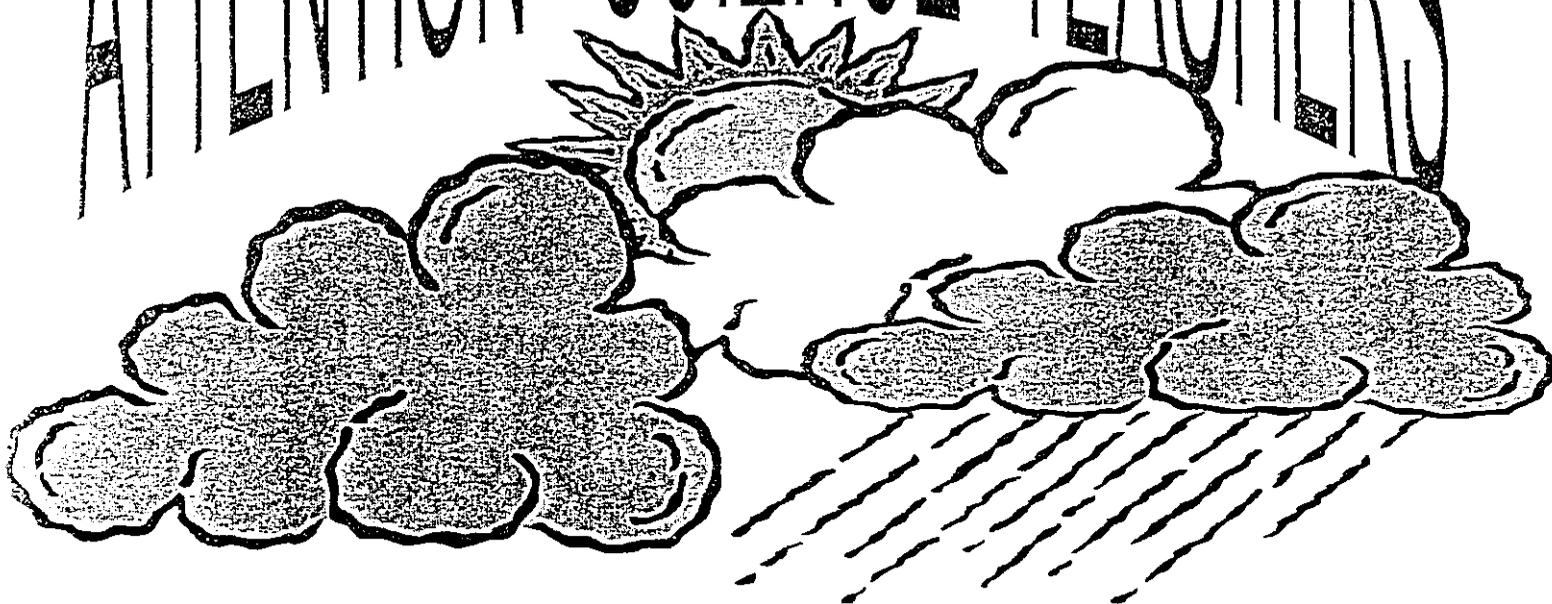
- 3) Develop institutional mechanisms and protocols for retrieving, integrating, and analyzing our island's water resource data in the future. In six months, WERI has organized the computer and student firepower, and gained the experience required to maintain this program at its current, first-year level. This level will annually support a variety of educational and training programs described above, and several highly focused research projects dealing with pressing water resource needs of the island. Our initial research thrusts under the GHS will be to i) attack the problem of chloride contamination in certain production wells, ii) develop better strategies for successful siting production wells by mapping karst features in northern Guam, iii) undertake a critical examination of water distribution problems in the Mangilao area, iv) establish the role of the large Pago Point-Adelup fault in controlling groundwater production, and surface and groundwater contamination, and v) derive a more accurate water budget for northern Guam by quantifying soil moisture losses.

Madam Chairperson, thanks to your early and continuing interest and the strong legislative support that you spearheaded, the new Guam Hydrologic Survey is proving to be a model program, one that is providing the citizens of Guam real value for their tax dollars.

