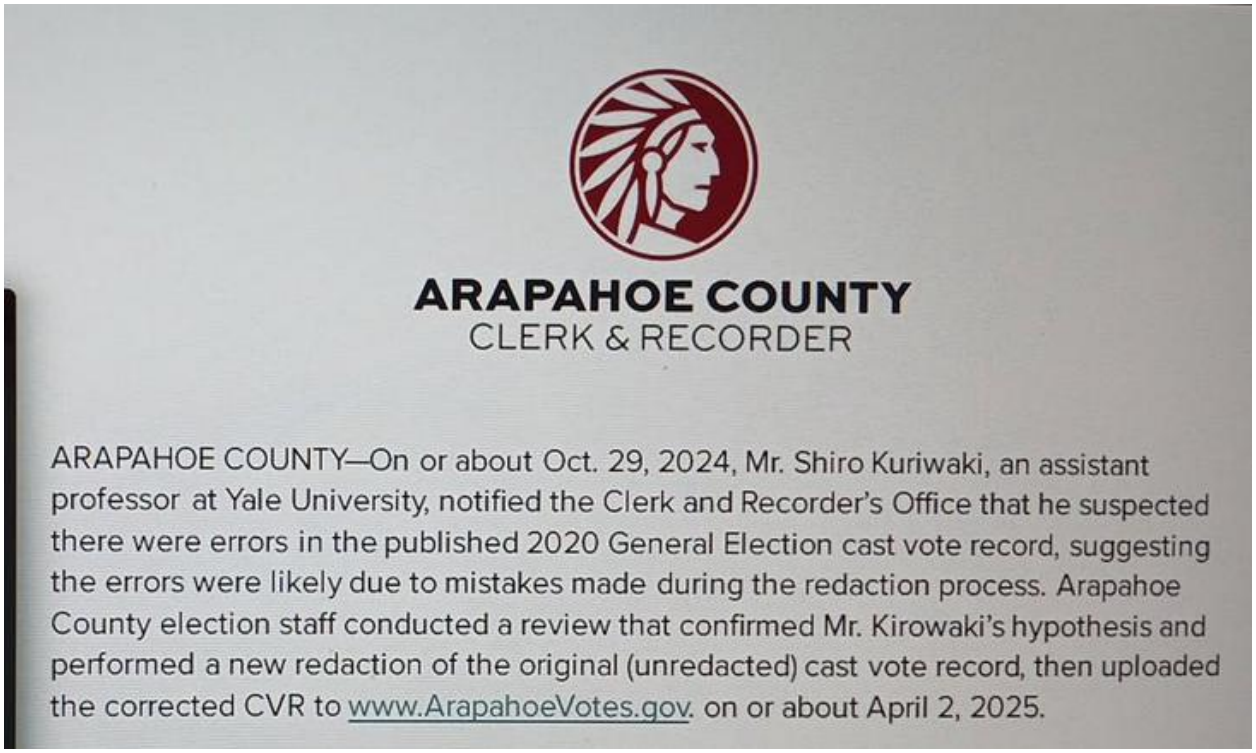
ARAPAHOE COUNTY, COLORADO – 2020 CVR EDIT ANALYSIS
by Jeff O'Donnell
May 21, 2025

I. BACKGROUND

The Cast Vote Record file (CVR) from Arapahoe County, Colorado, produced from the Dominion Voting Systems software (version 5.11.3.1) was provided via CORA requests as well as being published on the county's official website. The file is marked as redacted, meaning that some ballots contained in the Cast Vote Record were removed to protect the voter's identity. (Typically, this involves very small precincts with 10 or less voters).

On or about April 2nd, 2025, the county replaced the CVR file with a new "corrected" version. This explanation was given by the county:



ARAPAHOE COUNTY
CLERK & RECORDER

ARAPAHOE COUNTY—On or about Oct. 29, 2024, Mr. Shiro Kuriwaki, an assistant professor at Yale University, notified the Clerk and Recorder's Office that he suspected there were errors in the published 2020 General Election cast vote record, suggesting the errors were likely due to mistakes made during the redaction process. Arapahoe County election staff conducted a review that confirmed Mr. Kirowaki's hypothesis and performed a new redaction of the original (unredacted) cast vote record, then uploaded the corrected CVR to www.ArapahoeVotes.gov. on or about April 2, 2025.

This statement was put out after election researcher Edward Solomon discovered the change shortly thereafter and publicly reported it.

II. DIFFERENCES OBSERVED IN THE TWO VERSIONS

While the two files have the same number of ballots represented, it is immediately obvious that they were not identical.

