

# STATE OF COLORADO

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Dedicated to protecting and improving the health and environment of the people of Colorado

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Colorado Department  
of Public Health  
and Environment

February 1, 2013

The Honorable John Morse, President of the Senate  
The Honorable Carroll Morgan, Senate Majority Leader  
The Honorable Bill Cadman, Senate Minority Leader  
The Honorable Mark Farrandino, Speaker of the House  
The Honorable Dickey Lee Hullinghorst, House Majority Leader  
The Honorable Mark Waller, House Minority Leader  
Colorado State Capitol  
200 East Colfax  
Denver, Colorado 80203

Dear Senators and Representatives:

Enclosed is a copy of the annual report to the General Assembly on the status of the Hazardous Waste Control Program in Colorado. Senate Bill 00-177 requires this report (CRS 25-15-301.5(3)).

Sincerely,

Gary W. Baughman, Director  
Hazardous Materials and Waste Management Division

Enclosure



# STATE OF COLORADO

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**Colorado Department  
of Public Health  
and Environment**

## **2012 Annual Report to the Colorado General Assembly: Status of the Hazardous Waste Control Program In Colorado**

Submitted to the Colorado Legislature  
by the Hazardous Materials and Waste Management Division  
Colorado Department of Public Health and Environment  
February 1, 2013

## DOCUMENT INFORMATION

**Title:** 2012 Annual Report to the Colorado General Assembly on the Status of the Hazardous Waste Control Program in Colorado

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**Subject:** The report describes the status of the Hazardous Waste Control Program and efforts to implement the program at the lowest possible cost without jeopardizing the statutory intent.

**Statute:** Section 25-15-301.5(3), C.R.S.

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**2012 Annual Report to the Colorado General Assembly:  
Status of the Hazardous Waste Control Program  
In Colorado**

**INTRODUCTION**

Colorado's Hazardous Waste Control Program is responsible for ensuring compliance with laws and regulations pertaining to the management of hazardous waste. The authority for this program is in the Colorado Hazardous Waste Act, 25-15-101 et seq., C.R.S., and the federal Resource Conservation and Recovery Act (RCRA). The U.S. Environmental Protection Agency (EPA) has authorized Colorado to implement the program, and by doing so, the authority to implement requirements for the management of hazardous waste in Colorado rests primarily with the state. Colorado was authorized for the base hazardous waste regulatory program in November 1984. In July 1989, federal authorization was granted to Colorado for significant additions to the base program, including authority for hazardous waste corrective action, which provided authority to investigate and clean up releases of hazardous waste constituents into the soil, surface water, or ground water at hazardous waste facilities.

Primary elements of the Hazardous Waste Control Program (the program) include compliance assistance; compliance monitoring and enforcement; corrective action; permitting; and information management. Each of these program elements is discussed in the following sections. In addition, this report includes sections discussing ongoing program authorization by EPA and the status of program funding.

As of December 2012, the Hazardous Waste Control Program regulates 8 active and permitted treatment, storage, and/or disposal facilities (TSDs), and 15 closed TSDs with hazardous waste remaining buried on-site which need post-closure monitoring and/or maintenance. In addition, the program regulates about 115 large quantity generators, about 550 small quantity generators, about 70 transporters and at least 3,200 conditionally exempt small quantity generators of hazardous waste. The true number of conditionally exempt small quantity generators is not known, as most are not required to provide any notification to the state - those known are a result of voluntary notifications, complaint inspections, and a 2007 rule change that requires conditionally exempt generators of four particular waste types to submit a notification. Finally, the program regulates about 415 facilities at which corrective action (remediation of environmental contamination) is required.

SB 00-177 requires an annual report to the General Assembly submitted on February 1 of each year describing the status of the Hazardous Waste Control Program and the efforts of the Colorado Department of Public Health and Environment to carry out its statutory responsibilities at the lowest possible cost without jeopardizing the intent of the statute.

**ACCOMPLISHMENTS**

The Colorado Department of Public Health and Environment's Hazardous Materials and Waste Management Division (the division) continues to streamline processes and develop innovative ways to improve the Hazardous Waste Control Program. Each of our program elements demonstrates improvement through a series of metrics, some of which are reported in the following sections.

## Compliance Assistance

A goal of the Hazardous Waste Control Program is for all regulated facilities to be in compliance with state law and regulations. The traditional inspection and enforcement program serves as one primary mechanism for reaching that goal. However, compliance assistance is another integral element for obtaining and maintaining compliance. The General Assembly recognized the value and importance of compliance assistance in that one of the expectations set out in SB 00-177, at Section 25-15-301.5(2)(g), C.R.S., is for the department to “establish a preference for compliance assistance with at least 10 percent of the annual budget amount being allocated to compliance assistance efforts.” In FY 2012, the Program met that requirement as 17.4 percent of staff time was devoted to compliance assistance.

The program has developed and continues to invest in a broad range of compliance assistance services to assist the regulated community in managing hazardous waste. These compliance assistance services include the following activities:

- A part-time customer assistance and technical assistance phone line (303-692-3320);
- A wide range of hazardous waste guidance documents and compliance bulletins;
- An extensive, useful and informative Website - [www.colorado.gov/cdphe/hm](http://www.colorado.gov/cdphe/hm);
- Compliance assistance site visits through the Generator Assistance Program (GAP);
- Hazardous waste management training to industry provided quarterly by our staff; and
- Hazardous waste training periodically requested by industry groups and others.

Program staff continue to develop additional services as more effective compliance tools are identified. For instance, we put considerable effort into developing useful and easily searched information on our website. Besides the normal access to regulations, guidance documents and policies, the website now offers up-to-date information on household hazardous waste, hazardous chemicals used around the home, data mapping capabilities that show where hazardous waste facilities are located in Colorado, compliance information about facilities, and information on upcoming hazardous waste trainings being offered by Program staff. During FY 2012, the Hazardous Materials and Waste Management Division’s Internet homepage received 2,210,522 hits.

During FY 2012, the division provided 25 compliance-assistance training sessions to industry around the state and reached 1,584 people. The training sessions covered a variety of topics, and included a focus on hazardous waste and other environmental regulations. These trainings included presentations by program and local agency staff, as well as members of the regulated community.

Program inspectors routinely incorporate compliance assistance and pollution prevention into the approximately 400 compliance inspections performed each year. Inspectors provide guidance documents to facilities during inspections as well as person-to-person advice and consultation. In FY 2012, the program conducted 19 site visits (discussed later under the Generator Assistance Program) that had compliance assistance as the single major focus.

The division maintains a system of guidance information for regulated parties through both print and electronic media. This includes an automated technical assistance telephone line for common waste management questions and a technical assistance phone line staffed 4 hours/day during business hours to provide information for more complex or detailed regulatory guidance.

Through the technical assistance phone line, division technical assistance staff responded directly to 2,000 calls and 536 e-mails during FY 2012.

During FY 2012, compliance assistance staff found, through feedback at the trainings they conducted, that the help they provided on hospital wastes, universal wastes, generator requirements, and hazardous waste identification was timely and particularly helpful.

### **Compliance Monitoring and Enforcement**

Efficiency and effectiveness are very important in compliance monitoring (inspections) and enforcement. Efficiency allows adequate coverage of the regulated universe - compliance assessments can be completed and deterrence of non-compliance occurs. Efficiency measures include such items as work output per employee and timeliness of inspection and enforcement activities. Effectiveness ensures that inspection and enforcement activities protect public health and the environment. Effectiveness measures include improving compliance rates within the regulated community.

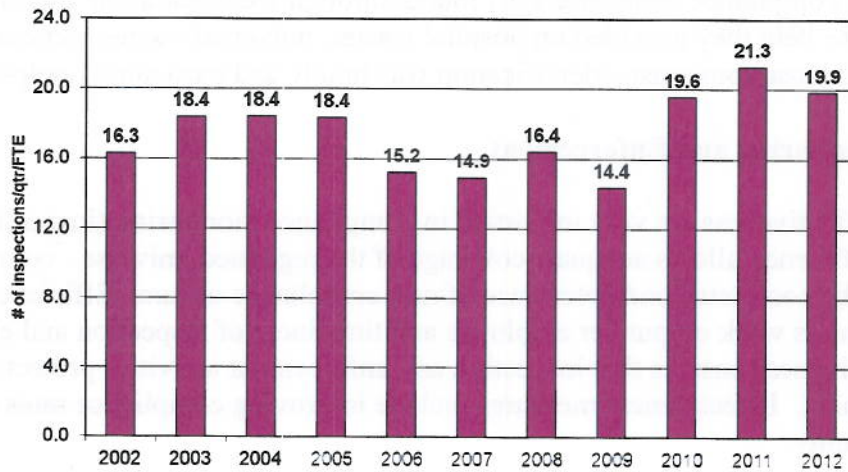
An example of staff efficiency is presented in Figure 1 on the next page. This graph illustrates the high level and consistent level of staff performance of inspections in recent years. The performance plans for each inspector define the number of inspections that need to be completed to achieve an outstanding, satisfactory, or unsatisfactory performance rating. We have found that, to perform at a sustainable level, inspectors should be expected to conduct 15 inspections/calendar quarter for a commendable rating and 18/qtr for an outstanding rating. This prevents staff burn-out, but also allows the program to adequately inspect the regulated universe. In 2010, inspection protocols changed and more inspections are being performed by solo inspectors rather than a two-person inspection team. This has allowed each inspector to improve his/her number of completed inspections without affecting workload.

