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**Process Improvement for the Ocean and Coastal Resource Compliance
Section**

February 2007

By Steven Brooks

South Carolina Department of Health and Environmental Control

Office of Ocean and Resource Management

1362 McMillan Avenue, Suite 400

Charleston, South Carolina 29405

Phone: (843) 747-4323

Email: brooks@dhec.sc.gov

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STATE DOCUMENTS

Introduction

The Enforcement and Compliance Section within the Regulatory Programs Division of the South Carolina Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management (SCDHEC-OCRM) has been focused on making a number of changes to better address enforcement and compliance responsibilities in the permitting, certification, and stormwater sections. The enforcement and compliance section originally consisted of four full-time officers to cover enforcement and compliance responsibilities only in the critical area permitting jurisdiction (a subsection of the eight county coastal zone). The enforcement and compliance section now consists of four full-time enforcement and compliance officers and three temporary compliance inspectors. Over time, the responsibilities of the enforcement and compliance section have been expanded to include enforcement and compliance responsibilities in the stormwater permitting and federal certification sections in the entire eight county coastal zone.

The significantly expanded role (both in programmatic and geographical jurisdictions) has presented the enforcement and compliance section with a number of challenges. One of these challenges is in the area of process and procedures. The increase in programmatic and geographical responsibilities without a corresponding adjustment in enforcement and compliance process and procedures has resulted in a discontinuity that interferes with the staff's ability to keep pace with the newly added responsibilities. This has resulted in a backlog of enforcement actions and compliance inspections that have accumulated over time.

Purpose of Project

The purpose of this project is to gather data on existing processes, solicit suggestions from staff, analyze and review suggestions for changes and/or additions to existing forms and procedures, then gather data after process improvements have been implemented. According to Fourth Generation Management, “Every employee has a responsibility to keep seeking ways to improve the work they do. But management has a larger responsibility to customers, shareholders, and other stakeholders to manage those improvements. This means encouraging the development of best-known methods to improve results and to establish a solid base on which further improvements can be built. It also means using data and process thinking to focus on specific sources of problems and develop countermeasures. And it means adopting a shared framework for improvement throughout the organization, which both increases the odds of success for each project individually and makes it easier for manager to find ways to improve the organization’s ability to improve.” (Joiner, *Fourth Generation Management*, p. 217)

This project will also explore what process improvements would be helpful in addressing the accumulated backlog and improving enforcement and compliance operations across all programmatic and geographical areas. Brian L. Joiner, a renowned statistician known for his distinctive leadership in statistical thinking and quality improvement stated, “There are some major benefits to be gained by making process improvement a part of your life in the workplace. There are also some specific actions that you must be willing to take if you expect to gain benefits. You must: take risks, educate yourself, be prepared for criticism, be open to change, and try new and different things, and focus on customer and process.”

(Flanigan, Scott, *Process Improvement Enhancing Your Organization’s Effectiveness*, p. 11).

Problem Identification

The general public has expectations of strong enforcement and compliance and also demands that reported violations and inspections be handled in an efficient and timely manner. Additionally, the regulated community expects timely inspections on their completed projects. In some cases, these inspections are needed before developers can move on to the next phase of their project. Time is money and too long of a delay can result in huge costs for a developer and other members of the regulated community. Certain permits have specific time constraints and any delay can result in additional backlogs and can affect our ability to meet our customers' needs and expectations.

The enforcement and compliance staff began undertaking a comprehensive review of enforcement and compliance efforts by going through the permitting, stormwater, and certification files to check for compliance with these various authorizations under South Carolina's Coastal Zone Management Program. This was done to diagnose the nature of customers' needs, identify specific problem areas to focus upon, and formulate a plan to improve operations and compliance across all permitting and certification programs. From this effort, two areas were identified for this project:

- The need to reduce the amount of backlogged compliance inspections; and
- The need to create appropriate documents and forms and develop processes to improve operations and compliance within the permitting, certification, and enforcement program areas.

Gathering Baseline Data

Data was gathered from January 1, 2005 through July 31, 2006, on critical area and stormwater inspections. For this period, the total number of inspections conducted was 1570.

Critical Area Inspections

The backlog of critical area inspections in January of 2005 was approximately 4500. 1075 critical area inspections were conducted. Approximately 23.88 percent of the original critical area inspection backlog was inspected. 700 of those inspections were performed on completed docks. Roughly 127 of these dock inspections resulted in potential violations (approximately 18 percent of the total dock inspections). The remaining 573 inspections were found to be in compliance.

Stormwater Inspections

The backlog of stormwater inspections in January of 2005 was not obtainable because of the manner in which data was entered into the Environmental Facilities Information System (EFIS) database. However, approximately 495 stormwater inspections were conducted. Roughly 17 of these inspected stormwater projects resulted in potential violations (approximately 3.4 percent of the total stormwater). The remaining 478 stormwater inspections were found to be in compliance. Approximately 17 potential violations resulted from these stormwater inspections.

