

**South Carolina
Drycleaning Facility Restoration Trust Fund
Program Status Report
January 18, 2012**



**South Carolina Department of Health and Environmental Control
C. Earl Hunter, Commissioner**

**Bureau of Land and Waste Management
Division of Site Assessment, Remediation & Revitalization**

The South Carolina Drycleaning Facility Restoration Trust Fund Program Status Report is submitted by the South Carolina Department of Health and Environmental Control in compliance with S.C. Code Section 44-56-430, Part C.

Additionally, Act 119 of 2005 mandates that agencies provide all reports to the General Assembly in an electronic format.

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Definitions & Acronyms:

Act	The South Carolina Drycleaning Facility Restoration Trust Fund Act of 2004
ACOR	Annual Certificate of Registration
DFEC	Drycleaning Facility Exemption Certificate
DFI	Detailed Facility Investigation
DOR	South Carolina Department of Revenue
Dry-Drop	A retail store which collects items to be drycleaned at a remote location
EIA	Expanded Initial Assessment
FS	Feasibility Study
Fund	The South Carolina Drycleaning Facility Restoration Trust Fund
FY	Fiscal Year
NFA	No Further Action
Opt-Out	A facility not subject to the Act, nor eligible for the Fund, in accordance with 44-56-485
PCE	Tetrachloroethylene (Perchloroethylene, or “perc”); a halogenated drycleaning fluid
SCDHEC	South Carolina Department of Health and Environmental Control
Stoddard	A non-halogenated petroleum based drycleaning fluid

1. Introduction

This report is provided to the South Carolina General Assembly as required of Article 4 of Title 44, Chapter 56 of the 1976 Code of Laws (Section 44-56-430 Part C), herein referred to as the Act. It contains the financial obligations and a 5-year budget projection, as required by the Act, as well as a summary of activities for 2011.

Background

In 1995, the South Carolina General Assembly created the South Carolina Drycleaning Facility Restoration Trust Fund (the Fund) to address environmental contamination resulting from drycleaning activities in South Carolina. The Act also required containment systems at existing and new drycleaners to lessen the chance of future releases. The Fund was created at the urging of the drycleaning industry to protect drycleaners from potentially devastating financial liability caused by environmental problems at their facilities. The Act was revised in 2004, and again in 2009. The South Carolina Department of Revenue (DOR) is responsible for drycleaner registration and collection of money into the Fund. The South Carolina Department of Health and Environmental Control (SCDHEC) is responsible for administering the Fund.

When the Fund was created in 1995, several hundred drycleaners registered with DOR, and applied to SCDHEC for eligibility. Currently, the Act requires a facility to initially document the presence of environmental contamination from past operations before it can become eligible for the Fund. There are currently 288 eligible sites where SCDHEC may obligate Fund monies for assessment and remediation. An additional 164 sites could become eligible in the future if evidence of contamination is discovered.

Revisions to the Act made in 2009 required that a facility possess either an Annual Certificate of Registration (ACOR) or a Drycleaning Facility Exemption Certificate (DFEC) issued by DOR in order to receive shipments of drycleaning solvent. Drycleaners who used petroleum-based solvents were given a one-time opportunity in 1995 to “Opt –Out” of the Fund. These businesses are not required to pay the annual registration fees or surcharges paid by participating drycleaners, but by not participating, they cannot access the Fund if contamination from their facilities is ever discovered. There are 118 drycleaning facilities that have “Opted-Out” of the Fund. All new drycleaning facilities are required to participate in the Fund.

Contamination was expected to be found once the Act came into effect, however the extent of the problem was not then known. SCDHEC has now performed some degree of investigation at every eligible drycleaning site in South Carolina, and has, in fact found contamination at the majority of these sites. Investigations have documented that groundwater contaminated by drycleaning operations has impacted public and private water supplies in several cases. As impacts to drinking water are identified, SCDHEC takes steps to eliminate human exposure to contaminants, usually by providing an alternative source of drinking water.

There are several reasons for the presence of soil and groundwater contamination at drycleaning facilities. The most commonly used drycleaning solvents, perchlorethylene (PCE, or “perc”) and various compounds derived from petroleum, such as Stoddard solvent easily pass through concrete floors common at drycleaning plants. In the past, most drycleaning machines were “transfer” machines, which required solvent laden clothes to be transferred to a separate machine for drying. This provided an opportunity for release of solvents to the floor and then to the environment. Filling a drycleaning

machine's solvent tanks from drums or other containers could also result in spills, as could improper storage or handling of containers. Also, since older drycleaning machines vented solvents vapors to the atmosphere, these vapors could condense in cool weather and collect on nearby exposed soil.