It should be noted that every inspection carries administrative responsibilities, such as preparation of a report, tracking the return-to-compliance activities and accomplishments at the facility, and data entry, all of which are also being performed on time and effectively.<sup>1</sup>

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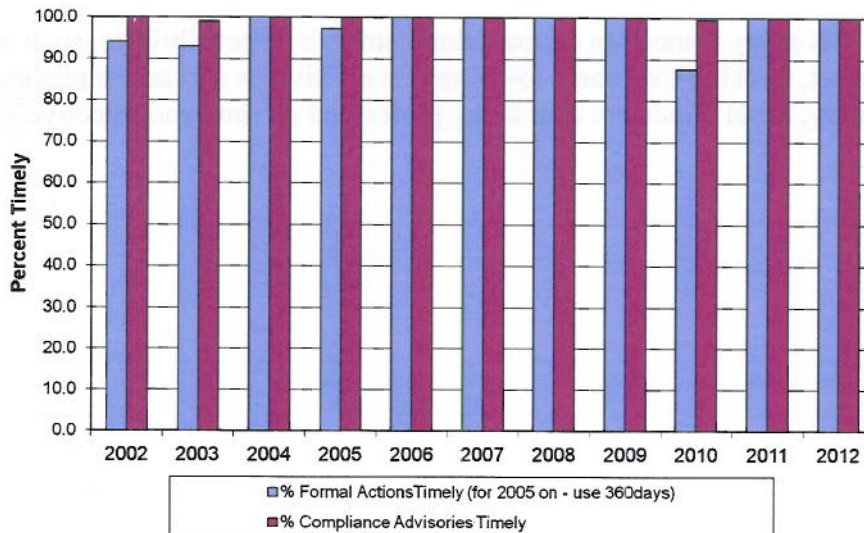
<sup>1</sup> As judged by EPA in their oversight role and recorded in their 1999 - 2011 End-of-Year Reports reviewing Colorado's Hazardous Waste Program.

**FIGURE 1**  
**Inspector Efficiency**



The high number of inspections continues to result in the issuance of quite a number of formal and informal enforcement actions. Yet, as illustrated in Figure 2, even with a high level of enforcement actions, the timeliness of both formal enforcement actions and informal actions (compliance advisories), as measured against standards established by EPA and adopted by the Colorado program, has been maintained at a very high level.

**FIGURE 2**  
**Enforcement Timeliness**



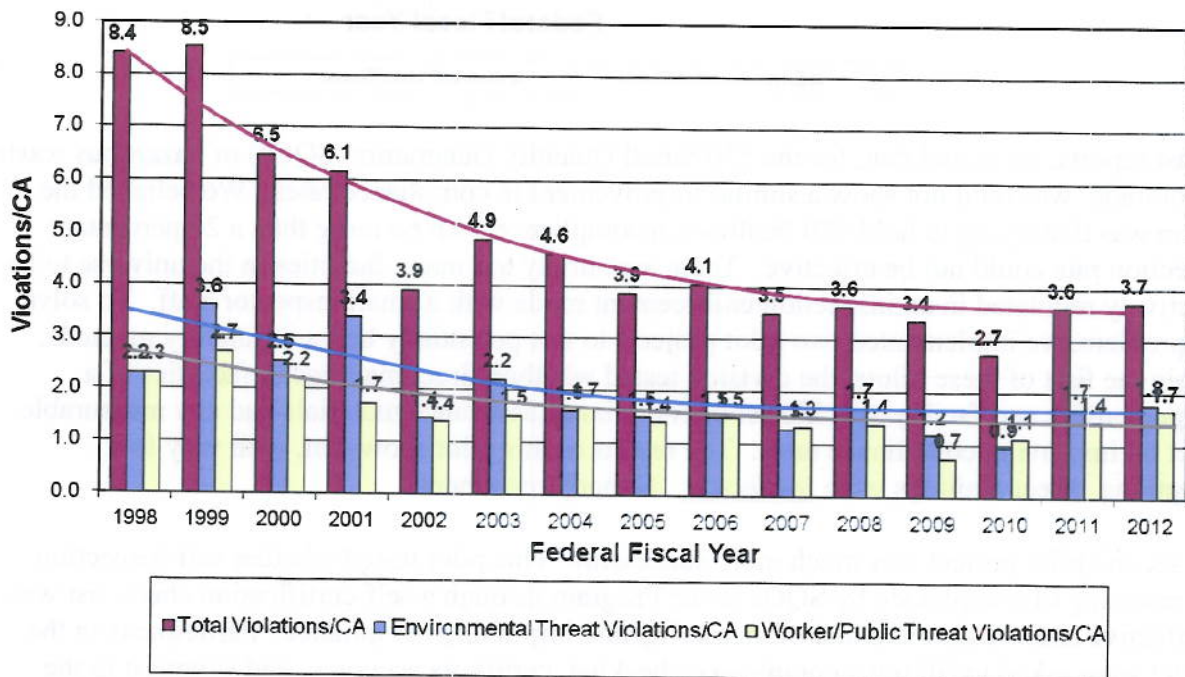
In recent years, program inspectors have performed around 400 on-site inspections each year. In FY 2011, 440 inspections were conducted. This included 15 inspections at facilities that treat, store, or dispose (TSDs) of hazardous waste, inspections at 48 of the 115 Large Quantity Generators (LQGs) of hazardous waste, inspections at 148 of the 680 Small Quantity Generators (SQGs), and 50 inspections that resulted from citizen complaints. Again, in 2010, inspection



protocols changed and more inspections are being performed by solo inspectors rather than a two-person inspection team. This has allowed the Program to significantly increase the overall number of inspections completed.

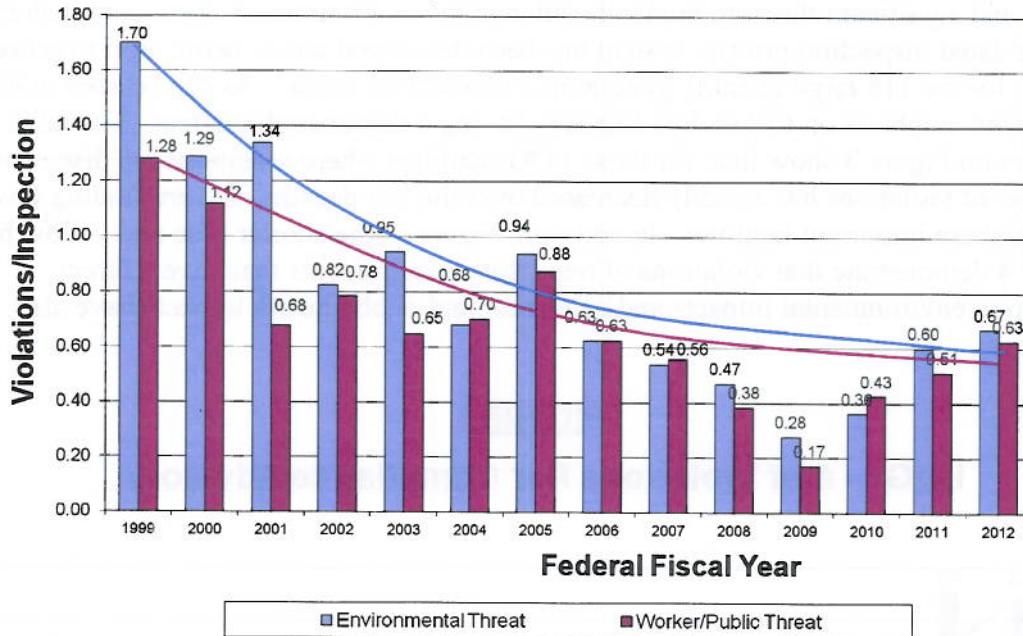
The compliance monitoring and enforcement program can also show that it is effective. SB 00-177 requires that the program’s inspections “focus on major violations of regulations that pose an immediate and significant threat to human health and the environment.” To accomplish this, an annually updated inspection priority system has been developed and is being used to schedule inspections for the 115 large quantity generators of hazardous waste. As can be seen in Figure 3, this prioritized emphasis on Colorado’s LQGs is having a demonstrable effect. The taller maroon bars on Figure 3 show that, for those LQG facilities where violations are discovered, the total number of violations has steadily decreased over the last decade. We are finding fewer problems at these important facilities. In addition, Figure 3 (the shorter blue and yellow bars) and Figure 4 demonstrate that violations of regulatory requirements that have a direct relationship to environmental impacts and/or worker and public health impacts have also declined.

**FIGURE 3**  
**LQGs - # of Violations Per Compliance Advisory**



**FIGURE 4**

**Environmental Threat Violations and  
Public/Worker Health Threat  
Violations per Inspection  
at LQGs - 1999 to 2010**



In past reports, we stated that, for the 550 Small Quantity Generators (SQGs) of hazardous waste in Colorado, we could not show a similar improvement in compliance rates. We believed the reason was that trying to hold 550 facilities in compliance with no more than a 20 percent/yr inspection rate could not be effective. There are simply too many facilities in the universe to be effectively regulated in an inspection/enforcement mode with a small inspector staff. To solve this problem, we implemented two pilot projects to test potentially better regulatory methods. Within the first of these pilots, the division tested whether direct mailings to facilities of a comprehensive and facility-specific set of compliance assistance materials had any measurable effect on improving compliance rates. The results of this pilot show that, with very few exceptions, direct mailings were *ineffective*. Nobody read them.