Additionally, an Excel database of stormwater projects with pending final compliance inspections was compiled in lieu of establishing a current backlog of stormwater inspections. In January of 2005, it was determined that there were approximately 350 stormwater projects with pending final inspections. Roughly 136 of the 350 stormwater final inspections were completed. The remaining 359 stormwater inspections (495 minus 136) were Wastewater/Water Supply Certification Inspections and other types of stormwater inspections.

Using the information above, one can predict what would be needed to eliminate the backlog and keep pace with the number of new permits requiring inspections under current compliance inspection processes. For critical area inspections, 3 inspectors could complete approximately 59.72 critical area inspections per month (1075 critical area inspections divided by 18 months), using current methods. At this rate, it would take 3 inspectors 57.35 months (or approximately 4.8 years) to inspect the remaining backlog of critical area inspections. The total number of critical area permits issued in 2005 was approximately 850. Using the 2005 total as a benchmark, the approximate number of new critical area permits needing inspections would be 71 per month. It would take approximately 3.6 inspectors to keep pace with the number of new critical area permits requiring compliance inspections.

For stormwater inspections, 3 inspectors could complete approximately 27.5 stormwater inspections per month, using current methods. At this rate, it would take approximately 3 inspectors 7.8 months to inspect the remaining 214 stormwater projects with pending final compliance inspections in the Excel database (350 stormwater projects with pending final inspections minus the 136 inspections that were completed on these final inspections) to eliminate the backlog. The total number of stormwater permits issued last year was approximately 1017. Using last year's total as a benchmark, the approximate number of new stormwater permits needing inspections per month would be 84.75. It would take approximately 9.25 inspectors to keep pace with the number of new stormwater permits requiring inspections.

Hypothesis and Plan Development

After considering several approaches to initiate the process improvement process, it was decided that the best approach would be to 1) train the newly hired staff in the current compliance process and procedures (in order to give them sufficient knowledge and background to critically analyze what they do), 2) enlist staff in the development of appropriate documents, forms, & procedures, and 3) begin looking at existing processes and procedures.

It was hypothesized that the number of inspections would decrease significantly because the only actual inspections would be on projects that were shown to be in violation with their issued permits by the As-built surveys or the Voluntary Certified Inspection with Evidence (CIE) form. It was predicted that the compliance inspection numbers would essentially equal the number of projects that were found to have violations that resulted in enforcement actions.

Staff Training

Staff training began with the enrollment of all staff responsible for conducting compliance inspections into the Certified Erosion Prevention and Sediment Control (CEPSCI) Course because this training and certification is required to perform inspections in the stormwater program area. After taking this course, staff was required to take an exam for certification. Passing this exam resulted in making our inspectors certified erosion prevention and sediment control inspectors with the state of South Carolina. Enforcement and compliance staff later received ArcGIS training at NOAA Coastal Services Center to aid in conducting enforcement investigations. ArcGIS is an integrated collection of geographic information software (GIS) products that enables users to view, query, & create maps, view spatial data, and perform basic spatial analysis. These software programs are used regularly to facilitate investigations when limited data or location information exists about the site. Staff also

received training in the use of Geographic Positioning Systems (GPS), various computer databases and other software to catalog and track compliance on all inspections that were conducted. Staff training was very important because it provided staff with a foundation from which to look at existing processes and procedures and recommend improvements.

Development of Forms and New Processes

Stormwater Compliance Inspection Request Form

A new Stormwater Compliance Inspection Request Form was created. Two older stormwater inspection request forms were modified to encompass the four types of stormwater compliance inspections: Final Inspections, Wastewater/Water Supply Certification Inspections, Stormwater Pond Maintenance Inspections, and Stormwater Compliance Inspections. This form was developed with the input and assistance of the compliance staff. The previous forms did not clearly indicate what type of inspection was being requested. This was one of the reasons a backlog baseline could not be obtained.

Voluntary Certified Inspection with Evidence (CIE) Form

The Voluntary Certified Inspection with Evidence (CIE) form was the idea of a junior staff member. This form was developed to allow developers to prepare site inspection information that could be sent in to DHEC-OCRM compliance staff in lieu of a field inspection in order to facilitate timely Wastewater/Water Supply Release Inspections. The intent of this effort was to streamline the stormwater inspection process and save man-hours that would otherwise be expended on field inspections of projects that were in compliance.

Uniform Complaint Referral Form

A uniform complaint referral form was completed for both internal and external use. Previously, there were two different complaint referral forms for the critical area section only and none

for the stormwater and federal certification sections. This new form functions as the complaint referral form for all three program areas and for internal and external referrals. This form was developed with the input of compliance staff.

