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Subject: Letter of Transmittal for the donation of the Alex S. Broun Geologic Collection

Dear Linda and Nathan,

This letter accompanies a body of work and is meant to provide an inventory and general description of the "Alex S. Broun Geologic Collection". The collection will provide a foundation for anyone working on the stratigraphy, structure, facies, and hydrogeology of the Cretaceous Trinity Group of Central Texas.

Since about 2000 through 2019, Alex S. Broun volunteered his geologic expertise and time at the Hays Trinity Groundwater Conservation District. Bringing his many years of expertise as an exploration petroleum geologist, he emphasized basic geologic studies involving the collection of cuttings from drilled wells, describing them in detail, and correlating them to geophysical logs. This information has provided the foundation for key stratigraphic and hydrogeologic studies of surrounding groundwater districts and publications such as Wierman et al., (2010), Hunt et al., (2020), and Broun et al. (2020) among many others.

Inventory and Explanation of Materials

There are two portions of the donation: 1) the well cuttings and associated descriptions and geophysical logs and 2) a digital compilation of formation picks and associated geophysical logs.

1. Cuttings Database (Appendix 1)

Central to the work of Alex S. Broun and the donation is the compilation of cuttings from about 113 wells with many (63%) having detailed descriptions ("notes"), and most (81%) having an associated geophysical log (**Table 1, Figure 1, and Appendix 1**). The work represents thousands of hours of detailed lithologic and stratigraphic analyses. Most of the collection contains cuttings from 10- to 20-ft intervals that have been washed and bagged (**Figure 2**). The database is provided as a spreadsheet with folders containing the notes and geophysical logs all in digital PDF format.

Table 1. Inventory of Cuttings Database

Material	No. wells
Cuttings	113
Detailed descriptions of cuttings (notes)	72
Geophysical or geologic logs of wells with cuttings	92