Information is power: Through the Guam Hydrologic Survey Program, WERI faculty are able to give back to the community the needed information and level of service that will empower it to manage wisely this most valuable of island resources. Indeed, as was often repeated to me recently in a meeting of State Water Institute Directors in Atlanta, Georgia, the GHS it is one of only a handful of similar programs nationwide, and by far the most successful, if I can believe their comments.

I congratulate you on the original idea, and obviously support strongly the Guam Hydrologic Survey becoming a permanent addition to WERI and, more importantly, to the island. Thank you.

# ATTENTION SCIENCE TEACHERS



## A Course in Water Resources of Pacific Islands (September 8, 1998 - October 27, 1998)

*A study of freshwater water resources on high and low islands of the tropical western Pacific, with special emphasis on Guam and the Marianas Islands. This course is aimed at schoolteachers at all levels. Prerequisites: none.*

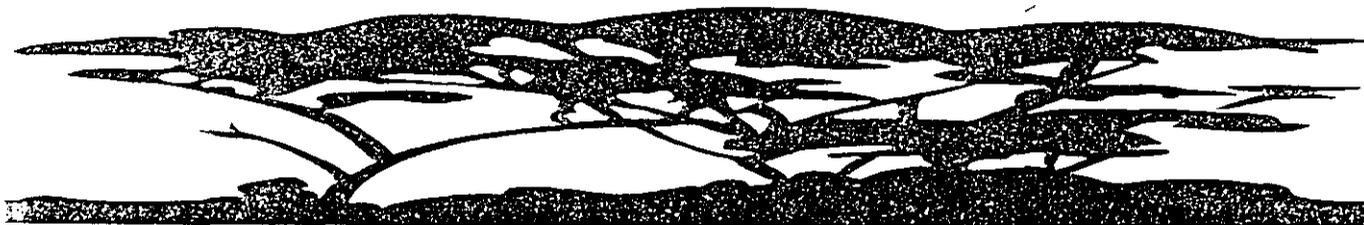
Course #: EV894: Water Resources of the Pacific Islands, 3.0 credits

Days/Times: Tuesdays & Thursdays, 4:00-6:45PM

Site: WERI Building (Next to Marine Lab), Room 105

Tuition: \$60.00

Instructors: G. Siegrist, G. Denton, C. Guard, L. Heitz, J. Jenson, S. Khosrowpanah,  
M. Lander, R. Wood



*Registration processing is at the Center for Continuing Education & Outreach Programs, 2nd floor, MARC/Computer Center Building. If you have any questions, please feel free to visit the Center or call 735-2600-4 for assistance.*



UNIVERSITY OF GUAM  
UNIBETSEDAT GUAHAN



WATER AND ENERGY RESEARCH INSTITUTE  
OF THE WESTERN PACIFIC

303 University Drive  
UOG Station, Mangilao, Guam 96923  
Tel: (671) 735-2685 / 2688 • Fax: (671) 734-8890

July 9, 1998

Statement of Dr. John Jenson, Acting Director of WERI & Program Manager of the  
Guam Hydrologic Survey Program, WERI, University of Guam

To: 24<sup>th</sup> Guam Legislature, Committee on Natural Resources

Madame Chairwoman and Senators:

I would like to follow Dr. Siegrist's remarks with a few of my own. Then I'll introduce the really important people from our program--those who do the hard work,...that is, our Survey Staff Hydrologist and his team of graduate research assistants.

I, too, want to commend you and your colleagues in the 24<sup>th</sup> Guam Legislature for your initiative to put in place a program that will finally provide the people of Guam with a permanent, centralized source of adequate scientific information on our local water resources. Moreover, you have recognized that scientific data on our water sources must be timely, accurate, and locally accessible if it is to support ongoing development, policy and regulatory decisions, and education on water resource use. Rounding up over 50 years accumulation of data from the various sources around the island,...putting the data into a single library which can be accessed by anybody from research scientists in Frankfurt to first-graders at Price Elementary School,...and keeping it up to date...is a huge step forward for properly managing our limited water resources.