The first difference observed is that column F of the original CVR spreadsheet, the "CountingGroup" column, had been removed in the edited version. This is important information that specifies the manner that the vote was cast – in person, early, or by mail. Secondly, the edited version was sorted by the "Precinct Portion" – the code assigned to precincts – while the first was sorted by Column A, the "CVR Number" field (which is a unique number that allows the order that the ballots were processed to be known). Sorting the edited file by Column A made most of the two spreadsheets match, except for

the last record being different between them.

Each column starting with column H in the original and G in the edited CVRs specifies a candidate or, in the case of an amendment or proposition, the possible answers. The first 34 columns of this data match up between the files. The remaining 145 do not, giving the immediate appearance that these votes had been "shuffled" so as to associate them with different ballots.

III. DETAILED OBSERVATION/EXPLANATION

When viewing the two CVR spreadsheets in their supplied form, it can be seen that while the first 34 columns do not match (which you would expect, as they were sorted differently). However, the remaining 145 columns *do match* to a large extent. For instance, here are the beginning columns of the *original* CVR, which shows the votes for Presidential candidates.

2020 Arap 5.11.3.1

								President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	President
								Joseph R.	Donald J.	Don Blank	Bill Hamm	Howie Ha	Blake Hub	Jo Jorgens	Brian Carr	Mark Cha	Phil Collir	Roque "Rc	Dario Hun	Princess A	Alyson Ke	Joseph Ki	Kyle Kenle	Gloria La I	Joe McHu	Brock Pier	Jordan "C	Kanye We	
CvrNumbe	Tabulator	BatchId	RecordId	Imprinted	CountingG	PrecinctPa	BallotType	DEM	REP	ACN	UNI	GRN	APV	LBR	AMS	UAF	PRB	ALL	PRO	UAF	SWP	SOE	IAM	SLB	UAF	UAF	UAF	UAF	
1	4	1	50	4/1/1950	Mail	126030314	44	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	4	1	33	4/1/1933	Mail	126030312	62	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	4	1	32	4/1/1932	Mail	126030313	33	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	4	1	23	4/1/2023	Mail	126030311	41	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	4	1	17	4/1/2017	Mail	126030313	33	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	4	1	8	4/1/2008	Mail	126030313	33	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	4	1	2	4/1/2002	Mail	626380317	43	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	4	1	73	4/1/1973	Mail	126030310	39	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	4	1	72	4/1/1972	Mail	626030316	61	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	4	1	45	4/1/1945	Mail	629420351	29	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	4	1	44	4/1/1944	Mail	626380315	43	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	4	1	35	4/1/1935	Mail	126030313	33	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	4	1	34	4/1/1934	Mail	126030313	33	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	4	1	18	4/1/2018	Mail	126030311	41	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	4	1	9	4/1/2009	Mail	126030313	33	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	4	1	6	4/1/2006	Mail	126030313	33	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	4	1	95	4/1/1995	Mail	126030312	39	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	4	1	94	4/1/1994	Mail	629360338	17	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	4	1	93	4/1/1993	Mail	629360338	17	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	4	1	92	4/1/1992	Mail	626380315	43	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	4	1	79	4/1/1979	Mail	626380317	43	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	4	1	78	4/1/1978	Mail	627380319	65	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	4	1	63	4/1/1963	Mail	626380315	43	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	4	1	62	4/1/1962	Mail	626380315	43	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	4	1	49	4/1/1949	Mail	626380316	43	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	4	1	24	4/1/2024	Mail	131090313	31	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	4	1	12	4/1/2012	Mail	126030313	33	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	4	1	5	4/1/2005	Mail	126030313	33	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	4	1	87	4/1/1987	Mail	626380316	43	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	4	1	86	4/1/1986	Mail	626380316	43	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	4	1	85	4/1/1985	Mail	626380315	43	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	4	1	84	4/1/1984	Mail	626380317	43	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	4	1	57	4/1/1957	Mail	626380314	60	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