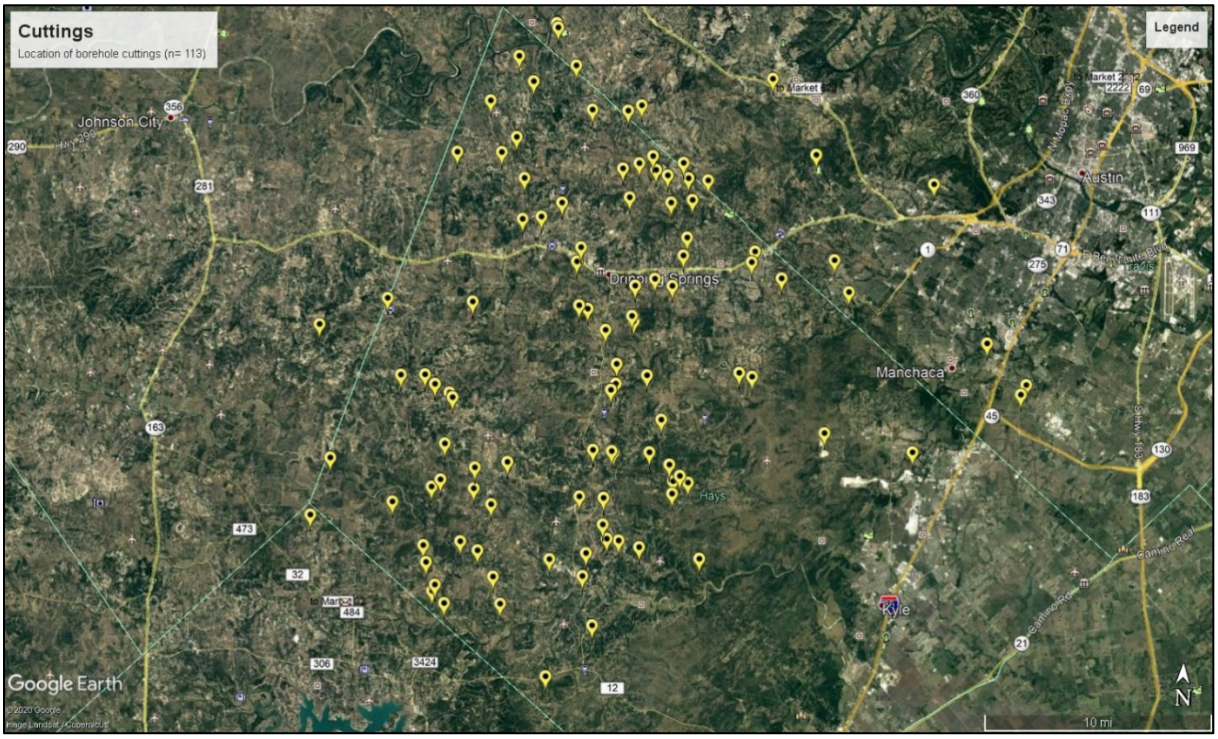

Figure 1. Location map of sites with cuttings, mostly from Hays County, central Texas (n=113).

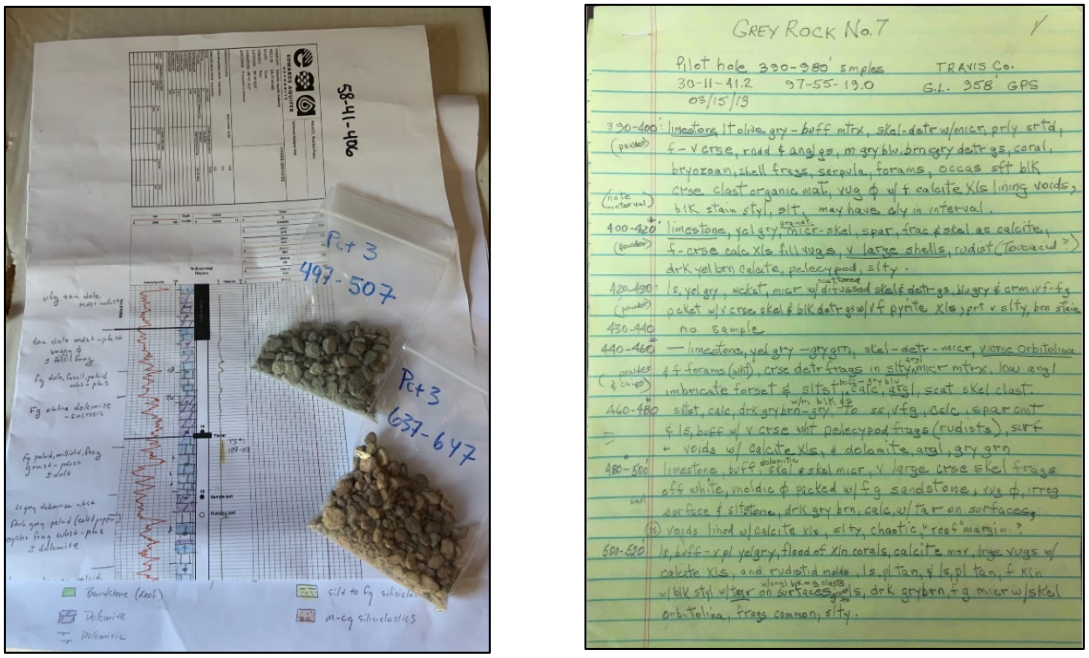

Figure 2. Example of washed and bagged cuttings and corresponding geophysical log, and example of description of cuttings.

2. Geologic Database

This electronic database (spreadsheet) (Appendix 1) contains surface and subsurface lithostratigraphic formation contacts, or "picks". The database is described in detail in Cockrell et al. (2018) and Cockrell et al. (2020). The database contains geologic formation elevations from about 1000 locations (**Figure 3**), primarily wells, but includes some outcrop locations. More than half of the sites (n=592) are based upon geophysical logs that are accompanying the spreadsheet. This database also contains the sites and logs within the cuttings database. The database is provided as a spreadsheet and a folder with the accompanying geophysical logs (PDF format).

