Edwards Aquifer Authority

TECHNICAL DOCUMENTS PROJECT

Phase I

EDWARDS AQUIFER AUTHORITY

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December 2012

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TABLE OF CONTENTS

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Introduction

The Edwards Aquifer Authority (EAA) and its predecessor, the Edwards Underground Water District (EUWD), have developed an impressive body of scientific research and technical studies on the Aquifer over a period of many years. This Science & Research (S&R) Program has been necessary in order to develop an understanding of the geography, hydrogeology, capacity and behavior of the Aquifer and its associated springs and wells under a variety of climatic conditions and uses.

As the major source of drinking water for two million people, the Edwards Aquifer is in an unusual position of being highly susceptible to natural and anthropogenic pollution as a result of extensive development over its Drainage and Recharge Zones. In the interest of transparency and to make these extensive data available to other researchers and to the general public alike, the EAA undertook this Technical Documents Project.

The purposes of the Technical Documents Project were:

- To discover the legacy Technical and Scientific Reports of the Edwards Aquifer Authority that may exist in various places, either in hard copy or in electronic format;
- To digitize these documents, including thumbnail graphic images of the report covers, and convert them for Optical Character Recognition;
- To develop a new document classification system and reach consensus with the S&R Team on it;
- To put the documents on the EAA website in some kind of organized fashion, with Summaries, Descriptions, Keywords, Abstracts, and other identifiers in order to enhance the browsing and searching experience of the visitors to the website; and finally,
- To standardize the way the S&R Documents are entered, classified and organized on the EAA website and its server.

At first it became apparent that the documents were spread out in many places. Many, but not all, were archived in the EAA Library. Some were in individual scientists' offices and computers. Some were already on the EAA website but were in various places and were difficult to find. No one really knew how many documents there were. And as a result, it would be impossible to know when all the documents had been identified or how long this would take.

Materials and Methods

After discussions with the S&R Team, the Education and Outreach Supervisor Elizabeth Smith, and Melinda Wickley the Website Developer, we divided the project into several stages:

1. Developing and reaching consensus on a new document classification and web entry system;
2. Achieving consensus on criteria for including and excluding documents for this Project;
3. Discovery of the documents;
4. Final review and approval of documents by Geary Schindel, the EAA Chief Technical Officer;
5. Scanning and optimizing the documents;
6. Establishing standard procedures for adding documents yet to be discovered and documents produced in the future; and
7. Uploading the digitized documents to the EAA website.

New Document Classification and Web Entry System:

We investigated several systems for Subject Headings, including:

- The Library of Congress System, which is used extensively by public and academic libraries but is not extensively developed in geology;
- The United States Geological Survey (USGS) system in its on-line Publications Catalog and Publications Warehouse;
- The GeoRef Thesaurus, developed and updated by geologists and recommended by Dennis Trombatore, head librarian at The Walter Geology Library at The University of Texas in Austin; and
- One which I developed *ab initio* as the basis for discussions with the S&R Team.

I was surprised to learn from Mr. Trombatore that there is no accepted standard library classification system in geology. Therefore, after much deliberation and discussion, the Team agreed with my recommendation to use the subject headings from the EAA Bibliography. The latter is revised every few years and attempts to record everything published about the Edwards Aquifer. This scheme has the advantage of building on what the EAA has already done, and would allow the documents in this Project to relate directly to the EAA Bibliography.

In addition to Subject Headings and Sub-Headings, I recommended that we add certain fields to the Document Entry Page on the EAA SMS application. These are shown in detail in the Results Section.

Achieving Consensus on Criteria:

Rather than reviewing each document on its own merits, I suggested that we reach consensus on the criteria for including and excluding documents for the project. Then the decision for including or excluding any given document should be straightforward. These criteria would also allow us to establish definite boundaries for the project, as well as to have consistency in the decisions.

I also proposed that the Chief Technical Officer have the final say on which documents would be included after applying the criteria, with the understanding that the criteria are guidelines rather than hard-and-fast rules. There could be exceptions: those documents not fitting the criteria that are deemed to be so important that they should be included, and conversely those documents otherwise fitting the criteria that should be excluded due to the sensitive nature of their content.

Discovery of the Documents:

At Elizabeth Smith's request, I examined every document and book in the EAA Library, removing them into piles in my workspace, and at the same time pulled any duplicates and set them aside in another area of the office whether or not they belong to this Project. Work with the Library was delayed for several weeks because it was packed up for moving to the new building. Once I had access to the library, this painstaking process took approximately three

weeks. Along the way I found several inconsistencies where reports or books in a series had been given different call numbers.

After I was finished with the Library, I visited with several S&R scientists to determine which documents they had in hard copy or electronic versions. Finally, I searched the USGS Documents Library and Publications Warehouse using different search criteria to locate reports produced jointly with the EUWD or EAA and downloaded those directly where they were available electronically.

As I found reports fitting the criteria, I entered them into a Master Spreadsheet using sequential tracking numbers. I also recorded the library call number or location of the document, title, author(s), year, EUWD/EAA Bulletin or Report #, and Comments. The Master Spreadsheet was color-coded, with the excluded ones in red. Excluded documents were not eliminated, however, in case the decision was made in the future to digitize them for internal use and put them behind the firewall on the server.

I then extracted the included documents into another Tracking Spreadsheet and expanded the fields to document the steps in the workflow of processing each document. This Tracking Spreadsheet and detailed date/time sheets, were the means of documenting the progress of the work on the project and helped me keep track of where I was.

The Tracking Spreadsheet and timesheet enabled me to generate totals easily of documents found vs. documents scanned and cumulative hours worked for each status report.

Final Review and Approval:

The Master Spreadsheet was reviewed on several occasions by John Hoyt and Geary Schindel, with Mr. Schindel having the final word on whether or not a document would be included in the Project.

Scanning and Optimizing:

I used a Fujitsu ScanSnap® S1500 multi-page scanner on-site for converting the documents into digital format and documented the procedures as I developed

them. Bound reports needed to be unbound prior to scanning the loose pages.

I took great care in unbinding the reports to minimize any damage to them. GBC binding was removed in the binding machine, but spiral binding had to be removed by hand. Stapled and taped bindings required a different technique. Using an Exacto® knife, I carefully cut through the tape to expose the staples on the front and back covers. Then, using techniques which can only be learned by experience, I used the Exacto blade, needle-nose pliers, a staple remover or regular pliers to extract the staples without damaging the pages. I protected the surface of the brand-new desk to prevent any scratches and was careful to avoid slicing fingers in the process. Pages from a few reports with perfect (glued) binding needed to be separated using the large paper cutter in the library.

Once unbound, the reports had to be inspected page-by-page to locate any folded plates. These were then unfolded and scanned with the clear sheet protector. To facilitate printing the reports from the website, plates larger than 11x17 inches were reduced to 8 ½ x 11 inches in Photoshop® and embedded where they appeared in the report, while the full-size images were appended to the end. Detailed procedures are described in Appendices II and III.

The only injury I suffered was one torn cuticle from pulling a book off the library shelf, though several tall piles in the office threated to topple over. And, more importantly, not a single page was destroyed or moved out of order in all the scanning. Scanned reports will remain unbound for archiving after receiving recommendations from Dennis Trombatore.

Quality control in the scanning was assured by separating the unbound pages by hand, sometimes one page at a time if they had a tendency to stick together. In addition, I ensured that every page was scanned and pages were not stuck together by handling every page as it came off the scanner, while at the same time viewing the results of the scan in the ScanSnap Manager. In addition, I looked at every page before or after conversion to OCR to ensure that the page orientations were correct (see below).

Each scanned document was saved as one or more.pdf files with unambiguous file names as detailed in the Appendices. File names included the unique document tracking number and sequence number for batched documents, and were stored in separate folders named with each document tracking number. Covers were scanned in color and saved separately @300 dpi as .pdf files, then flattened and converted to .tif files using Adobe Photoshop®CS6 Extended to generate thumbnails for the document display on the EAA website.

Restoring Covers:

At the request of the Team, we generated thumbnail images of the report covers. This required a lot of time in some cases where the covers were damaged or aged. We made a decision early on to make the covers clean because they would be the "face" of the EAA on its website. Covers were restored using Photoshop in all but a few cases. Where reports were available electronically, the covers were saved as .pdf files and converted directly to .tif files @300 dpi using Photoshop without retouching.

Most of the covers of reports from the Library had markings from rubber stamps saying "Library Use Only" and the name of the agency at the time. Some covers had names and personal information of the person who donated the volume to the Library. Rather than doing simple redactions, I saved the scanned covers separately and then eliminated the extraneous markings in Photoshop. Covers were saved as .tif files @ 300 dpi to avoid .jpg compression artifacts. Sometimes this process also had to be used for the first or internal pages as well. Other imperfections in the covers such as torn corners, wrinkles and stains were also removed. In addition to intentional or unintentional imperfections, the scanning process sometimes introduced colored vertical lines that needed to be removed.

In some cases the restoration was time-consuming if the imperfections overlapped with text or graphics. In one of the most interesting examples, I was able to cut and paste letters from elsewhere on the cover of an old EUWD Bulletin to replace a word that had been destroyed with a rubber stamp where the old font was no longer available for direct replacement. In other cases where the print was severely faded, I reconstructed the print using a similar modern font.

I strived to make each cover appropriate for the report. Older reports usually retained their faded edges, while others looked like new. Textures and colors of cover papers were retained. The goal was to make the digitized report as faithful as possible to the original. The corrected .tif image was used for combining with the rest of the report to create the digital archive and the thumbnail image on the webpage display of the document record. Images of all the original covers have been saved. See Appendix IV.

Converting Reports to OCR:

After combining the cleaned cover images with the rest of the scanned reports, I converted all pages to OCR using Adobe Acrobat XI Pro® (the current version). While the ScanSnap® has a built-in OCR function, Acrobat Pro would ensure the latest OCR technology would be applied to the document. Documents were run through the OCR conversion in batches overnight because this is a very time-consuming process and the computer cannot be used for anything else while the conversion is running. Files that had been OCR'd were automatically designated with the _OCR suffix in the file name, to allow for unambiguous identification. In addition, I verified each file as being OCR'd manually. No attempt was made to correct errors in optical character assignments. See Appendix VI for details.

Correcting Orientation of Pages:

I discovered mid-way through the scanning that the ScanSnap and Adobe Acrobat programs automatically orient pages right-side-up for reading in some *but not all* cases. I believe this is a function of the relative amount of readable text on a page. Maps and charts tended to have the highest error frequency, although occasionally a page containing only text would be upside-down.

Therefore I added a step in the workflow for verification of orientation in the pages. This involved having to look at every page after the OCR was finished. Displaying the.pdf thumbnails using the F4 key allowed this process to be rapid: enough detail could be seen in the thumbnails to determine if the orientation was correct. Nevertheless, I had to make many corrections manually. The final.pdf files are displayed so that they can be read without any changes on the part of the viewer. Acrobat automatically re-orients pages for printing if the user desires this output.

I have documented the details, and by extension the time, involved in scanning the reports. It was much more than piling a sheaf of papers on the paper feed and letting the scanner run on its own. Indeed, scanning and verification should occupy the TOTAL ATTENTION of the person doing it, in order for the process to be smooth and error-free.

All scanned files, final OCR versions and .tif images were backed up regularly onto a 64 GB flash drive, which will also be used for delivering the documents with this Report.

Establishing Standard Procedures:

The Technical Documents Project is unending. More documents will be discovered, and of course new ones are produced every year. In addition, the scope of this Project may expand to include technical documents produced by others, or other documents produced by the EAA. Detailed step-by-step procedures are documented in the Appendices. The goal is to allow any other person to carry on this work.

Uploading the Digitized Documents to the EAA Website:

At the same time this Project was going on, the EAA was undergoing a complete website re-design and server migration. These latter projects have required more time than anticipated, and at this time the applications for uploading, viewing and browsing the documents on the EAA web server are not available. I have re-configured the Document Entry Screen in the EAA SMS to include the new classification scheme but have not been able to upload any documents. The Document Entry Screen will probably change after the EAA server migration because the assignment of new classifications as Subcategories is cumbersome. This part of the project, including the more labor-intensive classification and writing of Summaries, Descriptions, Abstracts, and keywords, will hopefully be continued in Phase II.

Results

New Document Classification and Web Entry System:

The new classification system based on the EAA Bibliography is shown below:

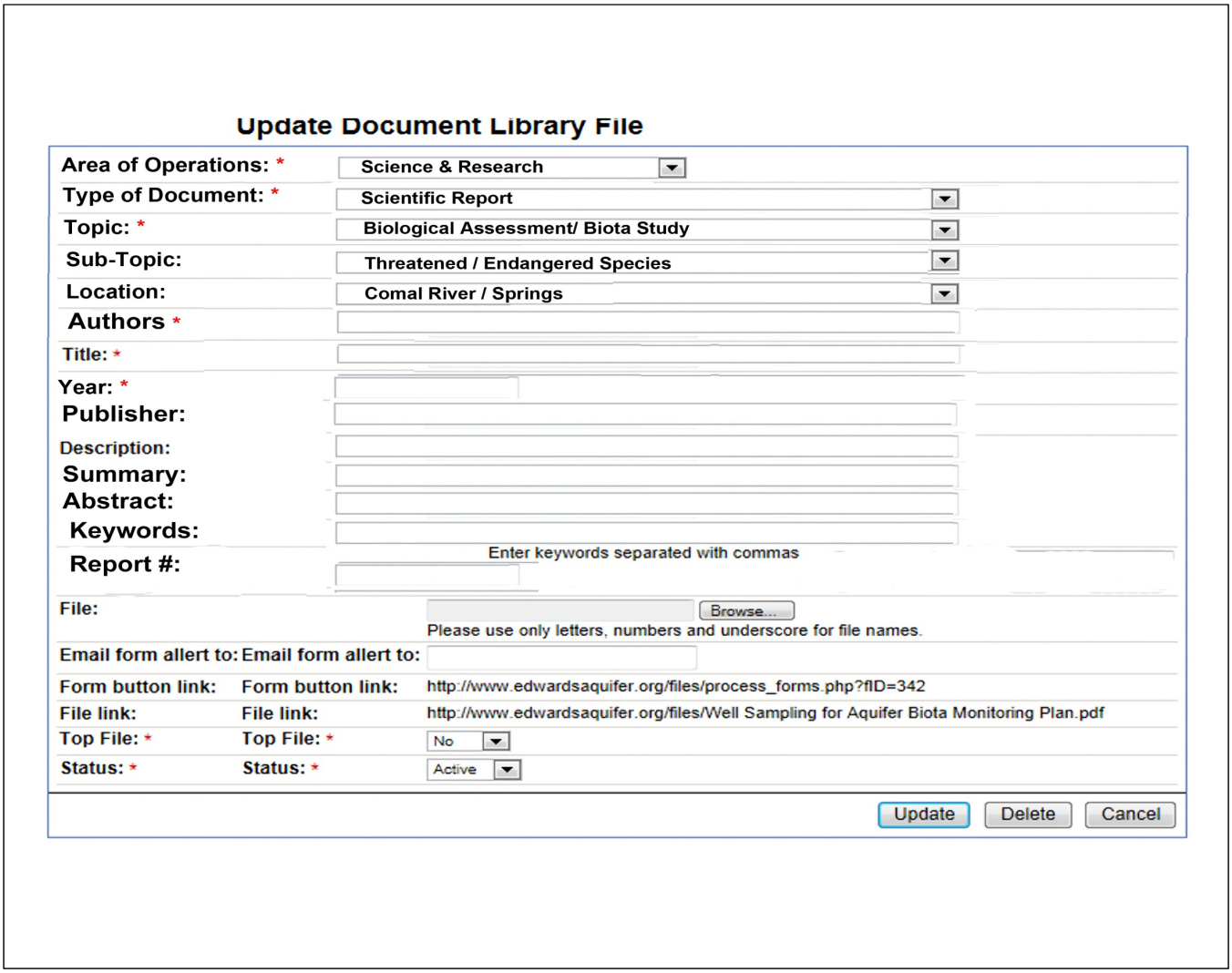
Table I: New Classification Scheme for Technical Documents

Pre-existing additional fields in the Document Entry/Edit screen will be kept.

Topic(s) (Select one or more)	Location (Select one or more)	Additional Fields (Fill in)
Archeology	Aquifer / General / Overall	Unique #
Biography	Artesian Zone	File Name
Biology	Balcones Fault Zone	Authors
Climatology	Bandera County	Title
Economic Geology	Barton Springs Segment	Year
Environmental Geology	Bexar County	Description
Floods and Droughts	Blanco County	Summary
Geochemistry	Blanco River	Abstract
Geology	Cibolo Creek	Keywords
Geomorphology and Caves	Colorado County	Publisher
Groundwater Movement	Comal County	Report #
Groundwater Recharge, Recharge Zone	Comal River / Springs	
History (changed from "Historical"	Drainage Area / Contributing Zone	
Hydrology and Hydrogeology	Edwards County	
Land Use	Gillespie County	
Overview Studies	Guadalupe County	
Paleontology	Guadalupe River	
Recreation	Hays County	
Remote Sensing	Hays County Groundwater Divide	
Sedimentation, Sedimentary Petrology	Hondo Pool	
Soils	Hueco Springs	
Springs, Groundwater Discharge	Kendall County	
Stratigraphy	Kerr County	
Structural Geology	Kinney County	
Surface Water/Groundwater Relationship	Knippa Gap	
Water Quality	Leona Springs	
Water Resources Data	Medina County	
Water Use / Conservation	Northern Segment	
Water-Resources Planning and Management	Nueces River	
Miscellaneous	Onion Creek	
	Real County	
	Recharge Zone	
	San Antonio Pool	
	San Antonio River / Springs	
	San Antonio Segment	
	San Marcos River / Springs	
	Southern Segment	
	Uvalde County	
	Other	

