

DISTRICT COURT, CITY AND COUNTY OF DENVER, COLORADO  1437 Bannock Street Denver, CO 80202	
MYRIAH SULLIVAN CONROY, ET AL.,  Plaintiffs,  v.  GINETTE DENNIS, IN HER OFFICIAL CAPACITY AS COLORADO SECRETARY OF STATE ,  Defendant.	▲ <b>COURT USE ONLY</b> ▲
	Case No.: 06 CV 6072  Ctrm.: 1
<b>FINDINGS OF FACT AND CONCLUSIONS OF LAW</b>	

THIS MATTER came before the court for trial from September 20, 2006 to September 22, 2006. Plaintiffs' Complaint alleges, *inter alia*, that the Secretary of State failed to properly certify voting systems approved for use in Colorado. Upon consideration of the record and evidence presented at trial, the court makes the following findings of fact and conclusions of law.

### FINDINGS OF FACT

1. The Plaintiffs in this case are Colorado electors.
  
2. Defendant Ginette Dennis is the Colorado Secretary of State (hereinafter "Secretary"). The Secretary is responsible for supervising "the conduct of primary general, congressional vacancy, and statewide ballot issue elections" in Colorado. § 1-1-107 (1)(a), C.R.S. (2006).
  
3. The Colorado General Assembly has authorized the use of direct recording electronic voting systems ("DREs"). A DRE is "a device by which votes are recorded electronically, including a touchscreen system." § 1-1-104(14.5), C.R.S. (2006).
  
4. Colorado law requires that DREs comply with federal standards, C.R.S. § 1-5-608.2, that DREs be qualified by an independent testing authority, C.R.S. § 1-5-608.5, and that DREs be certified by the Secretary, C.R.S. § 1-5-614. Additionally, counties must implement security requirements at the local level that are approved by the Secretary.

5. Under § 1-5-616(1), C.R.S. (2006), the Secretary is required to adopt rules “that establish minimum standards for electronic and electromechanical systems regarding: (a) Functional requirements; (b) Performance levels; (c) Physical and design characteristics; (d) Documentation requirements; (e) Evaluation criteria; (f) Audit capacity; (g) Security requirements; (h) Telecommunications requirements; and (i) Accessibility.

6. Pursuant to her duties under § 1-5-616, the Secretary adopted Election Rule 45, 8 CCR 1505. Rule 45 was promulgated as an emergency rule on October 3, 2005. The emergency adoption of Rule 45 was driven by internal delays within the Secretary’s office in drafting the rule.

7. Under § 1-5-617(2), C.R.S. (2006), the Secretary must “appoint one or more experts in the fields of data processing, mechanical engineering, or public administration to assist in the examination and testing of electronic or electromechanical voting systems submitted for certification and to produce a written report on each system.”

8. Len Vest was initially appointed as the Secretary’s expert and was in charge of promulgation of the rules establishing minimum standards for DREs. John Gardner was appointed to work with and assist Vest. Mr. Vest resigned in the fall of 2005.

9. When Vest resigned in the fall of 2005, the Secretary appointed Gardner to assume Vest’s responsibilities. Gardner became the appointed expert under § 1-5-617(2). Gardner took over the responsibility of promulgating minimum standards under C.R.S. § 1-5-616(1), and was put in charge of DRE examination, testing, and certification. There is no evidence that the Secretary or Deputy Secretary reviewed Gardner’s qualifications when asking him to assume Vest’s duties.

10. Gardner has a degree in architecture. He does not have a degree in data processing, mechanical engineering or public administration, although he does have some data processing experience as an IT manager in El Paso County, and he has some public administration experience working at the El Paso County Clerk and Recorder’s Office as well as at the Secretary of State’s office. He has no formal academic training in computer science or computer security. During his four years in the El Paso County Clerk and Recorder’s office, Gardner was responsible for election tabulation equipment. He coordinated and planned the programming, ballot order, training and deployment of all equipment related to conducting elections for El Paso County.

11. Prior to submitting an electronic or electromechanical voting system to the Secretary for certification, a vendor must be qualified by an independent testing authority approved by the Federal Election Commission. § 1-5-608.5, C.R.S. (2006). Upon receiving approval by an independent testing authority (“ITA”), a vendor may submit its system to the Secretary for certification. § 1-5-617(1)(a), C.R.S. (2006). The Secretary must examine each system and

determine whether the system complies with statutory requirements set forth in § 1-5-615, C.R.S. (2006), as well as the standards established by the Secretary under § 1-5-616, C.R.S. (2006). See § 1-5-617(1)(b), C.R.S. (2006).