The second pilot project was much more successful. This pilot tested whether self-inspection and reporting of compliance by SQGs to the Program through a self-certification check-list was an effective and accurate method of measuring and improving compliance. Participants in the project were asked to fill out a compliance checklist, certify its accuracy, and submit it to the division. Within 30 to 45 days of receiving a facility's self-certification, the division sent its inspectors to the facility and they completed an identical checklist. The facility's responses and the inspectors' responses were compared and this data shows that there was a very high level of agreement between the responses. In cases where the facility reported they were compliant, but the division did not, the primary reason seems to have been a misunderstanding of the regulatory requirement, not purposeful misreporting.

Because of the success of the self-certification project, the division expanded the Self-Certification Program over the next several years into two primary sectors – the SQGs and Dry Cleaners. We also modified our regulations in 2007 to allow the Division to require mandatory

self-certification. Figure 5, below, presents the history and expansion of our use of the self-certification mechanism.

2012 represents the 6<sup>th</sup> year of mandatory SQG self-certification and the 5<sup>th</sup> year of mandatory Dry Cleaner self-certification. Figure 5 shows that, in 2012, 549 SQGs and 247 Dry Cleaners were asked to self-certify. Each year the division performs a statistically significant number of random follow-up inspections of the self-certified facilities to ensure data accuracy and to learn what regulations continue to be misunderstood or wrongly implemented by the regulated community.

**FIGURE 5**  
**Self-Certification Program**

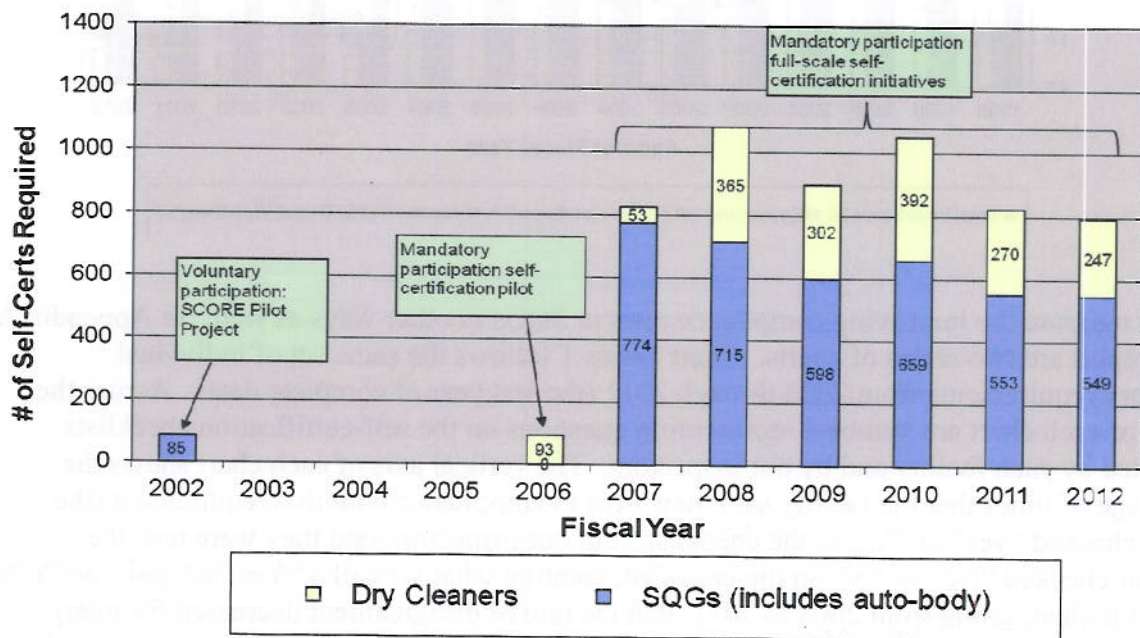
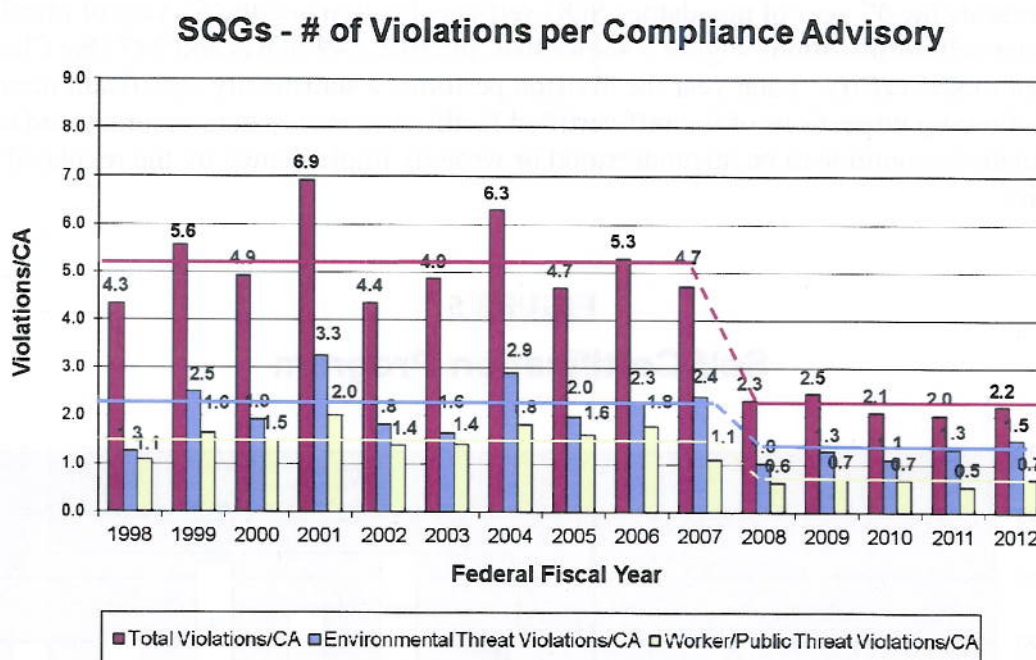


Figure 6, below, is the same information for SQGs that is presented for LQGs in Figure 3. Figure 6 demonstrates that the Self-Certification Program has now had a measureable effect on the number of violations we are finding at SQGs. When Figures 5 and 6 are compared, it is clear that, beginning in 2008, the first year that random follow-up inspections were performed by our staff, fewer violations were discovered at SQGs – in fact, about half as many as in previous years.

**FIGURE 6**



We can measure the improving compliance rates at SQGs in other ways as well. In Appendix A to this report are two series of charts. Chart Series 1 follows the same set of individual regulatory requirements from 2008 through 2011 (the last year of complete data). Across the bottom of each chart are numbers representing questions on the self-certification checklists completed by each facility and by our inspectors. The vertical axis of each chart shows the percentage of times that the facility said they were in compliance with that requirement (the facility checked “yes” or “Y” on the checklist), but our inspectors said they were not (the inspector checked “No” or “N” on the checklist, creating what we call a “Yes/No” pair, or “Y/N” pair). It is clear, going from 2008 to 2011, that the rate of disagreement decreased for many requirements. In fact, in 2008 there were 11 requirements where the disagreement exceeded 10%. In other words, in more than 10% of our follow-up inspections, our inspectors were finding violations of specific requirements when the facility thought they were in compliance. By 2011, just 3 years later, no requirement exceeded a 10% disagreement.

Chart Series 2 in Appendix A again shows 2008 - 2011 information. These charts show the decreasing number of facilities with multiple violations. Across the bottom of each chart is the number of times a facility said they were in compliance but our inspectors found violations (i.e., the number of Y/N pairs found at each facility). The vertical axis of each chart is the number of facilities. In 2008, only 26% of facilities were found to be in complete compliance (no Y/N pairs, or 100% Y/Y pairs). In 2009 and 2010, that had increased to 66% and 65% respectively. And by 2011, this level had increased to an incredible 90%.

Clearly, this information shows the success of the Self-Certification Program and the measurable improvement in compliance rates that the program is achieving in the difficult-to-regulate SQG universe.

As a side-note: the self-certification process is entirely internet-based and electronic for those facilities that want to self-certify over the internet. This is a time saver for them, and allows us to directly download their submittals into our database.

The advantages of the Self-Certification program are that 1) we get 100 percent coverage of those groups that are required to participate rather than the ~20 percent coverage we get through traditional inspections, 2) each facility in that group gets “re-trained” and re-acquainted with the regulatory requirements each time they certify their compliance (and lack of familiarity with the regulations has been a major problem), 3) we can target compliance assistance to problem areas, and 4) compliance rates improve.

It should also be noted here that, while we believe self-certification will allow us to better regulate all of our facilities, it has required a significant investment of our very limited resources. We have assigned 2 FTE to the self-certification projects. This is equivalent to a 43 percent reduction in the number of inspectors performing inspections in the traditional enforcement mode, but we believe this reassignment is actually a better expenditure of resources which is improving compliance rates within the regulated community.

In addition to the self-certification program, the division has continued the Generator Assistance Program, or GAP. This program is aimed at small businesses, although any business may participate. GAP offers businesses an on-site evaluation of their hazardous waste management practices and suggests ways to improve and/or come in to compliance. In addition, GAP offers assistance with waste minimization and pollution prevention opportunities. Any findings of non-compliance during a GAP site visit are given enforcement amnesty so long as the facility expeditiously corrects the problems and no immediate danger to human health or the environment is being caused by the violations. The division performed 19 GAP compliance assistance site visits in FY2012. The GAP program has its own website: [www.colorado.gov/cs/Satellite/CDPHE.HM/CBON/1251623315173](http://www.colorado.gov/cs/Satellite/CDPHE.HM/CBON/1251623315173).