As-built Requirements

As-built Requirements have been put in place in the critical area permitting section as well as the stormwater permitting section. This requirement obligates a permittee to submit an as-built survey after the completion of their project to certify that their project has been constructed in compliance with the issued permit. This survey must be stamped and signed by one of the following professional groups: Registered land surveyors, registered professional engineers, or registered landscape architects. These individuals must be licensed in the state of South Carolina. This process is designed to save many man-hours that were previously used to physically inspect projects that were in compliance. With the as-built surveys, an inspector could review the survey and determine from his desk if a project is in compliance. This would cut down on the amount of manpower needed to check projects for compliance and would quickly begin reducing backlog. The concept of utilizing as-built surveys to ensure compliance started out as an idea from enforcement and compliance staff.

Plan Development and Implementation

After training the compliance staff, reviewing their proposed changes in documents and forms, and evaluating their ideas on new processes, the next logical step was to formulate a work plan. A work plan should include the ideas and suggestions of the compliance staff.

Process Improvement Work Plan

1.] Gather baseline data on the number and types of critical area and stormwater compliance inspections that have been conducted from July 1, 2006 through December 31, 2006.

Description

Collecting this valuable data is essential in order to provide a “Gap Analysis” to map out the shortfalls in the current processes and procedures. This will be necessary to develop the most effective process improvement approaches.

Objectives

SCDHEC-OCRM will collect this data from the Environmental Facility Information System (EFIS) and maintain this data for use in improving existing processes. This information will also be used to determine the effectiveness of the new and revised processes.

Deliverables

1. Maintain a database of baseline data on critical area and stormwater compliance inspections.

- 2.] Reduce non-compliance of regulated activities and facilities to meet applicable protective standards (Objective 4-A-3 of South Carolina Department of Health and Environmental Control Strategic Plan).

Description

SCDHEC-OCRM plans to reduce the amount of backlogged compliance inspections, create appropriate documents and forms and develop new processes to improve operations and compliance within the permitting, certification, and stormwater program areas.

Objectives

This effort will refine methods, identify problems, and function in a more efficient manner.

Deliverables

1. Implementation of the As-Built Survey Requirements.
 2. Utilization of the improved stormwater inspection form.
 3. Utilization of the improved Uniform Complaint Referral Form.
 4. Utilization of the improved Voluntary Certified Inspection with Evidence (CIE).
-
- 3.] Develop procedures that measure the success of the implemented process improvements.

Description

Collecting data after the process improvements have been implemented is necessary in order to determine how successful the changes were and to verify whether the shortfalls in the current process have been addressed.

Objectives

To put in place measures that can monitor the process changes and provide feedback so that additional adjustments can be made.

Deliverables

1. Periodic inspection reports on critical area and stormwater compliance inspections.

Data Gathered After Process Improvements

Data was gathered from July 1, 2006 through December 31, 2006, on critical area and stormwater inspections. For this period, the total number of inspections conducted was 312.

Critical Area Inspections

The backlog of critical area inspections in July of 2006 was approximately 3425. Forty-seven critical area inspections were conducted. Approximately 1.37 percent of the critical area backlog was inspected.

Stormwater Inspections

In July of 2006 approximately 265 stormwater inspections were conducted. Roughly 4 of these inspected stormwater projects resulted in potential violations (approximately 1.51 percent of the total stormwater). The remaining 261 stormwater inspections were found to be in compliance.

For comparison purposes it was necessary to divide the baseline data by three. This was required because the baseline data was gathered over an 18-month period and the post process improvement data was gathered over a 6-month period.

Baseline and Post Process Change Data Comparisons

Data Type	Baseline Data Jan 1, 2005 thru July 31, 2006 (18 Months)	Jan 1, 2005 thru July 31, 2006 Divided by three	Post Process Change July 1, 2006 thru Dec 31, 2006 (6 Months)
Critical Area Data	1075 critical area inspections	358.3 critical area inspections	47 critical area inspections
Stormwater Data	495 stormwater inspections	165 stormwater inspections	265 stormwater inspections

After the gathering of baseline data, it was hypothesized that the number of inspections would decrease to inspections on projects that were shown to be in violation with their issued permits by the As-built surveys or the Voluntary Certified Inspection with Evidence (CIE) form. It was predicted that the compliance inspection numbers would essentially equal the number of projects that were found to have violations that resulted in potential violations. Using the baseline data, the critical area compliance inspection numbers were expected to be in the area of 42.33 (127 potential violation divided by three). For stormwater inspections, the number of inspections was expected to be in the area of 5.66 inspections. The critical area inspections predictions were quite accurate. Although we had reduction of approximately 100 in a six-month period, the stormwater inspections were significantly off the mark. After receiving this feedback, an investigation was initiated to understand this discrepancy. It was later determined that the variance could be explained as resulting from the following causes:

- Use of the Voluntary Certified Inspection with Evidence (CIE) process could not be implemented because of legal issues involving the shifting of compliance responsibility to the regulated community;

- Programmatic changes in the stormwater section (the new NPDES General Permit) required that inspections be conducted as part of the review of a project; and
- Staff changes in the stormwater and compliance sections modified somewhat the goal of reducing the number of stormwater inspections. There was a concern that Wastewater/Water Supply Certification Inspections, which have built in time constraints, could hold up developers and homebuilders on major projects. Additionally, OCRM viewed the stormwater compliance inspections during construction as having the most importance because of the potential for off-site pollution.