I also want to commend you for restoring the 50-50 federal matching program with the US Geological Survey under PL 24-161 to provide the hydrographic data that we need on rainfall,...pan evaporation,...groundwater water levels and saltwater interaction,... tidal levels,... and streamflow and sediment transport. In consonance with the other ongoing and planned data collection programs on the island--most notably groundwater quality data collection by Guam EPA,... weather data collection by the National Weather Service,... and surface water data collection by the Navy in their cooperative program with USGS--we will soon have in place a data collection program that promises to meet our current needs for scientific data. We must keep in mind, of course, that we will need to expand these programs to incorporate new coverage as newly parts of the island are developed.

I can't stress enough how important it is for the island to have hard data on how much rain we get in the various places around the island... and how much of it probably evaporates before going into the ground... how the volume of water in our northern water lens and southern streams responds to rainfall and drought... how the tidal variations affect the water levels in our wells,... and how much sediment is being washed off from our land surface and carried to the reefs by our streams. This information is absolutely essential for making accurate estimates of sustainable yield from ground and surface sources,... for designing storm water management systems to control flooding,... for determining appropriate land use practices,... and a host of other decisions and activities.

We also need a reliable picture of the bedrock and basement geology of northern Guam so that developers can locate new sources of groundwater... and avoid unnecessary—and very expensive--exploratory drilling. (This is getting harder to do as the “easy” sites have already been tapped.) We need to understand the natural “plumbing” of our limestone aquifer better in order to accurately determine how the lens is affected by surface contamination such as effluent from septic tanks, leaky sewer lines, or agricultural chemicals. Finally, we need to have accurate, up-to-date geographic data—all in one place--on our own plumbing,... that is on the distribution lines of GWA and the military systems so that engineers will have the data they need to more easily correct current problems and optimize the system to meet future needs.

A third noteworthy achievement of this legislation is the commitment that it makes to provide local funding for work on local problems. I must point out that unilateral federal funding is no longer something we can take for granted. The federal government has made it clear that they will fund only work on national or regional problems—problems like global warming or El Nino. No one in Washington cares about the Northern Guam Lens Aquifer. On the other hand, for local governments that make a commitment to help themselves, matching funding is forthcoming. USGS is matching our commitment to the data collection program 50/50 and has contracted to do so indefinitely so long as we hold up our end. In addition, because of the current funding that you provided for startup of this program last fall, and the preliminary results we have been able to show, WERI obtained two additional grants from USGS last month that will support local research work on water infiltration through the bedrock and water catchment design on Guam for the next two years. Your investment is already paying off!

As Dr. Siegrist pointed out in his remarks, we already have team of people at WERI up and running on this program. They are here with me today, and you can see a few examples of their work, which we will be formally presenting in a few weeks when the first year's reports are complete for FY98. I've asked each of them to be prepared to give you a brief report on their work to date if you have time.

Finally, I would like to recommend some minor changes to the wording of Section Three of the bill in order to clarify that WERI's role in the data collection process is strictly to consolidate and archive data, and that it in no way is to overlap into Guam EPA's regulatory prerogatives:

Section 3(b) Change as follows:

All Government of Guam agencies, including but not limited to the Guam Environmental Protection Agency and Guam Waterworks Authority, shall transmit a copy of all non-proprietary data available to WERI for consolidation by the GHS. Each agency collecting water-related data shall maintain an active point of contact with the GHS regarding the collection, transmission, and archiving of data.