### **Corrective Action**

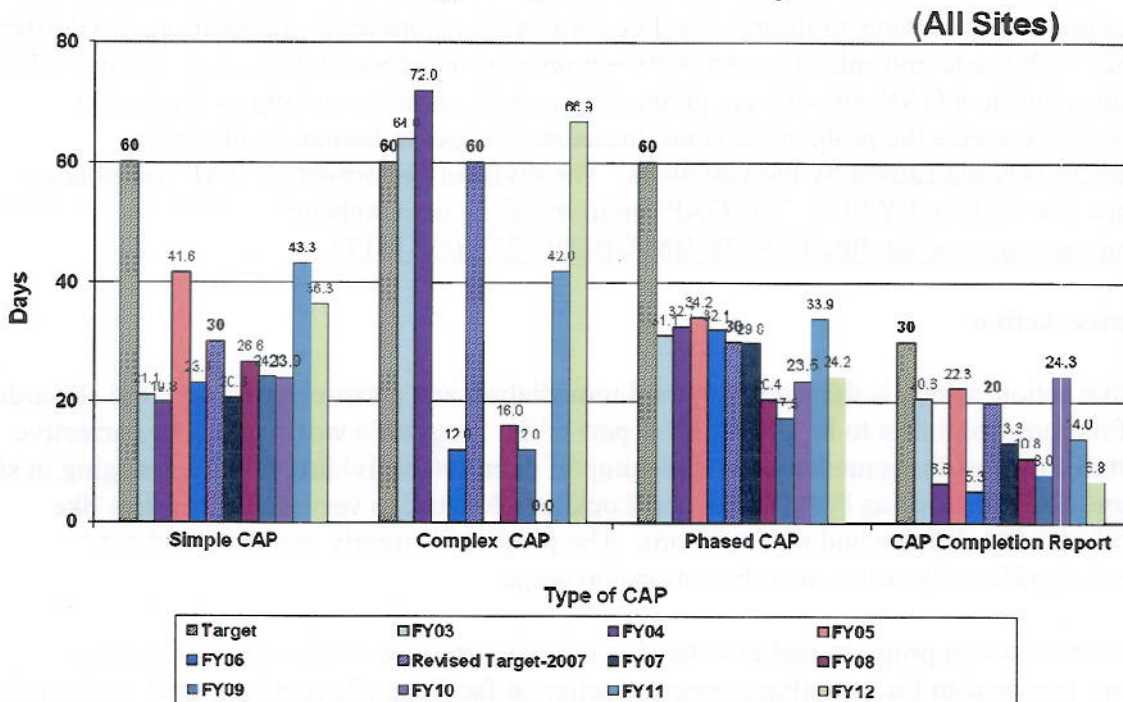
Corrective action, which is the environmental remediation and clean-up portion of the Hazardous Waste Program, continues to be a substantial part of the Program’s workload. The corrective action staff oversees the remediation and cleanup of over 400 individual facilities ranging in size from large facilities such as Fort Carson and Lockheed-Martin, to very small facilities like neighborhood dry cleaners and plating shops. The program is tightly managed and has performed significantly better than the national average.

The corrective action program makes extensive use of Corrective Action Plans (CAPs), a regulatory mechanism for initiating corrective action at facilities where it is needed without the need for extensive enforcement. Without CAPs, oversight of environmental clean-up activities would require either a hazardous waste permit or a compliance order. Both of these processes are lengthy and resource-intensive for facilities that only need to conduct clean-up activities. A facility may submit a CAP and, once approved, it is enforceable as either a permit or an order. Using the CAP approach is voluntary for the facility, but it can be implemented much more quickly than either of the other mechanisms and requires fewer facility and Program resources. It continues to be a popular mechanism among industries that are regulated by the department and it has streamlined the program substantially.

In conjunction with the Corrective Action Plan (CAP) mechanism, guidelines have been put in place for level of effort and total elapsed time associated with reviewing documents submitted under Corrective Action Plans. These guidelines have been useful to both managers and staff in assessing our efficiency and the Program has been successful in meeting its targets. Figure 7 shows the average total elapsed time (from document submittal by a facility to division review and feedback to a facility) as compared to the target levels for various types of documents. Figure 8 shows similar information for the actual review time (actual hours spent by Division staff reviewing each document).

The FY 2012 data on Figures 7 and 8 show that program staff continue to perform at high efficiency – both compared to the targets in each category, and when compared to past years. In fact, on both of these graphs, we have presented revised targets for FY 2007 and beyond. Most of these revised targets are substantially less than the original targets.

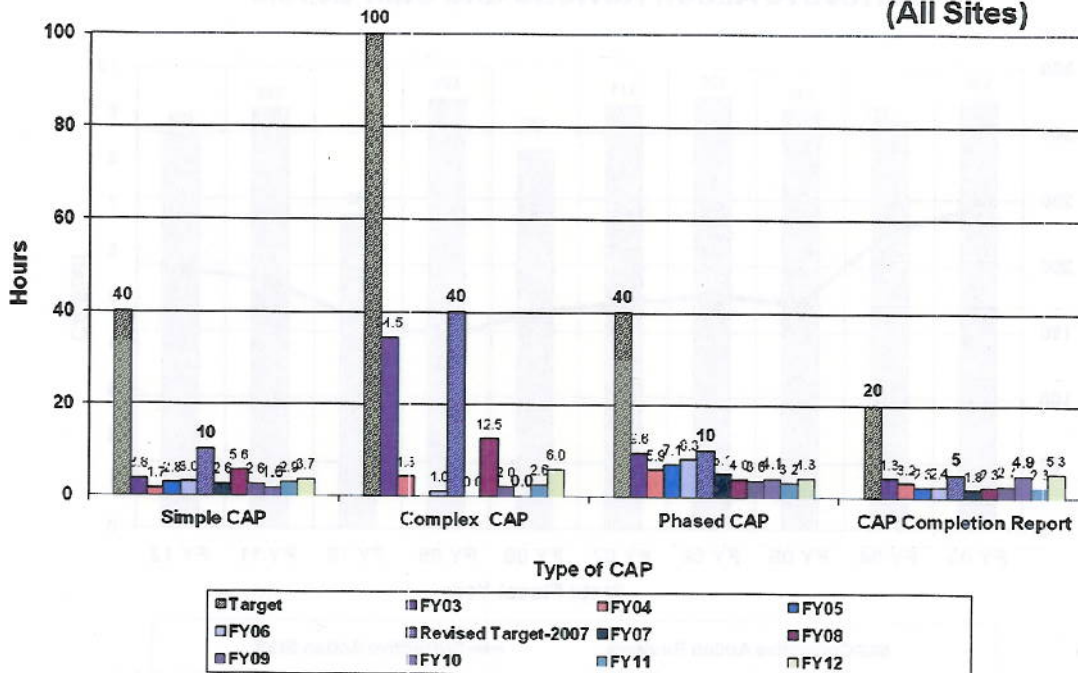
**FIGURE 7**  
**Corrective Action Plan Processing**  
**Average Elapsed Time in Days**



**FIGURE 8**

**Corrective Action Plan Processing  
Average Completion Time in Hours**

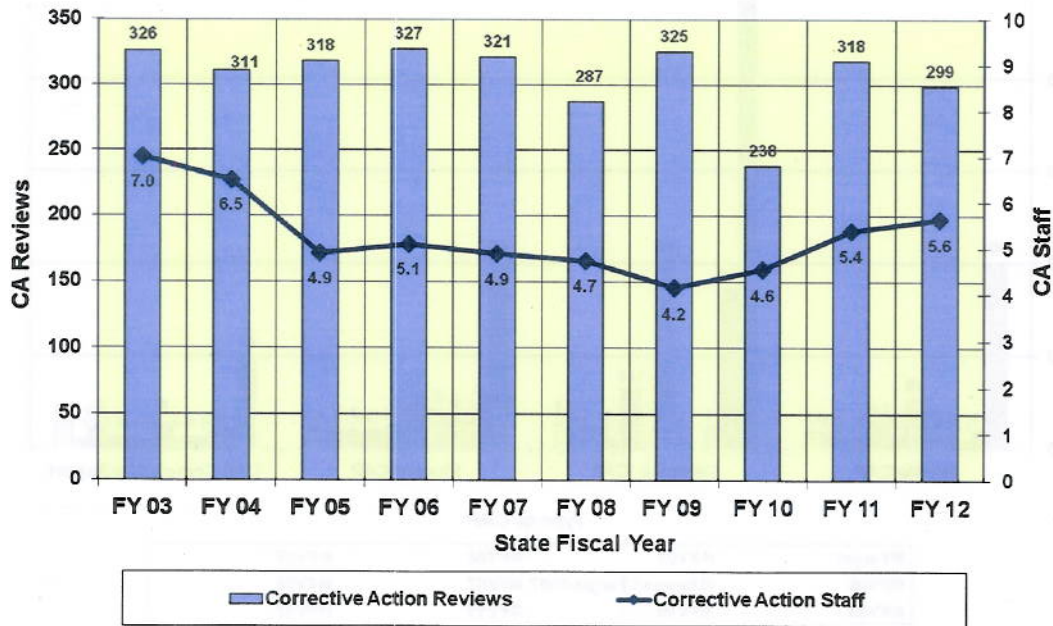
(All Sites)



Workload and staffing temporarily peaked in FY 2003, and a decline in staffing began in FY 2004 and continued up through FY 2009. Figure 9 compares the number of corrective action reviews completed with the number of corrective action staff, and Figure 10 shows the number of plan or report approvals per FTE over several years. When Figures 9 and 10 are considered together, the information demonstrates that staff efficiency continues to be very high. More recently, the workload has again moved upward. In fact, many facilities have taken the economic downturn as an opportunity to submit workplans for our review and approval ahead of time – so our workload has increased. In addition, many of the facilities still in corrective action are more complicated and technically demanding – the easy ones are done. As a result, in mid-FY 2010, we backfilled a position we had been holding vacant for the previous 18 months. In mid-FY 2011, we added another full-time FTE. So – more difficult technical work and the additional people we needed to get this work done, have depressed our apparent efficiency slightly.