Overall, we were successful in reducing of the amount of backlogged compliance inspections and the creating useful documents, forms, and processes to improve operations and compliance within the permitting, certification, and stormwater program areas. All of the new forms and operational processes, with the exception of the Voluntary Certified Inspection with Evidence (CIE), are now part of the standard operating procedures for the permitting, certification, enforcement, and stormwater program areas.

Problems and Issues

These inspections occurred during an 18-month period. Some of the difficulties encountered during the implementation of this effort were getting started late and travel restrictions. Additionally, it was not possible to obtain accurate statistics of the amount of backlog stormwater inspections, which made it difficult to set a baseline. Also, the compliance inspectors experienced several problems, such as confusion and difficulty in locating specific lots and their corresponding permits. This confusion resulted from the issuance of a single placard to a permit that had multiple docks on multiple lots. The inspectors had some difficulty understanding the permits and determining what OCRM actually allowed in the issued permits. They also had some difficulty with the file location (hard files, scanned files, electronic EFIS files, old database files, microfiche, etc.) and figuring out all the amendments that are sometimes done after the initial permit is issued. They also came across a lot of incorrect or missing information. We also learned that during the process improvement process, the legal department should be involved in the front end. We expended a lot of time and energy putting together the Voluntary Certified Inspection with Evidence (CIE) process only to find that there were potential legal obstacles to overcome. We hope to revisit putting this process in place if it can be done.

In summary, we are all familiar with the general public's expectations of strong enforcement and compliance efforts from this Agency. Despite our best efforts, OCRM enforcement and compliance resources are limited. Creating useful documents, forms, and processes to improve operations and compliance within compliance section can be a logical and sensible approach to managing in a consistently efficient and timely manner the overwhelming compliance workload. Old processes will continue to be evaluated and new processes like As-builts and the Voluntary Certified Inspection with Evidence (CIE) will continue to be advanced. It is clear that establishing a system of continual process improvement should be part of the final plan if OCRM is to be successful and prepared for the future.

APPENDIX A

TYPES OF INSPECTIONS

Wastewater/Water Supply Certification Inspection - The Bureau of Water issues wastewater and water supply permits for both domestic and industrial projects. These projects are usually closely associated with stormwater permits. The Bureau of water coordinates with the Office of Ocean and Coastal Resources Management (OCRM) on all wastewater and water supply projects located in counties under OCRM's jurisdiction. These coastal counties are Horry, Georgetown, Berkeley, Charleston, Dorchester, Colleton, Beaufort, and Jasper. OCRM must certify that the wastewater/water supply permits are consistent with the Coastal Zone Management Act.

Final Stormwater Inspection - A final inspection is conducted at the completion of a project to ensure compliance with the approved stormwater management and sediment control permit.

Initiation of Construction and During Construction Stormwater Inspections - The person responsible for the land disturbing activity shall notify the appropriate inspection agency before initiation of construction on when an inspection can be conducted to ensure compliance with the approved stormwater management and sediment control plan. DHEC or any other responsible inspection agency shall, for inspection purposes, do all of the following items:

- (1) Ensure that the approved stormwater management and sediment control plans are on the project site and are complied with;
- (2) Ensure that every active site is inspected for compliance with the approved plan on a regular basis;
- (3) Provide the person responsible for the land disturbing activity a written report after every inspection.
- (4) Notify the person responsible for the land disturbing activity in writing when violations are observed, describing the:
 - (a) Nature of the violation;
 - (b) Required corrective action; and
 - (c) Time period for violation correction.

Stormwater Pond Maintenance Inspections - Maintenance inspections of stormwater ponds to ensure upkeep of the pond and its immediate surroundings. Inspections usually involve an assessment of aquatic weeds, the effectiveness of weed management, and the integrity of the pond's structure. Stormwater ponds are also inspected after major storm events for side slope erosion and outfall structure damage.

Critical Area Inspection - An inspection that is conducted at the completion of a project to ensure compliance with the issued critical area permit.

Marina Compliance Inspections - An inspection that is conducted at the completion of a marina or marina type facility to ensure compliance with the issued critical area permit.