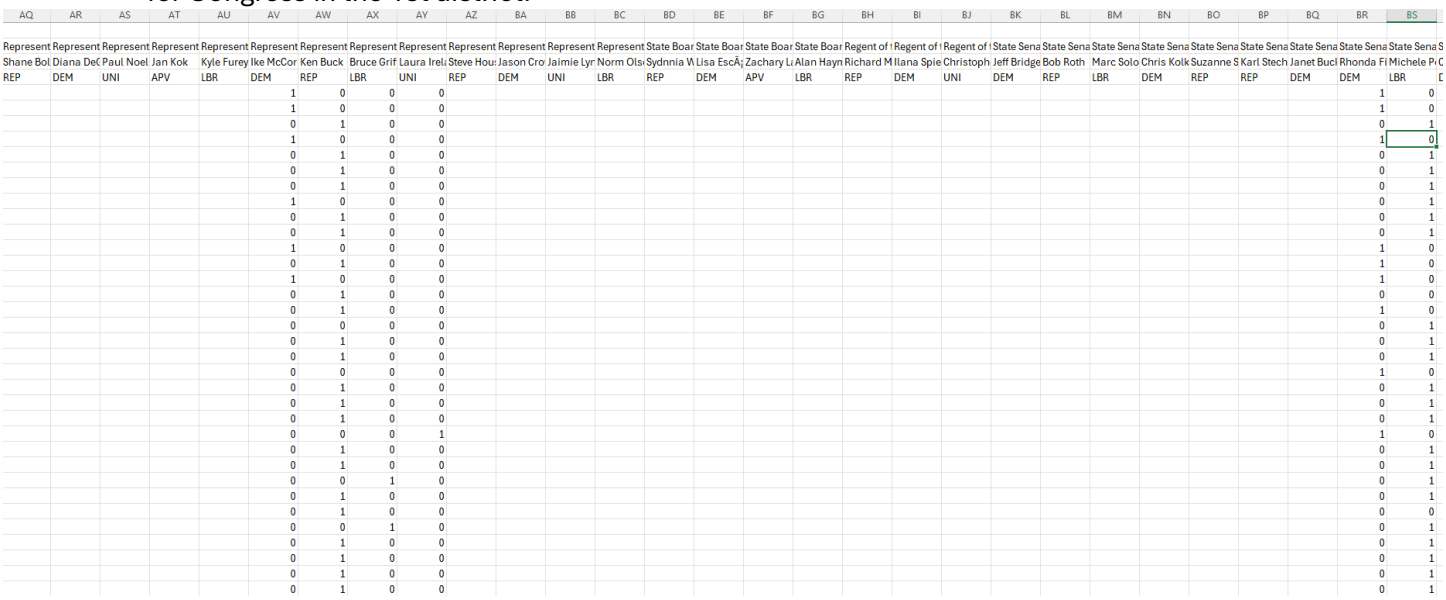
These are the beginning columns of the *edited* CVR.

2020 Arap 5.11.3.1

							President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	President	P
							Joseph R.	Donald J.	Don Blank	Bill Hamm	Howie Ha	Blake Hub	Jo Jorgens	Brian Carr	Mark Cha	Phil Collir	Roque "Rc	Dario Hun	Princess A	Alyson Ke	Joseph Ki	Kyle Kenle	Gloria La I	Joe McHu	Brock Pier	Jordan "C	Kanye We	Write-in	K
CvrNumbe	Tabulator	BatchId	RecordId	Imprinted	PrecinctPa	BallotType	DEM	REP	ACN	UNI	GRN	APV	LBR	AMS	UAF	PRB	ALL	PRO	UAF	SWP	SOE	IAM	SLB	UAF	UAF	UAF	UAF		
102204	5	120	57	5-120-57	429560336	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102757	8	84	20	8-84-20	429560336	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103890	9	157	36	9-157-36	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10462	6	40	22	6-40-22	429560336	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105146	6	166	12	6-166-12	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105167	6	166	49	6-166-49	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105984	8	90	62	8-90-62	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106047	8	90	61	8-90-61	429560336	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106378	6	172	93	6-172-93	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109189	6	179	9	6-179-9	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109198	6	179	76	6-179-76	429560336	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109200	6	179	60	6-179-60	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109207	6	179	91	6-179-91	429560336	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109257	6	179	64	6-179-64	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109468	4	202	24	4-202-24	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
116499	3	121	5	3-121-5	429560336	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
122201	5	144	83	5-144-83	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
122202	5	144	82	5-144-82	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123715	5	147	90	5-147-90	429560336	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123772	6	207	84	6-207-84	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125165	3	132	3	3-132-3	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125199	3	132	20	3-132-20	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125235	3	132	49	3-132-49	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125242	3	132	6	3-132-6	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125244	3	132	4	3-132-4	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125743	11	3	13	11/3/2013	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125781	11	3	16	11/3/2016	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125802	11	3	17	11/3/2017	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125845	11	3	14	11/3/2014	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
126951	11	11	146	11-11-146	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127038	11	12	103	11-12-103	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127093	11	12	107	11-12-107	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127096	11	12	104	11-12-104	429560336	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