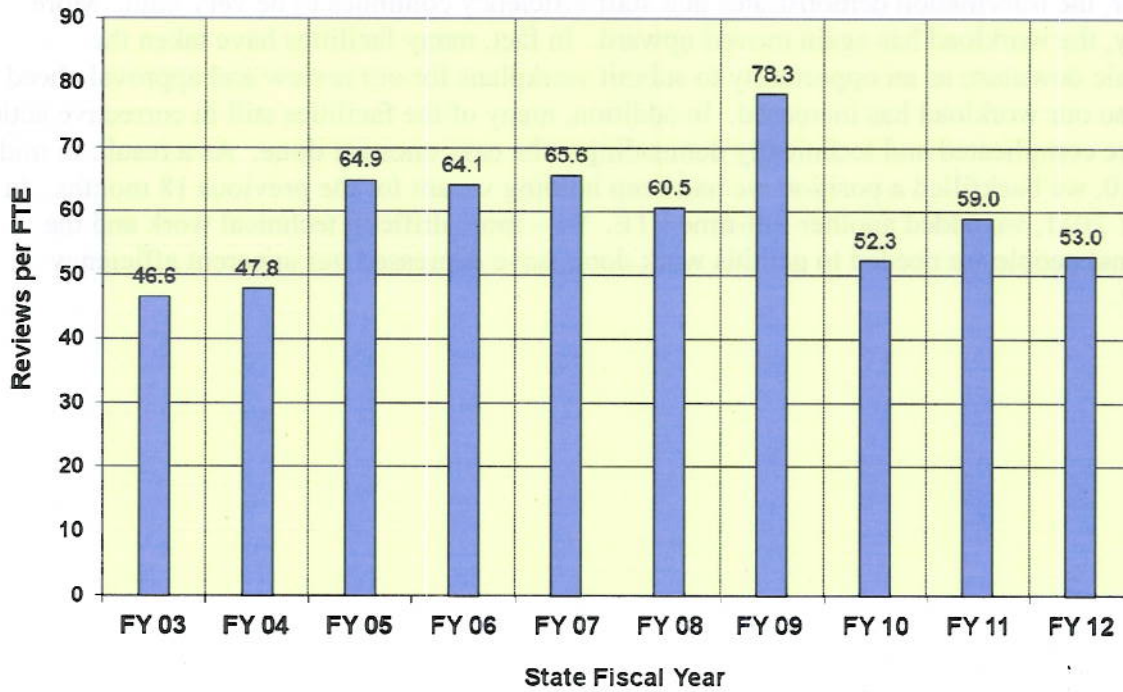
**FIGURE 9**

**Corrective Action Reviews and Staff Levels**



**FIGURE 10**

**Corrective Action Reviews per FTE**





A significant factor in the time that it takes staff to review a clean-up document is the overall quality of the document that is submitted for review. This appears to be dependent on several factors. The first is the regulated community's use of the department's Corrective Action Guidance Document in which clear corrective action goals, expectations, and strategies that focus on flexibility and environmental results are presented. One of the most often used elements of this guidance is a description of a process whereby risk-based methods allow for the reclassification of contaminated media from a hazardous waste to a solid waste, thereby reducing disposal costs and promoting more thorough cleanups. The second improvement involves early and more frequent communication between program staff and the regulated community, resulting in the resolution of difficult issues before they have the opportunity to become obstacles that stand in the way of completing necessary work. Improved communication leads to a trust relationship that promotes a collaborative approach to cleaning up sites. Striving for common objectives leads to the development of work plans that are more easily approved.

One of the expectations expressed by the General Assembly in SB 00-177, as part of streamlining the corrective action process, was that the Hazardous Waste Control Program should use enforceable institutional controls and consider such controls in determining clean-up standards. A serious concern for the program at the time was lack of any authority to enforce institutional controls. That problem was resolved with the passage of Senate Bill 01-145. This bill created an environmental covenant, which provides a mechanism for property owners to establish certain restrictions or conditions for their properties, and for those restrictions or conditions to be enforceable by the Colorado Department of Public Health and Environment. Since then, the Hazardous Materials and Waste Management Division has begun to approve long-term clean-up plans that rely on environmental covenants to manage risks associated with residual contamination, thereby avoiding the difficulty and expense of remediating sites down to unrestricted use levels. To date, accomplishments include:

- A registry of sites has been created as required by the statute; currently, there are 95 sites on the registry, with 33 of those being hazardous waste sites. Several others are in process and will be added soon.
- Staff of the Colorado Attorney General's Office has developed model covenant language.
- The Hazardous Materials and Waste Management Division's Geographic Information System (GIS)-based map Web page has been implemented; the sites with covenants have been included, with a link to the actual covenant document. This allows the public to have access to the information.
- After meeting with several local governments to discuss communication and implementation issues, the Hazardous Materials and Waste Management Division has drafted and made available to the public a guidance document on what covenants are, the opportunities they offer, what is needed to create a covenant, and the tracking and notification responsibilities of the State and local governments. This guidance document, along with other covenant related support documents, is presently available on the division's Web site.
- In 2011, program staff and staff from the Attorney General's Office (AGO) revised a 2006 policy describing when the covenant should be finalized within the cleanup process so that remedies cannot be compromised through subsequent property transactions.
- In 2008, via passage of SB08-037, the environmental use restriction was added to the statute as a second mechanism that ensured long-term control of residual risks. Federal facilities throughout Colorado were unwilling to enter into Environmental Covenants because the federal government feared the covenants represented interest in real property.

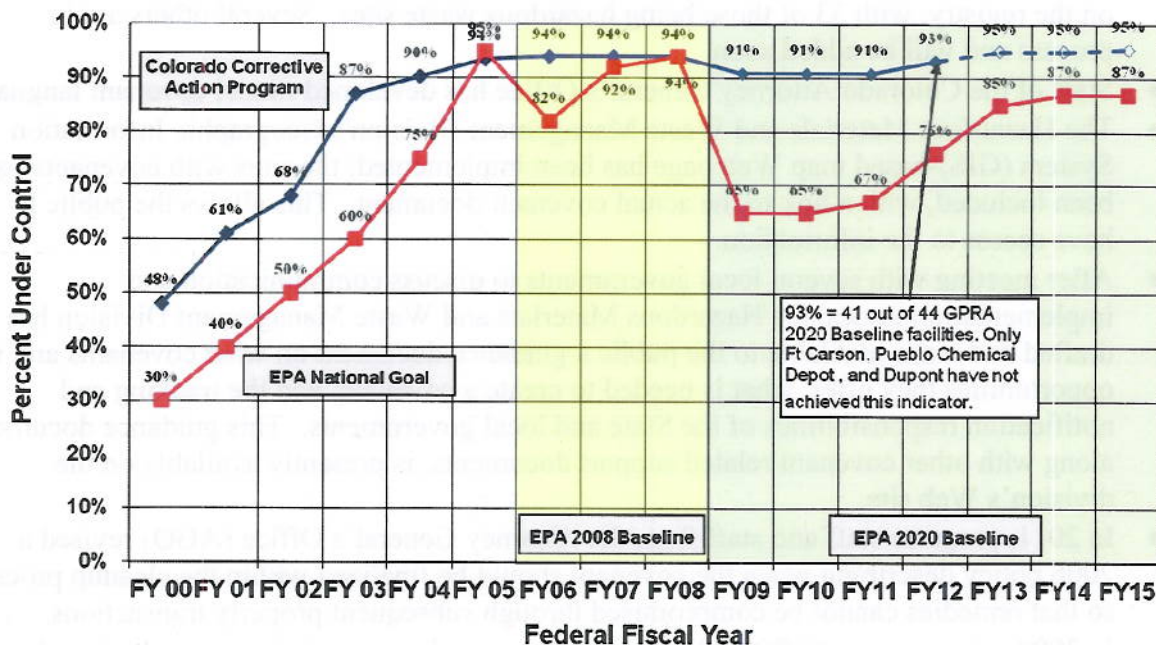
Rather than litigate the issue, Colorado worked with the federal entities to develop the environmental use restriction as a mechanism that federal entities could agree to and accomplished equivalent long-term control of contaminated sites.

The Hazardous Waste Control Program also continues to be a leading contributor to national efforts to streamline the corrective action process through active participation in the Interstate Technology and Regulatory Cooperation Work Group. This is a national organization led by state regulators with the purpose of streamlining the regulatory process associated with approving the use of innovative technologies in cleaning up environmental contamination.