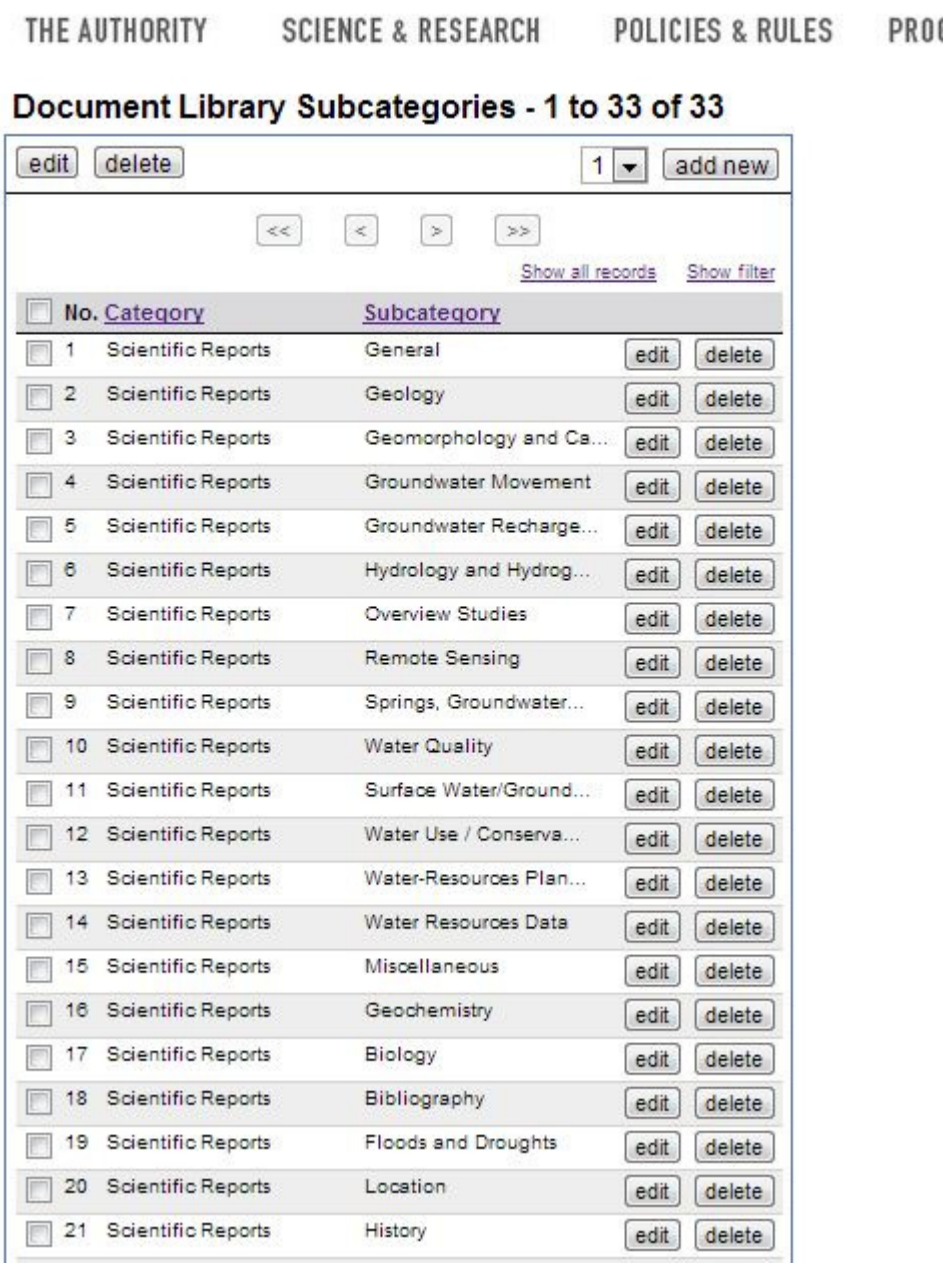
We designed a mock-up for the Document Entry/Edit Screen in the EAA SMS and presented it to the Team on August 2. Here it is modified to contain the new fields. Final version is yet to be determined by the webmaster:

Figure 1: Mock-Up of Document Entry/Editing Screen in EAA SMS:



One way to handle the new classification system is to assign the subject headings as Subcategories in the Document Library. The webmaster created a new Subcategory entry page in SMS and I populated it with the new subject headings from the EAA Bibliography. However, this will probably not be the final solution, which awaits the server migration and website re-design:

Figure 2: New Document Library Subcategories Entry Screen in SMS



Achieving Consensus on Criteria:

We agreed on the following criteria for including documents in the Project:

- **Those scientific and technical reports produced BY the EUWD or EAA;**
- **Scientific, engineering and technical studies produced FOR or WITH the EUWD or EAA by another entity.**

Peer-reviewed journal articles, technical reports, theses and dissertations, and proceedings of symposia ABOUT the Edwards Aquifer, or studies conducted and written by others would be excluded in Phase I.

Discovery of the Documents:

At the present time, a total of 383 documents have been located. Of these, 53 reports are already on the EAA website (including two duplicates and two of the same report listed with two different titles, for a net of 51). Some of these were corrupted or incomplete copies and have been reconstructed. I have not done a systematic review of all of them. Thumbnails of the covers will be made at the time these pre-existing web reports are converted to the new classification format.

A few older reports are available only in hard copy from the USGS library in Reston, VA. I included them in the Master File but have not attempted to obtain them because it would have been impossible to scan them nondestructively with the ScanSnap®.

Among these older findings, I discovered that the EUWD apparently published a journal called *The Water Level*. The USGS library has an incomplete run of partial sets of Volume 3-5 from 1986-1988. I will attempt to locate copies and scan them nondestructively in Phase II. Notable in the collection is a complete set of the Critical Period biomonitoring reports from 2001-2011 for the Comal and San Marcos Springs and Rivers, which are not available on either the EAA or EAHCP websites.

Of course, there may be other reports that escaped our surveillance, and we will never know when all of them have been found. There are a few EUWD Bulletins that appear to be unaccounted for because reports with sequential numbers are missing. I was able to determine that Bulletin 19 was not printed;

however, Bulletins 22, 25, and 28 appear to be missing. In Phase II I will attempt to locate these and any others in the EAA records repository and the Texas State Library. We will need to find a way to scan these nondestructively if only one copy is available.

Final Review and Approval:

Of the remaining 332 documents, 58 were excluded. Some were excluded because they didn't strictly fit the criteria for inclusion, were engineering proposals concentrating on cost estimates, were inspection reports , were draft reports or earlier versions replaced by final reports, or contained personal or sensitive information.

This leaves 274 new documents that needed to be scanned or located in electronic format for this Project. Of these, 246 have been scanned or downloaded. The complete library of scanned and optimized reports is on a 64-GB flash drive, which is being delivered with this Report.

The remaining 28 include the old EUWD reports that haven't been located and some of the large regional water plan volumes. In addition, some of the ones that have been scanned are not ready to be uploaded because they contain large plates that need to be scanned in a large-format flatbed scanner which will be accessible sometime in the future.

We decided to include the various local and regional water plans that were co-sponsored by the EUWD or EAA because they contained valuable historical data and reflected the current thinking of that time. We also included reports on the evaluation of the EAA because they contained discussion about the research program, but all of these may not have been found.

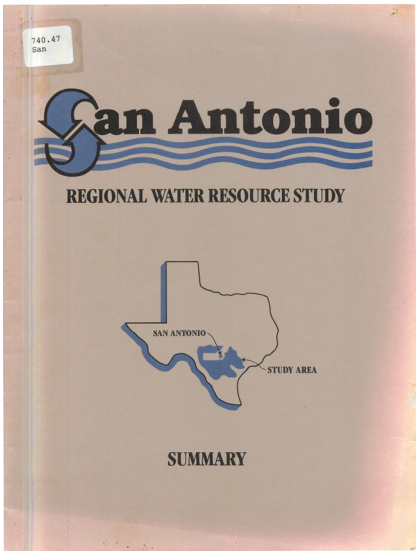
The combined list of included and excluded documents is shown in Appendix I. Excluded documents are shown in **red** and local or regional water plans in **blue**.

Scanning and Optimizing:

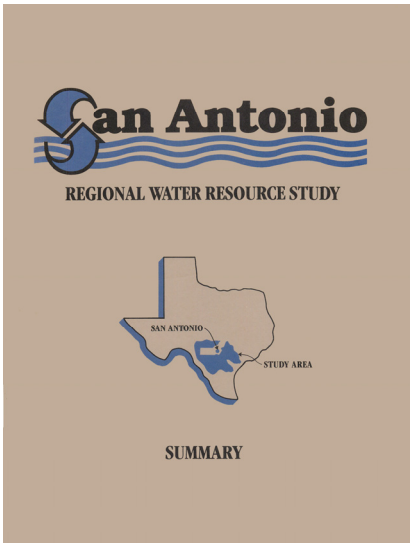
Here are some images that illustrate the restoration process:

#97: San Antonio Regional Water Resource Study Summary

Showing scanning artifact of colored lines as well as aging in original. The uneven variations of aging would have been a distraction:



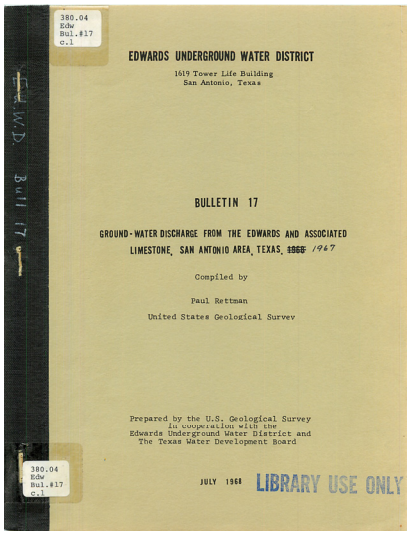
Original Cover



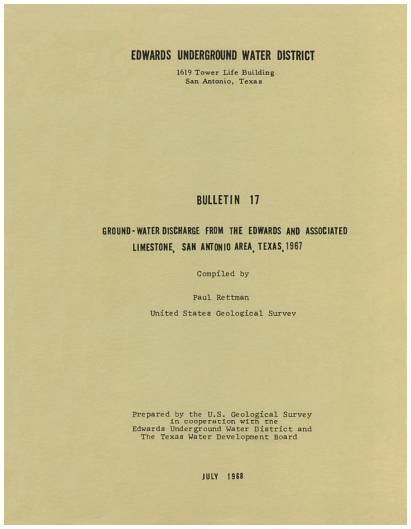
Restored Cover

#117: EUWD Bulletin 17

Showing retention of original texture in paper and aging with elimination of rubber stamp marks, library subject heading and binding. In this case the subtle patina of aging was appropriate for this historical document of the EUWD:



Original Cover

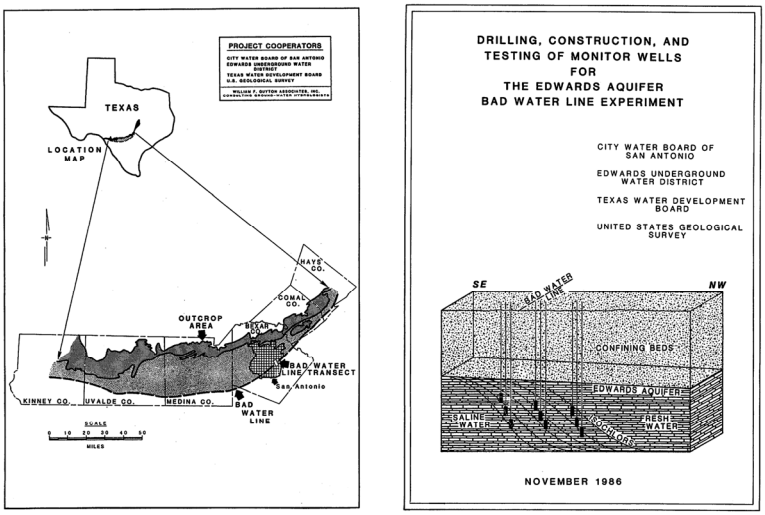


Restored Cover

The following images from some of the more unusual reports are good examples for learning purposes and could be used for displays in the Resource Center:

#204: Drilling, Construction, and Testing of Monitor Wells for the Edwards Aquifer Bad Water Line Experiment

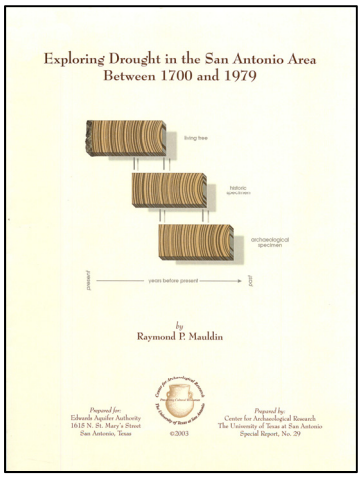
This was the best example of excellence in design and powerful black-and-white imagery. The back and front covers convey not only the location of the study, but also the study itself and how it was conducted:



Excellent Design in Back and Front Covers of a Report: Illustrations Summarize the Location and Design of the Study

#165: Exploring Drought in the San Antonio Area Between 1700 and 1979

This report commissioned by the EAA to the UTSA Center for Archaeological Research shows their methodology in one simple and striking image on the cover:



#168: Proposal to Edwards Underground Water District for Designing and Conducting an Operational Cloud Seeding Project

This charming figure conveys the methodology of cloud seeding better than words ever could:

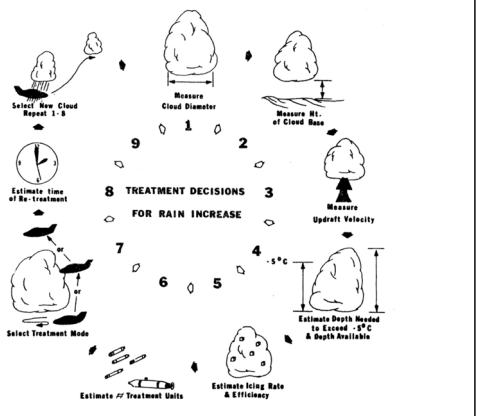


Figure B.5

From North American Weather Consultants: PROPOSAL TO EDWARDS UNDERGROUND WATER DISTRICT FOR DESIGNING AND CONDUCTING A N OPERATIONAL CLOUD SEEDING PROJECT, 1984

170: Assessment of the Effect of Cloud Seeding in the Edwards Aquifer Target During the 1999, 2000 and 2001 Seasons

A dramatic image from NOAA showing rainfall over the Recharge Zone, possibly as a result of cloud seeding:

CLOUD SEEDING PROGRAM TO ENHANCE RAINFALL OVER THE EDWARDS AQUIFER

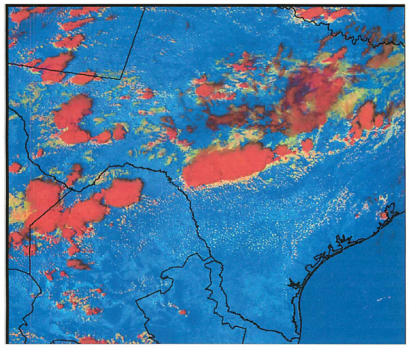
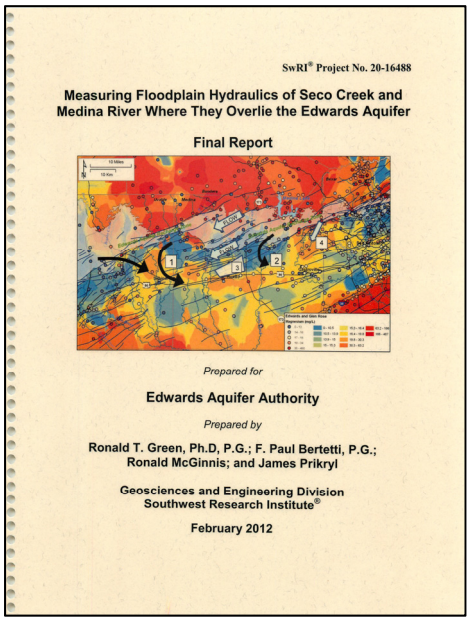


Figure 14. Portion of processed, color-coded, NOAA-16 image at 23:20:06 GMT on August 16, 2001, that shows portions of Texas. The picture shows a strong line of convection in the northwestern portion of the EA target with smaller new clouds growing on the south side of the line. An average of 0.19 in. of rain was measured in the EAA rain gauge network and there were three seeding flights on this day.

From Woodley Weather Consultants for Services: ASSESSMENT OF THE EFFECT OF CLOUD SEEDING IN THE EDWARDS AQUIFER TARGET DURING THE 1999,2000 and 2001 SEASONS

 # 320: Measuring Floodplain Hydraulics of Seco Creek and Medina River Where They Overlie the Edwards Aquifer - Final Report

A colorful example of a more recent report, showing results of the study on the cover:



SwRI® Project No. 20-16488

Measuring Floodplain Hydraulics of Seco Creek and Medina River Where They Overlie the Edwards Aquifer

Final Report

Prepared for

Edwards Aquifer Authority

Prepared by

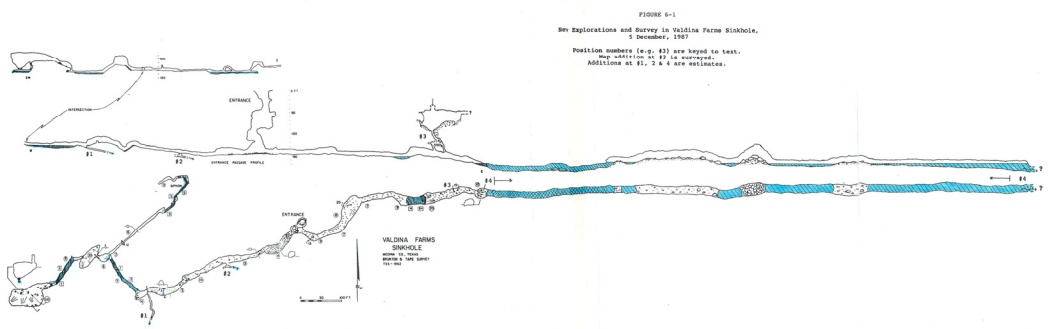
Ronald T. Green, Ph.D, P.G.; F. Paul Bertetti, P.G.; Ronald McGinnis; and James Prikryl

Geosciences and Engineering Division
Southwest Research Institute®

February 2012

 # 192: Valdina Farms Sinkhole: Hydrogeologic & Biologic Evaluation

This diagram by Dr. George Veni of the vertical and horizontal sections of a cave illustrates the excitement and mystery of exploring the underground features of the Aquifer:



 # 320: Measuring Floodplain Hydraulics of Seco Creek and Medina River Where They Overlie the Edwards Aquifer - Final Report

This diagram of electrical resistivity could pass for an abstract expressionist painting:

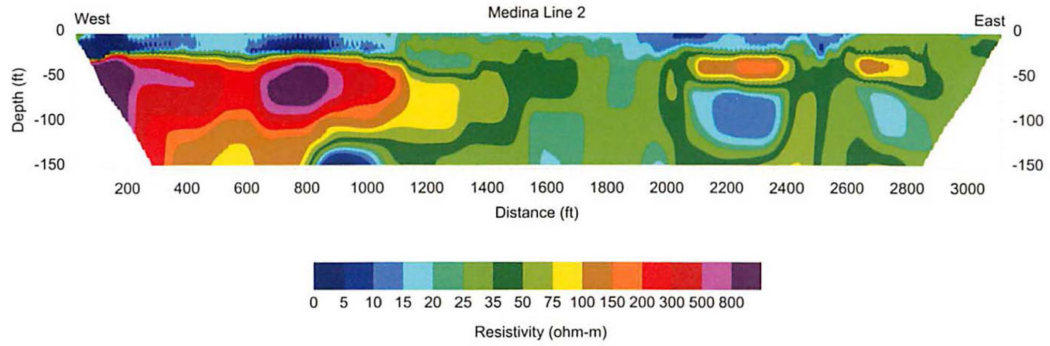


Figure 19. Vertical profile of electrical resistivity values calculated for the Medina Line 2 located at the Medina River floodplain transect. Leona Formation is interpreted as zones with resistivity above 200 ohm-m. 3:1 vertical exageration.

Establishing standard procedures:
The procedures used for digitizing the reports are documented in meticulous detail in the Appendices. The details of any other person's work flow do not need to be identical to these, so long as the file and folder names and documentation of work flow are unambiguous.

Conclusions and Recommendations

Of the 383 documents found, 274 were selected for inclusion in Phase I, and 246 have been scanned or downloaded. The remainder are already on the EAA website, are of lower priority or have not been obtainable.

As shown in the previous section, some report covers and other graphics would be useful for hands-on displays or for framing and hanging on the wall in the new Resource Center. As I upload the documents I will have an opportunity to review each one again and make additions to this set.

My recommendations, some small and others major, are:

- We would like to work directly with the website designer and programmer to develop a user interface for browsing, searching and advanced searching that will be clear and intuitive. We also hope the format of the document displays including the thumbnails of the covers will be arranged to maximize the visual and cognitive impact of the information.

- We hope the EAA will showcase the Technical Documents Project on its website, Facebook page and other social media. I would be happy to identify a "Document of the Month" for this purpose.

- If separate large-format plates are used in future reports, they should have the name of the report, plate number and page number as part of the plate. This will allow plates to be reunited with the main reports if they become separated.

- EAA documents meeting the criteria for this Project but excluded for various reasons should also be scanned, uploaded and made available to EAA staff from a location on the server behind the firewall.

- All future EAA S&R reports should be tracked in a Master File, digitized, and uploaded to the EAA website in a consistent manner, hopefully one that follows procedures similar or identical to those described herein. It would be helpful if there is one person designated to process and upload all the new documents. This consistent process needs to become part of the institutional culture at the EAA, and all authors should cooperate and use this process or designated person.

- One unbound copy of all EAA S&R reports should be printed on acid-free paper and kept together under archival conditions in a controlled environment and exempt from the agency's record retention policy, in the event digital technologies change in the future.

- A systematic review and cross-tabulation of documents between the EAA and EAHCP websites should be performed. Should habitat studies performed prior to the creation of the RIP/HCP be on the EAA website, or the EAHCP website, or both? Should there be complete, partial, or no overlap for EAA-initiated studies between the two sites? These decisions need to be made at a high level. We realize the documents on the EAHCP site are there for the purpose of documenting the work done for the RIP/HCP. However, there will undoubtedly be new studies done for the HCP, and these need to be digitized, archived and uploaded in a similar consistent fashion, and placed on the EAA website (or not) in a consistent pattern.

- In addition, we recommend that all the technical documents for the EAHCP, and ultimately all the documents of the EAA, be digitized and archived by a similar consistent process, with a similar look and feel on the websites.

In conclusion, the EAA Technical Documents Project has been an extraordinary project, and the results are also extraordinary. But this is just the beginning. There are many discoveries hiding in all that data, discoveries that may lead to a new understanding of the Aquifer - of its structure and resilience in the face of drought, development, and demands by competing interests. We hope that the publication of these data will enable those discoveries to be made, to the end of increasing the protection of the Aquifer and enhancing the quality of life for all its inhabitants – human and wild.

About the Author

Dr. Betty Dabney has worked in environmental health and informatics for over 35 years. She is retired from the faculties of Texas A&M's School of Rural Public Health and the University of Maryland School of Public Health. At Maryland she was the Founding Director of the Maryland Institute for Applied Environmental Health, developed the environmental health curriculum, taught foundational courses for the MPH in Environmental Health Sciences, was on the Maryland Governor's Commission for Environmental Justice and Sustainable Communities, and worked with the US Environmental Protection Agency and the Centers for Disease Control and Protection on water-related projects. She has also worked for the Maryland Department of the Environment, for Fortune 50 companies, and has been an independent consultant in environmental health. In her spare time she is a fine-art photographer (bettydabney.com) and contributes articles on the urban renaissance to The Rivard Report (therivardreport.com). Beginning in summer 2013 she will be teaching in the UTSA Graduate Program of Urban and Regional Planning.

APPENDIX I
Combined Master List of Documents

NOTES:
Criteria for inclusion: scientific or technical reports issued by the EUWD/EAA, contract studies done for or with the EUWD/EAA by other agencies, engineering companies, etc.
I have included USGS reports that were done "in cooperation with" the EUWD/EAA.
I haven't done a systematic survey to see which reports are on the EAHCP website and not on the EAA site, and vice-versa. Need consensus if there should be 100% conformity.
Question: If a biota study was done prior to the RIP/HCP, does it belong on the EAA or the HCP website? EAA, said Geary.
Am including proposals if they contain substantial data. Have not included proposals that are specifications for work delivery.
Am not including draft versions where final reports are available.
Reports in red have been excluded by Geary. We may still want them in digital version for internal use.
Excluding reports by Edwards Underground Conservation District on Barton Springs/Travis County.
I included some archival USGS and US Army Corps of Engineers surveys, histories and regional water plans (shown in blue) in addition to scientific studies because they have valuable data and are important for the historical record.
Docs #1-50 are already on the EAA website.
Doc #'s 51-end: other documents fitting the above criteria
Some report names vary slightly. I have kept the names as listed on the EAA website for the time being. Would be better to make them consistent eventually.

NOTE: This list represents the reports found as of the end of Phase I. Additional reports were found in Phase II in 2013-2014. The complete list will be in the Final Report for Phase II.

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
1	EAA Website	1999 [Hydrologic Data Report]			00-02	No cover - no large plates on-line. Scan and add to.
2	EAA Website	2000 [Hydrologic Data Report]			01-02	
3	EAA Website	2001 [Hydrologic Data Report]				
4	EAA Website	2002 [Hydrologic Data Report]			03-02	
5	EAA Website	2003 [Hydrologic Data Report]			04-02	
6	EAA Website	2004 [Hydrologic Data Report]			05-02	
7	EAA Website	2005 [Hydrologic Data Report]			06-01	
8	EAA Website	2006 [Hydrologic Data Report]	http://www.edwardsaquifer.org/files/Hydro%20report%202006.pdf			
9	EAA Website	2007 [Hydrologic Data Report]	http://www.edwardsaquifer.org/files/Final%202007%20Hydrologic%20Data%20Report.pdf			
10	EAA Website	2008 [Hydrologic Data Report]	http://www.edwardsaquifer.org/files/2008%20Hydro%20Report.pdf			
11	EAA Website	2009 [Hydrologic Data Report]	http://www.edwardsaquifer.org/files/HydroReport2009.pdf			Is out of order on webpage.
12	EAA Website	2010 Hydrologic Data Report - use this to develop additional categories	http://www.edwardsaquifer.org/files/2010FinalHydroReport.pdf			
13	EAA Website	2010 Edwards Aquifer Hydrologic Data Fact Sheet for Recharge and Discharge	http://www.edwardsaquifer.org/files/EAA_2010HydrologicDataRD5.pdf			
14	EAA Website	2010 Hydrologic Data Fact Sheet for Precipitation, Groundwater Levels and Drought Conditions	http://www.edwardsaquifer.org/files/2010FinalHydroReport.pdf			
15	EAA Website	2009 Aquatic Ecosystem Monitoring at Comal Springs	http://www.edwardsaquifer.org/files/Comal_Final_2009_Annual_Report_allappendices.pdf			
16	EAA Website	2009 Aquatic Ecosystem Monitoring at San Marcos Springs	http://www.edwardsaquifer.org/files/Comal_Final_2009_Annual_Report_allappendices.pdf			
17	EAA Website	2010 Aquatic Ecosystem Monitoring at Comal Springs	http://www.edwardsaquifer.org/files/Comal%20Final%202010%20Annual%20Report.pdf			
18	EAA Website	2010 Aquatic Ecosystem Monitoring at San Marcos Springs	http://www.edwardsaquifer.org/files/San%20Marcos%20Final%202010%20Annual%20Report.pdf			
19	EAA Website	Analysis of Recharge and Recirculation – Phase 1				
20	EAA Website	Analysis of Recharge and Recirculation - Phase 2				
21	EAA Website	Analysis of Recharge and Recirculation – Phase III/IV				
22	EAA Website	Structural Controls on the Edwards Aquifer/Trinity Aquifer Interface in the Helotes Quadrangle, Texas				CHECK - IS THIS THE SAME AS REPORT FROM GEARY'S OFFICE? Structural Controls on the Edwards Aquifer/Trinity Aquifer Interface in the Camp Bullis Quadrangle, Texas - YES. Kept report from Geary's office in case I need to enter authors etc.
23	EAA Website	Assessment of Factors Influencing Texas Wild-Rice (Zizania texana) Sexual and Asexual Reproduction				http://www.edwardsaquifer.org/files/Texas_Wild_Rice%20_Reproduction_Final%20Rpt.pdf
24	EAA Website	Assessment of Instream flow and Habitat Requirements for Cagle's Map Turtle				http://www.edwardsaquifer.org/files/Cagles_Ma_Turtle_Final_Report.pdf
25	EAA Website	Conduits and Turbulent Flow in the Edwards Aquifer				
26	EAA Website	Deep Aquifer Biota Study				
27	EAA Website	Edwards Aquifer System [Map]				http://www.edwardsaquifer.org/files/EdwardsAquifersystemPattern.pdf
28	EAA Website	Estimation of Hydraulic Parameters for the Edwards Aquifer Management Model				
28a	EAA Website	Edwards Aquifer Authority Synoptic Water Level Program 2005-2009 Water Level Data				http://www.edwardsaquifer.org/files/Synoptic%20Report%208-6-2012.pdf

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
28b	EAA Website	Edwards Aquifer Authority Well Plugging and Abandonment Study				http://www.edwardsaquifer.org/files/Well%20Plugging%20Report%208-8-12.pdf
28c	EAA Website - SAME AS 46	Tracing Groundwater Flowpaths in the Vicinity of San Marcos Springs, Texas - SAME AS #46. NOTE: NAME ON REPORT MAY BE Tracing Groundwater Flowpaths in the Edwards Aquifer Recharge Zone, Panther Springs Creek Basin, Norther Bexar County, Texas			10-01	http://www.edwardsaquifer.org/files/Panther%20Springs%20Creek%20Traces%202010.pdf
29	EAA Website	Evaluation of Augmentation Methodologies in Support of In-Situ Refugia at Comal and San Marcos Springs, Texas				
30	EAA Website	Evaluation of the Aquifer and Springflow Impacts Associated with the Cibolo Creek Transfer Rules				http://www.edwardsaquifer.org/files/Final_Cibolo_Report_by_LBG-Guyton.pdf
31	EAA Website	Evaluation of the Edwards Aquifer in Kinney and Uvalde Counties, Texas				http://www.edwardsaquifer.org/files/Uvalde_final_19_June2006[2].pdf
32		Evaluation of the Option to Designate a Separate San Marcos Pool for Critical Period Management				`http://www.edwardsaquifer.org/files/Final_San_Marcos_Springs_Report.pdf
33		Final Report for Deep Aquifer Biota Study of the Edwards Aquifer				http://www.edwardsaquifer.org/files/Zara%20Deep%20Aquifer%20Biota%20Sampling%20of%20the%20Edwards%20Aquifer%20Final%20Final.pdf
34		Fracture/Conduit Study (Refining the Conceptual Model for Flow in the Edwards Aquifer – Characterizing the Role of Fractures and Conduits in the Balcones Fault Zone Segment)				
35		Geophysical Survey to Determine the Depth and Lateral Extent of the Leona Aquifer and Evaluation of Discharge Through the Leona River Floodplain, South of Uvalde, Texas				
36	EAHCP WEBSITE	HSPF Recharge Models for the San Antonio Segment of the Balcones Fault Zone of the Edwards Aquifer				BAD LINK ON WEBSITE. Downloaded report from EAHCP website. Show to Jim Winterle. See if it is among the files Jim gave.
37		Measuring Floodplain Hydraulics of the Frio River where it Overlies the Edwards Aquifer				http://www.edwardsaquifer.org/files/MEASURING%20FLOODPLAIN%20HYDRAULICS%20OF%20THE%20FRIO%20RIVER%20WHERE%20IT%20OVERLIES%20THE%20EDWARDS%20AQUIFER.pdf
38	EAA Website	North Medina County Flowpath – Electromagnetic Survey in the Vicinity of Seco Creek Sinkhole				Same as 353, I think.
39	EAA Website	Recharge Methodology Pilot Study of the Blanco and Nueces Basins				GEARY SAYS CAN BE REPLACED BY LATER STUDY - see printed report of summaries.
40	EAA Website	Robust Representation of Dry Cells in MODFLOW				http://www.edwardsaquifer.org/files/EAA_Dry_Cell_Report_r1.pdf
41	EAA Website	Simulated Impacts Associated with the Cibolo Creek Transfers Using MODFLOW-NR and Senate Bill 3 Assumptions				http://www.edwardsaquifer.org/files/Final_Cibolo_Transfer_Report_W_Appendix%20(2).pdf
42	EAA Website	Statistical Analysis of Hydrologic Data				
43	EAA Website	Structural Controls on the Edwards Aquifer/Trinity Aquifer Interface in the Helotes Quadrangle, Texas				SAME AS 22. Scanned outer cover and combined with downloaded report.
44	EAA Website	Synoptic Water Level Study [1999-2004]				http://www.edwardsaquifer.org/files/SWLP%20Final%20Report.pdf
45	EAA Website	Tracer Test Work Plan, Kinney and Uvalde Counties				http://www.edwardsaquifer.org/files/Uvalde_Kinney_Work_Plan_FinaL_Draft.pdf
46	EAA Website	Tracing Groundwater Flowpaths in the Edwards Aquifer Recharge Zone, Panther Springs Creek Basin, Northern Bexar County, Texas				http://www.edwardsaquifer.org/files/Panther%20Springs%20Creek%20Traces%202010.pdf

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
47	EAA Website	Variable Flow Study - Seven Years of Monitoring and Applied Research				http://www.edwardsaquifer.org/files/Summary_of_Monitoring_and_Research_for_2000-2007.pdf
48	EAA Website	Water Quality Trends Analysis Report	EAA-Jonson S, Schindel G and Hoyt J			Change title to: Water Quality Trends Analysis of the San Antonio Segment, Balcones Fault Zone Edwards Aquifer, Texas
49	EAA Website	Water-Budget Analysis of Medina and Diversion Lakes and the Medina/Diversion Lake System, with Estimated Recharge to Edwards Aquifer, San Antonio, Texas		2004	USGS SIR 2004-5209	On EAA website - but downloaded from USGS.
50	EAA Website	Well Sampling for Aquifer Biota Monitoring Plan				http://www.edwardsaquifer.org/files/Well%20Sampling%20for%20Aquifer%20Biota%20Monitoring%20Plan.pdf
51	3480.04 Edw #43-44	1983-84 Hydrologic Data Report - Compilation of Hydrologic Data for the Edwards Aquifer, San Antonio Area, Texas, 1983-84, with 1934-84 Summary	USGS / EUWD	1986	Bulletin 43-44	
52		1985 Hydrologic Data Report -Compilation of Hydrologic Data for the Edwards Aquifer, San Antonio Area, Texas, 1985, with 1934-85 Summary	USGS - Ozuna GB, Nalley GM, Bowman MN / EUWD	1987	Bulletin 45	Large Plates - will need special scanning
53	N/C	1986 Hydrologic Data Report -Compilation of Hydrologic Data for the Edwards Aquifer, San Antonio Area, Texas, 1986, with 1934-86 Summary	USGS - Ozuma GB, Nalley GM, Stein WG / EUWD	1988	Bulletin 46	Large Plates - will need special scanning
54	N/C	1987 Hydrologic Data Report -Compilation of Hydrologic Data for the Edwards Aquifer, San Antonio Area, Texas, 1987, with 1934-87 Summary	USGS - Nalley GM and Rettman PL / EUWD	1988	Bulletin 47	Large Plates - will need special scanning
55	N/C	1988 Hydrologic Data Report -Compilation of Hydrologic Data for the Edwards Aquifer, San Antonio Area, Texas, 1988, with 1934-88 Summary	USGS - Nalley GM / EUWD	1989	Bulletin 48	Large Plates - will need special scanning
56	N/C	1989 Hydrologic Data Report -Compilation of Hydrologic Data for the Edwards Aquifer, San Antonio Area, Texas, 1989, with 1934-89 Summary	USGS - Nalley GM and Thomas MW / EUWD	1990	Bulletin 49	Large Plates - will need special scanning. Kept Geary's clean copy.
57	380.04	1990 Hydrologic Data Report - Compilation of Hydrologic Data for the Edwards Aquifer, San Antonio Area, Texas, 1990, with 1934-90 Summary	USGS - Brown DS, Gilhousen JR, and Nalley GM / EUWD	1991	Bulletin 50	Kept clean copy from Geary's office
58	N/C	1991 Hydrololologic Data Report - Compilation of Hydrologic Data for the Edwards Aquifer, San Antonio Area, Texas, 1991, with 1934-91 Summary	USGS - Brown DS, Petri BL, and Nalley GM / EUWD	1992	Bulletin 51	Plates are missing from pocket in library's copy. Use John Hoyt's copy instead.
59	380.04 Edw 93-05	1992 Hydrogeologic Report - Edwards Aquifer Hydrogeologic Status Report for 1992	Bader RW, Walthour SD, and Waugh JR - EUWD	1993	93-05	Kept clean copy from Geary's office
60	370.06 Sch	1994 Review and Update of the Position of the Edwards Aquifer Freshwater/Saline-Water Interface from Uvalde to Kyle, Texas	Chultz AL - EUWD	1994	94-05	Large Plates - will need special scanning. Kept clean copy from Geary's office.
61	380.04 Edw 96-04	1995 Hydrogeologic Report - Edwards Aquifer Hydrogeologic Report for 1995	Walthour SD, Waugh JR, O'Connor J, James GD, Bradley, C and Bader RW - EAA	1996	96-04	Kept clean copy from Geary's office
62	380.04 Edw 97-01	1996 Hydrogeologic Report	James GD, Mireles J, Molina D, Snyder GL, Walthour SD, and Kipp GK	1997	97-01	Large Plates - will need special scanning. Kept Geary's clean copy.
63	380.04 EDW 98-02	1997 Hydrogeologic Report	Esquilin R et al / EAA	1998	98-02	Large Plates - will need special scanning. Kept Geary's clean copy.
64	380.04 EDW 99-02	1998 Hydrogeologic Report	Esquilin R /EAA	1999	99-02	Large Plates - will need special scanning. Kept Geary's clean copy.
65	Rick Illgner	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the Comal Springs/River Aquatic Ecosystem / Final 2011 Annual Report	Bio-West / EAA	2012		Not on HCP or EAA website 10/12/2012. Separate plates in pockets - probably available in searchable pdf. Is it awaiting final review?

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
66	Rick Illgner	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the San Marcos Springs/River Aquatic Ecosystem / Final 2011 Annual Report	Bio-West / EAA	2012		Not on HCP or EAA website 10/12/2012. Separate plates in pockets - probably available in searchable pdf
67	Rick Illgner	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the Comal Springs/River Aquatic Ecosystem / Final 2005 Annual Report	Bio-West / EAA	2006		Not on HCP or EAA website 10/16/2012. Separate plates in pockets - probably available in searchable pdf
68	Rick Illgner	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the San Marcos Springs/River Aquatic Ecosystem / Final 2005 Annual Report	Bio-West / EAA	2006		Not on HCP or EAA website 10/16/2012. Separate plates in pockets - probably available in searchable pdf
69	680.16 EAA	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the Comal Springs/River Aquatic Ecosystem / Final 2002 Annual Report	Bio-West / EAA	2003		Not on HCP or EAA website 10/16/2012. Separate plates in pockets - probably available in searchable pdf
70	680.17 EAA	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the San Marcos Springs/River Aquatic Ecosystem / Final 2002 Annual Report	Bio-West / EAA	2003		Not on HCP or EAA website 10/16/2012. Separate plates in pockets - probably available in searchable pdf
71	680.12 EAA	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the Comal Springs/River Aquatic Ecosystem / Final 2001 Annual Report	Bio-West / EAA	2002		Not on HCP or EAA website 10/16/2012. Separate plates in pockets - probably available in searchable pdf
72	680.13 EAA	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the San Marcos Springs/River Aquatic Ecosystem / Final 2001 Annual Report	Bio-West / EAA	2002		Not on HCP or EAA website 10/16/2012. Separate plates in pockets - probably available in searchable pdf
73	680.10 EAA	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the San Marcos Springs/River Aquatic Ecosystem / Final 2001 Annual Report Appendix C: Drop New Raw Data	Bio-West / EAA	2002		Not on HCP or EAA website 10/16/2012. Separate plates in pockets - probably available in searchable pdf
74	680.09 EAA	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the Comal Springs/River Aquatic Ecosystem / Final 2004 Annual Report	Bio-West / EAA	2005		Not on HCP or EAA website 10/16/2012. Separate plates in pockets - probably available in searchable pdf
75	680.09 EAA	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the San Marcos Springs/River Aquatic Ecosystem / Final 2004 Annual Report	Bio-West / EAA	2005		Not on HCP or EAA website 10/16/2012. Separate plates in pockets - probably available in searchable pdf
76	560.42 SOI	Soil Gas Survey and Soil Sample Analyses of Former Gensco, Inc Site and Properties Adjacent to Taylor Slough Uvalde, Texas	Chen & Associates / EUWD	1989		
77	740.03 Sur	City of San Marcos Water Development Plan	City of San Marcos / EUWD	1988		
78	370.01 Bla 92-01	Blasting Effects on Engineered Structures	EUWD / UTSA Center for Water Research	1992	92-01	Kept clean copy from Geary's office
79	370.01 Bla 92-01 App A-G	Blasting Effects on Engineered Structures Appendices A - G	EUWD / UTSA Center for Water Research	1993	92-01	
80	370.01 Bla 92-01 App H-J	Blasting Effects on Engineered Structures Appendices H, I ,J	EUWD / UTSA Center for Water Research	1992	92-01	May contain copyrighted material. (Old-probably expired.)
81	ERROR	ASSIGNED BY MISTAKE IN SORTING FILE.				

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
82	370.9 Sch 93-06	Defining the Edwards Aquifer Freshwater/Saline-Water Interface with Geophysical Logs and Measured Data (San Antonio to Kyle, Texas)	Schultz AL - EUWD	1993	93-06	Large Plates - will need special scanning
83	370.11 Sma	Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, Comal County, Texas	USGS - Small TA and Hanson JA / EUWD	1994	USGS 94-4117	Large Plates - will need special scanning. USGS has electronically on-line - DOWNLOADED.
84	370.12 Han	Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, Hays County, Texas	USGS - Hanson JA and Small TA / EUWD	1995	USGS 95-4265	Downloaded from USGS.
85	370.10 Wau 93-10	Government Canyon Geologic and Hydrologic Assessment	Waugh JR and Walthour SD - EUWD	1993	93-10	
86	370.16 Gro	Hydrogeologic Framework and Geochemistry of the Edwards Aquifer Saline-Water Zone, South-Central Texas	USGS - Groschen GE and Buszka PM / EAA / SAWS	1997	USGS 97-4133	Downloaded from USGS.
87	370.02 Pot 92-02 Ex Sum	Investigation of the Fresh/Saline Water Interface in the Edwards Aquifer in New Braunfels and San Marcos, Texas Executive Summary	EUWD	1992	92-02	
88	740.42 SWD	New Braunfels - San Marcos Surface Water Development	EUWD/Hunter Associates, Inc	1988		
89		[This number may have been assigned in error when sorting file. Leave it for the time being. Would belong to a call # between 740.42 and 740.31.]				Note: Some pockets containing large plates of older EUWD reports have become separated from the main report and are in danger of being lost if they are not scanned
90	740.31	Pilot Recharge Models of the Nueces and Blanco River Basins	HDR Engineering, Inc.	2002		
91	740.32 HDR v1	Recharge Enhancement Study Guadalupe-San Antonio River Basin / Volume I - Executive Summary	HDR Engineering, Inc.	1993		
92	740.32 HDRv3	Recharge Enhancement Study Guadalupe-San Antonio River Basin / Volume III-Appendices	HDR Engineering, Inc.	1993		
93	740.32 HDR v2	Recharge Enhancement Study Guadalupe-San Antonio River Basin / Volume II-Technical Report	HDR Engineering, Inc.	1993		
94	370.15 Hov	Regional Distribution of Permeability in the Edwards Aquifer	UT Bureau of Economic Geology-Hovorka SD, Mace RE, Collins EW et al / EUWD-Dutton AR	1995	95-02	Large Plates - will need special scanning. Have draft. Saved clean copy from Geary's office.
95	785.06	Results of Investigation of Trace Volatile Organics in Northern San Antonio from the Edwards Aquifer (Draft)	EUWD	1984		John Hoyt said final report may be in off-site record boxes.
96	780.31 Rep	San Antonio and Bexar County, Texas Report on Reclamation and Re-Use of Municipal Wastewater	EUWD et al/Freese, Nichols and Endress Consulting Engineers	1971		
97	740.47 San	San Antonio Regional Water Resource Study - Summary	EUWD / City of San Antonio	1980?		Full report was in John Hoyt's office - see below
98	N/C	The Edwards Aquifer / Extremely Productive, but…	USGS - Burchett CR, Reettman PL, Boning CW / EUWD	1986		
99	370.07 Sch	Using Geophysical Logs in the Edwards Aquifer to Estimate Waer Quality Along the Freshwater/Saline-Water Interface (Uvalde to San Antonio, Texas)	Schultz AL - EUWD	1992	92-03	Large Plates - will need special scanning
100	740.54 EAA	Work Plan to Develop HSPF Recharge Models for Seven Drainage Basins	EAA/LBG-Guyton Associates	2003		John - we don't need the work plan if we have the final report.
101	380.04 Edw Bull #1	Chemical Analyses of Water from Observation Wells in the Edwards and Associated Limestones, San Antonio Area, Texas	USGS - Garza S / EUWD	1962	Bulletin 1	Large plate at end
102	380.04 Edw Bull #2	Ground-Water Discharge from the Edwards and Associated Limestone, 1955-62, San Antonio Area, Texas	USGS-Garza S/ EUWD	1963	Bulletin 2	

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
103	380.04 Edw Bull #3	Records of Precipitation, Aquifer Head, and Ground-Water Recharge to the Edwards and Associated Limestones, 1960-62, San Antonio Area, Texas	USGS-Garza S/ EUWD	1963	Bulletin 3	Note: "Discharge" in title was changed to "Recharge" manually on cover.
104	380.04 Edw Bull #4	Chemical Analyses of Water from Observation Wells in the Edwards and Associated Limestones, San Antonio Area, Texas, 1963	USGS-Garza S/ EUWD	1964	Bulletin 4	
105	380.04 Edw Bull #5	Ground-Water Discharge from the Edwards and Associated Limestone, San Antonio Area, Texas, 1963	USGS-Garza S/ EUWD	1964	Bulletin 5	
106	380.04 Edw Bull #6	Records of Precipitation, Aquifer Head, and Ground-Water Discharge to the Edwards and Associated Limestones, San Antonio Area, Texas, 1963	USGS-Garza S/ EUWD	1964	Bulletin 6	
107	380.04 Edw Bull #7	Chemical Analyses of Water from Observation Wells in the Edwards and Associated Limestones, San Antonio Area, Texas, 1964	USGS-Garza S/ EUWD	1965	Bulletin 7	
108	380.04 Edw Bull #8	Ground-Water Discharge from the Edwards and Associated Limestones, San Antonio Area, Texas, 1964	USGS-Rettman P / EUWD	1965	Bulletin 8	
109	380.04 Edw Bull #9	Ground-Water Recharge to the Edwards and Associated Limestones, San Antonio Area, Texas, 1964	USGS-Garza S/ EUWD	1966	Bulletin 9	
110	380.04 Edw Bull #10	Chemical Analyses of Water from Observation Wells in the Edwards and Associated Limestones, San Antonio Area, Texas, 1965	USGS-Garza S/ EUWD	1966	Bulletin 10	
111	380.04 Edw Bull #11	Ground-Water Discharge from the Edwards and Associated Limestones, San Antonio Area, Texas, 1965	USGS-Garza S/ EUWD	1966	Bulletin 11	
112	380.04 Edw Bull #12	Records of Precipitation, Aquifer Head, and Ground-Water Recharge to the Edwards and Associated Limestones, San Antonio Area, Texas, 1965	USGS-Rettman P / EUWD	1966	Bulletin 12	
113	380.04 Edw Bull #13	Chemical Analyses of Water from Observation Wells in the Edwards and Associated Limestones, San Antonio Area, Texas, 1966	USGS-Rettman P / EUWD	1967	Bulletin 13	
114	380.04 Edw Bull #14	Ground-Water Discharge from the Edwards and Associated Limestones, San Antonio Area, Texas, 1966	USGS-Rettman P / EUWD	1967	Bulletin 14	
115	380.04 Edw Bull #15	Records of Precipitation, Aquifer Head, and Ground-Water Recharge to the Edwards and Associated Limestones, San Antonio Area, Texas, 1966	USGS-Rettman P / EUWD	1967	Bulletin 15	
116	380.04 Edw Bull #16	Chemical Analyses of Water from Observation Wells in the Edwards and Associated Limestones, San Antonio Area, Texas, 1967	USGS-Rettman P / EUWD	1968	Bulletin 16	
117	380.04 Edw Bull #17	Ground-Water Discharge from the Edwards and Associated Limestones, San Antonio Area, Texas, 1967	USGS-Rettman P / EUWD	1968	Bulletin 17	
118	380.04 Edw Bull #18	Records of Precipitation, Aquifer Head, and Ground-Water Recharge to the Edwards and Associated Limestones, San Antonio Area, Texas, 1967	USGS-Rettman P / EUWD	1968	Bulletin 18	
119	380.04 Edw Bull #20	Ground-Water Discharge from the Edwards and Associated Limestones, San Antonio Area, Texas, 1967	USGS-Puente C / EUWD	1969	Bulletin 20	Note: Bulletin 19 was not printed.
120	380.04 Edw Bull #21	Records of Precipitation, Aquifer Head, and Ground-Water Recharge to the Edwards and Associated Limestones, San Antonio Area, Texas, 1968	USGS-Rettman P / EUWD	1969	Bulletin 21	
121	380.04 Edw Bull #23	Ground-Water Discharge from the Edwards and Associated Limestones, San Antonio Area, Texas, 1969	USGS-Puente C / EUWD	1970	Bulletin 23	Note: Bulletin 22 is missing.

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
122	380.04 Edw Bull #24	Records of Precipitation, Aquifer Head, and Ground-Water Recharge to the Edwards and Associated Limestones, San Antonio Area, Texas, 1969	USGS-Rettman P / EUWD	1970	Bulletin 24	
123	380.04 Edw Bull #26	Ground-Water Discharge from the Edwards and Associated Limestones, San Antonio Area, Texas, 1970	USGS-Puente C / EUWD	1971	Bulletin 26	Note Bulletin 25 is missing.
124	380.04 Edw Bull #27	Records of Precipitation, Aquifer Head, and Ground-Water Recharge to the Edwards and Associated Limestones, San Antonio Area, Texas, 1970	USGS-Puente C / EUWD	1971	Bulletin 27	
125	380.04 Edw Bull #29	Ground-Water Discharge from the Edwards and Associated Limestones, San Antonio Area, Texas, 1971	USGS-Puente C / EUWD	1972	Bulletin 29	Bulletin 28 is missing.
126	380.04 Edw Bull #30	Records of Precipitation, Aquifer Head, and Ground-Water Recharge to the Edwards and Associated Limestones, San Antonio Area, Texas, 1971	USGS-Puente C / EUWD	1972	Bulletin 30	
127	380.04 Edw Bull #31	Ground-Water Discharge from the Edwards and Associated Limestones, San Antonio Area, Texas, 1972	USGS-Puente C / EUWD	1973	Bulletin 31	
128	380.04 Edw Bull #32	Ground-Water Discharge from the Edwards and Associated Limestones, San Antonio Area, Texas, 1973	USGS-Rappmund RA / EUWD	1974	Bulletin 32	
129	380.04 Edw Bull #33	Records of Precipitation, Aquifer Head, and Ground-Water Recharge to the Edwards and Associated Limestones, San Antonio Area, Texas, 1972-73	USGS-Puente C / EUWD	1974	Bulletin 33	
130	380.04 Edw Bull #34	Ground-Water Discharge from the Edwards and Associated Limestones, San Antonio Area, Texas, 1974	USGS-Rappmund RA / EUWD	1975	Bulletin 34	
131	380.04 Edw Bull #35	Ground-Water Discharge from the Edwards and Associated Limestones, San Antonio Area, Texas, 1975	USGS-Rappmund RA / EUWD	1976	Bulletin 35	
132	380.04 Edw Bull #36	Ground-Water Discharge from the Edwards and Associated Limestones, San Antonio Area, Texas, 1976	USGS-Rappmund RA / EUWD	1977	Bulletin 36	
133	380.04 Edw Bull #37	Records of Ground-Water Recharge and Discharge for the Edwards Aquifer in the San Antonio Area, Texas, 1934-77	USGS-Maclay RW and Rappmund RA / EUWD	1979	Bulletin 37	
134	380.04 Edw Bull #38	Records of Ground-Water Recharge, Discharge, Water Levels, and Chemical Quality of Water for the Edwards Aquifer in the San Antonio Area, Texas, 1934-78	USGS-Reeves RD, Maclay RW, Grimm KC and Davis MF / EUWD	1980	Bulletin 38	
135	380.04 Edw Bull #39	Records of Ground-Water Recharge, Discharge, Water Levels, and Chemical Quality of Water for the Edwards Aquifer in the San Antonio Area, Texas, 1934-79.	USGS-Reeves RD, Maclay RW, Grimm KC and Davis MF / EUWD	1981	Bulletin 39	Big plates. Title on title page is "Compilation of Hydrologic Data for the Edwards Aquifer, San Antonio Area, Texas, 1934-79"
136	380.04 Edw Bull #40	Records of Ground-Water Recharge, Discharge, Water Levels, and Chemical Quality of Water for the Edwards Aquifer in the San Antonio Area, Texas, 1934-80.	USGS-Reeves RD, Maclay RW, and Davis MF / EUWD	1982	Bulletin 40	Big plates. Title on title page is "Compilation of Hydrologic Data for the Edwards Aquifer, San Antonio Area, Texas, 1934-80". USGS has.
137	380.04 Edw Bull #41	Records of Ground-Water Recharge, Discharge, Water Levels, and Chemical Quality of Water for the Edwards Aquifer in the San Antonio Area, Texas, 1934-81.	USGS-Reeves RD, Maclay RW, and Ozuna GB / EUWD	1984	Bulletin 41	Big plates. Title on title page is "Compilation of Hydrologic Data for the Edwards Aquifer, San Antonio Area, Texas, 1981, with 1934-81 Summary"
138	380.04 Edw Bull #42	Records of Ground-Water Recharge, Discharge, Water Levels, and Chemical Quality of Water for the Edwards	USGS-Reeves RD and Ozuna GB / EUWD	1985	Bulletin 42	Need to scan 138_7 in big scanner before merging files.

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
139	530.01 Lea 94-03	Leak Detection / Location Survey Report for County Line Water Supply Corporation / Caldwell & Hays Counties, Texas	EUWD-Gapinski JE and Shipley JR	1994	94-03	
140	380.33 Edw	Edwards Aquifer Ground-Water Divides Assessment, San Antonio Region, Texas	LBG-Guyton Associates	1994		Big plates. Internal document, but may have scientific value. USE FINAL COPY # 296
141	537.01 Opt	Optimization Technical Studies in Support of the Edwards Aquifer Optimization Program	Todd Engineers	1999		Big plates. Not an official EAA Technical Report, but was part of the research program. Geary: is out of date. ADDRESS THIS IN THE SUMMARY/DESCRIPTION.
142	300.08 Ree	Quantity and Quality of Low Flow in the Hondo Creek Basin, Texas March 27-28, 1968	USGS-Reeves WE and Rettman PL	1969		Apparently not issued as an EUWD report
143	460.20 Edw	Edwards/Glen Rose Hydrologic Communication, San Antonio Region, Texas	LBG-Guyton Associates	1995	95-03	Big plates. Kept Geary's clean copy.
144	460.13 Med	Medina Lake Hydrology Study	Espey, Huston & Associates, Inc	1989		Another unpublished technical report. Note for scanning: pages in different directions.
145	300.27 RSI	Technical Assessments in Support of the Edwards Aquifer Science Committee "J Charge" Flow Regime Evaluation for the Comal and San Marcos River Systems	River Systems Institute-Hardy TB	2009		Report for the RIP.
146	150.08 And	Edwards Underground Water District Water Conservation Benchmark Study	Anderson Advertising	1991		Study to measure consumers' awareness and actions for water conservation
147	193.28 Com	Comal Springs Riffle Beetle Habitat and Population Evaluation	Bio-West / EAA	2002	ON EAHCP WEBSITE	Rick Illgner is the EAA contact for BIO-WEST.
148	193.24 Ars	Ecology of the Exotic Giant Rams-Horn Snail, *Marisa cornuarietis* , Other Biological Characteristics, and a Species/Ecological Review of the Literature of the Comal Springs Ecosystem of South Central Texas	Arsuffi FL, Whiteside BG, Howard MD and Badough MC/EUWD	1992-93		- Actual report date not clear.
149	640.20 Kie	Phase I Edwards Underground Water District Storage-Release Recharge Facility Evaluation	Camp Dresser & McKee Inc-Kier RS and Woelke AD / EUWD	1985		Draft report is also available, but I replaced it with the final one.
150	160.15 Pre	Preliminary Proposal for Engineering and Cost Feasibility Study of Small Recharge Facilities for Edwards Aquifer	Farner & Winslow Inc-EUWD	1980		Large Plates - will need special scanning
151	160.19 u Vol 1	Survey Report on Edwards Underground Reservoir Guadalupe, San Antonio and Nueces Rivers and Tributaries, Texas. Volume 1 Main Report	US Army Corps of Engineers / EUWD	1965?		No date
152	160.19 u Vol 2	Survey Report on Edwards Underground Reservoir Guadalupe, San Antonio and Nueces Rivers and Tributaries, Texas. Volume 2 Appendices I, II, IV, VI	US Army Corps of Engineers / EUWD	1965?		
153	160.19 u Vol 3	Survey Report on Edwards Underground Reservoir Guadalupe, San Antonio and Nueces Rivers and Tributaries, Texas. Volume 3 Appendix III Geology/Appendix V Economic Base Study / Appendix VI Recreation and Wildlife	US Army Corps of Engineers / EUWD	1965?		Volume 2 is missing.
154	160.33 Fox	Review of Hydrocarbon Transmission Lines Crossing the Edwards Underground Reservoir	Southwest Research Institute-Fox TP, Comann DE, Whultz DW and Kunka SL / EUWD	1976		
155	160.31 Lan	Proposed 10-Year Plan for Continuation of Hydrologic Studies of the Edwards Aquifer, San Antonio Area, Texas	USGS / EUWD	1984		Large Plates. Kept Geary's clean copy.
156	160.42 San	Regional Water Resources Plan for the Edwards Aquifer	City of San Antonio / EUWD	1988		
157	160.43 Rau	Report on the Edwards Aquifer San Antonio Region, Texas	Donald G Rauschuber & Associates, Inc	1985		Description, Formation, Recharge Zone, Artesian Zone, Groundwater Storage, Groundwater Movement, Historical Discharge, Historical Pumpage Spring Flows, Underground River?, Water Quality Issues, Effects of Selected Pumpage on Spring Flow, Revised Emergency Withdrawal Reduction Plan, Bibliography

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
158	160.32 HOV	Edwards Aquifer Storage Assessment, Kinney County to Hays County, Texas	UT Austin Bureau of Economic Geology-Hovorka SD, Ruppel SC, Dutton AR, and Yeh J / EUWD	1993		Plates were small enough to be scanned with protective sheet.
159	160.30 Mac	Hydrologic Investigations of the Edwards and Associated Limestones in the San Antonio Area, Texas Progress Report, 1970-71	USGS-Maclay RW and Rettman PL / EUWD	1972		Plate scanned with protective sheet.
160	160.25 Mac	Regional Specific Yield of the Edwards and Associated Limestones in the San Antonio, Texas Area	USGS-Maclay RW and Rettman PL / EUWD	1973		Plates scanned with protective sheet.
161	160.71 Tom	A Statistical Study of the Hydrological Character of the Edwards Aquifer	Argonne National Laboratory-Tomasko D, Fisher A-M, Williams GP and Pentecost ED	2001		Not sure if this study was done for the EAA. Analysis of severe flooding in October 1998.
162	160.71 Pai	Edwards Aquifer Parameter Estimation Project: Final Report	Center for Nuclear Waste Regulatory Analyses-Painter S, University of Manitoba-Jiang Y and Woodbury A / EAA	2002		Hydraulic conductivity model
163	160.70 Lin	Conceptualization and Similation of the Edwards Aquifer, San Antonio Region, Texas	USGS-Lindgren RJ, Dutton AR, Hovorka SD, Worthington SRH and Painter S / EAA	2004	USGS 2004-5277	Large plates. USGS Report 2004-5277. A really nice report.
164	160.68 Hov	Final Contract Report Refining the Conceptual Model for Flow in the Edwards Aquifer - Characterizing the Role of Fractures and Conduits in the Balcones Fault Zone Segment	UT Austin Bureau of Economic Geology-Hovorka SD, Phu T, Nicot JP, and Lindley A - EAA	2004		See if already available electronically. Show to Jim Witerle. ON EAA WEBSITE.
165	80.32 May	Exploring Drought in the San Antonio Area Between 1700 and 1979	UTSA Center for Archaeological Research-Mauldin RP / EAA	2003	`	Meterology/Climatology, Archeology, Tree Rings
166	580.30 WMI 1999	Edwards Aquifer Precipitation Enhancement Program Final Report 1999	Weather Modification, Inc / EAA	2000		
167	580.30 WMI 2000	Edwards Aquifer Precipitation Enhancement Program Final Report 2000	Weather Modification, Inc / EAA	2001		
168	85.04 Pro	Proposal to Edwards Underground Water District for Designing and Conducting an Operational Cloud Seeding Project	North American Weather Consultants / EUWD	1984		Meterology, Cloud Seeding, Methodology
169	85.03 Ris	Operations Report on a Cloud Seeding Program for the Edwards Underground Water District	North American Weather Consultants / EUWD	1986		Meterology, Cloud Seeding,
170	85.21 Woo	Assessment of the Effect of Cloud Seeding in the Edwards Aquifer Target During the 1999, 2000 and 2001 Seasons	Woodley Weather Consultants-Woodley WL / EAA	2002		
171	85.16 Str	A Summary of Cloud Seeding Activities Conducted over Six Counties in South Texas During the Period 15 March - 15 November 2002	Southwest Texas Rain Enhancement Association- Straub JM / EAA	2002		Was prepared for the EAA, as mentioned in 2004 report.
172	85-13 Cou	Southwest Texas Rain Enhancement Association 2003 EAA Final Report	Southwest Texas Rain Enhancement Association- Cousins DA, Staub JM and Geiger WE III / EAA	2003		
173	85.14 Bea	Southwest Texas Rain Enhancement Association 2004 Edwards Aquifer Authority Final Report	Southwest Texas Rain Enhancement Association- Beall S and Cousins DA / EAA	2004		
174	85.15 Bea	Southwest Texas Rain Enhancement Association 2005 Edwards Aquifer Authority Final Report	Southwest Texas Rain Enhancement Association- Beall S / EAA	2005		
175	85.15 Bea	Southwest Texas Rain Enhancement Association 2006 Edwards Aquifer Authority Final Report	Southwest Texas Rain Enhancement Association- Beall S / EAA	2006		
176	N/C	Southwest Texas Rain Enhancement Association 2007 Edwards Aquifer Authority Final Report	Southwest Texas Rain Enhancement Association- Beall S / EAA	2007		
177	85.19 Bea	Southwest Texas Rain Enhancement Association 2008 Edwards Aquifer Authority Final Report	Southwest Texas Rain Enhancement Association- Beall S / EAA	2008		
178	85.20 EAA	Southwest Texas Rain Enhancement Association 2009 Edwards Aquifer Authority Final Report	Southwest Texas Rain Enhancement Association- Beall S / EAA	2009		
179	85.17 Fla	South Texas Weather Modification Association 2002 Report	South Texas Weather Modification Association-Flanagan T / EAA	2002		Cloud seeding, Bandera, Bexar, Medina

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
180	85.12 Fla	South Texas Weather Modification Association EAA Target Area 2003 Report	South Texas Weather Modification Association-Flanagan T / EAA	2003		Cloud seeding, Bandera, Bexar, Medina
181	85.15 Fla	South Texas Weather Modification Association Edwards Aquifer Authority Target Area 2004 Report	South Texas Weather Modification Association-Flanagan T / EAA	2004		Cloud seeding, Bandera, Bexar, Medina
182	N/C	South Texas Weather Modification Association Edwards Aquifer Authority Target Area 2005 Report	South Texas Weather Modification Association-Flanagan T / EAA	2005		Cloud seeding, Bandera, Bexar, Medina
183	85.20 Fla	South Texas Weather Modification Association Edwards Aquifer Authority Target Area 2006 Report	South Texas Weather Modification Association-Flanagan T / EAA	2006		Cloud seeding, Bandera, Bexar, Medina
184	85.18 Fla	South Texas Weather Modification Association Edwards Aquifer Authority Target Area 2007 Report	South Texas Weather Modification Association-Flanagan T / EAA	2007		Cloud seeding, Bandera, Bexar, Medina
185	85.20 Fla	South Texas Weather Modification Association Edwards Aquifer Authority Target Area 2008 Report	South Texas Weather Modification Association-Flanagan T / EAA	2008		Cloud seeding, Bandera, Bexar, Medina
186	85.20 EAA	South Texas Weather Modification Association Edwards Aquifer Authority Target Area 2009 Report	South Texas Weather Modification Association / EAA	2009		Cloud seeding, Bandera, Bexar, Medina
187	140.5w 1987	Evaluation of Stormwater Control Techniques and Programs	Water Resources Associates, Inc/James Miertschin & Associates - EUWD	1987		
188	40.30 Gre	Geophysical Survey to Determine the Depth and Lateral Extent of the Leona Aquifer and Evaluation of Discharge through the Leona River Floodplain, South of Uvalde, Texas	Southwest Research Institute-Green RT / EAA	2004		ON EAA WEBSITE.
189	40.28 Gre	Geophysical Survey to Determine the Depth and Lateral Extent of the Leona Aquifer in the Leona River Floodplain, South of Uvalde, Texas	Southwest Research Institute-Green RT / EAA	2003		May have been replaced by report of similar name on EAA website.
190	20.5 Ray	Evaluation of the Use of Remote-Sensing Data to Identify Crop Types and Estimate Irrigated Acrege, Uvalde and Medina Counties, Tesas, 1989	USGS-Raymond LH, Nalley GM and Rettman PL / EUWD	1992		Downloaded from USGS.
191	70.58 Kre	Diversion Spring Cave	Zara Environmental LLC-Krejca JK / EAA	2005		Ask Geary or Marcus if available in pdf.
192	70.05 Val	Valdina Farms Sinkhole: Hydrogeologic & Biologic Evaluation	George Veni and Associates / EUWD	1987		
193	70.04 Lon	Preliminary Report of Biological Investigation / Valdina Farms Sinkhole - Medina Co., Texas	Environmental Sciences of San Marcos-Longley G / EUWD	1977		Is contained as an appendix in Valdina Farms Sinkhole report of 1987
194	65.30 Well	Well Sampling for Aquifer Biota Monitoring Plan	Edwards Aquifer Research and Data Center, George Veni and Associates / EAA	2001		Apparently not on HCP website. Too early date? ON EAA WEBSITE.
195	940.23 Wau	South Medina County Observation Well Project	Waugh JR - EUWD	1993	93-11	
196	940.22 Ret	Records of Wells and Springs, San Antonio Area, Texas	USGS-Rettman P / EUWD	1969		Large Plates; not available on-line.
197	880.20 We1	Statistical Summary of Water-Quality Data Collected from Selected Wells and Springs in the Edwards Aquifer Near San Antonio, Texas	USGS-Wells FC / EUWD	1985	USGS Open-File Report: 85-182	Downloaded from USGS.
198	880.24 Pea	Geochemical and Isotopic Analyses of Waters Associated with the Edwards Limestone Aquifer, Central Texas	USGS-Pearson FJ and Rettman RL / EUWD	1976		
199	880.25 Ana	Analysis of Water Quality Data for East Elm, West Elm and Lorence Creeks	Waters Resources Associates, Inc and James Miertschin and Associates / EUWD	1986		Small numbers in Appendices may not scan well.
200	880.16 Rev 68-72	Chemical and Bacteriological Quality of Water at Selected Sites in the San Antonio Area, Texas August 1968-April 1972	USGS-Reeves RD, Rawson J and Blakey / EUWD	1972		Large plates. Not avail on-line from USGS. 200 and 201 are combined into one volume in USGS.
201	880.16 Rev 68-75	Chemical and Bacteriological Quality of Water at Selected Sites in the San Antonio Area, Texas August 1968-January 1975	USGS-Reeves RD / EUWD	1976		Large plates. Not avail on-line from USGS.
202	880.16 Rev 75-77	Chemical and Bacteriological Quality of Water at Selected Sites in the San Antonio Area, Texas February 1975-September 1977	USGS-Reeves RD / EUWD	1978		Large plates. Kept John Hoyt's copy because it has a clean cover.

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203	880.18 Har	File Memorandum on Review of Water Quality Changes in Edwards Reservoir - Especially Near the Bad Water Line	Harden RW	1968		Large plates
204	880.10 Dri	Drilling, Construction, and Testing of Monitor Wells for the Edwards Aquifer Bad Water Line Experiment	William F Guyton Associates, Inc /EUWD	1986		Large plates
205	930.37 Pap	Upper Reaches of Leon Creek Watershed Frequency Analysis for Storm of June 30-July 2, 2002 Phase I	Pape-Dawson Engineers	2003		Big loose-leaf notebook with much data
206	930.05 Wat	Preliminary Draft of Watershed Work Plan for Watershed Protection and Flood Prevention Seco Creek Watershed Medina, Bandera, and Uvalde Counties, Texas	Medina Valley Soil and Water Conservation District / Nueces-Frio-Sabinal Soil and Water Conservation District, Medina County Commissioners Court, Bandera County Commissioners Court, Uvalde County Commissioners Court / EUWD	1970		Loose taped crude map in pieces
207	900.49 Wil	History of Water in the San Antonio River Valley	AACOG-Wilson WW	1970		This is not an EAA report but may have historical significance because it is a remarkable narrative.
208	860.23 Rep 1992	Report of the Technical Data Review Panel on the Water Resources of the South Central Texas Region	EUWD	1992		Historical data of spring flows in different counties. Looks important.
209	860.26 Opt	Optimum Streamflow and Rainfall Gauging Site Location Study As Part of Real Time Data Collection Network Assessment	Raba-Kistner Consultants Inc / HDR Engineering Inc / North American Weather Consultants / EUWD	1993		Big plates
210	900.93 USGS	The Edwards Aquifer Authority and US Geological Survey Water Resources Program Quarterly Report - 04/01/2000 to 7/31/2000	USGS / EAA	2000		Partially illegible numbers in tables may not scan well.
211	900.93 USGS	The Edwards Aquifer Authority and US Geological Survey Water Resources Program Quarterly Report - 10/01/1999 to 12/31/1999	USGS / EAA	1999		
212	860.29 Sur	New Braunfels - San Marcos Crystal Clear Surface Water Development				Phase I Report - looks like a proposal to EUWD for help in funding. Is different from #77. John needs to look at document.
213	860.27 Nor	North Bexar County Water Resources Study for the Edwards Underground Water District - Executive Summary	WE Simpson Co, Inc / William F Guyton Associates, Inc	1993		Large plates
214	860.57 Nue	Regional Water Supply Planning Study Phase III - Recharge Enhancement - Nueces River Basin	HDR Engineering, Inc., Paul Price Associates, Inc / Nueces River Authority, EUWD, City of Corpus Christi, South Texas Water Authority, South Texas Water Development Board	1991		USE CLEAN COPY FROM GEARY'S OFFICE. Had to photograph stiff cover and remove glare.
215	860.56 Reg	Regional Water Supply Planning Study - Phase I Nueces River Basin Volume I - Executive Summary	HDR Engineering, Inc and Geraghty & Miller, Inc / Nueces River Authority, City of Corpus Christi, EUWD, South Texas Water Authority, South Texas Water Development Board	1991		
216	860.56 Reg v 2	Regional Water Supply Planning Study - Phase I Nueces River Basin Volume II - Technical Report	HDR Engineering, Inc and Geraghty & Miller, Inc / Nueces River Authority, City of Corpus Christi, EUWD, South Texas Water Authority, South Texas Water Development Board	1991		
217	860.56 Reg v 3	Regional Water Supply Planning Study - Phase I Nueces River Basin Volume III - Appendices	HDR Engineering, Inc and Geraghty & Miller, Inc / Nueces River Authority, City of Corpus Christi, EUWD, South Texas Water Authority, South Texas Water Development Board	1991		
218	860.71 Edw	San Antonio & Guadalupe River Basins Study (Report to US Congress)	City of San Antonio / EUWD / San Antonio River Authority / City Water Board / Guadalupe-Blanco River Authority	1974		

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219	860.73 HDR v1	Trans-Texas Water Program West Central Study Area Phase I Interim Report Volume 1	HDR Engineering Inc, Paul Price Associates Inc, LBG-Guyton Associates and Espey-Huston & Associates, Inc /San Antonio River Authority, San Antonio Water System / EUWD / Guadalupe-Blanco River Authority / Bexar Metropolitan Water District / Nueces River Authority / Texas Water Development Board	1994		NB: Regional water planning is now done by the TWDB.
220	860.73 HDR v 2	Trans-Texas Water Program West Central Study Area Phase I Interim Report Volume 2	HDR Engineering Inc, Paul Price Associates Inc, LBG-Guyton Associates and Espey-Huston & Associates, Inc /San Antonio River Authority, San Antonio Water System / EUWD / Guadalupe-Blanco River Authority / Bexar Metropolitan Water District / Nueces River Authority / Texas Water Development Board	1994		
221	860.73 Int v3	Trans-Texas Water Program West Central Study Area Phase I Interim Report Volume 3	HDR Engineering Inc, Paul Price Associates Inc, LBG-Guyton Associates and Espey-Huston & Associates, Inc /San Antonio River Authority, San Antonio Water System / EUWD / Guadalupe-Blanco River Authority / Lower Colorado River Authority / Bexar Metropolitan Water District / Nueces River Authority / Texas Water Development Board	1994		
222	860.83 Int v4 96	Trans-Texas Water Program West Central Study Area Phase I Interim Report Volume 4	HDR Engineering Inc, Paul Price Associates Inc, LBG-Guyton Associates, Espey-Huston & Associates, Inc and HB Zachry Company /San Antonio River Authority, San Antonio Water System / EUWD / Guadalupe-Blanco River Authority / Lower Colorado River Authority / Bexar Metropolitan Water District / Nueces River Authority / Texas Water Development Board	1996		
223	860.83 Int v5 199c	Trans-Texas Water Program West Central Study Area Phase I Interim Report Volume 5 Comments Received from the Advisory Committee for Public and Technical Input	San Antonio River Authority / San Antonio Water System / EUWD / Guadalupe-Blanco River Authority / Lower Colorado River Authority / Bexar Metropolitan Water District / Nueces River Authority / Texas Water Development Board		NOTE: Has sign-in sheets with individual names and contact info of people who attended meetings - should be redacted.	
224	860.73 TechMem	Trans-Texas Water Program West Central Study Area Technical Memorandum Public Participation / Stakeholder Involvement Process	Robert Aguirre Consultants, LC, Katz and Associates, Inc, Robert R Ashcroft, AICP, Dethman and Associates, Inc, and Nancy Scott Jones and Associates, Inc / San Antonio River Authority, San Antonio Water System / EUWD / Guadalupe-Blanco River Authority / Bexar Metropolitan Water District / Nueces River Authority / Texas Water Development Board	1996		
225	860.73 Det 1996	Trans-Texas Water Issues Survey Report West Central Study Area	Dethman & Associates and Robert Aguirre Consultants, LC	1996		

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226	860.75 HDR 1998	Trans-Texas Water Program West Central Study Area Phase II Summary Report of Water Supply Alternatives	HDR Engineering, Inc / San Antonio River Authority, San Antonio Water System / EAA / Guadalupe-Blanco River Authority / Lower Colorado River Authority / Bexar Metropolitan Water District / Nueces River Authority / Canyon Lake Water Supply Corp / Bexar-Medina-Atascosa Counties WCID No 1 / Texas Natural Resource Conservation Commission / Texas Parks and Wildlife Dept / Texas Water Development Board	1998		
227	860.75 HDR 1996	Trans-Texas Water Program West Central Study Area Phase II Report Letter of Intent Analysis	HDR Engineering, Inc / San Antonio River Authority, San Antonio Water System / EAA / Guadalupe-Blanco River Authority / Lower Colorado River Authority / Bexar Metropolitan Water District / Nueces River Authority / Texas Water Development Board	1996		John: Don't need interim reports on website. Put a couple of final reports. Betty: This looks like a proposal - don't include if it is.
228	860.75 HDR 1998 v 7	Trans-Texas Water Program West Central Study Area Phase II Comments	San Antonio River Authority / San Antonio Water System / EAA / Guadalupe-Blanco River Authority / Lower Colorado River Authority / Bexar Metropolitan Water District / Nueces River Authority / Canyon Lake Water Supply Corp / Bexar-Medina-Atascosa Counties WCID No 1 / Texas Natural Resource Conservation Commission / Texas Parks and Wildlife Dept / Texas Water Development Board	1998		DUPLICATE OF 244, WHICH HAD A DIFFERENT CALL #.
229	860.75 Pub 1997	Trans-Texas Water Program West Central Study Area Public Participation / Stakeholder Involvement Plan	Robert Aguirre Consultants, LC, Katz and Associates, Inc, Robert R Ashcroft, AICP, Dethman and Associates, Inc, and Nancy Scott Jones and Associates, Inc / San Antonio River Authority, San Antonio Water System /EAA / Guadalupe-Blanco River Authority / Lower Colorodo River Authority / Bexar Metropolitan Water District / Nueces River Authority /Canyon Lake Water Supply Corp / Bexar-Medina-Atascosa Counties Water Control and Improvement Dist #1 / Texas Water Development Board	1997		
230	860.75 HDR 1998 v 8	Trans-Texas Water Program West Central Study Area Integrated Resource Planning Committee Final Criteria Report Public Participation / Stakeholder Involvement Process	Robert Aguirre Consultants, LC, Katz and Associates, Inc, Robert R Ashcroft, AICP, Ximenes and Associates, Inc, and Nancy Scott Jones and Associates, Inc / San Antonio River Authority, San Antonio Water System / EAA / Guadalupe-Blanco River Authority / Lower Colorado River Authority / Bexar Metropolitan Water District / Nueces River Authority / Canyon Lake Water Supply Corp / Bexar-Medina-Atascosa Counties Water Control and Improvement Dist #1 / Texas Water Development Board	1998		

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
231	860.75 HDR 1998 v 5	Trans-Texas Water Program West Central Study Area Phase II Guadalupe-San Antonio River Basin Model Modifications & Enhancements	HDR Engineering, Inc / San Antonio River Authority, San Antonio Water System / EAA / Guadalupe-Blanco River Authority / Lower Colorado River Authority / Bexar Metropolitan Water District / Nueces River Authority / Canyon Lake Water Supply Corp / Bexar-Medina-Atascosa Counties WCID No 1 / Texas Natural Resource Conservation Commission / Texas Parks and Wildlife Dept / Texas Water Development Board	1998		Downloaded from website
232	860.75 HDR 1998 v 4	Trans-Texas Water Program West Central Study Area Phase II Guadalupe-San Antonio River Basin Environmental Criteria Refinement	HDR Engineering, Inc and Paul Price Associates, Inc / San Antonio River Authority, San Antonio Water System / EAA / Guadalupe-Blanco River Authority / Lower Colorado River Authority / Bexar Metropolitan Water District / Nueces River Authority / Canyon Lake Water Supply Corp / Bexar-Medina-Atascosa Counties WCID No 1 / Texas Natural Resource Conservation Commission / Texas Parks and Wildlife Dept / Texas Water Development Board	1998		
233	860.75 HDR 1998 v 6	Trans-Texas Water Program West Central Study Area Phase II Updated Evaluation of Potential Reservoirs in the Guadalupe River Basin	HDR Engineering, Inc and Paul Price Associates, Inc / San Antonio River Authority, San Antonio Water System / EAA / Guadalupe-Blanco River Authority / Lower Colorado River Authority / Bexar Metropolitan Water District / Nueces River Authority / Canyon Lake Water Supply Corp / Bexar-Medina-Atascosa Counties WCID No 1 / Texas Natural Resource Conservation Commission / Texas Parks and Wildlife Dept / Texas Water Development Board	1998		
234	860.10 Wat Ex Sum	Executive Summary of Water Availability Study for the Guadalupe and San Antonio River Basins	Espey, Huston & Associates, Inc / San Antonio River Authority / Guadalupe-Blanco River Authority / City of San Antonio	1986		Not an EUWD report but looks important. Big plates.
235	860.10 Wat	Water Availability Study for the Guadalupe and San Antonio River Basins Volume I	Espey, Huston & Associates, Inc / San Antonio River Authority / Guadalupe-Blanco River Authority / City of San Antonio	1986		Not an EUWD report but looks important. Big plates.
236	860.10 Wat vol 2	Water Availability Study for the Guadalupe and San Antonio River Basins Volume II	Espey, Huston & Associates, Inc / San Antonio River Authority / Guadalupe-Blanco River Authority / City of San Antonio	1986		Not an EUWD report but looks important. Big plates.
237	850.41 EAA	Comprehensive Water Management Plan Edwards Aquifer Authority	EAA	2004		This should be on the EAA website if it's not already. John said a more current plan is available. See Marc Friberg or Rick Illgner.
238	820.31 Ols	Socioeconomic Factors Affecting Water Conservation in Southern Texas	Office of Applied Energy Studies, Washington State Univ - Olsen D, and CH2M Hill, Inc - Highstreet AL / EUWD / City of San Antonio Planning Dept	1985		Keywords: Operation Water Conservation
239	820.26 Sch	School Facilities Water Audit	Kenneth M Cave & Associates / EUWD	1991		
240	820.09 Gos	A Re-Investigation of Attitudes toward Conservation in a Non-Crisis Environment	Gossen and Associates / EUWD	1992		

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
241	820.08 Inv	An Investigation of Attitudes toward Conservation in a Non-Crisis Environment	Southwest Marketing Communications Group / EUWD	1984		Scan only first half / second half is a report on High Plains from other companies to US Dept of Commerce
242	860.75 HDR 1998 v1	Trans-Texas Water Program West Central Study Area Phase II Population, Water Demand, and Water Supply Projections	HDR Engineering, Inc / San Antonio River Authority, San Antonio Water System / EAA / Guadalupe-Blanco River Authority / Lower Colorado River Authority / Bexar Metropolitan Water District / Nueces River Authority / Canyon Lake Water Supply Corp / Bexar-Medina-Atascosa Counties WCID No 1 / Texas Natural Resource Conservation Commission / Texas Parks and Wildlife Dept / Texas Water Development Board	1998		
243	860.84 Pub Mar 98	Trans-Texas Water Program West Central Study Area Public Participation / Stakeholder Involvement Program Final Report	Robert Aguirre Consultants, LC, Katz and Associates, Inc, Robert R Ashcroft, AICP, Ximenes and Associates, Inc, and Nancy Scott Jones and Associates, Inc / San Antonio River Authority, San Antonio Water System / EAA / Guadalupe-Blanco River Authority / Lower Colorado River Authority / Bexar Metropolitan Water District / Nueces River Authority / Canyon Lake Water Supply Corp / Bexar-Medina-Atascosa Counties Water Control and Improvement Dist #1 / Texas Water Development Board	1998		
244	860.84 Com Mar 98	Trans-Texas Water Program West Central Study Area Phase II Comments	HDR Engineering, Inc / San Antonio River Authority, San Antonio Water System / EAA / Guadalupe-Blanco River Authority / Lower Colorado River Authority / Bexar Metropolitan Water District / Nueces River Authority / Canyon Lake Water Supply Corp / Bexar-Medina-Atascosa Counties WCID No 1 / Texas Natural Resource Conservation Commission / Texas Parks and Wildlife Dept / Texas Water Development Board	1998	See Rick Illgner	Elizabeth's call - comments from other public agences are valuable, but this is not the final version.
245	860.75 HDR 1998 v 3	Trans-Texas Water Program West Central Study Area Phase II Edwards Aquifer Recharge Analyses	HDR Engineering, Inc, Paul Price Associates, Inc, LBG-Guyton Associates and Fugro-McClelland (SW), Inc / San Antonio River Authority, San Antonio Water System / EAA / Guadalupe-Blanco River Authority / Lower Colorado River Authority / Bexar Metropolitan Water District / Nueces River Authority / Canyon Lake Water Supply Corp / Bexar-Medina-Atascosa Counties WCID No 1 / Texas Natural Resource Conservation Commission / Texas Parks and Wildlife Dept / Texas Water Development Board	1998		Downloaded from TWDB website
246	860.82 Gua 2/92	Proposal Guadalupe-San Antonio River Basin Recharge Enhancement and Water Availability Study	HDR Engineering Inc - Espey, Huston & Associates, Inc - Paul Price Associates, Inc / EUWD, City of Corpus Christi, City of San Marcos	1992		Not sure if it should be included.
247	860.78 Euw	Water Resources Management Necessary to Protect the Edwards Aquifer: A Plan (Draft IV Edwards Aquifer Management Plan)	EUWD Legal Affairs Committee	1992		Not sure if it should be included.

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
248	640.14 Nue	Edwards Aquifer Recharge Enhancement Project Phase IVA Nueces River Basin Final Report	HDR Engineering / Freese & Nichols, Inc / Fugro-McClelland (Southwest), Inc / LBG-Guyton Associates / Paul Price Associates, Inc / International Aerial Mapping Co / EUWD	1994		
249	860.86 FGR	Phase III Public Participation Twenty-One County Focus Group Report	Moorhouse Associates, Inc / South Central Texas Regional Water Planning Group	1999		Not sure if it should be included.
250	880.77 Rod	Water Quality of the Edwards Aquifer and Streams Recharging the Aquifer in the San Antonio Region, Texas	USGS - Roddy WR / EUWD	1992	USGS Hydrologic Investigations Atlas HA-723	Large Maps - Kept John Hoyt's duplicate copy which looks very clean. Not available on-line.
251	880.74 Inv	Investigation of Volatile Organic Compounds in Groundwater Uvalde, Texas Edwards Underground Water District Field Activities from January 1984 through April 1988	EUWD	1998		s
252	880.57 Hau	Barton Springs/Edwards Aquifer Hydrogeology and Groundwater Quality	Barton Springs/Edwards Aquifer Conservation District - Hauwert NM and Vickers S / Texas Water Development Board	1994		Not sure if it should be included.
253	870.00 EAA	Evaluation of the Availability of Additional Water Supplies from the Edwards Aquifer	Daniel B Stephens & Associates, Inc / EAA	2004		
254	861.13 EAA	Wuest Ranch Conservation Easement Inspection	EAA	2007		
255	861.10 EAA	Thrift Ranch II Conservation Easement Inspection	EAA	2007		
256	861.10 EAA	Bat Cave International Annual Conservation Easement Inspection	EAA	2007		
257	861.13 EAA	Hills and Dales Conservation Easement Inspection	EAA	2009		
258	861.17 EAA	Hills and Dales Conservation Easement Inspection	EAA	2008		
259	861.16 EAA	City of San Marcos Purgatory Creek Preserve Conservation Easement Inspection	EAA	2008		
260	861.10 EAA	City of San Antonio Thrift Ranch II Conservation Easement Inspection	EAA	2008		
261	861.10 EAA	Bat Cave International Annual Conservation Easement Inspection	EAA	2008		
262	861.10 EAA	Purgatory Creek Preserve Conservation Easement Inspection	EAA	2007		
263	861.10 EAA	Government Canyon State Natural Area Conservation Easement Inspection	EAA	2006		
264	861.14 EAA	Government Canyon State Natural Area Annual Easement Inspection	EAA	2007		Large plates
265	861.10 EAA	Government Canyon State Natural Area Annual Easement Inspection	EAA	2008		
266	881.01 Wat	Water Quality / Variable Flow Study Summary of Critical Period Sampling #1 Comal River, New Braunfels, Texas August 23-31, 2000	PBS&J / EAA	2001		Large plates
267	881.04 Wat	Water Quality / Variable Flow Study Summary of Critical Period Sampling #2 Comal River, New Braunfels, Texas September 7-15, 2000	PBS&J / EAA	2001		Large plates
268	881.02 Wat	Water Quality / Variable Flow Study Summary of Fall Quarterly Sampling Comal River, New Braunfels, Texas November 9-17, 2000	PBS&J / EAA	2001		Large plates
269	881.03 Wat	Water Quality / Variable Flow Study Summary of Fall Quarterly Sampling San Marcos River, San Marcos, Texas October 24-November 2, 2000	PBS&J / EAA	2001		Large plates. It appears that other sampling in August & Sept was not done on the San Marcos River - at least the call #s are continuous. Report says the San Marcos never reached critical period that year.

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
270	861.04 EAA	Aquatic Vegetation Laboratory Study: Phase 1: Observation of water quality changes and plant growth under various flows. Phase 2: Effects of carbon dioxide level on aquatic plants found in the Comal and San Marcos Springs/River Ecosystems…	Bio-West / EAA	2004		Is on the EAHCP website but not the EAA website. Shelved back in library; pdf should be available.
271	861.06 EAA	DRAFT Phase 1 Limited Feasibility Study for Quarry Water Storage Facilities	Earth Tech, Inc / EAA	2002		Very large plates - what to do?
272	860.93 SCT	South Central Texas Region Water Needs Assessment	HDR Engineering Inc / Paul Price Associates, Inc / LBG-Guyton Associates / RJ Brandes Co / The Wellspec Co	2000		Geary: Not a science study/probably avail elsewhere.
273	860.921 SCT 2001 v1	South Central Texas Regional Water Planning Area Regional Water Plan Volume I Executive Summary and Regional Water Plan	South Texas Regional Water Planning Group / San Antonio River Authority / HDR Engineering Inc / Moorhouse Associates, Inc / Open Form / Paul Price Associates, Inc / LBG-Guyton Associates / RJ Brandes Co / The Wellspec Co	2001		Not an EAA report, but looks very important, like the Trans-Texas Plan.
274	860.92 SCT 2001 v2	South Central Texas Regional Water Planning Area Regional Water Plan Volume II Technical Evaluations of Alternative Regional Water Plans	South Texas Regional Water Planning Group / San Antonio River Authority / HDR Engineering Inc / Moorhouse Associates, Inc / Open Form / Paul Price Associates, Inc / LBG-Guyton Associates / RJ Brandes Co / The Wellspec Co	2001		
275	860.92 SCT 2001 v3	South Central Texas Regional Water Planning Area Regional Water Plan Volume III Technical Evaluations of Water Supply Options	South Texas Regional Water Planning Group / San Antonio River Authority / HDR Engineering Inc / Moorhouse Associates, Inc / Open Form / Paul Price Associates, Inc / LBG-Guyton Associates / RJ Brandes Co / The Wellspec Co	2001		2001 plans have been replaced - Ask Rick.
276	861.05 EAA	Edwards Aquifer Authority Rain Gauge Analysis Study Report	Vieux & Associates, Inc / EAA	2005		
277	720.14 Pue	Statistical Analysis of Water-Level, Springflow, and Streamflow Data for the Edwards Aquifer in South-Central Texas	USGS-Puente C / EUWD / Texas Water Development Board / City of San Antonio	1976	USGS 76-393	
278	690.22 Pav	Hydrogeologic Data from a Study of the Freshwater Zone/Salinewater Zone Interface in the Edwards Aquifer, San Antonio Region, Texas	USGS-Pavlicek D, Small TA and Rettman PL / San Antonio City Water Board / EUWD / Texas Water Development Board	1987	USGS Open-File Report 87-389	Took clean copy from John Hoyt's office - he has several others. ON EAHCP WEBSITE - Downloaded and OCRd.
279	690.15 Per	Potential for Updip Movement of Salinewater in the Edwards Aquifer, San Antonio, Texas	USGS-Perez R / EUWD	1986	USGS WRIR 86-4032	Downloaded from USGS.
280	640.27 EAA	Recharge Dams Inspection Report	HDR Engineering, Inc / EAA	2002		
281	640.36 HDR	Introduction to Technical Application Requirements for Articifial Recharge Contract and Recharge Recovery Permits	HDR Engineering, Inc / EAA	1998		
282	640.22 EAA	San Geronimo Recharge Structure Baseline Documentation Report	HDR Engineering, Inc / EAA	2005		Inspection photos on CD - not sure if there are any on CD that are not in report.
283	640.26 EAA	Seco Creek Recharge Project Baseline Documentation Report	HDR Engineering, Inc / EAA	2006		Photos on CD
284	640.17 Pue	Method of Estimating Natural Recharge to the Edwards Aquifer in the San Antonio Area, Texas	USGS-Puente C / Texas Dept of Water Resources / EUWD / City of San Antonio	1978	USGS Water-Resources Investigations Report 78-10	Downloaded from USGS. Lightened cover to eliminate many smudge marks and reduced other pages to 8 1/2 x 11. See if our copy has the large plates and scan them. Plates in on-line version are bad.
285	640.20 Kie	Phase I Edwards Underground Water District Storage-Release Recharge Facility Evaluation	Camp Dresser & McKee Inc-Kier RS and Woelke AD / EUWD	1985		
286	640.35 EAA	Recharge and Recirculation / Edwards Aquifer Optimization Program Phase III/IV Report Final	Todd Engineers / TRC Brandes / NRS Engineering	2008		
287	660.52 Sec	Seco Creek Recharge Dam / Diversion Channel Modification Study	Slay Engineering Co Inc-Slay M and Ramming A / EUWD	1986		Large plate in pocket. Some figures are hand-drawn and some text is hand-written.

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
288	John Hoyt's Office	Evaluation of Acoustic Doppler Velocity Meters to Quantify Flow from Comal Springs and San Marcos Springs, Texas	USGS-Gary MO, Gary RH and Asquith WH/EAA	2008	USGS 2008-5083	Downloaded from USGS.
289	John Hoyt's Office	Stormwater Runoff for Selected Watersheds in the Edwards Aquifer Recharge Zone, Bexar County, Texas, 1996-98	USGS/SAWS	1999	USGS Fact Sheet FS-172-98	Downloaded from USGS.
290	John Hoyt's Office	Edwards Aquifer Authority Data Management Plan	EAA	2003		Draft plan - not sure if it's been replaced. Has important info about how the agency collects data.
291	John Hoyt's Office	Springflow Augmentation of Comal Springs and San Marcos Springs, Texas: Phase I - Feasibility Study	UT Center for Research in Water Resources-McKinney DC and Sharp JM Jr	1995		Used Library's color copy. Geary said not to use.
292	John Hoyt's Office	San Antonio Regional Water Resource Study	City of San Antonio / EUWD	1986		ON EAHCP WEBSITE - Its copy was not good.
293	John Hoyt's Office	Edwards Aquifer Hydrogeologic Report for 1993	EUWD-Walthour SD, Waugh JR, Sutton CM and Bader RW	1994	94-04	Kept Geary's clean copy too. Check to see which one is better.
294	John Hoyt's Office	Environmental Tritium in the Edwards Aquifer Central Texas 1963-71	USGS-Pearson FJ, Rettman PL and Wyerman TA / EUWD	1975	USGS Open-File Report 74-362	Not available on-line.
295	John Hoyt's Office	Geology and Water Quality at Selected Locations in the San Antonio Area Texas, Progress Report, 1969	USGS- Reeves RD and Blakey JF / EUWD	1970	USGS Open-File Report: 70-272	NEED TO SCAN PLATE.
296	John Hoyt's Office	Edwards Aquifer Ground-Water Divides Assessment, San Antonio Region, Texas	LBG-Guyton Associates	1994	95-01	USE THIS COPY. Geary also has a copy.
297	John Hoyt's Office	Edwards Aquifer Hydrogeologic Report for 1994	EUWD - Salthour SD, Waugh JR, O'Connor J and Bader RW	1995	95-07	
298	John Hoyt's Office	Investigation of the Fresh/Saline Water Interface in the Edwards Aquifer in New Braunfels and San Marcos, Texas Appendices	EUWD - Poteet D, Collier H and Macclay R	1992	92-02	
299	USGS	Analysis of Data from Test-Well Sites along the Downdip Limit of Freshwater in the Edwards Aquifer, San Antonio, Texas, 1985-87	USGS / SAWS / EUWD / TWDB	1994	USGS Water-Resources Investigations Report 93-4100	
300	John Hoyt's Office	Bad Water Line Transect Pumping Test at San Antonio City Water Board's Artesia Station, March 25, 1987	William F Guyton Associates, Inc /City Water Board of San Antonio/EUWD	1988		
301	John Hoyt's Office	Edwards Aquifer Bad Water Line Experiment	City Water Board / EUWD / USGS / Texas Department of Water Resources	1984		PROPOSAL - don't use.
302	John Hoyt's Office	Investigation of the Fresh/Saline Water Interface in the Edwards Aquifer in New Braunfels and San Marcos, Texas - Report	EUWD-Poteet D, Collier H and Maclay R	1992	92-02	
303	John Hoyt's Office	Carbonate Geology and Hydrology of the Edwards Aquifer in the San Antonio Area, Texas	USGS-Maclay RW and Small TA / San Antonio City Water Board / Texas Dept of Water Resources / UEWD	1984	USGS Open-File Report 83-537	Many plates that need to be scanned separately. Plates are on-line and were downloaded.
304	USGS (200) R29o no.99-245 Reston, VA Internet	Quality of stormwater runoff from an urbanizing watershed and a rangeland watershed in the Edwards aquifer recharge zone, Bexar and Uvalde Counties, Texas, 1996-98 / [Patricia B. Ging] ; in cooperation with the Edwards Aquifer Authority and the Nature Conservancy of Texas.	Ging, Patricia B., Edwards Aquifer Authority (Tex.), Nature Conservancy of Texas., Geological Survey (U.S.)	1999	USGS Open-File Report 99–245	Downloaded from USGS.
305	Geary Schindel's Office	Geologic framework and hydrogeologic characteristics of the Edwards Aquifer outcrop, Medina County, Texas	Small, Ted A., Clark, Allan K., Edwards Aquifer Authority (Tex.), Geological Survey (U.S.)	2000	USGS WRIR 00-4195	Downloaded from USGS.
306	Geary Schindel's Office	Geologic framework and hydrogeologic characteristics of the Edwards aquifer, Uvalde County, Texas / by Allan K. Clark ; in cooperation with the Edwards Aquifer Authority.	Clark, Allan K., Edwards Aquifer Authority (Tex.), Geological Survey (U.S.)	2003	USGS WRIR 03-4010	Downloaded from USGS.
307	Geary Schindel's Office	Quality Plan Document for the Development of Groundwater Management Module for MODFLOW / Draft - Use FINAL version if available.	HydroGeoLogic, Inc / EAA	2004		Not sure if final plan is available. Geary - final version would be on the web - see Jim Winterle. Betty: I don't see final version on the web.

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
308	Geary Schindel's Office	Enhanced Characterization and Representation of Flow through Karst Aquifers - Phase II Revision 1	Southwest Research Institute-Painter A, Sun A and Green RT / Southwest Florida Water Management District / EAA	2007	SwRI Project 20-11674	CHECK ON AVAILABILITY OF ELECTRONIC VERSION. EXTRA COPY SENT TO LIBRARY
309	Geary Schindel's Office	Appendix B A Report Investigating Impacts of Aquifer Pumping Limits on Flow of Comal Springs and San Marcos Springs	Hicks & Co / LBG Guyton Assoc / EAAHCP	2000		SHOULD BE ON EAHCP WEBSITE.
310	Geary Schindel's Office	Preliminary Feasibility Assessment of Edwards Aquifer Saline Water Treatment and Use	Southwest Research Institute Center for Nuclear Waste Regulatory Analyses-Pabalan RT, Daruwalla DD and Green RT / EAA	2003	SwRI Report CNWRA-EAA-01	Looks good if no final report available. Check on the web. Geary says electronic version avail.
311	Geary Schindel's Office	Hydrogeology, Hydrologic Budget, and Water Chemistry of the Medina Lake Area, Texas	USGS-Lambert RB, Frimm KC and Lee RW / Bexar-Medina Atascosa Counties Water Control and Improvement District No. 1 / Bexar Metropolitan Water District / Texas Water Development Board / EAA	2000	USGS WRIR 2000-4148	Big maps in pocket. Found on-line in USGS Catalog but not in Publications Warehouse. Reported discrepancy to USGS. Maps are in zipped file.
312	Geary Schindel's Office	Effects of Brush Management on the Hydrologic Budget and Water Quality In and Adjacent to Honey Creek State Natural Area, Comal County, Texas, 2001-10	USGS-Banta JR and Slattery RN / US Dept of Agriculture Natural Resources Conservation Service / Edwards Region Grazing Lands Conservation Iniative / Texas State Soil and Water Conservation Board / San Antonio River Authority / EAA / Texas Parks and Wildlife / Guadalupe Blanco River Authority, Sand Antonio Water System	2011	USGS SIR 2011-5226	Many appendices which were downloaded from spreadsheets to pdf files and appended to report. Also added a Notes page with links to Appendix spreadsheets.
313	Geary Schindel's Office	Report on the Effectiveness of the Edwards Aquifer Authority	South Central Texas Water Advisory Committee / Naismith Engineering, Inc / Law Office of John J Vay	2010	X: //8415/2010 EAA/2010 Effectiveness Report	Should be available electronically. Also contains info on lawsuits. Ask Elizabeth if they should all be up.
314	Geary Schindel's Office	Hydrochemical Data for the Edwards Aquifer in the San Antonio Area, Texas	TX Dept of Water Resources / USGS- Maclay RW, Rettman PL and Small TA / TX Dept of Water Resources / City Water Board of San Antonio		LP-131	Contains hydro data - not sure how it relates to EUWD Bulletins - listed here but not numbered. May supplement EUWD Bulletins on water analyses . Covers 197-78 time frame.
315	Geary Schindel's Office	Water-Level, Recharge, Discharge, Specific-Capacity, Well-Yield, and Aquifer-Test Data for the Edwards Aquifer in the San Antonio Area, Texas	TX Dept of Water Resources / USGS- Maclay RW, Small TA and Rettman PL / TX Dept of Water Resources / City Water Board of San Antonio		LP-133	Contains hydro data - not sure how it relates to EUWD Bulletins - listed here but not numbered. May supplement EUWD Bulletins - not sure. Covers 1972-1976 time frame.
316	Geary Schindel's Office	Streamflow Conditions in the Guadalupe River Basin, South-Central Texas, Water Years 1987-2006 - An Assessment of Streamflow Gains and Losses and Relative Contribution of Major Springs to Streamflow	USGS-Ockerman DJ and Slattery RN / EAA	2008	USGS SIR 2008-5165	
317	Geary Schindel's Office	Additional Graphical Materials to the Edwards Aquifer (San Antonio Region) Groundwater Flow Model (Lindren et al., 2004)	EAA - Troshanov N and Hamilton M	2005		Seems to be an EAA document that has not been issued as an EAA report. Check with modelers for electronic availability. Geary - is already on the web? Should not go up on the web because it hasn't been reviewd./approved.
318	Geary Schindel's Office	Fifth Biennial Report on the Effectiveness of the Edwards Aquifer Authority	South Central Texas Water Advisory Committee	2006		See 313.
319	Geary Schindel's Office	Edwards Aquifer Authority Aquifer Science Research Program Plan 2008-2013	EAA	2009	EAA 09-01	Geary said it might be on the web. Betty: Not on EAA website.
320	Geary Schindel's Office	Measuring Floodplain Hydraulics of Seco Creek and Medina River Where They Overlie the Edwards Aquifer - Final Report	Southwest Research Institute-Green RT, Bertetti FP, McGinnis R and Prikryl / EAA	2012	SwRI Project 20-16488	See 37
321	Geary Schindel's Office	Draft Edwards Aquifer Habitat Conservation Plan	Hicks & Co / Recon / BIO-WEST, Inc / LBG-GUYTON Associates / EAA	2005		For EAHCP website??? Geary - ask elizabetj or Rick Illgner. Were withdrawn and re-done.
322	Geary Schindel's Office	Edwards Aquifer Authority Initial Draft Environmental Impact Statement and Habitat Conservation Plan	Hicks & Co / Recon / BIO-WEST, Inc / LBG-GUYTON Associates / PBS & J / TURNER, COLLIEI & BRADEN / EAA	2004		For EAHCP website??? / Comments and Committee Amendments in Pocket. Were withdrawn & re-done - ask Rick.

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
323	Geary Schindel's Office	Authority Responses to Public Comments on the Habitat Conservation Plan	EAA	2005		For EAHCP Website???
324	Geary Schindel's Office	Habitat Conservation Plan Project Guide	PBS & J / Turner, Collie & Braden, Inc / LBG-Guyton Associates / EAA	2000		For EAHCP Website??? Reference for Team Members
325	Geary Schindel's Office	Needs Assessment for Ground-Water Management Model for the Edwards Aquifer (San Antonio Section)	UT Bureau of Economic Geology - Dutton A / EAA	1999		
326	Geary Schindel's Office	Evaluation of Augmentation Methodologies in Support of In-Situ Refugia at Comal and San Marcos Springs, Texas - Detailed Work Plan	LBG-Guyton Associates	2003		Report is on EAA website - this is the detailed methods. Include?? Geary says yes.
327	Geary Schindel's Office	Helicopter Electromagnetic and Magnetic Survey Data and Maps, Seco Creek Area, Medina and Uvalde Counties, Texas	USGS-Smith BD, Smith DV, Hill PL and Labson VF / EAA	2003	USGS Open File Report 03-226	Is this the same as N Medina County report already on the web? - YES
328	Geary Schindel's Office	Trans-Texas Water Program West Central Study Area Phase 2 Edwards Aquifer Recharge Update	HDR Engineering, Inc / San Antonio River Authority / San Antonio Water System / EAA / Guadalupe-Blanco River Authority / Lower Colorado River Authority / Bexar Metropolitan Water District / Nueces River Authority / Canyon Lake Water Supply Corp / Bexar-Medina-Atascosa Counties WCID No. 1 / Texas Natural Resource Conservation Commission / Texas Parks and Wildlife Dept / Texas Water Development Board	1998		
329	Geary Schindel's Office	Groundwater Level Monitoring Plan	EAA	2003		Should be available electronically - check with Geary: Mark Hamilton
330	Geary Schindel's Office	Evaluation of the Option to Designate a Separate San Marcos Pool for Critical Period Management	EAA-Johnson SB and Schindel GM	2008	08-01	Should be available electronically - check with Geary.
331	Geary Schindel's Office	Edwards Aquifer Authority Hydrologic Data Summary for 2007	EAA-Hamilton JM, Ruiz R, Smith E and Schindel GM	2008	08-03	Should be available electronically - check with Geary.
332	Geary Schindel's Office	Draft Edwards Aquifer Optimization Overview	Todd Engineers	1999		Replaced/outdated? ASK GEARY.
333	Geary Schindel's Office	Groundwater Quality Monitoring Plan	EAA	2003		Ask Mark for electronic version.
334	Geary Schindel's Office	Groundwater Management Plan 1998-2008	EAA	1998		Should we put up older plans? Ask Geary.
335	Geary Schindel's Office	Draft Work Plan to Develop HSPF Recharge Models for Seven Drainage Basins	LBG-Guyton Associates / AQUA TERRA Consultants / Espey Consultants, Inc / Texas A&M Univ-Wilcox B / GlynData / EAA	2003	EAA Contract 02-87-AS	Is a draft plan but has a lot of data in it.
336	Geary Schindel's Office	Summary Information Regarding Historical Edwards Aquifer Recharge, Aquifer Modeling, and Recharge Enhancement Projects	HDR Engineering, Inc /			
337	Geary Schindel's Office	2006 Conference on the Edwards Aquifer	Various	2006		CONFERENCE PROCEEDINGS
338	Geary Schindel's Office	Historical presentations of Distinguished Lectures (n=14)	Various			
339	EAHCP WEBSITE	Draft 30-Year Water Supply Plan	EAA	2001	Downloaded and OCRd	
340	Geary Schindel's Office	South Central Texas Regional Water Planning Area 2006 Regional Water Plan / Volume I Executive Summary and Regional Water Plan	South Central Texas Regional Water Planning Group / HDR Engineering, Inc / Paul Price Associates, Inc / John Folk-Williams / Margaret Dalthorp / San Antonio River Authority	2009		

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
341	Geary Schindel's Office	South Central Texas Regional Water Planning Area 2011 Regional Water Plan / Volume I Executive Summary and Regional Water Plan	South Central Texas Regional Water Planning Group / HDR Engineering, Inc / Laura Raun Public Relations / Ximenes & Associates / San Antonio River Authority	2010		
342	Geary Schindel's Office	Hydrologic Simulation Program Fortran (HSPF) Model Refinement	Clear Creek Solutions, Inc / EAA	2007?	See Geary's report - Jim Winterle	
343	Geary Schindel's Office	Conversion of the Water Resources Management Module for the MODFLOW Model 2000	HydroGeoLogic, Inc / EAA	2005	Is code - put summary from Geary's report and say code is available to whoever wants it.	
344		Karst Aquifer Modeling Research (Phase I)	American Water Works Association Research Foundation / Southwest Research Institute / EAA	2004	See Jim Witterle - Geary has electronic.	
345		Recharge Methodology	LBG-Guyton / AQUA TERRA Inc, Espey Consultants, Freese and Nichols, Dr. Bradford Wilcox (TAMU)	2005	HPSF output data files - see Jim Witterle. Put summary - say files are available??	
346		Define and Delineate San Marcos Pool	ZARA Environmental / EAA	2008	See Steve Johnson	
347		Noble and Active Gas Sampling in the Knippa Gap Region	USGS Draft Report		Geary has.	
348	NOT SURE WHAT THIS WAS.	[PROBABLY ASSIGNED BY MISTAKE IN SORTING FILE.]				
349		Helicopter electromagnetic and magnetic survey data and maps, northern Bexar County, Texas	Smith, Bruce D.; Cain, Michael J.; Clark, Allan K.; Moore, David W.; Faith, Jason R.; Hill, Patricia L.	2005	USGS Open-File Report: 2005-1158	Downloaded from USGS. Large plate and notes with links to data files included.
350		Geophysical Survey to Determine the Depth and Lateral Extent of the Leona Aquifer and Evaluation of Discharge Through the Leona River Floodplain, South of Uvalde, Texas - Phase II	SwRI	2012	Geary has.	
351		Improved Gauging at Comal Springs and San Marcos Springs	USGS / EAA	2008	Get from USGS website	Can't find on USGS website.
352		Edwards Aquifer Authority Hydrologic Data Summary for 2007	EAA	08-03	08-03	See if Mark Hamilton has.
353	USGS	Geologic and apparent resistivity maps for the Seco Creek study area / Helicopter Electromagnetic and Magnetic Survey Data and Maps, Seco Creek Area, Medina and Uvalde Counties, Texas	Smith, Bruce D.; Cain, Michael J.; Clark, Allan K.; Moore, David W.; Faith, Jason R.; Hill, Patricia L.	2003	USGS Open File Report 2003-226	Downloaded from USGS.
354	USGS	The Water level	EUWD		USGS Call No. S(245) W288	USGS Library holdings begin with: Vol. 3, no. 1, June 1986. v.3:no.1-4, v.4:no.1-3, v.5:no.1,3,5 (1986-1988)Folio. Reston, VA.
355	USGS Library	Water, water conservation and the Edwards Aquifer	EUWD - Edmund A. Marek, Thomas P. Fox, and Glenn Longley	1981	USGS Call No. 490(245) M335w	
356	USGS Library	Suggested design and construction of Edwards Aquifer wells	EUWD -	198?	USGS Call No. 791(245) Ed95s	
357	USGS Library	Water resources of the Edwards Aquifer Region (Map)	EUWD		USGS Call No.	Scale ca. 1:500,000
358	USGS Library	Use of landsat thematic mapper data to identify crop	USGS - Raymond, Lee H., McFarlane, Scott I. /	1994	USGS WRi no.93-	Downloaded from USGS.
359	John Hoyt's Office	Water quality of the Edwards Aquifer and streams recharging the aquifer in the San Antonio region, Texas	USGS- Roddy, W. R. / EUWD	1992	USGS Hydrologic Investigations Atlas HA-723	6 maps on 3 sheets. Not available on-line.

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
360	Geary Schindel's Office	Work Plan to Develop HSPF Recharge Models for Seven Drainage Basins	LBG-GUYTON ASSOCIATES / AQUA TERRA Consultants / Espey Consultants, Inc / Freese and Nichols, Inc / Texas A&M University-Bradford Wilcox / GlynData / EAA	2003		Proposal?
361	Jim Winterle	HSPF Recharge Models for the San Antonio Segment of the Balcones Fault Zone Edwards Aquifer	LBG-GUYTON ASSOCIATES / AQUA TERRA Consultants / Espey Consultants, Inc / Texas A&M University-Bradford Wilcox / GlynData / EAA	2005	EAA Contract 02-87-AS	
362	580.30 WMI 2001	Edwards Aquifer Precipitation Enhancement Program Final Report 2001	Weather Modification, Inc / EAA	2002		
363	580.31 EAA	Assessment of Recharge Benefit from Enhanced Rainfall	LBG-Guyton Associates / EAA	2003		
364	Geary Schindel's Office	Proceedings / San Marcos & Comal Springs Symposium	Aquarena Springs / Barton Springs - Edwards Aquifer Conservation District / Comal and Hays Counties / Edwards Aquifer Research and Data Center / Southwest Texas State University / Edwards Underground Water District / Hays County Water Development Board / Guadalupe-Blanco River Authority / Texas Water Commission / Texas Water Conservation Association / Texas Water Development Board	1988	ISBN 0-929469-27-5	
365	Geary Schindel's Office	Proceedings / San Marcos & Comal Springs Symposium	Aquarena Springs / Barton Springs - Edwards Aquifer Conservation District / Comal and Hays Counties / Edwards Aquifer Research and Data Center / Southwest Texas State University / Edwards Underground Water District / Hays County Water Development Board / Guadalupe-Blanco River Authority / Texas Water Commission / Texas Water Conservation Association / Texas Water Development Board	1988	ISBN 0-929469-27-5	Hold for Phase II
366	Geary Schindel's Office	Significant Edwards Aquifer Karst Recharge Features of Bexar County, Texas	George Veni and Associates / City of San Antonio Dept of Water Resources Management	1989		
367	Rick Illner	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the Comal Springs/River Aquatic Ecosystem / Final 2006 Annual Report	Bio-West / EAA	2007		Appendix A combined with report. Do the same for all the other Critical Period monitoring reports.
368	Rick Illgner	An Evaluation of the 1997 Edwards Aquifer Irrigation Suspension	Tarleton State University Texas Institute for Applied Environmental Science - KO Keplinger and BA McCarl / EAA	No Date		
369	Rick Illgner	Cibolo Creek, San Antonio, Texas	US Army Corps of Engineers / GBRA / SARA / SAWS / NRCS / USGS	2012		Hold for Phase II
370	Rick Illgner	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the San Marcos Springs/River Aquatic Ecosystem / Final 2006 Annual Report	Bio-West / EAA	2007		
371	Rick Illgner	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the Comal Springs/River Aquatic Ecosystem / Final 2008 Annual Report	Bio-West / EAA	2009		

Doc #	Call #/Source	Title	Authors	Date	Report #	Comments
372	Rick Illgner	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the Comal Springs/River Aquatic Ecosystem / Final 2009 Annual Report	Bio-West / EAA	2010		
373	Rick Illgner	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the Comal Springs/River Aquatic Ecosystem / Final 2010 Annual Report	Bio-West / EAA	2011		
374	Rick Illgner	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the Comal Springs/River Aquatic Ecosystem / Final 2003 Annual Report	Bio-West / EAA	2004		
375	Rick Illgner	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the Comal Springs/River Aquatic Ecosystem / Final 2007 Annual Report	Bio-West / EAA	2008		
376	Rick Illgner	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the San Marcos Springs/River Aquatic Ecosystem / Final 2008 Annual Report	Bio-West / EAA	2009		
377	Rick Illgner	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the San Marcos Springs/River Aquatic Ecosystem / Final 2007 Annual Report	Bio-West / EAA	2008		
378	Rick Illgner	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the San Marcos Springs/River Aquatic Ecosystem / Final 2009 Annual Report	Bio-West / EAA	2010		
379	Rick Illgner	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the San Marcos Springs/River Aquatic Ecosystem / Final 2010 Annual Report	Bio-West / EAA	2011		
380	Rick Illgner	Comprehensive and Critical Period Monitoring Program to Evaluate the Effects of Variable Flow on Biological Resources in the San Marcos Springs/River Aquatic Ecosystem / Final 2003 Annual Report	Bio-West / EAA	2004		

APPENDIX II

Procedures for Scanning and Naming Files of Documents

You are welcome to develop whatever workflow and file naming conventions you wish. This documents how I have done it. It has been an evolving process to get this worked out. The only absolute requirements are that the workflow procedure must allow you to track where each document is in the process. Secondly, the naming convention of document files must be unambiguous.

1. Open ScanSnap scanner and ScanSnap icon on task bar.
2. On the ScanSnap activities page, click on ScanSnap icon on the upper left. Then click on "SCAN Button settings". This will open up menus for scan settings.
3. Remove binding from report to be scanned. Check carefully to see if there are any oversize pages in the report. Set oversize pages aside.
4. Look to see if document is one- or two-sided. If two-sided, scan on duplex mode.
5. Scan settings:
    a. Image Quality for covers: 300 dpi – whether color or B/W.
    b. Image Quality for internal pages: Normal (150 dpi color/ 300 dpi B/W)
    c. Color mode: Auto color detection
    d. Scanning side: Duplex scan (if duplex document); Simplex scan (if one-sided)
    e. Always make sure "Continue scanning after current document is finished" is clicked on.
    f. DON'T AUTOMATICALLY DO OCR AFTER SCANNING –this takes up a lot of time.
6. Scan large reports in batches, clicking continue scanning after each batch until finished.
7. If a report is very large, it is a good idea to break up the scanning into several files. File names should allow you to reconstruct exactly which document and which sequence within the document each file belongs.
8. Scan large pages separately. Finish the scanning of the last sub-file and save it according to the above convention. Then fold wide page in half and put fold on the right side in protector sheet. Then put protector sheet into the scanner by flipping it the same way individual pages are flipped. The

black-and-white squares on the top of the sheet should be facing downward into the scanner.

a. If a large sheet is wider than 8 ½ x 11 inches after folding in half, then scan it as separate panels by creatively folding the page in order to show each panel. Make sure the scanner is set to DUPLEX (2-sided mode) for sheets that are folded where you want to capture both sides of the sheet.
b. Finish scanning the folded sheet after the first scan and save that file as [Doc#]_n_Left Panel.
c. Then if you need to scan only one side of the right panel, switch the ScanSnap Settings to SIMPLEX (one-sided), put the re-folded paper into the document protector and scan as usual with the right edge of the image along the right side of the protector. Then finish the scan and save the right part of the image as [Doc#]_n_Right Panel.
d. Very large (wall-size) plates need to be scanned in the large flat-bed scanner, with each file named according to doc# and where it belongs in the sequence of the combined document.

9. To save scanned documents, right-click on "ScanSnap" directory in the ScanSnap Manager and select "New Cabinet". Name that Cabinet (folder) the document tracking number. Then click and drag the files for that document from the ScanSnap cabinet to the new cabinet.
10. Expanded examples of naming batch files:
    i. This is hypothetically for Document #125 from the Master List, which has many pages and some large folded plates at various places within the document.
    ii. For Document # 125, files in sequence should be named:
        1. 125_Cover (to be fixed in Photoshop) (Scanned at BEST resolution in color @300 dpi) SIMPLEX (unless there is something on the inside of the back cover that needs to be captured).
        2. 125_p1 (if needed to be fixed in Photoshop – otherwise can combine p 1 with the rest of the text files)
        3. 125_1 (the first batch text file, containing ca. 25-50 pages)
        4. 125_2 (the second text file)

5. 125_3_Left Panel (the left half of a wide sheet that had to be folded more than once to fit into the protector sheet)
6. 125_3_Right Panel (the right half of a wide sheet)
7. 125_4 (the next batch file of the next pages)
8. etc

11. Post-scan processing – IMPORTANT
    a. Set up file folders according to workflow:
        1. Separate folders with each Master Report # and sequence #s – can go ahead and move all the files for a document from its numbered folder in ScanSnap into EAA/Finished Reports/[Doc#] if you want.
            a. [Master Report #]
            b. [Master Report #]_OCR (converted to OCR using Adobe Acrobat Pro XI)
        ii. Save OCR file in EAA\Finished Reports\[Master Report #] folder\[doc#]_OCR
        iii. EAA
            1. Finished Reports
                a. [Master Report #]_OCR
                b. [Master Report #]_Cover.tif (after capturing cover image – see below)
    b. Make the working file name the master document number shown in the master spreadsheet during all processing. Then re-name using this convention prior to uploading to the on-line Document Library.
    c. File naming convention for reports: report#_author_title_year
    d. File naming convention for large-size sheets: report#_author_title_year_plates
    e. Store scanned files in separate folders named with report # in the My Documents/ScanSnap/directory until OCR has been performed.
    f. Using Adobe Acrobat XI, combine pdf file with large plates into pdf file containing the main report. Then do OCR. Save OCR file separately as [original file name]_OCR, in case we need to re-run the original pdf file in another program.
    g. Do OCR separately as time permits using Adobe Acrobat Pro XI.

12. Capturing image of cover for EAA website and pdf file

a. Open pdf file of scanned cover in Adobe Photoshop BEFORE RUNNING OCR.
b. Make corrections to cover (and any other nec pages) in Photoshop (See Appendix IV).
c. Save cover from Photoshop as .tif file (no compression) to "Finished Documents-[doc#] folder and name as [doc#]_Cover.tif.
d. Repeat with any other internal pages that need to be doctored.
e. Delete doctored pages from pdf file and re-incorporate into main pdf file as described next.

13. Combining fixed cover image (and fixed page 1 if this has been done) with batch files for a document:
    a. Start up Adobe Acrobat Pro. Select "Combine Files into PDF" and minimize the large Acrobat window.
    b. Open the folder containing the fixed cover .tif file and drag it into the Adobe Acrobat screen. Repeat for the .tif file for page1 if it has been fixed in Photoshop. Then CAREFULLY drag the batch files in sequence to piece together the document. NOTE: WHEN YOU REACH THE RIGHT EDGE OF THE ADOBE ACROBAT SCREEN, IT SOMETIMES GETS THE MOVED FILES OUT OF SEQUENCE. BE VERY CAREFUL TO VERIFY THAT THE BATCH FILES ARE STILL IN SEQUENCE IN THE ACROBAT WINDOW.
    c. Then click on "Combine Files". This will create a new document in which all the batch files have been pieced together. It will be named Binder1.
    d. Save the Binder1 file as [Doc#].pdf in the EAA/Finished Reports\Doc# folder. Now the file is ready for OCR.
14. Converting scanned pdf files to OCR
    a. Run OCR on processed files in batches while you are doing something else NOT on the computer because this takes a long time.
    b. Open pdf file in Adobe Acrobat Pro XI
    c. View -> Tools -> Text Recognition -> Select "In multiple files"
    d. Drag files, including the one open file and any others from their directories into the window for OCR.
    e. Select Keep Current Directory and Add Suffix _OCR, do not overwrite files, and click to start the conversion. Click the default on the following screen and let Acrobat run the batch to OCR.
15. Verifying Orientation of OCR Documents

a. Adobe Acrobat Pro XI will automatically rotate sheets printed in Landscape format so that all pages face the same way in the final file. BUT IT DOESN'T DO THIS EVERY TIME, depending on how much text is in one direction on a page for it to recognize. So you will need to LOOK AT EVERY PAGE to make sure it is oriented right-side-up after the OCR process before designating the file as being ready to upload to the server.
b. Page orientation is easiest to do by opening the [Doc#]_OCR.pdf file, adjusting the zoom so a full page shows on the screen, then hit F4 to bring up thumbnails of all the pages on the left of the screen.
c. Put the cursor into the thumbnail area and then roll the mouse wheel to view several thumbnail pages at once. You should be able to tell by the pattern of the text on the thumbnail if the page is right-side-up (left justified, usually right margin ragged).
d. To correct the orientation of a page, select that thumbnail and then select the curved arrow button at the top of the screen. You will be given the choice of rotating the page 90^{o} clockwise, 90^{o} counter-clockwise, or 180^{o}. Select the appropriate orientation.
e. You can select multiple pages in a row by holding down the <SHIFT> button for the last thumbnail in the sequence that needs to be re-oriented (assuming they are all mis-oriented in the same way). If they are mis-oriented in different ways you will need to re-orient them individually.

16. When report is ready to be loaded into the Document Library, move all files into the Finished Reports Folder.

APPENDIX III
Procedures for Scanning Bound Reports

1. **Stapled with black tape binding**
    - **a.** Using a scalpel/utility knife, slit on either side of the front and back of staples through the tape binding.
    - **b.** Use a staple remover, knife, needle-nose or regular pliers to remove staples.
        - **i.** For thick reports it may be necessary to slide an Exacto blade under each of the back halves of the staples and pry them up to loosen. BE VERY CAREFUL NOT TO BREAK THE BLADE OR CUT YOUR FINGERS!
        - **ii.** Once the back halves of the staples are straightened, go to the front of the report and slide Exacto blade under the top of the staple to pry up just a bit. Then use a staple remover to get removal started.
        - **iii.** It may be necessary to use pliers to GENTLY pull staples out.
        - **iv.** In the worst case of a thick stapled report, turn the report over and GENTLY remove a few pages at a time from the back after the back halves of the staples are straightened. Remove ends of staples by twisting with needle-nosed pliers as long ends become exposed to facilitate extraction of pages.
    - **c.** Pull individual pages apart and scan, being careful not to tear the pages in the process. Be especially mindful of pages that have been glued to the binding.
2. **For GBC (wide plastic loop) binding**
    - **a.** Take report to GBC binder in library and remove GBC binding. (May need to remove call number and tape on the outside first).
3. **For spiral binding**
    - **a.** Break off the bent end with needle-nose pliers.
    - **b.** Holding the report with the binding over the edge of the desk, gently work one end with each hand to unwind the binding from the report. There is a rhythm to this which you will soon discover. It may be necessary to make a few turns on the leading end and then work the tension through the spiral to the following end.
4. **For glued (perfect) binding**

   a. Sometimes it is possible to tear the covers and binding off, leaving the pages and their glue exposed. If this is the case, you can then tear the pages into groups of about 10 pages each and cut the glued edges off with a large paper cutter.
   b. If this can't be done, then position the book a few pages at a time through a large paper cutter and trim the pages directly.
   c. Be careful to cut all the pages the same size and keep them in order!
5. **For other bindings**
   a. Some reports have other kinds of bindings, such as the old-fashioned metal tabs inserted through punched holes or solid plastic bars perforated with several holes and using round plastic filaments. It is usually possible to improvise the removal of the binding by using the variety of tools.
   b. Always be careful to preserve the paper as much as possible.

APPENDIX IV
Cleaning up Cover Pages and Creating Thumbnail Images

Often the reports will have library markings, signs of wear and tear, and miscellaneous extraneous detail like the personal information of the person who donated the report to the EAA. These need to be removed in order to make the report look as good as possible on-line.

Follow these steps:

- When scanning the report, scan using "Best" resolution if the cover is in color. This will save it at 300 dpi. If the cover is black & white, use "Normal" resolution in the Scan Button Settings. Save the cover page and any other pages that have these markings as separate individual pdf files. Name the files [Doc#]_Cover.pdf, [Doc#]_p1.pdf, etc.
- Open the pdf file of the cover in Photoshop®. It is not necessary to save the scanned image as a jpg file; that will cause loss of detail because jpg is a compression scheme. Photoshop will recognize pdf files directly because they are from the same company.
    - If the pdf file will not open in Photoshop, open the pdf file in Adobe Acrobat and save it as a pdf image file by selecting this option under "Advanced" features of printing.
- Using the Clone Stamp tool in Photoshop, select an unblemished place on the cover and copy it to the markings to make them disappear.
    - Depending on what effect the report cover calls for, you may want to preserve the faded edges of an old report. This requires some skill to blend the faded edges together. Select the point of origin in the Clone Stamp to be the same distance from the edge as the imperfection you are wiping out.
- If a marking covers some of the text or a graphic, you will have to be creative.
    - Sometimes you can cut and paste letters from elsewhere on the cover after erasing the ruined letters with the Clone Stamp.
    - Alternatively, you may be able to match the font and use the Photoshop Text tool to insert the missing letters after erasing the ruined letters with the Clone Stamp.

    - In the worst case, if the original letters are too faded to reproduce well, you may need to erase all the text and reconstruct it with a similar font.
- When you have the cover reconstructed to your satisfaction, flatten all the layers and save it as a .tif file named [Doc#]_Cover.tif in the scanned document directory. Saving it as a .tif file avoids .jpg compression artifacts.
- However, it may be necessary to convert the thumbnail to a low-resolution .jpg file for uploading to the Document Library. We have not reached this point yet, and will revise the procedure if necessary.
    - At the present time all the cover images are actual size. At first I will try re-sizing the .tif file to smaller dimensions for the thumbnail. If the Document Entry application does not accept .tif images, I will convert them to .jpg after reducing their size.

APPENDIX V
Procedures for Incorporating Graphic Images into pdf Report Files

Occasionally a report may have supplementary graphic images or plates. Here are tips for how to handle them and incorporate them into a single pdf file with the main report.

1. Incorporating the cleaned cover page and other graphic images into the main report:
    - .jpg, .tif, and of course .pdf image files can be combined with the main pdf report directly using Adobe Acrobat Pro. Open Acrobat Pro and select "Combine Files into pdf". Click and drag (copy) the cleaned cover page (which should be a .tif file) to the Acrobat working window and main pdf report file(s) from its/their directory into the Acrobat Pro working window, then move the graphics files one at a time, being careful to maintain whatever order you want.
    - If the graphics files need to be embedded within the body of the main report, you will need to divide the main report into several batch files. Then move the first pdf batch file into the Acrobat Pro working window, followed by the graphic file, then the next pdf batch file, etc, until you have all the files in the correct order in the Acrobat Pro working window. Double-check to make sure the sequence is correct in the working window after you have moved all the files.
    - If you have too many files to move in one operation, save the first combined file as [Doc#].pdf, then repeat the combining operation using the [Doc#].pdf file as the starting point.
    - This operation should look something like:
        - Drag [Doc#]_cover.tif into the first (left) space in the working window;

        - Drag [Doc#].pdf (the file containing the main body of the report without the cover page) to the right of the cover page in the working window;
        - Drag any other batch files for the document in sequence into the working window.
    - Then click “Combine Files” on the lower right of the working window and confirm visually that all the files have been combined.
    - Adobe Acrobat will name the combined file “Binder1”. You will need to save that file as [Doc#].pdf in its appropriate directory.

2. Rarely you may encounter .gif files to combine with the main report. This is more complicated, but still doable.
    - First print each .gif file as a .pdf file.
    - Then open each .pdf file in Photoshop®, making sure to designate the width of the file to be small enough to allow a margin in the final 8 ½ x 11-inch page size.
    - Once the file is in Photoshop, make sure the default background colors show white on top. Then adjust the canvas size to 8 ½ x 11. Flatten the file to get the margin to be white.
    - It may be helpful to put a title above the image. You’ll have to invert the default background colors to make black on top, then type the desired text wherever you want it on the sheet. Photoshop has built-in tools for centering and justifying text on the top menu bar, but sometimes these give bizarre results. I just try to center the text manually.
    - Finally, flatten all the layers if you have added text and save the file as a .tif file in the directory for that report.
    - Now you are ready to start at 1.) above to incorporate the .tif files into the main report.

3. For the old Corps of Engineers volumes that were the original survey of the Edwards, I used the following procedure to get maximum resolution of both text and photos. This procedure is very complicated, and I recommend it only for valuable or rare documents where you want the digital file to resemble the original document as closely as possible:
    - Scan the pages using "Normal" black & white setting @ 300 dpi. This gives maximum resolution of the text, but photos may have too much contrast.
    - Then pull the pages with photos and scan them on "Auto Color Detection" or "Gray". Try both to see which one give results closer to the original or best contrast.
    - I scanned all the photo pages into one file and then copied the file and deleted all the other pages, one page at a time, to reconstruct each photo page as a separate file because merely printing each page individually to create a new pdf file resulted in some loss of resolution. This was a lot of work. It would have been easier to scan each photo page as a separate file and name it [Doc#]_p[n]. (Hindsight is 20:20.)
    - When you have the high-contrast black & white file and the individual gray contrast photo pages, open the large black & white file and adjust the size of the page on the screen to make one page fit the screen. Then using F4, scroll down to the first high-contrast photo page. With the cursor on the F4 thumbnail image of the high-contrast photo page, right-click on that thumbnail and select insert page – from file. Then select the file containing the gray image of that photo. Verify that the correct photo has been inserted, and then delete the page with the high-contrast photo.
    - Repeat the last step for every photo page.
    - BE SURE TO SAVE THE NEW ASSEMBLED FILE BEFORE CLOSING!

4. For large plates:
    - If they are a folded sheet no larger than 11x17 inches, use the transparent sheet protector for scanning. Put the folded edge to the right, the printed side of the protector sheet up. Then flip front side down as for normal scanning and scan. Make sure the scanner is set to DUPLEX (double-sided) mode.
    - For sheets that are no larger than 11 inches tall but longer than 17 inches, you can usually scan them in Left- and Right-panels using the sheet protector by creatively folding them.
    - On occasion you may need to fold the left edge over, being careful to keep the border of the plate showing.
    - Larger plates need to be scanned in the flat-bed scanner.
    - As a courtesy to the reader, I have converted large plates to 8 ½ x 11 inches and inserted these in the appropriate position within the file. This is in case the reader wants to print the document. Then I append the large plates at 100% scale to the end of the file, so they can be viewed in enough detail to read easily. The 11x17-inch plates scanned with the sheet protector will print as-is, so long as the pdf print function is set to “Print to fit”.

APPENDIX VI
OCR wth Adobe Acrobat XI Pro®

1. For a single document:

(From the Adobe Acrobat Pro User's Guide)

a. Open the PDF file.

b. In Acrobat, select View > Tools > Text Recognition. The Text Recognition panel in the Tools pane opens.

c. Click In This File. Designate the desired pages and click OK. Acrobat applies OCR to the scanned document.

2. For multiple documents:

My supplementary information:

It is most time-efficient to run the OCR program on batches of pdf files because the process is very slow.

a. In Acrobat, select View > Tools > Text Recognition > In Multiple Files
b. You can designate which files to run in the window that pops up.
c. Select to save the OCR file in the same directory as the original file, and append the file name with _OCR. This will allow you to verify when viewing the file directory that the file has been OCR'd.

3. Always open the OCR'd file to verify its OCR status by observing the cursor as a vertical bar and being able to select text.

4. If you haven't already verified the correct orientation of every page, do it now by pressing F4 to reveal thumbnails of pages and scrolling down the thumbnails with the mouse wheel.

5. To correct orientation, select an individual page and then click on the curved arrow at the top of the menu. Select "90o CW, 90o CCW, or 180o". If several pages in a row need the same correction, you can select multiple thumbnails using the standard <Shift> <Left Click>.
   a. Be careful to designate only the page you have selected or the range of pages selected for changing the orientation!
6. Be sure to save the file with the corrected orientations before you exit!