APPENDIX B

LIST OF ATTACHMENTS

Attachment A –Project Certification Site Inspection Form

Attachment B –Stormwater Management and Sediment Reduction Site Inspection Report

Attachment C –Certified Inspection with Evidence (CIE) Stormwater Management and Sediment Reduction Site Inspection Report

Attachment D –Incident Referral Form

Attachment E –DHEC-OCRM Permit As-Built/Record Drawing Requirements

Attachment F –Example of As-Built Language that is included on all critical area permits

Attachment G –Stormwater Management System Inspection Form

Attachment H –Marina Inspection Report Form

Attachment I –Permit Inspection Report Form (Critical Area)

ATTACHMENT A

PROJECT CERTIFICATION SITE INSPECTION REQUEST

Date: _____

(OCRM PROJECT MANAGER)
S. C. DHEC-OCRM
1362 McMillan Ave., Suite 400
Charleston, S.C. 29405

Project Name: _____

Stormwater Permit #: _____

OCRM WS/WW #: _____

I, as a registered professional, certify construction of the stormwater management system at the above referenced project has been completed in accordance with the approved plans and specifications. This certification is based upon periodic observations of construction and an inspection for design compliance by me or a representative of my office who is under my supervision. Any changes from the approved plans are shown on the attached as-built drawings (if applicable).

() We request that OCRM staff conduct a final wastewater/water supply (WW/WS) operational approval inspection at their earliest convenience.

Or

() We request that OCRM staff conduct a final stormwater permit site inspection at their earliest convenience.

Registered Professional: _____
Printed Name Signature

S. C. Registration #: _____

Company/Agency Name: _____

Address: _____

Phone #: _____ Fax #: _____

Email Address: _____



Office of Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, SC 29405
(843) 747-4323 Fax (843) 744-8772

ATTACHMENT B

Permit # _____ EFIS ID # _____

STORMWATER MANAGEMENT AND SEDIMENT REDUCTION
SITE INSPECTION REPORT

DATE/TIME: _____
PROJECT NAME: _____
COUNTY: _____

WEATHER: _____

INSPECTED BY: Will McGoldrick

FOLLOW-UP: [] Yes [] No

Type of Inspection: [] Initiation of Construction [] During Construction/Compliance [] Reinspection [] Final

CHECK ONE OR MORE:

- 1. DOES THIS SITE HAVE NPDES COVERAGE? [] YES [] NO
2. ARE THE APPROVED PLANS ONSITE? [] YES [] NO
3. ARE NPDES INSPECTION AND MAINTENANCE REPORTS COMPLETE? [] YES [] NO [] N/A
4. INSTALLATION OF STORMWATER DEVICES (PONDS, SWALES, ETC.)? [] YES [] NO
A.) PROPER INSTALLATION OF STORMWATER MANAGEMENT DEVICES? [] YES [] NO
B.) PROPER MAINTENANCE OF STORMWATER MANAGEMENT DEVICES? [] YES [] NO
5. INSTALLATION OF SEDIMENT CONTROL (SILT FENCE, CHECK DAMS, ETC.)? [] YES [] NO
A.) PROPER INSTALLATION OF SEDIMENT CONTROL DEVICES? [] YES [] NO
B.) PROPER MAINTENANCE OF SEDIMENT CONTROL DEVICES? [] YES [] NO
DISTURBED AREA STABILIZED? [] YES [] NO (NPDES definition of 70% vegetative cover/acre)
IF YES, BY WHAT METHOD _____
7. OFFSITE IMPACT TO: [] NONE [] WETLAND [] STREAM/WATERBODY/CRITICAL AREA
[] ROW [] ADJOINING PROPERTY OWNER [] OTHER

COMMENTS:

VIOLATIONS CITED: _____

CORRECTIVE ACTIONS: _____

TIME ALLOWED FOR CORRECTIVE ACTION: _____

ENFORCEMENT ACTION: _____

ENGINEER/FIRM: _____ CONTRACTOR: _____

REPRESENTATIVES PRESENT: _____

PHOTOS TAKEN: [] Yes [] No

FORM PROJECT MANAGER: _____



ATTACHMENT C

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

CERTIFIED INSPECTION WITH EVIDENCE (CIE) STORMWATER MANAGEMENT AND SEDIMENT REDUCTION SITE INSPECTION REPORT

PROJECT (SITE) NAME AS IT APPEARS ON THE STORMWATER PERMIT: _____

SITE COUNTY: _____ : SITE LATITUDE (at Site entrance): _____

SITE LONGITUDE (at Site entrance): _____

SITE LOCATION AND DRIVING DIRECTIONS (from OCRM Myrtle Beach Office):

SITE STORMWATER PERMIT NO.: _____

SITE WASTEWATER PERMIT NO.: _____

SITE WATER SUPPLY PERMIT NO.: _____

TITLE AND DATE OF OCRM-APPROVED CONSTRUCTION PLANS (i.e. Site Basemap) FORMING THE BASIS OF THIS INSPECTION: _____

DATE/TIME OF INSPECTION: _____

WEATHER: _____

INSPECTOR(S) NAME(S) AND AFFILIATION: _____

INSPECTOR(S) TELEPHONE NO(S) AND E-MAIL ADDRESS(ES): _____

TYPE OF INSPECTION: WATER AND WASTEWATER

(EXPLAIN ALL "NO" ANSWERS TO ITEMS 1 THROUGH 9 BELOW IN THE EXPLANATION SECTION)