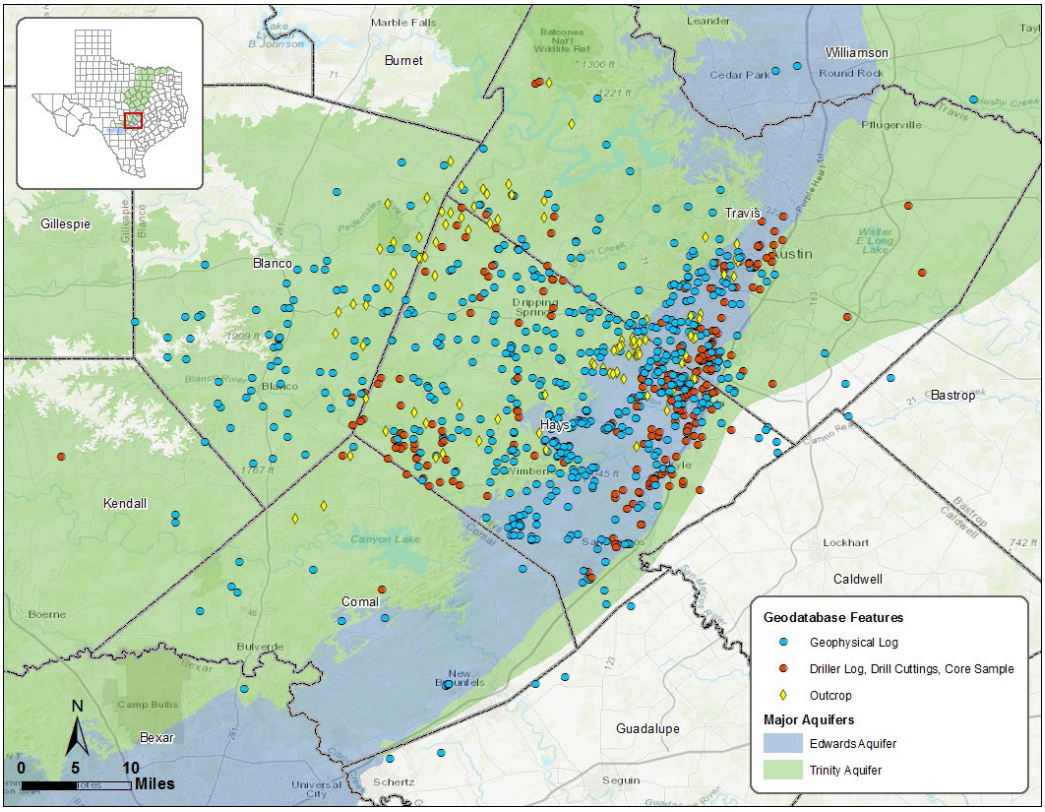

Figure 3. Map showing the distribution of geologic control (formation picks). Map from Cockrell et al (2018). There are over 590 geophysical logs within the database.

About the Donation:

The data and information contained in this collection was predominantly the product of Al Broun's voluntary donation of time and expertise. The work was done for the benefit of the Hays Trinity Groundwater Conservation District and other groundwater conservation districts in the region, which are political subdivisions of the state. Alex S. Broun supports the donation of this material to the BEG. Ultimately, the donation has been facilitated by the following individuals and their corresponding agencies:

Charlie Flatten (GM), Philip Webster, and Keaton Hoelscher
Hays Trinity Groundwater Conservation District

Brian B. Hunt, P.G., and Brian A. Smith, P.G., Ph.D.
Barton Springs/Edwards Aquifer Conservation District

Douglas A. Wierman, P.G.
Blue Creek Consulting LLC

Acknowledgements

Numerous individuals and agencies have contributed to this collection over the years. Individuals include: Rick Broun, Joe Vickers, Steve Bond, Jeff Watson, Lane Cockrell, past HTGCD board members, Ron Fieseler, Paul Tybor, John Mikels, Lynne Fahlquist, Rob Esquilin, Steve Johnson, Lane Cockrell, Robin Gary, and Nico Hauwert. Agencies that provided data include the Texas Water Development Board, Bureau of Economic Geology, City of Austin, Hays Trinity Groundwater Conservation District, Barton Springs/Edwards Aquifer Conservation District, Edwards Aquifer Authority, Blanco Pedernales Groundwater Conservation District, and numerous well drillers and landowners.