Other potential sources of contamination include drycleaning wastes, such as spent solvents, distillation wastes, separator water, and used filters. Before hazardous waste regulations were enacted in the early 1980's, these wastes were commonly disposed of by pouring liquids into sewer lines, septic systems, or onto the ground. Used filters were commonly placed on the ground or into trash dumpsters.

Modern "dry-to-dry" machines perform both washing and drying cycles without the need to transfer items, thereby reducing the potential for release of solvents to the environment. Beginning in 2010 the Act required all halogenated drycleaning solvents to be delivered by a "closed-loop" system. This both reduces opportunities for spills during refilling, and eliminates on-site storage of solvents.

Today, the Act requires that all drycleaning facilities participating in the Fund use special floor coatings in the areas of the drycleaning machine and waste storage to prevent spilled solvents from permeating through concrete floors. Other requirements include containment pans or dikes for drycleaning machines and waste storage areas. Drycleaners are periodically required to certify that their facilities meet the applicable containment requirements. SCDHEC personnel also visit facilities to verify the presence and adequacy of containment structures prior to committing Fund dollars for assessment or remediation.

Finally, hazardous wastes generated by drycleaning operations must be properly managed and disposed of. Several hazardous waste disposal companies operate in South Carolina, providing a safe, effective means to prevent additional drycleaning wastes from entering the environment.

While improvements in industry practices will not remove contamination that has already been released into the environment, these measures will greatly reduce the probability and scope of future releases.

The Fund cannot address all environmental problems at every participating site at once, because revenue is limited. Therefore, one of SCDHEC's tasks is to prioritize sites for future work based on risks to human health and the environment. Prioritization criteria are spelled out in both the Act, and in regulation 61-33, Subpart D. SCDHEC performed a comprehensive update to the priority list in 2010, and continues to update this list as new information becomes available.

2. Fund Status and Five-Year Funding Projection

Funding Sources

Revenue for the Fund is currently derived from four sources, all of which come from the drycleaning industry itself:

- Annual registration fees
- Surcharges on drycleaning solvents
- Facility deductibles, which range from \$1,000 to \$25,000, and
- Since fiscal year (FY) 2005, a 1% surcharge on retail sales of drycleaning services.

Annual registration fees apply to every operating drycleaning plant, and vary based on the number of people employed by that business – including employees at drop-off store locations. Facilities employing up to 4 employees pay \$750 per year, those with 5-10 employees pay \$1,500 per year, and those with 11 or more employees pay \$2,250 per year. Solvent surcharges are \$10 per gallon for halogenated solvents, such as PCE, \$2 per gallon for non-halogenated drycleaning fluids such as Stoddard solvent, and \$0.25 per pound for non-liquid drycleaning agents.

Deductible amounts are assigned to a facility based on the date the eligibility application was submitted. The Act initially offered a \$1,000 deductible as an incentive to quickly bring existing facilities into the Fund. A facility starting operations on or after November 24, 2004 will have a deductible of \$25,000.

The 1% surcharge on retail sales of drycleaning services is collected at the point of sale, regardless of whether the store is a drop-off location (or “dry-drop”) or has a drycleaning machine on site.

Businesses that have opted-out of the Fund as allowed by statute do not pay these surcharges or fees, but are not eligible to receive monies from the Fund for cleanup of any discovered contamination.

FY11 revenue was \$1,295,766.34, as compared to \$1,440,750.89 in FY10. FY11 revenue was less than the average collected over the previous five years.

