

Post-Election Audit Summary

May 8, 2018 Primary Election

Court of Common Pleas, General Division, FTC 01/09/2019 (Democratic)

On June 19, 2018 we conducted a Risk-Limiting Post-Election Audit for the May 2018 Primary Election. There were 210,582 total ballots cast in the election. A hand count was conducted of 2,029 ballots cast in the audited contest. The accuracy rate for the post-election audit is 100%.

Audited contest and batch details are provided below:

RACE	TOTAL BALLOTS CAST	UNIQUE BATCHES AUDITED	TOTAL BALLOTS AUDITED	NUMBER OF PRECINCTS IN CONTEST
Court of Common Pleas, General Division, FTC 01/09/2019 (Democratic)	135,635	20	2,029	975

Court of Common Pleas, General Division, FTC 01/09/2019 (Democratic)

PRECINCT NAME	NUMBER OF TIMES SELECTED	SELECTED BATCH TYPE	OFFICIAL BALLOTS CAST	AUDIT HAND COUNT	DIFFERENCE / DISCREPANCY
BEREA -03-A	1	Election Day	118	118	0
BROOKLYN HEIGHTS -00-A	1	Absentee	91	91	0
CLEVELAND -04-Q	1	Election Day	209	209	0
CLEVELAND -10-S	1	Absentee	50	50	0
CLEVELAND -13-O	1	Election Day	83	83	0
CLEVELAND -15-D	1	Election Day	104	104	0
CLEVELAND -15-N	1	Election Day	125	125	0
FAIRVIEW PARK -01-A	1	Election Day	113	113	0
FAIRVIEW PARK -05-A	1	Election Day	125	125	0
GARFIELD HEIGHTS -07-A	1	Absentee	62	62	0
GLENWILLOW -03-A	1	Election Day	33	33	0
LAKESWOOD -04-E	1	Election Day	78	78	0
LAKESWOOD -04-F	1	Election Day	130	130	0
MAYFIELD HEIGHTS -00-H	1	Election Day	46	46	0
MAYFIELD HEIGHTS -00-I	1	Election Day	97	97	0
OAKWOOD -02-A	1	Election Day	143	143	0
OLMSTED TOWNSHIP -00-D	1	Election Day	54	54	0
PARMA HEIGHTS -01-C	1	Election Day	86	86	0
PARMA HEIGHTS -02-C	1	Absentee	83	83	0
SHAKER HEIGHTS -00-K	1	Election Day	199	199	0
TOTAL		-			0

Our Risk-Limiting Audits are based upon the Kaplan-Markov method as explained by Philip B. Stark and Mark Lindeman. Auditing best practices recommend we split up the total ballots cast by precinct into multiple batch types. We utilize five batch types each consisting of one single ballot type category: Absentee, Election Day, Provisional, Post Absentee, and Post Election Day.

A master spreadsheet is created for each contest with statistical formulas to determine the number of batches that must be audited in order to reach a 90% confidence level. This confidence level means the audit has at least a 90% probability of leading to a full recount if the apparent outcome is incorrect.

We use a “Probability Proportional to Error Bound with Replacement” selection method. We assign numbers ranging from 000000 through 999,999 for each batch within each contest. Unique ranges of numbers are allocated to specific batches based upon their error bound - i.e. the greater the possibility of a miscount within a batch, the more numbers assigned, and the more likely it is to be selected. For example, if a single batch has a high probability of a miscount, multiple numbers are assigned to that single batch, making the random selection of that batch more likely during the audit. Each of those individual numbers might be randomly selected and included in the overall batch audit requirement, but the single batch to which those numbers are assigned needs to be audited only once. To obtain the precinct batch number we roll differently colored dice numbered 0 - 9, each one of the colored dice representing one digit of the batch number.