1. DOES THIS SITE HAVE NPDES COVERAGE? YES NO
2. ARE THE APPROVED CONSTRUCTION PLANS AND SWPPPS ONSITE? YES NO
3. LOCATION OF APPROVED PLANS AND SWPPS (E: include SWPPPS for preceding 3 weeks) _____
4. HAVE ALL STORMWATER AND SITE FEATURES OF THE INSTRUCTION SET? (Items 5a through 5p) BEEN INSPECTED YES (E: include photos, photo index, Site basemap, etc.) NO
5. IS THE STORMWATER SYSTEM CONSTRUCTED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION PLANS? YES NO
6. DOES THE STORMWATER SYSTEM APPEAR TO BE FUNCTIONING PROPERLY? YES NO

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Ocean and Coastal Resource Management

Myrtle Beach Office • 927 Shine Avenue • Myrtle Beach, SC 29577 • Phone: (843) 238-4528 • Fax: (843) 238-4526 • www.scdhec.gov



C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

- 7. IS THERE A PROPERLY DESIGNED CONCRETE WASHOUT AREA ON SITE? YES (E.) NO
- 8. ARE ALL WETLANDS, WETLAND BUFFERS, CONSERVATION EASEMENTS MARKED BY "DO NOT DISTURB" OR EQUIVALENT WARNING PLACARDS? YES (E) NO
- 9. HAVE ALL THE DEFICIENCIES IN THE PREVIOUS THREE SWPPP INSPECTIONS BEEN CORRECTED? YES NO (list uncorrected conditions in Explanation Section)

(EXPLAIN ALL "YES" ANSWERS TO ITEMS 10 THROUGH 12 BELOW IN THE EXPLANATION SECTION)

- 10. ARE THERE ANY ADVERSE OFFSITE IMPACTS FROM THE SITE TO WETLANDS, WATER BODIES, CRITICAL AREAS, ROADS OR TO PERSONS, WILDLIFE OR PROPERTY? YES NO
- 11. IS THERE EVIDENCE OF UNAUTHORIZED SOLID WASTE OR HAZARDOUS WASTE AT THE SITE? YES NO
- 12. ARE THERE ANY OTHER APPARENT VIOLATIONS LAW OR ADVERSE ENVIRONMENTAL CONDITIONS AT THE SITE? YES (E) NO

EXPLANATION SECTION

(Attach extra pages if necessary and applicable photographs or other Evidence)

Item No. _____ : Explanation: _____
: _____
: _____

Item No. _____ : Explanation: _____
: _____
: _____

Item No. _____ : Explanation: _____
: _____
: _____

Item No. _____ : Explanation: _____
: _____
: _____

Item No. _____ : Explanation: _____
: _____
: _____

ATTACHMENT D



Incident Referral Form

S. C. Department of Health and Environmental Control
Office of Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, South Carolina 29405
(843) 744-5838 (843) 744-5847 (fax)

Date:	Time:	OCRM Staff Taking Report:
--------------	--------------	----------------------------------

Name, Address and Telephone Number of Person Making Report:

Activity Date and Description:

Activity Location (Address, Tax Map #, Lot #, Permit #, Subdivision, or GPS Coordinates):

County:	Nearest Waterbody:
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Name, Address & Telephone of Property Owner:

Name, Address & Telephone of Other Involved Party (i.e. builder, contractor, site manager):

-----**FOR OFFICIAL USE ONLY**-----

Report Assigned To:	Date Assigned:	Investigation Date:
----------------------------	-----------------------	----------------------------

File Name:	Incident #:
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Investigator's Comments:

ATTACHMENT E

DHEC/OCRM Stormwater Permit As-Built/Record Drawing Requirements

Any construction project permitted or certified by DHEC-OCRM after March 15, 2006, will require that as-built/record drawings be submitted prior to stormwater permit close-out. Prior to the contractor requesting a final site inspection, one as-built/record drawing hard copy and 1 digital (scanned plan sheets) copy must be provided to OCRM staff. Allow at least one (1) week for initial review of as-built/record drawings. Final stormwater permit closeout is dependent upon approval of the as-built/record drawings and satisfactory completion of any punch list items. This requirement will be a condition in all stormwater permits and failure to comply will be considered a violation and could result in enforcement action.