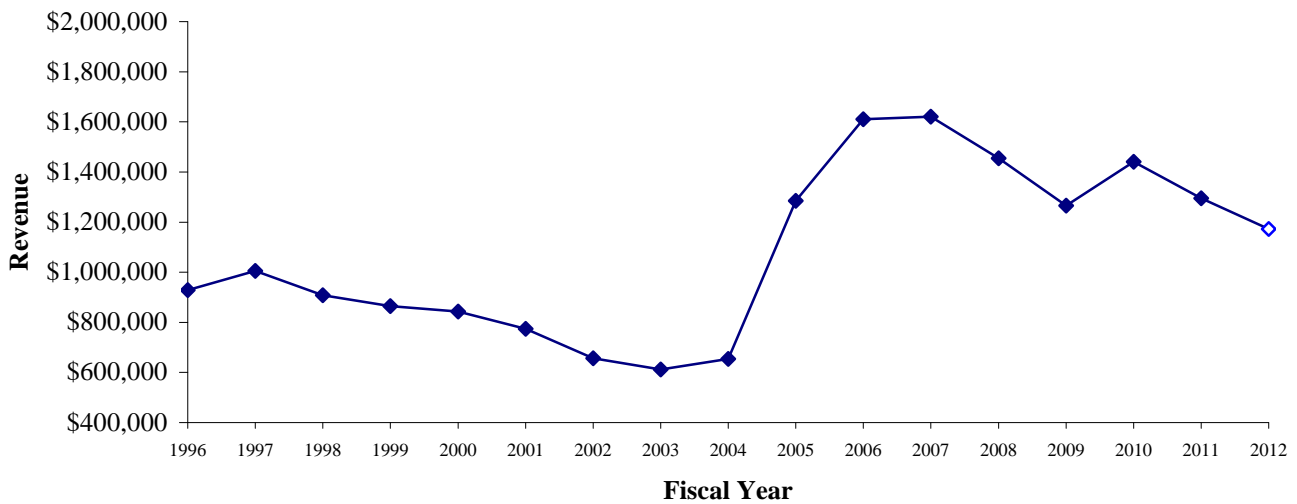


Figure 1: Drycleaning Facility Restoration Trust Fund Yearly Income
(FY 2012 revenue projected based on first 5 months)

From the inception of the Fund through the end of FY11 it has taken in a total of \$17,219,983.58 and had total expenditures of \$14,312,885.75 (Figure 2). Allowing for outstanding commitments of \$770,155.61, the uncommitted Fund balance on June 30, 2011 was \$2,136,942.22.

During the first five months of FY12, the Fund has taken in \$479,142.28. Based on income to the Fund from July through November 2011, FY12 revenue is projected to be approximately \$1,150,000.

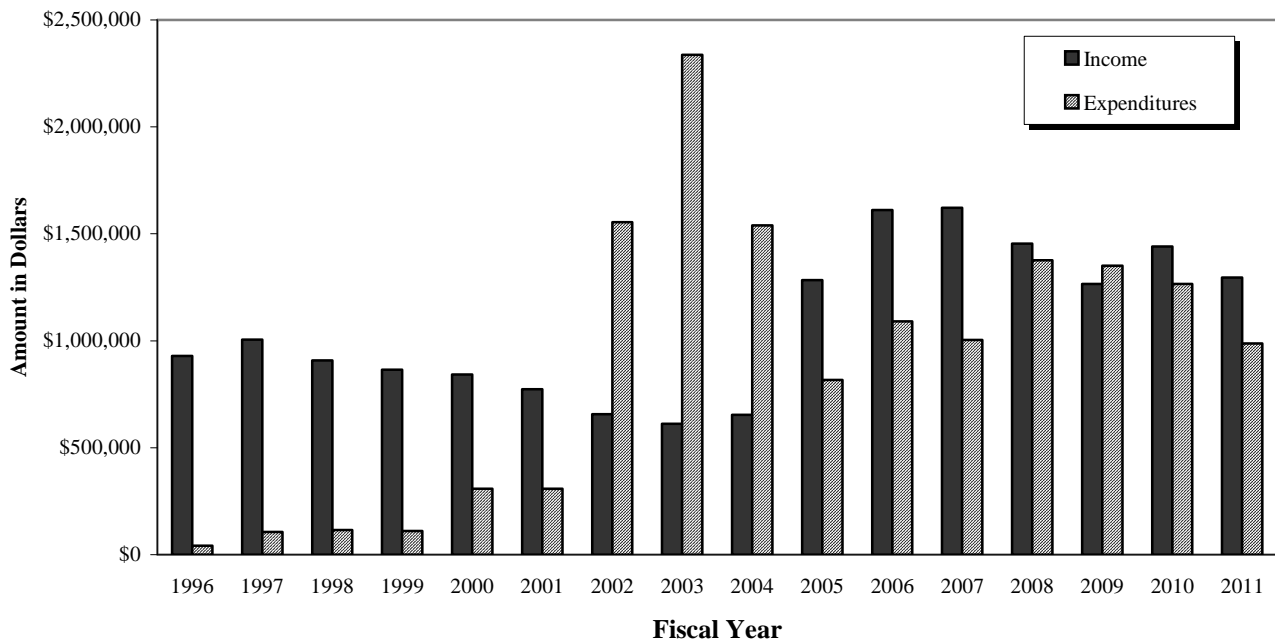


Figure 2: Comparison of Income versus Expenditures

Project Inventory

Of the 288 drycleaning sites in South Carolina that are currently eligible for the Fund, 34 have undergone a complete environmental assessment.

Another 164 sites could become eligible for the Fund in the future if contamination is discovered. Of these 164 sites, 79 have previously been sampled with no drycleaning related contamination detected, 37 have never been sampled due to property access issues, and there are 48 sites for which SCDHEC has not received complete eligibility application packages.

Assessment Costs

The cost for full assessments of the 34 sites range from \$51,000 to \$477,000. The average cost of the full assessments to date has been \$174,318. This represents a small but important reduction in the average assessment cost compared to previous years, and is discussed further in Section 3. Assuming that the average assessment cost can be reduced to \$161,000, and that 238 additional sites will require a full-scale assessment, \$38,318,000 will be needed for assessment of the remaining known sites.

Remediation Costs

Once sites are fully assessed, many will require some form of remediation in order to reduce risks and reach cleanup goals. Contamination that requires remediation has been identified at most of the sites assessed to date. Previous annual reports have estimated that 95% of all eligible sites may require remediation and/or long-term monitoring. Based on the results of work conducted so far, this figure remains reasonably accurate; of the 288 sites investigated to date, 18, or 6.25% have been determined not to require further action.

To date, SCDHEC has spent a total of \$4,064,797 on remedial activities at 12 drycleaning sites. These remedial activities include removal actions, cleanup system design, installation, monitoring, operation and maintenance. Removal actions or interim actions have been conducted at 7 of these 12 sites. The average

cost for removal actions is \$73,838 per site. Groundwater remediation systems have been implemented at 5 of the 12 sites, including three ozone systems, one potassium permanganate injection, and one groundwater recirculation system. The average cost to date for these 5 sites is \$709,585 and additional operation & maintenance costs will accrue until these sites reach closure.

To estimate future liability, SCDHEC staff have projected that 75% of the sites where soil and groundwater contamination has been identified to date will require active remediation. It is assumed that the remaining 25% of these sites may be addressed through removal actions, passive remedies, and institutional controls. Using these assumptions, and cleanup costs to date, future cleanup liabilities are estimated at \$141,749,575.

Future Liabilities

Based on expenditures to date and the above projections, SCDHEC staff estimate that \$180 million will be required to assess and clean up eligible sites. This estimate is based on \$38 million for assessment costs and \$142 million for remediation costs, including long-term operations and maintenance. This amount does not consider new sites and has not been adjusted for inflation.

Table 1: Income and expenditures for the Fund, 1996-2011
(Data for 2012-2016 are projected)

Fiscal Year	Income	Expenditures
1996	\$928,545.65	\$42,582.84
1997	\$1,005,142.60	\$106,383.46
1998	\$908,516.14	\$115,929.62
1999	\$864,553.81	\$111,067.06
2000	\$842,913.75	\$308,156.47
2001	\$773,511.14	\$308,078.22
2002	\$657,242.36	\$1,553,734.08
2003	\$612,189.97	\$2,337,642.77
2004	\$654,508.34	\$1,540,095.94
2005	\$1,284,353.96	\$816,404.12
2006	\$1,610,701.26	\$1,090,890.57
2007	\$1,621,127.21	\$1,003,163.01
2008	\$1,454,856.48	\$1,375,857.27
2009	\$1,265,303.68	\$1,350,910.21
2010	\$1,440,750.89	\$1,265,239.30
2011	\$1,295,766.34	\$986,750.81
2012	\$1,150,000.00	\$1,150,000.00
2013	\$1,150,000.00	\$1,150,000.00
2014	\$1,150,000.00	\$1,150,000.00
2015	\$1,150,000.00	\$1,150,000.00
2016	\$1,150,000.00	\$1,150,000.00

Five Year Funding Projection

In order to complete the funding projection, the income to the Fund was estimated over the next five fiscal years. The historical trend shows income to the Fund declining steadily from a high in 1997 until the 1% surcharge on retail sales of drycleaning services was implemented in FY05 (Figure 1). Trend analysis

conducted in earlier Annual Program Status Reports projected that income to the Fund would remain steady at a level near \$1,600,000 through FY12. Actual revenue has declined since FY07. Amendments to the Act enacted in 2009 have had a positive effect, however revenue fell by roughly 10% in FY11. Based on data through November 2011, FY12 revenue is expected to decline further to approximately \$1,150,000. This amount is projected as the approximate average income to the Fund for the next five years.

Table 1 includes a five-year projection of expenditures. Expenditures during FY11 were less than total income to the Fund. Actual expenditures will not exceed income to the Fund plus remaining balances carried forward from previous years.

3. Recent Activities

Assessment Activities

From 1995 through 2006, SCDHEC had completed assessment of 29 Fund-eligible sites. This left a large number of sites where potential impacts to human health and the environment were unknown. Therefore, between late 2006 and 2010, SCDHEC conducted preliminary investigations called Expanded Initial Assessments (EIAs) at the remaining 259 Fund-eligible sites in South Carolina. These EIAs were used to rapidly identify existing and potential human exposures, and also provided data to help prioritize future work. Additional sampling was conducted during FY11 to fill data gaps and allow closure at a number of these sites. More EIAs may be conducted in the future as additional sites are determined to be eligible for the Fund.

During the past year, SCDHEC has completed full-scale assessments, known as Detailed Facility Investigations, or DFIs at five sites. Four of these sites were completed under a short-term (nine months) contract that was awarded using a competitive bid process. Investigation of the remaining site began prior to the award of the competitive bid contract. SCDHEC will be reviewing the reports and data generated by these investigations to determine whether the competitive bid process is beneficial to the program. While side-by-side comparison of results is complicated by differences in the size, scope, and complexity of various sites, both methods appear to deliver data of a quality that will support remedy selection.

An innovative approach to site investigations is being piloted in the Lake Forest area of Greenville. A state assessment contractor with extensive experience at drycleaning sites in South Carolina is conducting an assessment of 8 sites that are in close proximity to one another. Investigation of these sites considers the cumulative impact of contamination from multiple sites. Rapid screening techniques and combining common tasks at several sites per mobilization will allow more efficient data collection with less dollars spent. SCDHEC anticipates that lessons learned from this project can be applied to investigations at other co-located sites.

Remediation Activities

During FY11, SCDHEC staff have evaluated progress at sites with existing active remedies. Three of these remedial systems have been shut down as the reduction in contaminants has reached a point of diminishing returns. Contaminant reduction was sufficient to allow removal of remedial equipment at one of these sites, and periodic monitoring is being conducted to ensure that contaminant concentrations continue to decline. Two other sites have seen limited progress, and bench scale testing of an alternative technology has been conducted for these sites. Field testing of these technologies is planned for 2012.

No-Further-Action Sites

Since September 2010 SCDHEC has made no-further-action (NFA) determinations at 16 sites where investigation has determined that drycleaning contaminants are not present at levels that require additional assessment or remediation. Provided that these facilities continue to meet the requirements of the Act, they can remain eligible in the event that evidence of contamination is discovered in the future. Given improvements in industry practices and equipment, combined with containment measures required by the Act, SCDHEC anticipates that these sites are unlikely to become contaminated in the future.

Containment Certification

During October 2011, SCDHEC began sending out containment structure certification forms. Containment certification is a requirement for eligibility under the Fund, and is conducted every five years. The last round of containment certification was conducted in 2005. Staff will be following up with phone calls to locations which don't respond, and site visits to those locations that cannot be reached by phone. A subset of drycleaning facilities will be visited to verify that containment structures meet the requirements of the Act. Failure to comply with the containment requirements constitutes gross negligence with regard to determining site eligibility for the Fund [44-56-470(I)].

4. Eligibility and Prioritization

Eligibility Application Scoring System

Drycleaners seeking eligibility for the Fund must register their facilities with DOR and submit a completed eligibility application to SCDHEC. The eligibility application provides such information as which solvents are used at the site, how long the drycleaner has been in operation, and how the waste products from the cleaning process are disposed. The applicant (usually the drycleaning business owner or land owner) certifies in the application that the drycleaning plant meets all of the eligibility criteria specified in the Act. SCDHEC initially assigns a priority ranking to the site using information provided in the eligibility application.