References

Broun, Alex S., Brian. B. Hunt, Jeffery A. Watson, and Douglas A. Wierman, 2020, A Reevaluation of the Lithostratigraphy and Facies of the Lower Cretaceous Hensel Sand–Lower Glen Rose Transition, Comanchean Shelf, Blanco and Hays Counties, Central Texas. GCAGS Journal, v. 9 (2020), p. 76–92. http://www.gcags.org/Journal/2020.GCAGS.Journal/2020.GCAGS.Journal.v9.05.p76-92.Broun.et.al.pdf

Cockrell, L., B.B. Hunt, R. Gary., B.A. Smith, 2018, Regional Geologic Geodatabase Project, Central Texas. Barton Springs Edwards Aquifer Conservation District. Data Series Report 2018-1211. December 2018. 14 p. https://bseacd.org/uploads/Cockrell-et-al.-2018_Geology_Geodatabase.pdf

Cockrell, L.P., Gary R.H., Hunt, B.B., and Smith, B.A., 2020, Data Compilation and Database Structure for the Geodatabase Accompanying the Hydrogeologic Atlas of Southwest Travis County, Central Texas: Barton Springs/Edwards Aquifer Conservation District (BSEACD) Data Series Report 2020-0721, July 2020, 15 p. + digital geodatabase. https://doi.org/10.18738/T8/O8OO64

Hunt, B.B., Cockrell, L.P., Gary, R.H., Vay, J.M., Kennedy, V., Smith, B.A., and Camp, J.P., 2020, Hydrogeologic Atlas of Southwest Travis County, Central Texas. BSEACD Report of Investigations 2020-0331 March 2020, 80 p. + digital datasets. https://repositories.lib.utexas.edu/handle/2152/81562

Wierman, D.A., A.S. Broun, and B.B. Hunt (Eds), 2010, Hydrogeologic Atlas of the Hill Country Trinity Aquifer, Blanco, Hays, and Travis Counties, Central Texas: Prepared by the Hays-Trinity, Barton/Springs Edwards Aquifer, and Blanco Pedernales Groundwater Conservation Districts, July 2010, 17 plates+DVD. https://repositories.lib.utexas.edu/handle/2152/8977

Appendix 1: List of Borehole Cuttings

MASTER ID	WELL OWNER OR NAME	NOTES	LOG	WELL DEPTH FT	DDLAT	DDLONG	COMMENTS
139590	Chris Jones	N	N	370	30.310556	-98.116667	
153840	Lippi	N	N	600	30.228889	-98.027500	
174152	Joe Vickers	Y	N	500	30.250556	-98.067500	Cuttings 410-500
196648	Sparks	N	N	780	30.068889	-98.051112	
200105	Houghton	N	N	400	29.998889	-98.120555	
213370	Berdoll	N	N	520	30.187500	98.053889	lost circulation below 215 ft
239567	Seale	N	N	430	30.157501	-98.100556	
269901	Doerr	N	N	250	30.238056	-98.150834	
315214	Joe Peter Well	N	N	450	30.117222	-98.055278	
333416	Specin	N	N	200	29.979722	-98.203056	
523359	Austin Getaway	Y	N	705	30.068819	-98.200306	