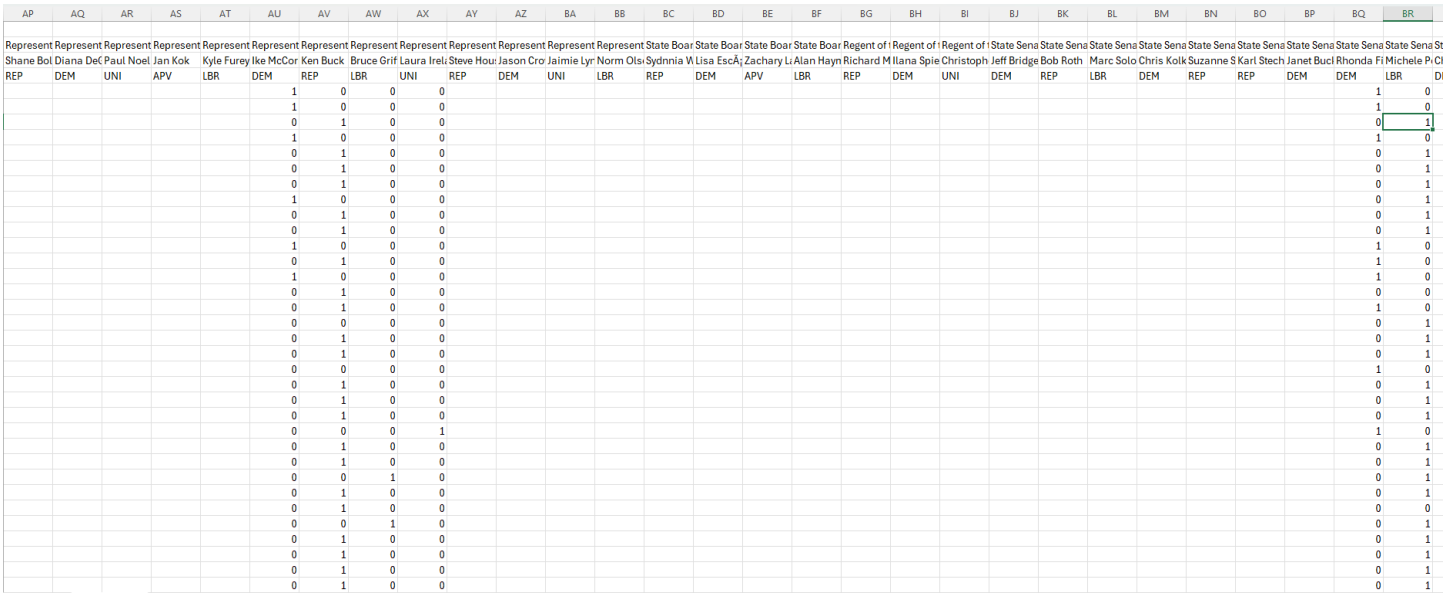
You can observe that they are quite different in the columns with votes. You can also observe the different sorting mechanisms… the original by CVR Number and the edited version by Precinct Portion code.

Below shows columns from the original file further to the right, starting with the race for Representative for Congress in the 1st district.



AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS
Represent	Represent	Represent	Represent	Represent	Represent	Represent	Represent	Represent	Represent	Represent	Represent	Represent	State Boar	State Boar	State Boar	State Boar	Regent of	Regent of	Regent of	State Sena	State Sena	State Sena	State Sena	State Sena	State Sena	State Sena	State Sena	State Sena
Shane Bol	Diana DeC	Paul Noel	Jan Kok	Kyle Furey	Ike McCor	Ken Buck	Bruce Grif	Laura Irel	Steve Hou	Jason Cro	Jaimie Lyr	Norm Olse	Sydnnia W	Lisa EscÃ¡	Zachary L	Alan Hayn	Richard M	Ilana Spie	Christoph	Jeff Bridge	Bob Roth	Marc Solo	Chris Kolk	Suzanne S	Karl Stech	Janet Bucl	Rhonda Fi	Michele P
REP	DEM	UNI	APV	LBR	DEM	REP	LBR	UNI	REP	DEM	UNI	LBR	REP	DEM	APV	LBR	REP	DEM	UNI	DEM	REP	LBR	DEM	REP	REP	DEM	DEM	LBR
					1	0	0	0																			1	0
					1	0	0	0																			1	0
					0	1	0	0																			0	1
					1	0	0	0																			1	0
					0	1	0	0																			0	1
					0	1	0	0																			0	1
					0	1	0	0																			0	1
					1	0	0	0																			0	1
					0	1	0	0																			0	1
					0	1	0	0																			0	1
					1	0	0	0																			1	0
					0	1	0	0																			1	0
					1	0	0	0																			1	0
					0	1	0	0																			0	0
					0	1	0	0																			1	0
					0	0	0	0																			0	1
					0	1	0	0																			0	1
					0	1	0	0																			0	1
					0	0	0	0																			1	0
					0	1	0	0																			0	1
					0	1	0	0																			0	1
					0	1	0	0																			0	1
					0	0	0	1																			1	0
					0	1	0	0																			0	1
					0	1	0	0																			0	1
					0	0	1	0																			0	1
					0	1	0	0																			0	1
					0	1	0	0																			0	1
					0	1	0	0																			0	1