12. The Secretary argued that she relied in large part on federal ITA testing to establish the security of the DREs. However, the evidence established that the ITA testing was deficient in a number of areas. For example, reports of ITA testing reveal that certain DREs were not subjected to software security tests that would reveal the software's vulnerability to malicious software attacks or tampering by telecommunication or data transmission.

13. Four vendors submitted their systems for certification in late 2005. These vendors are Diebold, Sequoia, Hart Intercivic, and ES&S.

14. The certification process did not commence until late in 2005. The Secretary's staff was under extreme time pressure because, to comply with federal law requirements, the certification process had to be completed in time to have the DREs in place for the August 2006 primary. Additionally, there was political pressure from counties for the Secretary's office to complete the certification process quickly. Some counties, particularly Mesa County, faced economic pressure because they had invested large sums of money in reliance on the assumption that the machines would be certified. In the face of this pressure, the Secretary's staff took unusual and extraordinary measures to push the DREs through the certification process.

15. Most of the testing conducted by the Secretary on the electronic voting systems is functional. That is, the Secretary's certification simply confirms that the voting system presented to the State is the same as the one qualified at the federal level, and tests to determine that the system can perform state-specific requirements. The security requirements for the electronic voting systems are contained in Rule 45.5.2.6. These requirements consist primarily of a requirement that vendors submit certain documentation. There is no evidence that any of the required documentation was ever reviewed, analyzed, or evaluated by the Secretary's office.

16. The Secretary is required to determine whether each voting system disallows unauthorized changes to system capabilities for certain operational functions, including defining ballot formats, casting and recording votes, and calculating vote totals consistent with defined ballot formats. John Gardner testified that he checked the DREs for compliance with this requirement during the certification process. Gardner's functional tests did not measure potential flaws in computer codes, nor did he test the robustness of the programming or the vulnerability of the programming to unauthorized tampering, except in cursory fashion.

17. By rule, the Secretary is required to compile a log of the testing procedures for each voting system. Among other things, the log must include a test description, notes of test, operating steps and deviations from requirements. Rules 45.6.2.2.3, 45.6.2.2.4 and 45.6.2.2.5. The Secretary's test logs do not identify the tests that were actually performed or the

methodologies used. The logs essentially disclose only whether a particular piece of equipment passed or failed.

18. The DREs must meet the accessibility requirements established in § 1-5-704, C.R.S. (2006). There is evidence that some of the DREs do not meet all of these requirements. For example, C.R.S. § 1-5-704(d) requires that a DRE play audio and video simultaneously; the ES&S system was certified despite the fact that it does not meet this requirement. However, Colorado voters with disabilities testified that even the noncompliant DREs provide an opportunity to vote independently and with more privacy than is available with traditional paper ballot systems.

19. The Secretary certified the systems presented by the four vendors. The Secretary imposed conditions on some of the certifications.

20. The DREs were used in the primary election held on August 8, 2006. There is no evidence of any actual or attempted security breaches or tampering during that election. There is no evidence that the DREs malfunctioned in any way that improperly or inaccurately recorded or tabulated votes.

21. Pursuant to the Secretary's Election Rule 43.7.1, each county must file with the Secretary security procedures for the

physical security of election equipment, software and firmware, election materials, polling places and counting centers, and equipment storage locations, including but not limited to (a) Locking mechanisms and seals; (b) Individuals with access to keys, door codes, vault combinations; (c) Temperature control (if necessary); (d) Security cameras or other surveillance; (e) Equipment maintenance procedures (See rule 11); (f) Transportation of equipment, ballot boxes, and ballots on election day; (g) Emergency contingency plans for equipment and polling places; (h) Any other procedures used to maintain physical security; (i) Internal controls for the voting system including software and hardware access controls and password management; and (j) Security Training for election judges.

22. Some of the written plans submitted by the counties for the August 2006 primary election and approved by the Secretary did not meet these requirements.

## **CONCLUSIONS OF LAW**

1. The Court has jurisdiction pursuant to § 1-1-113, C.R.S. (2006). The Court may review activities of the Secretary under the Election Code to determine whether she "has committed or is about to commit a breach or neglect of duty or other wrongful act." § 1-1-

113(1), C.R.S. (2006). The Court may order the Secretary to substantially comply with the provisions of the code if the Court finds that the Secretary has breached a duty established under the Election Code.

2. In analyzing whether the Secretary has substantially complied with the Election Code, the Court must, at a minimum, consider the following factors: (1) the extent of noncompliance, that is a court should distinguish between isolated examples of district oversight and what is properly viewed as systematic disregard of the requirements under the Election Code, (2) the purpose of the provision violated and whether that purpose is substantially achieved despite the noncompliance, and (3) whether it can reasonably be inferred that the district made a good faith effort to comply. *Bickel v. City of Boulder*, 885 P.2d 215, 227 (Colo. 1994).

3. The Court also recognizes that it reviews the Secretary's actions subject to a deferential standard. When reviewing the Secretary's promulgation of rules, the Court will not substitute its judgment for that of the Secretary, but must determine whether the Secretary has acted in an unconstitutional manner, exceeded her statutory authority or otherwise acted in a manner contrary to statutory requirements. *Colorado Ground Water Commission v. Eagle Peak Farms, Ltd.*, 919 P.2d 212, 217 (Colo. 1996); *Citizens for Free Enterprise v. Department of Revenue*, 649 P.2d 1054, 1065 (Colo. 1982). This Court will not substitute its opinion or judgment for that of Secretary nor interfere with the Secretary's exercise of discretion based on evidence from which reasonable persons may draw different conclusions. *McQuate v. City of Boulder Fermented Malt Beverage Licensing Authority*, 420 P.2d 823, 824 (Colo. 1966). It is the court's duty, however, to determine whether the Secretary failed to comply with the law or to meet her statutory obligations, and where appropriate, to order the Secretary to comply.

4. Plaintiffs allege that the Secretary violated § 1-5-617(2), C.R.S. (2006), which provides, "The secretary of state shall appoint one or more experts in the fields of data processing, mechanical engineering, or public administration to assist in the examination and testing of electronic or electromechanical voting systems submitted for certification and to produce a written report on each system." Plaintiffs assert that Gardner was not an expert because he does not have a degree or formal training in any of the three fields listed under § 1-5-617(2) and, in particular, that he does not have expertise in computer science, programming, or computer security that would enable him to competently evaluate the potential vulnerabilities of the DREs. The Court certainly agrees that it would have been preferable for the Secretary to appoint a person with sufficient computer science skills to vigorously test the DREs for potential flaws and vulnerabilities. However, the statute affords the Secretary broad discretion. The statute does not establish a minimum level of training or experience. For example, the statute would allow the Secretary to appoint a person with a master's degree in public administration who had no computer or elections experience. The Court will not second-guess the Secretary's personnel decisions in the face of such a vague statutory mandate. Therefore, the Court is unable to conclude that the Secretary violated § 1-5-617(2).

5. Plaintiffs next contend that the Secretary did not establish minimum security standards. The Court agrees. Pursuant to § 1-5-616(1), the Secretary “shall adopt rules in accordance with article 4 of title 24, C.R.S., that establish minimum standards for electronic and electromechanical voting systems regarding...(g) Security requirements....” Rule 45.5.2.6.1 states that the vendor

shall provide documentation detailing voting system security in the areas listed below. At no time shall the system allow for unauthorized changes to system capabilities for: (a) Defining ballot formats; (b) casting and recording votes; (c) Calculating vote totals consistent with defined ballot formats; (d) Reporting vote totals; (e) Alteration of voting system audit records; (f) Changing, or preventing the recording of, a vote; (g) Introducing data for a vote not cast by a registered voter; (h) Changing calculated vote totals; (g) Preventing access to vote data, including individual votes and vote totals, to unauthorized individuals; and (j) Preventing access to voter identification data and data cast by the voter such that an individual can determine the content of specific votes cast by the voter.

The Secretary contends that the factors listed in (a)-(j) of the rule constitute standards. However, a fair reading of the rule as a whole leads to the conclusion that those are functional requirements, not security standards. The rule primarily requires the vendor to provide documentation and does not require that anyone test, analyze, or even read the documentation. Supplying documentation is not a standard. While the rule states that systems shall not be subject to unauthorized changes, it does not set forth any security measures or prescribe any testing protocols that are designed to ensure that result. The lack of adequate security standards was highlighted by evidence introduced by Plaintiffs that showed certain DREs are vulnerable to tampering and reprogramming, yet those vulnerabilities were neither recognized nor addressed by any security measures. The Court concludes that the Secretary has not established minimum security requirements as mandated by § 1-5-616(1)(g), C.R.S. (2006), and did not adequately test the DRE systems against those minimum security requirements.

6. Plaintiffs next argue that the Secretary failed to maintain test logs in accordance with Rule 45.5.6.2. The test logs clearly do not meet the standards employed by the scientific community. The logs are grossly deficient in documenting what, if any, testing procedures were used and what standards were employed. They are inadequate to permit any person to repeat or verify the test procedures. However, test logs are not required by statute. The standards employed by the scientific community are not required by rule. Therefore, although the Secretary failed to even minimally document the tests that were the basis for certification, the court is unable to conclude that the Secretary failed to substantially comply with the applicable statutes and rules for certification.

7. Plaintiffs assert that the certification process was unduly influenced by political, economic, and time pressures. Elected officials do not operate in a vacuum. Citizens have a constitutional right to petition their elected officials. There are always political, economic, and

time pressures on elected officials. At some point these factors may loom large enough to render a decision arbitrary and capricious. In this case, there is insufficient evidence to establish that the Secretary's decisions to certify the DREs were based primarily on political pressure, and the court, therefore, declines to find the Secretary's actions to be arbitrary and capricious.

8. Plaintiffs contend that the voter-verified paper audit trail ("VVPAT") is subject to degradation and may not last for at least twenty-five months, as required by § 1-7-802, C.R.S. (2006). There was evidence that the thermal paper used by certain DREs can degrade over time and that it may degrade rapidly if exposed to light, heat, and humidity. While the Secretary has failed to demonstrate that the paper trail will last at least 25 months, the plaintiffs have not established that the paper trail will not, under controlled circumstances, last at least 25 months. Common sense dictates that at a minimum, the environment in which the VVPATs are stored should be controlled to minimize the risk of degradation. Therefore, the court orders the Secretary to immediately implement standards at the county level which shall assure the secure handling and storage of the VVPATs in a controlled environment.

9. Plaintiffs assert that the DREs do not strictly meet all of the requirements for accessibility by persons with disabilities. However, the evidence established that in most cases the DREs provide better access for persons with disabilities than paper ballots or other alternatives. Though the DREs may not meet every requirement for access to persons with disabilities, the remedy of decertifying the machines would have the effect of making it more difficult for persons with disabilities to vote. Obviously, such a remedy is inappropriate as it causes more harm than it ameliorates. The court, therefore, is unable to conclude that the DREs do not substantially comply with the applicable accessibility requirements.

10. Each county is required to file security plans with the Secretary. § 1-5-616(5), C.R.S. (2006). Each plan must meet the requirements set forth in Rule 43.7. Rule 43.1, 8 CCR 1505-1. The Secretary did not carefully evaluate the county security plans and in some cases approved plans that do not substantially comply with the minimum requirements of Rule 43.7. In addition, the Secretary has failed to adequately require all counties to provide appropriate minimum security at the county level. On-site security is particularly important in light of the Secretary's failure to adequately evaluate or test the DREs for security vulnerabilities.

11. Plaintiffs have requested, as a remedy, that the DREs be decertified. The court finds that decertifying the machines only six weeks before the elections would create more problems than it solves, and is therefore an inappropriate remedy.

Based on the foregoing findings of fact and conclusions of law, the Court hereby orders as follows:

1. The Secretary is ordered to promulgate a rule containing minimum security standards for DREs as required by § 1-5-616 (1)(g), C.R.S. (2006). (At trial, certain other portions of Rule 45 were shown to be far from ideal. The court cannot order the Secretary to promulgate a better

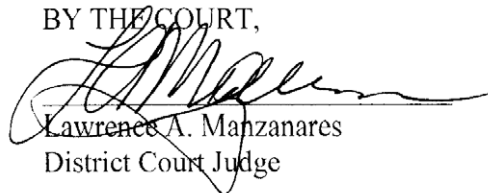
rule simply because a better rule could have been promulgated. Nonetheless, inasmuch as the rule must be amended anyway, the Secretary is encouraged to consider addressing other shortcomings of the rule.)

2. The Secretary is ordered to retest previously certified systems or any new systems, using the revised security standards to be promulgated by the Secretary, prior to the next primary, general or statewide ballot issue election following the November 7, 2006 general election, whichever comes first.

3. Prior to the November 7, 2006 election, the Secretary shall require county election officials to implement minimum security standards for that election. Such local standards shall be developed forthwith with input and cooperation from Plaintiffs, and shall be designed to reduce the possibility of tampering, to increase the security relating to handling and use of DREs, and to provide for secure and proper handling and storage of the VVPATs in a controlled environment.

Dated this 19th day of October, 2006, *nunc pro tunc*, September 22, 2006.

BY THE COURT,



Lawrence A. Manzanares  
District Court Judge