545767	Travis County Monitor well #2	N	N	857	30.337431	-98.132206	
5747603	MarkWilkerson	Y	Y	330	30.299412	-98.147315	not a geophysical log but "completion log"
5747904	RobertJacobsWellNo.1	Y	Y	462	30.263700	-98.157900	
5748705	RiverOaksSubdivisionWellNo.2	Y	Y	810	30.283000	-98.103400	
5748811	Whisenant&LyleOffice	Y	Y	844	30.255419	-98.057708	
5748912	GranerWellNo.1,LaFronteraSub.	Y	Y	770	30.252000	-98.035200	
5755705	EmsWellNo.1	Y	Y	505	30.158700	-98.246600	
5755803	BoydDreyer	N	Y	475	30.158816	-98.184577	notes on log
5756205	HHSTestWell	N	Y	850	30.243670	-98.046370	
5756480	RogerHanksParkWellNo.1	Y	Y	440	30.196000	-98.107400	
5756518	ForemanWellNo.1	Y	Y	320	30.178200	-98.052500	
5756521	LeonMobergStarsHollow	N	Y	505	30.173333	-98.066722	
5756714	MyersDupuit	Y	Y	484	30.159444	-98.106944	
5763204	PumpStationNo.1BillDunnW.A.S.	Y	Y	560	30.101000	-98.198500	
5763504		Y	Y	380	30.046089	-98.202302	detailed report
5763603	DryCypressNo.1Byrum	Y	Y	483	30.058900	-98.154200	
5764203	HeatherwoodDevelopmentWellNo.1	Y	Y	342	30.122700	-98.077600	
5764403	Kelly'sCountryWellNo.1	Y	Y	460	30.068900	-98.092300	
5764607	LoyalLowe	Y	Y	860	30.054840	-98.028225	530-870 samples
5764613	DriftwoodMultiport	N	Y	846	30.050842	-98.022083	some litho description on log
5764717	SabinoRanchNo.1	Y	Y	755	30.003700	-98.094100	
5764807	Pin #2 (Pinnacle Ridge)	N	N	860	30.013334	-98.079444	
5764808	Pin #1 (Pinnacle Ridge)	N	N	900	30.012501	-98.070722	
5764906	HermosaPalomaNo.2	Y	Y	900	30.003200	-98.011400	
5841406	TravisCountyPct.3	Y	Y	860	30.307500	-97.972500	
5849413	BelterraFosterRanchWellNo.1	Y	Y	903	30.198100	-97.980300	duplicate
5849516	GreyRock7	Y	Y	997	30.194778	-97.921944	Cuttings 390-980, Ream Cuttings 660-1000
5849615	SpillarWellNo.1	Y	Y	1210	30.175100	-97.910400	hard copy description notes with samples; log scan has description
5850131	St. Andrew's School Well No.3	N	Y	840	30.245391	-97.8513	
5850864	Onion Creek Country Club	N	Y	1530	30.146375	-97.80767	
5858305	Texas Disposal Systems	N	Y	1100	30.114913	-97.78152	
5858431	Antioch Westbay Well	N	Y	1370	30.075812	-97.8591	
6807301	LasMisionesWellNo.3	Y	Y	460	29.986400	-98.161000	
6808401	CieloRanchWellNo.1	Y	Y	860	29.925300	-98.119600	
67646204	Heatherwood No. 2	Y	N		30.123611	-98.077778	
57473STA	BentreeRV	N	Y	205	30.334190	-98.131124	
57473TC1	Travis County Monitor Well #1--Plugged	N	Y		30.336892	-98.132257	touches paleozoic; plugged and abandoned