Below shows the same portion of the *edited* file.



AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR
Represent	Represent	Represent	Represent	Represent	Represent	Represent	Represent	Represent	Represent	Represent	Represent	Represent	State Boar	State Boar	State Boar	State Boar	Regent of	Regent of	Regent of	State Sena	State Sena	State Sena	State Sena	State Sena	State Sena	State Sena	State Sena	State Sena
Shane Bol	Diana DeC	Paul Noel	Jan Kok	Kyle Furey	Ike McCor	Ken Buck	Bruce Grif	Laura Irel	Steve Hou	Jason Cro	Jaimie Lyr	Norm Olse	Sydnnia W	Lisa EscÃ¡	Zachary L	Alan Hayn	Richard M	Ilana Spie	Christoph	Jeff Bridge	Bob Roth	Marc Solo	Chris Kolk	Suzanne S	Karl Stech	Janet Bucl	Rhonda Fi	Michele P
REP	DEM	UNI	APV	LBR	DEM	REP	LBR	UNI	REP	DEM	UNI	LBR	REP	DEM	APV	LBR	REP	DEM	UNI	DEM	REP	LBR	DEM	REP	REP	DEM	DEM	LBR
					1	0	0	0																			1	0
					1	0	0	0																			1	0
					0	1	0	0																			0	1
					1	0	0	0																			1	0
					0	1	0	0																			0	1
					0	1	0	0																			0	1
					0	1	0	0																			0	1
					1	0	0	0																			0	1
					0	1	0	0																			0	1
					0	1	0	0																			0	1
					1	0	0	0																			1	0
					0	1	0	0																			1	0
					1	0	0	0																			1	0
					0	1	0	0																			0	0
					0	1	0	0																			1	0
					0	0	0	0																			0	1
					0	1	0	0																			0	1
					0	1	0	0																			0	1
					0	0	0	0																			1	0
					0	1	0	0																			0	1
					0	1	0	0																			0	1
					0	1	0	0																			0	1
					0	0	0	1																			0	1
					0	1	0	0																			0	1
					0	0	1	0																			0	1
					0	1	0	0																			0	1
					0	1	0	0																			0	1
					0	1	0	0																			0	1

The numbers match up, and do throughout the remainder of the columns to the right.

This tells us, to an extent, how this anomaly occurred.

IV. EXPLANATION

One issue we have is not knowing which of these files is correct – we have only their word on the matter. Observation of the original unredacted Cast Vote Record file would clear that up, and I believe this must happen. Because of the unlikelihood of the parallel motion patterns identified by Ed Solomon's work occurring through random chance, it is completely possible (and perhaps likely) that the original CVR file is the correct one, and the "error" I outline below was a deliberate action to decouple the Presidential and Amendment votes.

Essentially, only the first 41 (approximately) columns were sorted, and the rest were not. This creates exactly the situation we see in the files. Any other minor differences can be explained by the second redaction not using the exact methodology of the first. Whether accidentally or deliberately, the preparer did not select the entire spreadsheet before performing the sort. This would be an egregious "rookie mistake" if accidental and would indicate that there were no "checks" on the process. If this was deliberate, it would indicate evidence tampering by the Election Office.

V. REMAINING QUESTIONS

1. Why was the CountingGroup column removed? This is not common for Colorado counties.

2. What caused Mr. Kuriwaki to examine the Arapahoe County CVR? Did he examine other states/counties?

3. What specifics about the data led Mr. Kuriwaki to determine that there was an error in the file? This information would be very useful to other election researchers.

4. Assuming Mr. Kuriwaki did contact the county in October 2024, why did it take over five months to determine that the file needed to be edited and make the change? And who in the Election Office ordered the alteration?

The author can be contacted at TheLoneRaccoon@protonmail.com.