Prioritization Process

SCDHEC prioritizes sites for future funding based on available assessment information. The Tier system categorizes sites into one of five tiers, and is designed to identify sites which require immediate action to prevent or eliminate human exposures to contaminants. These Tier categories are defined in Appendix A. After an initial assessment or other investigation is conducted, a site is assigned a value ranging from Tier I (Most urgent), to Tier N (no further action). Most of the drycleaning sites that have been ranked were initially assigned to Tier II, meaning that they have contamination and need to be investigated further. If SCDHEC determines that there is an imminent health risk, then the site is immediately designated a Tier I site and the health risk is dealt with accordingly. For example, if impacted private drinking water wells are discovered, then the residents are provided with bottled water for consumption until an alternate water source is established. Once the risk from contaminated drinking water is eliminated, the site is re-ranked for assessment and/or remediation and is usually moved down to the Tier II or Tier III level, reflecting that there is contamination present at the site, but there are no imminent health risks.

Site Ranking

While the Tier system categorizes sites broadly, it does not prioritize individual sites within each tier. Program staff use data collected from the EIAs to calculate a numeric score and assign a rank to each site.

As specified in the Act, this process considers the degree to which human health, safety, or welfare may be affected by exposure to the contamination. Other factors considered include the probability of contamination migrating off-property, and adjacent land use. This system allows program staff to update a site's ranking as new data become available, or as corrective actions are taken to mitigate risks. Currently, all eligible sites have been evaluated using this ranking system, and the revised ranking list is posted on the program's website at: <http://www.scdhec.gov/environment/lwm/pubs/drycleaningrank.pdf>

5. Public Participation in the Drycleaning Program

One of SCDHEC's goals for the Drycleaning Restoration Trust Fund Program is to encourage public participation in the remedy selection/cleanup process. Community involvement in the program is important for several reasons. Primarily, it gives local residents an opportunity to have input into choosing a remedial strategy and allows them to address any concerns that they may have about the site. People living near a site may be aware of conditions that could influence the effectiveness of the available remedies. On several occasions, sharing of such important information has substantially aided SCDHEC's understanding of the site and has influenced remedial decisions.

When SCDHEC conducts assessment activities at a site it may be necessary to address the potential migration of contaminants onto or beneath adjacent properties. Field personnel meet with homeowners and business owners in the area surrounding the site when there is a likely risk to drinking water supply wells. SCDHEC may conduct sampling to determine if the wells have been affected by contamination emanating from a drycleaner property. If drinking water supplies have been contaminated, an alternate source of drinking water is provided, eliminating the immediate risk to human health. The site is then reprioritized for completion of assessment and remediation.

SCDHEC distributes information about the site and its upcoming remediation to the public via a legal notice in local newspapers and letters to area residents, local government officials, and locally elected members of the S.C. General Assembly. SCDHEC schedules a public meeting at a location near the drycleaning site, and advertises the time and place as a legal notice. SCDHEC also sends individual letters to those in the vicinity of the site in question. At the meeting, a SCDHEC spokesperson presents an overview of site conditions and explains the potential remedies that have been considered. An open forum with a question-and-answer session follows this presentation. A court reporter compiles an official transcript of the meeting, and people are encouraged to call the program's toll-free telephone number (1-866-343-2379) if they have further questions.

6. Web Links

South Carolina Department of Health and Environmental Control (SCDHEC)

www.scdhec.gov

SCDHEC's Drycleaning Restoration Program home page:

www.scdhec.gov/environment/lwm/html/drycleaner.htm

SCDHEC forms for Drycleaners and Environmental Contractors:

www.scdhec.gov/environment/admin/htm/eqcforms.shtml#Dry

List of SCDHEC Certified Drycleaning Contractors:

www.scdhec.gov/environment/lwm/pubs/South%20Carolina%20Drycleaning%20Fund%20Certified%20Contractors%2012.doc

South Carolina Drycleaning Facility Restoration Trust Fund Act:

<http://www.scstatehouse.gov/code/t44c056.php>

South Carolina's drycleaning sites by rank (priority list):

<http://www.scdhec.net/environment/lwm/pubs/drycleaningrank.pdf>

State Coalition for the Remediation of Drycleaners (U.S. EPA):

www.drycleancoalition.org

Appendix A

Site Assessment, Remediation and Revitalization Division

Project Tiering System

SITE ASSESSMENT, REMEDIATION, AND REVITALIZATION DIVISION PROJECT TIERING SYSTEM