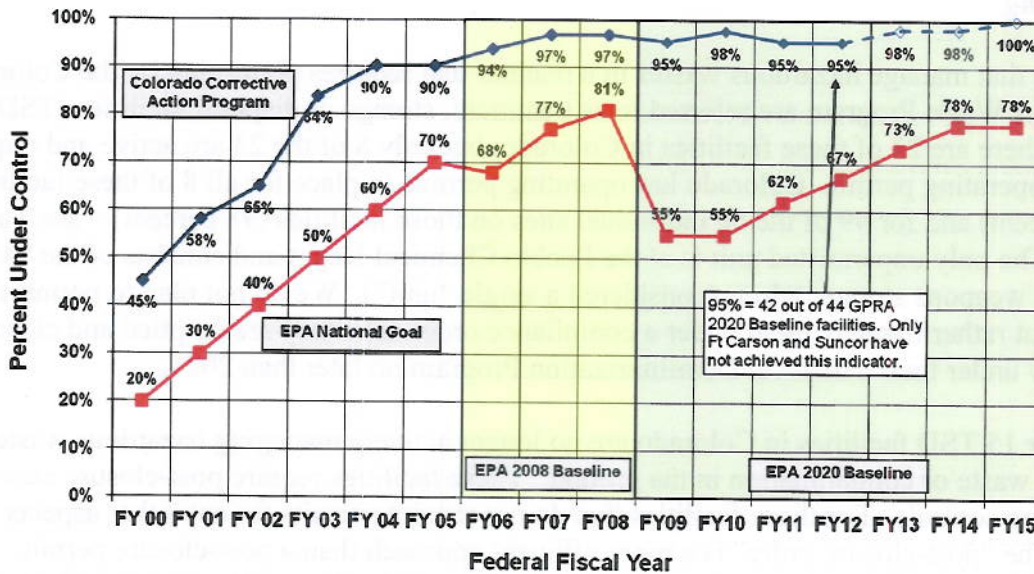
To measure corrective action effectiveness, the U.S. Environmental Protection Agency established two national environmental indicators in FY 1999. These indicators measure progress of the hazardous waste corrective action program toward risk containment at contaminated facilities. This approach was established as part of the Government Performance Results Act (GPRA), and measures “Human Exposures Under Control,” and “Ground Water Releases Under Control” at a defined group of high priority facilities around the country. In Colorado, there are currently 44 of these high priority facilities. Figures 11 and 12 show the department’s efforts and progress. Because these indicators are useful for showing risk mitigation at our sites, our program will continue to measure progress on these indicators. It is useful to point out that there were only 31 facilities in the tracking group from FY 2000 through FY 2005. EPA added 2 facilities in FY 2006 bringing Colorado’s total to 33 facilities. In FY 2009, EPA added another 11 facilities bringing Colorado’s total to 44 facilities. The EPA addition of facilities in Colorado and around the nation accounts for the dip in EPA’s national goals in FY 2006 and FY 2009.

**FIGURE 11**

**Human Exposures Under Control - CA725**

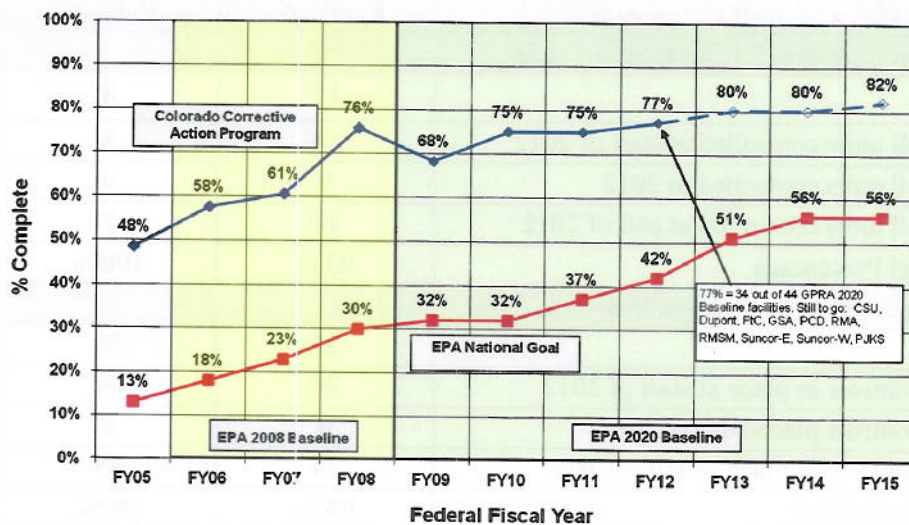


**FIGURE 12**  
**Ground Water Releases Under Control - CA750**



Beginning in FY 2006, EPA established an additional GPRAs indicator to measure progress toward completing cleanups: the percent of high priority sites where the final remedy has been completely constructed. As shown in Figure 13, our Corrective Action program is running well ahead, and is projected to remain well ahead, of the national targets for this measure because of the good work that staff and management has performed over the last few years.

**FIGURE 13**  
**Remedy Constructed - CA550**



Figures 11, 12, and 13 already include projected information for FY 2012 showing that we expect to make good progress on these metrics and remain ahead of EPA’s target, particularly for the new CA550 indicator.

**Permitting**

Facilities that manage hazardous wastes in a manner that requires permitting by the Colorado Hazardous Waste Program are referred to as treatment, storage or disposal facilities (TSDs). At present, there are 23 of these facilities in Colorado, but only 8 of the 23 are active and required to have an operating permit. Colorado has operating permits in place for all 8 of these facilities (100 percent) and for 49 of the 50 individual sites on those facilities (98 percent) – see Table 1 below. The only unpermitted unit is at the Pueblo Chemical Depot and consists of the 94 chemical weapons storage igloos (considered a single “unit”). We do not plan to permit these igloos, but rather regulate them under a compliance order until they are emptied and closed by the Army under their Chemical Demilitarization Program no later than 2021.

The other 15 TSD facilities in Colorado are no longer actively managing hazardous waste, but have left waste or contamination in the ground. These facilities require post-closure care or monitoring controls. For those facilities that do not require permits for any other aspects of the facility, the “post-closure order” is a more efficient approach than a post-closure permit. Colorado has post-closure controls in place at 14 of the 15 facilities (93 percent) and 24 of 25 individual sites on those facilities (96 percent) – see Table 1. Only one facility with one unit remains without an enforceable post-closure mechanism – the Rockwool site in Pueblo. This is an abandoned site with no viable owner or operator. The division inspects the site periodically to ensure that the contaminated soil left at the site, which has been consolidated and covered with a soil cap, remains inaccessible to the public and is not impacting ground water.

**TABLE 1**

<b>Table 1 - Permit Status for Colorado TSDs Needing Controls</b>			
<b>TSD and Unit Categories</b>	<b>Post-Closure Controls</b>	<b>Operating Permits</b>	<b>Totals<sup>1</sup></b>
Facility Level measures for Baseline Universe:			
TSDs	15	8	23
TSDs with all units controlled at start of 2012	14	8	22
TSDs with all units controlled in 2012	0	0	0
TSDs with all units controlled at end of 2012	14	8	22
Facility Level Percentage	<b>93%</b>	<b>100%</b>	<b>96%</b>
Unit Level measures for Baseline Universe:			
Units	25	50	75
Units with controls in place at start of 2012	24	49	73
Units with controls placed during 2012	0	0	0
Units with controls in place at end of 2012	24	49	73
Unit Level Percentage	<b>96%</b>	<b>98%</b>	<b>99%</b>

<sup>1</sup>Total numbers may differ from the sum of the 3 columns because some facilities have more than one type of unit.

The Program has several staff assigned to one project that requires extensive hazardous waste permitting – the Chemical Demilitarization facility being built at the Pueblo Chemical Depot for

the destruction of the chemical weapons in storage there. This is a very significant project for the Program and will remain so for about the next 10 years. Significantly, construction began on this project in FY 2008 and the final construction permit for the facility was issued by HMWMD in early FY 2009. As of the end of CY2012, the facility is about 95% complete and the demilitarization program is moving aggressively into the systemization phase which ensures all systems within the facility are operational and coordinated. Further permitting will be needed before the facility can commence operations – expected in 2014.

The program continued its participation in the national Interstate Technology and Regulatory Council (ITRC). This group supports streamlining the permitting process to reduce regulatory barriers associated with innovative technologies. The approval of these technologies typically involves some version of a permitting process.

### **Information Management**

The division continues to make a substantial effort to improve data evaluation and turn it into useful information. Some of the data presentations in this report are a continuing part of that effort. Internally, the division has been able to develop a data management system that has enabled effective tracking of all inspections and any related enforcement actions; and to retrieve reports that provide managers with an up-to-date overview of cases. This information allows the division to be more effective in the use of program resources and accomplish the highest priority activities.

The division also is able to track how much time and effort is spent on different aspects of work. Improvements in the billing system allow tracking of staff time spent on review of a specific document. This improves managers' ability to identify areas that are consuming significant amounts of time, and allows decisions to be made to make appropriate improvements. It also improves the division's ability to be accountable to those paying fees by better identifying how the money they pay is used.

Management of data is an important issue for EPA in the national hazardous waste program. Because most states are authorized to implement most of the hazardous waste program, EPA's management of national data is very complex. Colorado has advanced beyond many states in our ability to manage such information and, as such, Colorado was invited to participate on the National Design Team for EPA's national hazardous waste data system (RCRAInfo). Program staff has been participating on two national workgroups associated with this effort.