Section 3(C) Change as follows:

~~WERI shall assist and GEPA in preparing and maintaining shall prepare and maintain a standard for geologic data collection during drilling on Guam. Prior to the start of drilling. Before a drilling permit is issued, GEPA and the permit applicant shall notify report the proposed well drilling to WERI so that on-site data collection can be supervised by a WERI geologist and recorded by the GHS. A copy of any down-hole or geophysical data collected on bore holes installed on Guam shall be archived with the GHS.~~



P.O. Box 5419  
Agana, Guam 96932  
671-472-1896

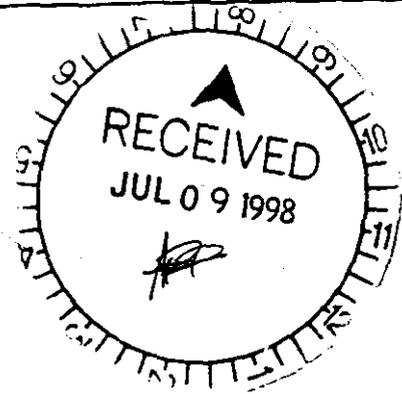
Fax: 671-472-1897

e-mail: [jtd@kuentos.guam.net](mailto:jtd@kuentos.guam.net)

**Please note new telephone numbers!**

**FAX TRANSMISSION COVER SHEET**

**Date:** July 9, 1998  
**To:** Senator Joanne M.S. Brown  
**Fax:** 472-4090  
**Re:** Bill 652-Guam Hydrologic Survey  
**Sender:** Julianne T. Duwel, P.E.



**YOU SHOULD RECEIVE Two (2) PAGE(S), INCLUDING THIS COVER SHEET. IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL 671-472-1896.**

Hafa adai, Senator Brown!

I am sorry that I will not be able to attend this morning's public hearing on Bill 652, An Act to Establish the Guam Hydrologic Survey...., and am hoping that you will consider the following in your deliberations.

I applaud the intent of this bill!!! The people of Guam, and in particular, our scientists, engineers, developers, and scholars, **DO** need access to a comprehensive encyclopedia of Guam's water resources data. This will greatly enhance the abilities of our policy-makers, and will also enable developers to make informed decisions as related to the consumption of our precious water resources. Certainly the Water and Energy Research Institute is one appropriate body to maintain this information and make the data available to the people of Guam.

I have several questions, however, related to the language in this bill.

- The bill states "...there is no standard for collecting and interpreting geologic data on new wells drilled on Guam." While I do believe that little interpretation is performed on a regular basis due to their lack of manpower resources, it should be noted that the Guam Environmental Protection Agency has a rather aggressive program to ensure that information is collected each and every time a well is drilled on this island. As a consultant, I have personally experienced this and can verify that their personnel have been ensuring that these requirements are met. A great deal of data is required to be submitted to the Agency for every well-drilling permit issued, and again for every well-operating permit which is issued. As a result, I believe that there is already a permanent program in place for collecting and storing water resource data related to wells.

- "WERI shall determine data collection requirements..." I am concerned that contractors, developers, and consultants will now experience the frustration of having to deal with both the University of Guam and the regulator--the Guam Environmental Protection Agency. Why not simply have copies of the well permit applications provided to WERI? If I, as a small business owner, property owner, consultant, or contractor, have to answer to two or more masters, it will only drive consumer costs further upward. I would suggest that WERI evaluate the data currently being collected by the Guam EPA to determine if this information will suit their needs, and if so, we leave this part of the current program as it is. Should it be appropriate, perhaps the GEPA could agree to revise its requirements so that we all have only one agency to which we report. I believe that any changes to the current program will certainly cost money, and while I do not wish to delude anyone into thinking our water is "free" I would like to point out that there are a number of enterprises which could be affected by a change in the reporting requirements, be they golf courses, or government agencies who own and maintain wells.
- I am concerned that this bill will result in an increase in workload for the Guam Environmental Protection Agency, without providing them the tools they need to make the flow of data happen on a timely basis. We are all well aware of the shortage of manpower that the Agency currently has on board, and the fact that it is difficult for them to take on more and more work without additional assistance of some kind. The Agency is in the process of becoming more computerized and I believe that this will happen eventually. Perhaps this bill should include a provision that the well data that the Agency maintains and monitors on a regular basis be computerized, to include data entry, hardware, and appropriate software development. This would allow the Agency to continue their computerization program, and would also provide a means for them to provide data to others (including WERI, the internet, etc.) quickly and easily through use of their computerized databases.
- The bill does not address the issue of cost to access this data. Will it be made available to the general public free of charge, or will WERI be authorized to "sell" this information to those who need it?