The as-built/record drawings shall be a reproducible copy of the originally approved plans annotated to reflect changes from the approved design. The as-built/record drawings shall contain the following information:

1. Perimeter of the top of all ponds with average bottom and water surface elevations. Elevations of control structure orifices/weirs/spillways and volume of pond storage in Acre-Feet. All applicable easements around pond areas.
2. New drawing sheets that provide a survey of the newly constructed above ground pond(s), complete with contour data and inverts. The pond survey data shall be shown at the same scale as the previously approved construction drawings.
3. Permanent drainage pipes with size, material, length, slope and invert elevations.
4. Drainage ditches and swales with tops and toes shown at 50' intervals.
5. Other drainage or sediment/erosion control structures with elevations.
6. All jurisdictional and non-jurisdictional isolated freshwater wetland areas, wetland buffers, conservation easements and mitigation areas.
7. All elevations shall be in U.S. standard units relative to mean sea level.
8. The As-Built/Record Drawings must include the following statement:

"I have examined these plans and specifications and hereby sign, date and affix my seal to certify to the best of my knowledge that the stormwater management facilities shown on the as-built/record drawings were constructed substantially in accordance with the approved plans. Any deviations between the systems as-built/record drawings and the plans and specifications have been noted on the as-built/record drawings and will not impact the operation, capacity, or capability of the system."

S. C. Registered Professional Engineer, Landscape
Architect or Tier B Land Surveyor

"I hereby sign, date and affix my seal to certify that the as-built/record drawing survey shown is correct and accurate."

S. C. Registered Professional Land Surveyor

ATTACHMENT F

Example of As-Built Requirement Language that is included on all critical area permits.

Provided that an as-built survey of the dock must be submitted to the Department within 90 days of the expiration date of the final construction placard. The survey must be performed by a registered land surveyor, must show all components of the dock, and must list the starting and ending coordinates of the dock walkway in the SC State Plane Coordinate System, which can be obtained by survey-grade Global Positioning System equipment.

ATTACHMENT G

Appendix Item 2

Stormwater Management System Inspection Form

	Stormwater Management System Maintenance Inspection Form	S. C. Department of Health and Environmental Control Office of Ocean and Coastal Resource Management 1362 McMillan Avenue, Suite 400 Charleston, South Carolina 29405 (843) 747-4323 (843) 744-5847 (fax)	
THIS FORM IS TO BE USED FOR INSPECTION OF PROJECTS AUTHORIZED UNDER AN ISSUED COEM PERMIT			
Name of Inspector			
Project Name			
County	Permit Number	COAST/EFIS Number	
Site Location		Access for Maintenance Acceptable/Not Acceptable	
Waterbody			
BMP Type(s)		Wetland Buffers	
ITEMS INSPECTED: (AS APPLICABLE)	ACCEPTABLE	NOT ACCEPTABLE	REQUIRED MAINTENANCE/NOTES
Enhancements			
Vegetation & ground cover			
Erosion			
Debris			
Inlets			
Pipe condition (e.g., cracks, corroded metal)			
Energy dissipation (e.g., rip rap aprons)			
Slopes			
Roof drainage			
Flumes			
Outlet Channels			
Vegetation & ground cover			
Energy dissipation/slope protection (e.g., rip rap)			
Embankments			
Erosion			
Reservoir Area (Dry Pond)			
Standing water or wet spots after 72 hours			
Vegetation & ground cover			
Low flow channel obstruction			
Undesirable woody vegetation			
Sediment/trash accumulation			
Reservoir Area (Wet Pond)			
Undesirable vegetation with (e.g., invasive species)			
Floating or floatable debris			
Visible pollution			

Sediment Load			
Storage capacity			
Spillways (Primary)			
Concrete/masonry condition			
Sediment accumulation inside structure			
Vertical & horizontal alignment of control structure			
Low flow orifice obstructions			
Trash racks			
Debris			
Corrosion			
Spillways (Emergency)			
Obstruction			
Debris			
Channel protection			
Underground Drainage			
Pipe condition			
Sediment accumulation			
Catch basin/grate inlet condition			
Water quality inlets (e.g., Stormceptor)			
Infiltration practices (basins, trenches, pervious paving materials)			
Wales/Filtering BMPs			
Vegetation & ground cover			
Erosion			
Sediment deposits			
Wetland buffers			
Fences			
Constructed Wetlands/Bio-retention Cells			
Vegetation & ground cover			
Noxious/invasive species			
Sediment accumulation			
Other (Specify)			
Attachments:			
Overall condition of system			
Date maintenance must be completed by:			
Responsible Party:			TMS Number
Address:			Phone:
Inspector's Signature:			Date:

ATTACHMENT H

**S. C. Department of Health and Environmental Control
Office of Ocean and Coastal Resource Management**

MARINA INSPECTION REPORT FORM

Date:

Time:

S. C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

**OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT
MARINA INSPECTION REPORT**

Date: _____

Time: _____

Permit Number(s): _____

Name: _____

Location: _____

County: _____

Waterway: _____

Mailing Address: _____

Telephone Number: _____

Marina officials present during inspection:

Inspection Officials: _____

Marina Name:

Date:

I. General Information

- Public Marina
- Private Marina

- Open Water Marina
- Basin Type Marina
- Lock Harbor Marina
- Dry Stack Facility
- Other (describe) -

- Wet Slips - Number of wet slips -
or linear feet of docking space -
- Dry Stack Facilities - Number or dry stack slips -

Size of boats that can be accommodated at the marina?
wet slips -
dry stack facility -

Percent occupancy at the marina (at the time of this inspection)?
wet slips -
dry stack facility -

Available Facilities

- Fuel
- Pumpout
- Porta-Potty Dumping/Cleaning Station
- Restrooms
- Showers
- Ships Store
- Boat Ramp
- Laundry
- Electric Hookups
- Potable Water Hookups
- Storage of trailered boats
- Repairs/maintenance
- Restaurant
- Rentals/Charters

Marina Name:

Date:

I. General Information (cont.)

Available Facilities (cont.)