Of note, in FY 2009, we embarked on a significant data system and database upgrade. This upgrade will move us to a Visual Basic interface with an underlying SQL database. This enables us to migrate our data to current platforms and leave behind old FoxPro platforms that are no longer supported by the department or by industry. This upgrade will cost the Hazardous Waste Program about \$240,000, of which \$200,000 will have to come from fee-funded accounts. This project has been repeatedly delayed, but is now expected to be finished in 2013.

### **Maintaining Authorization**

One of the key values held by the regulated community, and one of the legislative directives from SB 00-177, was that Colorado "maintains program authorization by the federal government." When EPA goes through the process of authorizing a state for the hazardous

waste program, it carefully reviews two aspects of the state program: 1) the state's statutory authorities, funding and staffing, both quantitatively and qualitatively; and 2) the state's regulations. Once the state is authorized, EPA monitors the state program to ensure that it is being implemented in a manner that satisfies the federal program requirements.

As mentioned early in this report, Colorado was authorized for the base hazardous waste regulatory program in November 1984. In July 1989, federal authorization was granted to Colorado for significant additions to the base program. One major element of that added authority was hazardous waste corrective action, which provided authority to investigate and clean up releases of hazardous waste constituents into the soil, surface water, or ground water at hazardous waste facilities. The basis for EPA's program authorization was adequate statutory authorities (CRS 25-15-101, et seq), adequate funding provided by federal EPA funds and by fees paid by the regulated community, and adequate numbers of staff with adequate expertise.

The other aspect of authorization is EPA approval of our regulations. Currently, the Hazardous Waste Control Program has adopted 100 percent of the necessary EPA regulations; however, EPA has only authorized about 95 percent of the regulations. We have no control over the length of time it takes EPA to review and approve our regulations. However, it does not affect how we implement the program because we implement state regulations even when EPA has not authorized us for equivalency with federal regulations. The division submitted new authorization information to EPA for changes made in our regulations in 2011. These additions were authorized by EPA in 2012, bringing Colorado to the 95 percent authorized level.

### **Program Funding**

Cash fees and an annual grant from EPA fund the Colorado Hazardous Waste Control Program. The program receives no General Fund. Currently, fee revenues fund about 70 percent of program costs, and the EPA grant covers the remaining 30 percent.

Because the EPA grant has remained essentially flat for more than 10 years, the fees have had to be increased several times to cover increasing program costs. Since the passage of SB00-177, the Colorado Solid and Hazardous Waste Commission has increased the fees three times - in February 2003, May 2006, and again in May 2009.

The fee structure put in place by the commission in 2009 was expected to fund the program adequately through FY 2011. By late 2010, however, because of higher-than-anticipated revenues and lower-than-expected costs, it was clear that the Department needed to decrease the fees. Effective January 1, 2011, the Commission decreased the fees by 12 percent for a period of one year (all of calendar year 2011). By late 2011, fee revenues were still higher than necessary and the Commission decreased the fees by a further 18 percent for calendar years 2012 and 2013, bringing the total fee decrease to 30 percent.

**FIGURE 14**

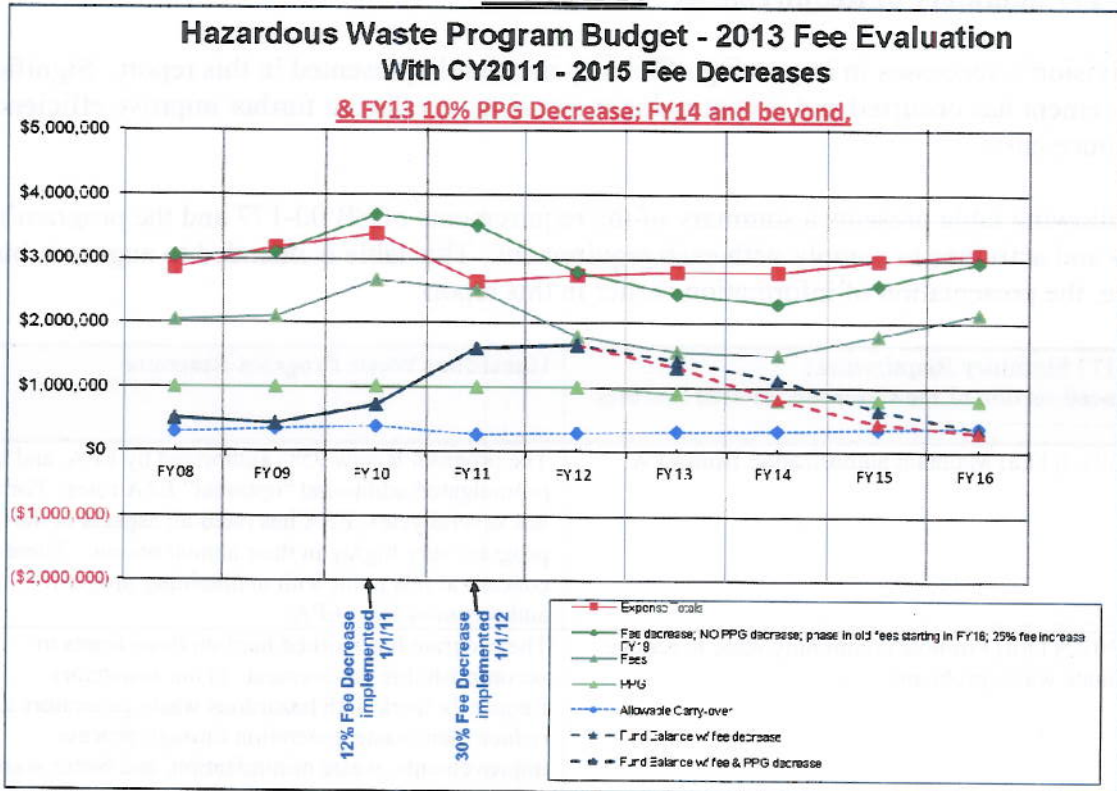


Figure 14 shows the fee revenue (medium green line), total expenses (top red line), and the cash balance (dark blue line) in the Hazardous Waste Service Fund from 2007 through 2012, with projections through 2015. Figure 14 illustrates that, even if we assume that the 30 percent fee reduction stays in place, there should be adequate revenue for the program through FY2015. However, if the EPA Grant (light green line) also is reduced, as we expect it will be in FY2013 based on “fiscal cliff” and “sequestration” possibilities, then there will only be adequate revenue through FY2014 (bold red line).

Either way, Figure 14 indicates that the Hazardous Waste Program is in good shape and should be adequately funded for at least the next two years without the need for a fee increase. This figure shows that the program is striving to balance revenues and expenditures and maintain a small fund balance during an economic downturn that has made revenue and cost projections very difficult.

## SB 00-177 Summary of Requirements

The division's successes in improving efficiency are clearly presented in this report. Significant improvement has occurred and is continuing to occur in an effort to further improve efficiency and reduce costs.

The following table presents a summary of the requirements of SB 00-177 and the program's efforts and activities to comply with each requirement. This table is intended to augment, but not replace, the presentation of information earlier in this report.

SB 00-177 Statutory Requirement Referenced section of the Colorado Revised Statutes (CRS)	Hazardous Waste Program Response
25-15-301.5(1)(a) Maintain authorization from EPA.	The program is now 95% authorized by EPA, and has promulgated additional "optional" EPA rules. For the last several years, EPA has rated all aspects of the program very highly in their annual review. There is no concern at this point with maintaining program authorization from EPA.
25-15-301.5(1)(b) Promote community ethic to reduce or eliminate waste problems	The program has worked hard on three fronts to accomplish this requirement: 1) our inspectors frequently work with hazardous waste generators to reduce their waste generation through process improvements, waste minimization, and better waste characterization; 2) the program places a high priority on investigating citizen complaints; and 3) the program makes itself available through the technical assistance telephone line and technical trainings provided around the state.
25-15-301.5(1)(c) Is credible and accountable to industry and the public	The program endeavors to maintain credibility and accountability through 1) a high-volume, high-efficiency prioritized inspection program that maintains compliance and a level playing field and 2) a high-efficiency corrective action program that meets or exceeds its commitments to the regulated community.
25-15-301.5(1)(d) Is innovative and cost-effective	This report presents the program's progress and accomplishments in becoming cost-effective and efficient. It also presents our commitment to, and implementation of, innovative approaches.
25-15-301.5(1)(e) Protects the environmental quality of life for impacted residents per the regulations	Our success in this requirement can be ascertained by considering our success in all of the other aspects of the program.
25-15-301.5(2)(a) Develop, implement, and continuously improve policies and procedures for statutory responsibilities at lowest possible costs	After SB 00-177 passed, the program set up numerous performance goals. This report presents our success in meeting those goals. In some cases, the program has performed so well against the original metrics that they have been revised to push for continued improvement.
25-15-301.5(2)(b) Establish cost-effective level-of-effort guidelines for performing inspections that focus on major violations of regulatory requirements that pose risk to human health and the environment.	The program has included goals in each inspector's performance plan for the number of inspections each inspector is expected to perform and for the timeliness of administrative duties associated with each inspection. These goals have been modified upwards several times over the last few years as inspector experience and efficiency improved. This report shows the program's progress on violations associated with risks to human health and the environment.