Thanks very much for your kind attention and interest in Guam's water resources!!!!





UNIVERSITY OF GUAM  
UNIBETSEDÁT GUAHAN



WATER AND ENERGY RESEARCH INSTITUTE  
OF THE WESTERN PACIFIC

303 University Drive  
UOG Station, Mangilao, Guam 96923  
Tel: (671) 735-2685 / 2688 • Fax: (671) 734-8890

July 9, 1998

Statement of Mr. John Jocson, Staff Hydrologist, Guam Hydrologic Survey Program,  
WERI, University of Guam

To: 24<sup>th</sup> Guam Legislature, Committee on Natural Resources

Madame Chairwoman and Senators:

To support the Guam Hydrologic Survey Program in coming years, I recommend the following amendment to Bill 652:

**Section 4. Budget Preparation.**

- a) Henceforth, WERI shall prepare and submit the annual budget for the Guam Hydrologic Survey to the Legislature by August 1<sup>st</sup> of each year.
- b) In accordance with Public Law 24-161, WERI will work with the USGS to prepare the annual budget for the Comprehensive Monitoring Program. WERI will submit the annual budget for Guam's 50% to the Comprehensive Monitoring Program to the Legislature by August 1<sup>st</sup> of each year.



CARL T.C. GUTIERREZ  
GOVERNOR

MADELEINE Z. BORDALLO  
LT. GOVERNOR

## BUREAU OF BUDGET & MANAGEMENT RESEARCH

OFFICE OF THE GOVERNOR  
Post Office Box 2950, Agaña, Guam 96910

JOSEPH E. RIVERA  
DIRECTOR

FRANCES J. BALAJADIA  
DEPUTY DIRECTOR

JUL 07 1998

The Bureau requests that Bill No(s), 652 (LS) be granted a waiver pursuant to Public Law 12-229 for the following reasons:

“The intent of this legislation is to establish a permanent program for not only collecting, but also for consolidating and storing all of the water resource data on Guam, and for making all of it readily retrievable for use by the people of Guam.” The program administrator responsible for subject legislation is WERI (Water and Energy Research Institute) of the University of Guam working in conjunction with two GovGuam agencies, GEPA and GWA, and USGS ( United States Geological Survey) and other federal agencies.

It should be noted that the intent of the proposed legislation is administrative in nature and poses no fiscal impact on the General Fund at this time.

*Frances J. Balajadia*  
FRANCES J. BALAJADIA  
Acting  
PP: 7/6/98





**BUREAU OF BUDGET & MANAGEMENT RESEARCH**

OFFICE OF THE GOVERNOR  
Post Office Box 2950, Agaña, Guam 96910

**CARL T.C. GUTIERREZ**  
GOVERNOR

**JOSEPH E. RIVERA**  
DIRECTOR

**MADELEINE Z. BORDALLO**  
LT. GOVERNOR

**FRANCES J. BALAJADIA**  
DEPUTY DIRECTOR

JUL 07 1998

The Bureau requests that Bill No(s). 652 (LS) be granted a waiver pursuant to Public Law 12-229 for the following reasons:

“The intent of this legislation is to establish a permanent program for not only collecting, but also for consolidating and storing all of the water resource data on Guam, and for making all of it readily retrievable for use by the people of Guam.” The program administrator responsible for subject legislation is WERI (Water and Energy Research Institute) of the University of Guam working in conjunction with two GovGuam agencies, GEPA and GWA, and USGS ( United States Geological Survey) and other federal agencies.

It should be noted that the intent of the proposed legislation is administrative in nature and poses no fiscal impact on the General Fund at this time.

*Frances J. Balajadia*  
FRANCES J. BALAJADIA  
Acting  
7/16/98