MASTER ID	WELL OWNER OR NAME	NOTES	LOG	WELL DEPTH FT	DDLAT	DDLONG	COMMENTS
57476WR	MirasolHillsRanch,LLCWinnRanch	Y	Y	330	30.315147	-98.158761	duplicate?
57478DJ1	DonnyJonesWellNo.1	Y	Y	280	30.252800	-98.200800	
57478K1	KeyesNo.1WellBillKeyes	Y	Y	360	30.286100	-98.178100	
57483LH	LarryHoffman	N	Y	300	30.356946	-98.036486	
57488JS	JeffScottWellNo.2	Y	Y	800	30.283300	-98.077300	
57488SAL	Saleh2	Y	Y	580	30.287087	-98.067539	
57488VR	VailRiverWellNo.1	Y	Y	460	30.253800	-98.168300	
57548JR	Oswald,Joseph	N	Y	760	30.140333	-98.295222	
57553BLE	BleakleyNo.2	N	Y	640	30.212200	-98.150900	
57553BW	BeulahWellNo.1	Y	Y	540	30.214167	-98.137222	
57561SPO	Spoede	N	Y	800	30.223556	-98.122667	no desc on log
57562BMI	BillMitchell	N	N	761	30.226667	-98.043056	
57562DIST	TreatyOakDistillery	N	Y	840	30.246789	-98.055068	
57562FW	FarmerWellNo.1	Y	Y	645	30.246800	-98.079300	
57562PW	PondWellNo.2DoubleLRanch	Y	Y	800	30.228800	-98.073500	
57563TJ	TimJennings	N	N	Null	30.242492	-98.031107	Cuttings 400-755
57563TJ2	Jennings	Y	N	755	30.242806	-98.030574	Cuttings 500-741
57564PFU	Pfullmann	Y	Y	361	30.186960	-98.109950	180-340
57566GC	GardenCenterNo.2	Y	Y	615	30.193600	-98.032500	lithologic log
57566KAY	JackKay	N	N	920	30.205000	-98.030278	
57566ST	SmithTHNo.2	Y	Y	501	30.174200	-98.039600	
57567ROB	RobuckWellNo.3	Y	Y	383	30.144700	-98.086900	
57568DS	DrippingSpringsWSCTW1-RB	N	Y	450	30.154200	-98.068100	
57568FLY	Flying"L"LivestockNo.1	N	N	340	30.150800	-98.066700	
57626CRA	EstateofCatherineAnnCraft	Y	N	220	30.056667	-98.283333	
57628WES	Wessendorff	Y	N	317	30.020250	-98.295861	
57631DS	DickScottRanchWell	Y	Y	500	30.106000	-98.209300	No. 3 well
57631DS2	DickScott2	Y	Y	815	30.111694	-98.216833	
57631ING	Ingrisano	Y	Y	465	30.110800	-98.234400	lithologic log
57632FR	FaithRanchDunn-heatexchange	Y	Y	300	30.098100	-98.196100	
57633BW	BischoffWellNo.1	Y	Y	710	30.241700	-98.016700	
57635LW	LedermanWellNo.1	Y	Y	305	30.041300	-98.208600	cuttings description on log
57635WW	WillisWellNo.1	N	Y	582	30.054600	-98.177700	
57637CUR	Currie	Y	Y	670	30.030806	-98.236611	
57637MW	ManessWellNo.2MickeyManess	Y	Y	280	30.004200	-98.212800	
57638GLA	Glattly	N	Y	340	30.007694	-98.185972	no desc on log
57638HW	HodgesWellNo.1	Y	Y	480	30.041400	-98.177800	
57638WW	WallaceWellNo.1RustyWallace	Y	Y	610	30.002500	-98.173100	
57639BW	BassWellNo.1	Y	Y	360	30.031900	-98.164700	
57642LV5	LaVentanaNo.5	Y	Y	380	30.089717	-98.043469	
57642NAP	Fournier,Steve&Jacquilyn	Y	Y	480	30.111112	-98.077778	
57642ST	SteveTuckerNo.1	Y	Y	460	30.107100	-98.081100	
57645ND	N.DobieLaneWellNo.2	Y	Y	560	30.068600	-98.078600	
57645WYN	Wynne,George	N	Y	600	30.067778	-98.077222	not geophysical log, completion log
57646INT	Lowden	N	Y	885	30.061667	-98.036194	
57646OD2	Odell_2	N	Y	840	30.051341	-98.032934	
57646OD3	Odell_3	N	Y	846	30.043474	-98.033344	
57647EN	Eagles Nest	Y	N		30.039194	-98.100694	
57648DW	DunhamWellNo.1	N	Y	710	30.008900	-98.055600	
57648GRE	GrecoNo.1	N	Y	520	30.022200	-98.082800	lithologic log
57648SKY2	SkylinePWS	Y	Y	787	30.039017	-98.083071	600-760 samples
58418AZ	AustinZoo	N	Y	920	30.260722	-97.938472	
58494RS	RoosterSpringsNo.2-heatexchange	Y	Y	320	30.191300	-97.982400	
58494SH	SignalHillRoadWell,RegalOaks	Y	Y	905	30.181900	-97.960100	
58495GR6	Grey Rock #6	N	Y	840	30.195045	-97.92205	
58571DS	Downstream	N	Y	540	30.121311	-97.988131	
58571WIL	Wilson	Y	Y	810	30.119167	-97.978611	
58572OB	KBDJ, MT Observation Well	N	Y	1040	30.085583	-97.92403	

MASTER ID	WELL OWNER OR NAME	NOTES	LOG	WELL DEPTH FT	DDLAT	DDLONG	COMMENTS
58583TDS	Texas Disposal Systems	N	N	800	30.121162	-97.7778	test well, cuttings only
68071SHE	Shellman	Y	Y	320	29.993700	-98.210200	
68072LES	LeschNo.1	Y	Y	320	29.968300	-98.195800	
68072ROH	RohanNo.1	Y	Y	200	29.975700	-98.204900	
68073STE	Steinau1	Y	Y	280	29.969444	-98.155000	
68081HAL	William&LindaHales	Y	Y	560	29.989111	-98.096000	
68081PW	Panarama/Westmoreland	Y	Y	560	29.958500	-98.087400	