SB 00-177 Statutory Requirement Referenced section of the Colorado Revised Statutes (CRS)	Hazardous Waste Program Response
25-15-301.5(2)(c)(I) Streamline the corrective action process through cost-effective level-of-effort guidelines for site investigations and remediation that focus on result-based outcomes and performance-based oversight by the Department.	After SB 00-177 passed, the program set up numerous performance guidelines in the corrective action program. This report presents our success in meeting those goals. Part of the success in meeting these guidelines is the transition to performance-based corrective action. Cleanup targets – not numbers of samples, now define most of our cleanups.
25-15-301.5(2)(c)(II) Streamline the corrective action process through cost-effective level-of-effort guidelines for reviewing site investigation reports and corrective action plans.	See above response to 25-15-301.5(2)(c)(I)
25-15-301.5(2)(c)(III) Streamline the corrective action process through the use of enforceable institutional controls.	This requirement was significantly enhanced when the General Assembly passed SB 01-145, which established environmental covenants. Since passage of this bill, which the program helped draft, the Program has utilized environmental covenants that enforce the institutional controls in every remedy where they are included to protect human health and the environment.
25-15-301.5(2)(c)(IV) Streamline the corrective action process through realistic clean-up standards that address actual risk to human health and the environment on a site-specific basis and account for institutional controls.	The program has developed generic soil cleanup standards for the more common contaminants and exposure scenarios, thereby relieving parties performing cleanups the expense of having to hire a risk assessor to perform this work for them. We have updated these tables several times. The equations used to calculate the standards are on the department's website for interactive use so that individuals may calculate cleanup levels themselves. The department allows the use of risk-based soil cleanup numbers developed by other states or the EPA. Facilities have always had other options: 1) the flexibility to calculate site-specific cleanup standards of their own if they so choose, which factor in specific conditions and documented exposure assumptions; 2) using an environmental covenant to allow greater levels of contamination to remain behind following cleanup, achieving similar levels of protection through property use controls; or 3) seeking waivers to established State ground water standards through the Water Quality Control Commission, to allow for increased levels of contamination that can be left at a site. The Program is now considering use of Alternate Concentration Limits (ACLs) for ground water contamination at contaminated sites that meet certain criteria.
25-15-301.5(2)(d) Establish cost-effective level-of-effort guidelines for enforcement activities.	The Program has significantly improved the efficiency and cost-effectiveness of enforcement activities over the last several years and we do operate under timeliness guidelines established in the program's Enforcement Response Policy. However, because of the importance of quality workmanship in enforcement actions, and because each action is very site- and violation-dependant, the program has not established firm level-of-effort guidelines. To meet our timeliness goals, thought, the level of staff effort on any given enforcement action has to remain at or below certain metrics.
25-15-301.5(2)(e) Establish schedules for timely	The program has established and is routinely meeting

SB 00-177 Statutory Requirement Referenced section of the Colorado Revised Statutes (CRS)	Hazardous Waste Program Response
completion of Department activities including submittal reviews, inspections, inspection reports, and corrective action activities.	and exceeding the timeliness guidelines that have been established for these activities and other activities.
25-15-301.5(2)(f) Establish a prioritization methodology for completing activities that focuses on actual risk to human health and the environment.	The body of this report explains how priority schemes are used in setting inspection schedules. For corrective action, this report also presents results for the Government Performance and Results Act (GPRA) high priority clean-ups.
25-15-301.5(2)(g) Establish a preference for compliance assistance with at least 10 percent of the annual budget amount being allocated to compliance assistance efforts.	Earlier in this report, we present the percentage of staff time and budget that is spent on compliance assistance activities (17.4 percent in FY 2012). We also discuss all of the innovative work being done by the program in the compliance assistance arena.
25-15-301.5(2)(h) Establish a preference for alternative dispute resolution mechanisms.	The department already has established this preference. In recent years, the program has not had many disputes.
25-15-301.5(2)(i) Establish a mechanism that continually values and provides incentives for further improvements in the Program's policies and procedures.	The department and division have vital rewards and recognition programs where process improvements or any innovative idea can be, and will be, rewarded.
25-15-301.5(3) Submit an annual report to the General Assembly by February 1 <sup>st</sup> of each year.	This report is the 12th annual installment of the program's efforts to meet this requirement.

## CONCLUSIONS

As discussed in this report, the Hazardous Materials and Waste Management Division has implemented and is maintaining significant improvements to the Hazardous Waste Control Program to satisfy the expectations set out by SB 00-177 (Section 25-15-301.5, C.R.S.). This report explains how each of these statutory expectations has been met:

- 1) maintaining program authorization by the federal government (EPA);
- 2) maintaining a program that is credible and accountable;
- 3) maintaining a program that is innovative and cost-effective;
- 4) developing level-of-effort guidelines for inspections, enforcement, and corrective action;
- 5) streamlining the corrective action process;
- 6) prioritizing activities based on risk; and
- 7) emphasizing compliance assistance efforts.

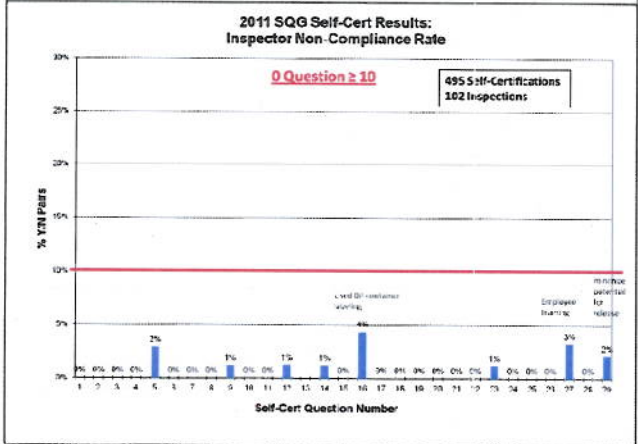
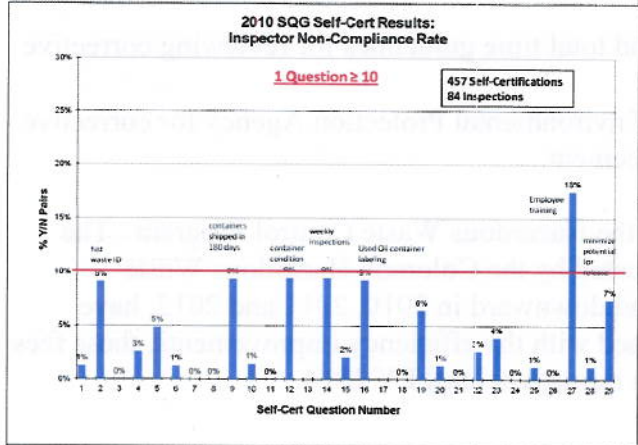
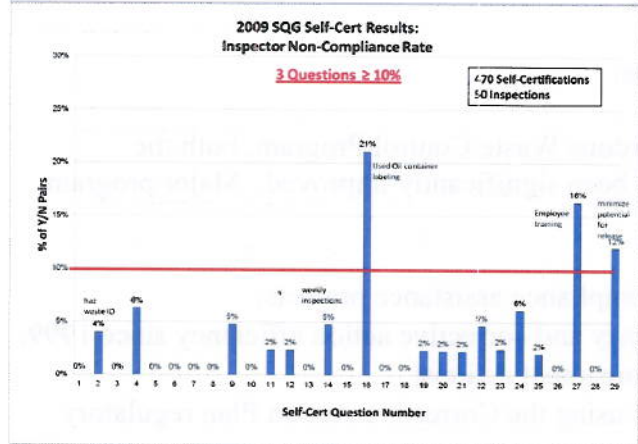
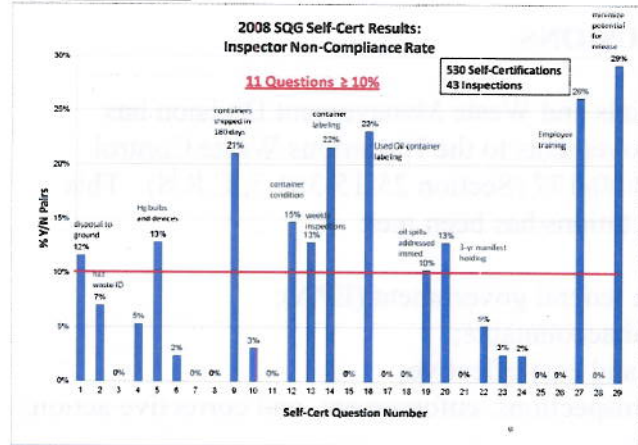
As a result of the efforts undertaken by the Hazardous Waste Control Program, both the efficiency and effectiveness of the Program have been significantly improved. Major program accomplishments include the following:

- continuing our emphasis on innovative compliance assistance projects;
- dramatically increasing inspection efficiency and corrective action efficiency since 1999;
- substantially improving timeliness of enforcement actions;
- streamlining the corrective action process using the Corrective Action Plan regulatory provision;
- developing and meeting level-of-effort and total time guidelines for reviewing corrective action submittals; and
- exceeding national goals set by the U.S. Environmental Protection Agency for corrective action, permitting, inspections, and enforcement.

Further efforts will continue in order to improve the Hazardous Waste Control Program. The generator fees authorized by SB 00-177, and adjusted by the Colorado Hazardous Waste Commission upward in 2003, 2006, and 2009, and downward in 2010, 2011 and 2012, have stabilized revenue to the program. When combined with the efficiency improvements, these fees should provide adequate funding for the program through at least FY 2014.

# Appendix A:

## Chart Series 1



## Chart Series 2:

