

## **DATA GATHERING METHODOLOGY**

An important step in the development of a better understanding of the Igneous aquifer system was the gathering of additional well data. Figure 5 shows the distribution of existing wells in the TWDB groundwater database, wells visited and measured during this study, and wells not field-visited but selected from water well drillers' reports. The TWDB groundwater database currently contains 374 Igneous aquifer wells with information such as depth, construction, water level, and yield. Many of these wells include a water-quality analysis. Not included and not shown on Figure 5 are wells that are likely dual completed in both Bolson and Igneous aquifers in the Ryan Flat area near Valentine.

In the performance of this study, a significant amount of new water well field data was collected. Field staff worked closely with the groundwater conservation districts in the selection of wells to be surveyed. Field measurements were taken at 118 well sites, 85 sites of which had not been previously inventoried by TWDB staff. The static water level was measured in all 85 inventoried wells as well as in 33 wells that are already in the TWDB groundwater database. Specific conductance, a measure of water quality, was measured in 21 of the inventoried wells. Table 1 contains information and measurements made at the 85 inventoried well sites. Water levels were also measured in 6 TWDB monitoring wells for the purpose of comparing summer water levels with winter water levels. And lastly, supplemental data was added to the study database in the form of information gained from drillers' reports of 16 unvisited wells that were drilled since 1996. Data collected from this task were combined with existing data to form the aquifer information base from which this report was produced. Near the completion of the field data collection task, a public meeting was held in Alpine for the purpose of enlisting local knowledge and comments on the interpretation and evaluation of the data.

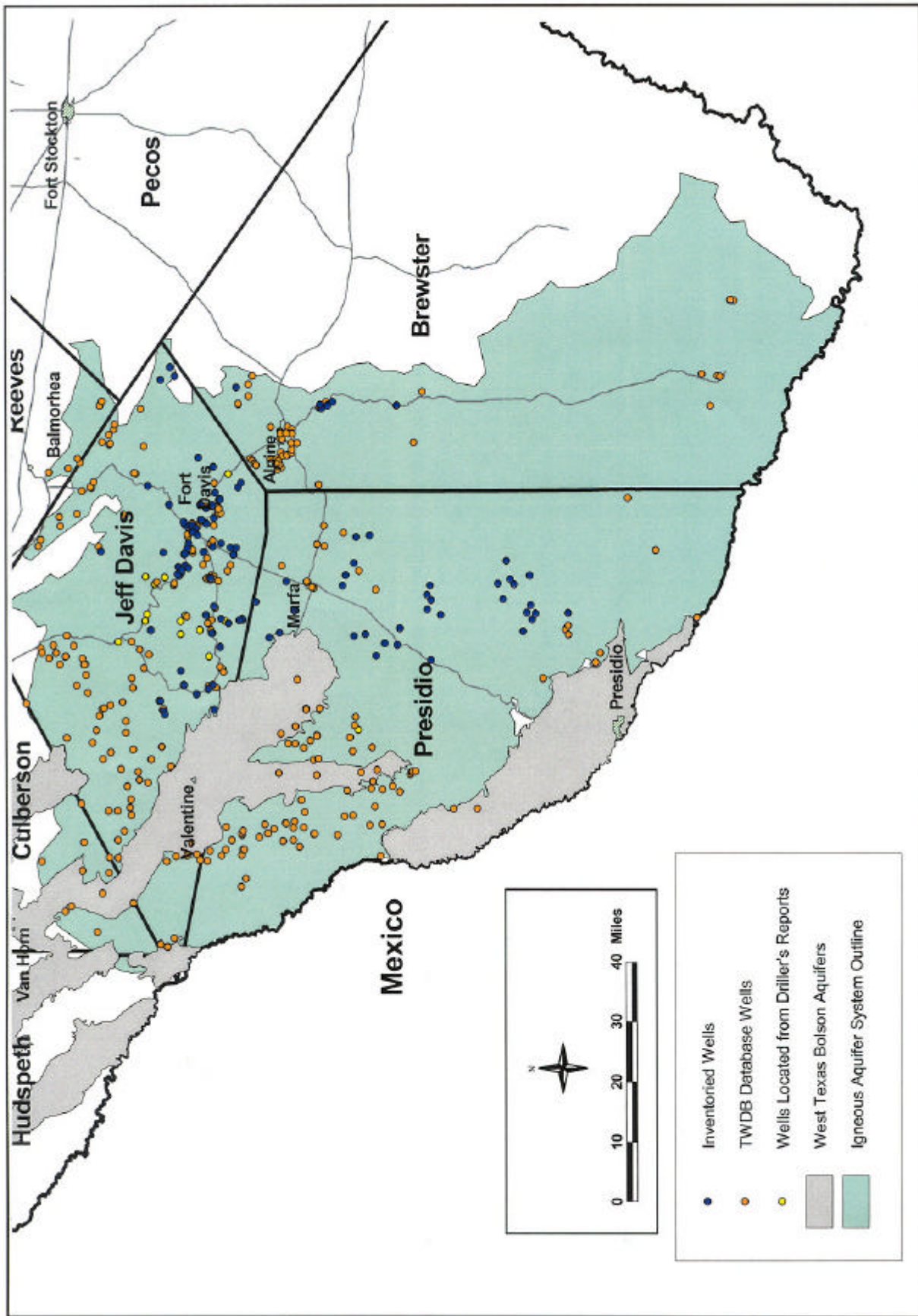


Table 1. Water Level and Water Quality Data for Inventoried Wells

State Grid No.	Latitude	Longitude	Year Drilled	Well Depth	Well Head Elev.	Water Level Date	Depth to Water	Water Level Elev.	Use	Pump Type	Casing Dia. (inch)	Est. Well Yield (gpm)	pH	Temp C °	Spec. Cond. (mmhos/cm)
<b>Brewster County</b>															
52-36-2	30.4854	103.5501			4116	08/16/01	61.9	4054	S	W	6				
52-44-7	30.2806	103.5992			5194	08/25/01	53.2	5141	H	S	6				
52-44-7	30.2792	103.6006	1996	300	5199	08/25/01	66.4	5133	H	S	6	1			
52-44-7	30.2828	103.5911	1984	120	5149	08/25/01	41.5	5108	H	S	6	40			510
52-44-7	30.2644	103.5919		150	5270	08/25/01	47.2	5223	H	S	6	15			410
52-44-7	30.2642	103.5919	1996	120	5275	08/25/01	59.5	5216	H	S	6	30			
52-44-7	30.2642	103.5939	1940	150	5302	08/25/01	49.0	5253	H	W	7				
52-44-7	30.2519	103.5842		165	5338	08/25/01	106.8	5231	H	S	6	14			
52-60-1	30.0976	103.5926	2001	265	4468	08/30/01	20.0	4448	I	S		60			
52-60-1	30.0969	103.5919	2001	600	4468	08/30/01	35.0	4433	I	S		150			
<b>Jeff Davis County</b>															
51-22-5	30.6719	104.3045		170	5275	06/08/01	32.3	5243	U	W	7				
51-22-5	30.6681	104.3051		84	5260	06/08/01	77.4	5183	U	W	7				
51-23-6	30.6921	104.1346			6038	06/21/01	202.9	5835	S	W	6				
51-24-9	30.6265	104.0007			5440	06/22/01	104.0	5336	S	W	6				
51-31-1	30.6197	104.2329		105	5780	06/18/01	58.3	5722	S	W	6				
51-31-8	30.5246	104.1747		100	5681	08/13/01	40.0	5641	S	S	6				
51-32-3	30.6234	104.0045			5305	06/22/01	307.5	4998	H	S	6	17	6.5	24.1	480
51-32-7	30.5221	104.1072		100	5501	08/13/01	86.9	5414	S	W	6				
51-32-7	30.5039	104.1180		100	5415	08/13/01	58.4	5357	H	S	6		7.8	22.6	394
51-40-1	30.4695	104.1098	1969	360	5268	08/13/01	129.7	5138	S	S	6				
51-40-1	30.4714	104.1063	1998	180	5238	08/13/01	136.7	5101	H	S	6		7.7	22.3	348
51-40-1	30.4783	104.1107	1935	100	5271	08/14/01	46.8	5224	S	S	6				
51-40-1	30.4773	104.1099	1964	125	5264	08/14/01	63.2	5201	H	S	6				
52-17-8	30.6614	103.9480			5275	06/21/01	308.3	4967	S	PJ	6				
52-18-6	30.6986	103.7878			4467	08/17/01	34.3		S	W	6				
52-18-7	30.6474	103.8338			4687	08/17/01	95.4	4592	H	S	6				
52-20-6	30.6684	103.5323			3998	08/16/01	40.9	3957	S	S	6		6.9	24	898
52-20-6	30.6683	103.5326			3998	08/16/01	47	3951	S	S	6				
52-20-6	30.6679	103.5323			3998	08/16/01	50.4	3948	S	S	6				
52-20-9	30.6339	103.5242			4097	08/16/01	71.4	4026	S	W	6				
52-20-9	30.6455	103.5020			4195	08/16/01	355.5	3840	S	S	6				356
52-25-1	30.6086	103.9802	1997	400	5180	06/07/01	183.2	4997	H	S	6	25	7.3	26	553
52-25-1	30.6253	103.9834		340	5235	06/07/01	234.2	5001	H	S	6	25	6.9	25	367
52-25-1	30.6174	103.9969	1988	440	5395	02/06/01	293.0	5102	H	S	5	11	7.6	26.1	315
52-25-1	30.6163	103.9897	2000	450	5200	06/09/01	197.0	5003	H	S	6	50	6.6	22.9	358
52-25-1	30.6008	103.9853			5320	06/21/01	281.7	5038	S	S	6				
52-25-3	30.5922	103.8992	1992	130	4955	06/05/01	75.5	4880	H	S	10	50			
52-25-3	30.5913	103.8834	2000	180	4950	06/05/01	94.3	4856	H	S		20			
52-25-3	30.6085	103.8820	1999	105	4815	06/06/01	33.0	4782	H	S	6	45			
52-25-3	30.6118	103.8750			4687	08/18/01	15.6	4671	H	S	120				
52-25-6	30.5826	103.8894			4945	06/21/01	51.5	4894	H	S	6				
52-26-3	30.5698	103.8693	1986	243	4954	06/21/01	154.8		S	S	6				
52-26-4	30.5579	103.8415			4840	06/21/01	34.0	4806	S	W		3			
52-26-7	30.5393	103.7195			4936	08/16/01	140.4		S	S	6				
52-27-4	30.5764	103.7195			4795	08/17/01	110.7	4684	S	W	6				
52-27-7	30.5411	103.7415			4618	08/16/01	178.8	4439	H	S	6		7.5	21.7	281

52-33-2	30.4917	103.9537	1994	330	5050	06/19/01	254.6	4795	H	S	6	25	6.9	24.6	528
52-33-2	30.4995	103.9365			5093	08/17/01	232.2	4861	S	S	6		7.6	22.6	232
52-34-2	30.4805	103.7918		140	4599	08/15/01	22.8	4576	P	S	6	25	7.5	22	259
52-34-3	30.4739	103.7802			4595	08/14/01	98.1	4497	S	W	6				

**Presidio County**

51-39-9	30.3810	104.1407			5053	06/20/01	388.0	4665	S	W	6				
51-39-9	30.4061	104.1523			5260	06/20/01	500.0	4760	U	W	6				
51-40-5	30.4379	104.0664	1969	525	5041	08/13/01	255.0	4786	S	W	6				
51-48-1	30.3451	104.0879			4843	06/20/01	302.0	4541	S	W	6				
51-48-3	30.3643	104.0177			4822	08/13/01	275.5	4547	I	S	10	350	7.6	22.5	389
51-55-6	30.2008	104.1481			4602	07/19/01	119.0	4483		W					
51-55-6	30.1733	104.1439			4759	07/19/01	286.5	4473		W					
51-55-8	30.1472	104.1958			4889	07/19/01	129.8	4759		W					
51-55-8	30.1261	104.1656			4278	07/19/01	456.0	3822		S					
51-56-3	30.2286	104.0269		540	4621	06/09/01	171.0	4451		S					760
51-56-3	30.2208	104.0017		189	4580	06/09/01	121.0	4462		S					360
51-56-3	30.2214	104.0019			4581	06/09/01	130.0	4451		S					
51-63-2	30.0958	104.1694			4839	07/19/01	125.2	4714		S					
51-63-3	30.0897	104.1292			4633	05/22/01	355.5	4278		W					
51-63-8	30.0144	104.2058			5057	07/19/01	325.0	4732		PJ					
51-64-7	30.0231	104.0839		162	4519	06/08/01	87.0	4432		S					
51-64-8	30.0136	104.0617		157	4274	06/08/01	10.0	4264		S					
51-64-8	30.0233	104.0492			4298	06/08/01	111.0	4187		W					
51-64-9	30.0164	104.0264			4164	06/08/01	64.0	4099		W					
52-49-4	30.2011	103.9725		200	4591	06/09/01	132.0	4459		W					380
52-49-6	30.1956	103.9106		300	4664	06/09/01	10.0	4654		S					
52-49-6	30.1958	103.9103			4664	06/09/01	10.0	4654	H	W					490
73-09-4	29.8308	103.9670		250	3825	06/07/01	170.0	3655	H	S					
74-08-1	29.9908	104.0967		102	4541	06/08/01	64.0	4477		S					
74-15-9	29.7903	104.1356		190	3908	06/26/01	170.0	3739		S					
74-16-2	29.8394	104.0592		50	3759	06/08/01	33.0	3727		S		15			
74-16-3	29.8519	104.0219		500	3762	06/08/01	60.0	3702	H	S		20			
74-16-6	29.8222	104.0105			3710	06/07/01	43.0	3668		S					
74-16-6	29.8130	104.0231			3690	06/07/01	79.0	3612		W					
74-16-7	29.7606	104.0931		220	3641	06/26/01	160.0	3482		S					280
74-16-7	29.7817	104.0911		150	3688	06/26/01	6.0	3684		W					
74-16-7	29.7686	104.1075		150	3734	06/26/01	130.0	3604	H	S					
74-16-8	29.7722	104.0736		150	3583	06/26/01	37.0	3546		W					
74-16-9	29.7748	104.0018			3577	06/07/01	17.0	3561		W					
74-24-4	29.6817	104.0914		225	3566	06/26/01	215.0	3352		W					

Latitude and Longitude in decimal degrees

gpm = gallons per minute

Use = Primary use of well: S = Stock, H = House, I = Irrigation, and U = Unused

Pump Type: W = Windmill, S = Submersible pump, and PJ = Pumpjack

C° = temperature in degrees Centigrade

mmhos = micromhos, a measurement of conductivity