- Tour/Ferry Boats
- Dockside storage lockers
- Telephone Hookups
- Cable TV Hookups
- Waste Oil Dump Station
- Used Antifreeze Dump Station
- Other (list)

Are liveboards allowed at the marina? Yes No
if Yes, number of liveboards currently at marina -
maximum number of liveboards allowed -
are liveboards required to have no-discharge MSD's or other
approved MSD's Yes No
if yes, specify -

Operations and Maintenance Manual required by permit Yes No
approved O & M Manual found in files Yes No
O & M Manual needs updating Yes No

Parking

Number of parking spaces provided for marina patrons -
Does this include tour/ferry boat parking Yes No

Marina Name:

Date:

II. Water Quality Management

Waterbody Classification -

Shellfish areas near marina Yes No

Shellfish closure zone around marina Yes No
if Yes, radius of closure - ft.

Water Quality Monitoring required by permit Yes No
 required by OCRM special condition
 required by SCDHEC 401 Water Quality Certification condition

Monitoring Plan approved and being implemented Yes No

Monitoring reports being submitted Yes No
 to EQC
 to OCRM

Any problems noted from monitoring reports? Yes No
if Yes, discuss below under comments.

Is monitoring in compliance with plan? Yes No

Are boat repairs, paint scraping, boat painting, etc. being allowed at slips? Yes No

Was there any evidence noted during the inspection of this marina that the above activities were occurring? Yes No

What is the marina policy on used batteries, oil filters, fuel filters, etc.?

Is there a waste oil dump station at the marina? Yes No
If Yes, capacity of storage tank -

Marina Name:

Date:

II. Water Quality Management (cont.)

Is there a used antifreeze dump station at the marina? Yes No
If Yes, capacity of storage tank -

Stormwater Management

Does the permit require a stormwater management plan for the marina? Yes No

Does the marina have an approved stormwater management plan? Yes No

if Yes, has it been inspected for compliance with the plan? Yes No

Does it need to be inspected? Yes No

Other problems and concerns:

Comments:

Marina Name:

Date:

III. Fueling Facilities Yes No

Types of Fuel

- Diesel Fuel
- Gasoline

Storage Tanks

- above-ground (number and capacity) -
-
- below-ground (number and capacity) -
-

Written approval of storage tanks by S. C. DHEC Yes No
Written approval of fueling system by S. C. DHEC Yes No

Pump Locations

- on high ground
- on fixed docks
- on floating docks

Fueling Locations

- high ground
- fixed docks
- floating docks

Cut-off Valve Locations

- Marina office/store
- at tanks
- at pumps
- at edge of docks
- other(s) (describe) -

Safety Equipment

- fire extinguishers
- absorbent pads
- absorbent booms
- other (list) -

Marina Name:

Date:

III. Fueling Facilities (cont.)

Were any leaks noted in the system? Yes No
if Yes, describe -

Is an updated copy of the "Contingency Plan For Spills Of Oil And Other Hazardous Substances" a part of the marina O & M Manual? Yes No

Is fueling from portable fuel containers allowed at the marina? Yes No

- business operation
- personnel watercraft
- other, describe -

if business, describe -

Is this fueling addressed in the O & M Manual and/or the Contingency Plan For Spills? Yes No

Is safety equipment readily available where this fueling occurs? Yes No

Describe precautions taken to prevent spills:

Marina Name:

Date:

III. Fueling Facilities (cont.)

Are oil and lubrication containers used or stored on the docks? Yes
No
if Yes, elaborate:

Comments:

Sketch of Fueling System and Facilities:

Marina Name:

Date:

IV. Sewage Pollution Management

Wastewater Pumpout

- Required by permit Yes No
Pumpout system present Yes No
Approved in writing by SCDHEC Yes No
Pumpout system operational Yes No
if No, explain -

Description of Pumpout System

- Portable system (describe) -
 Fixed System (describe) -
 Commercially manufactured system (make & model) -
 Personally manufactured system
- Pumped into central sewer system
 public sewer system
 septic tank system
- Pumped into temporary holding tank
 to be picked up by commercial sewage collector
 then into a central sewer system

Porta-potty Dumping/Cleaning Station

- Required by permit Yes No
Dumping station present Yes No
if Yes, describe -

if No, are porta-pottys being dumped at marina? Yes No
if Yes, where and how? -

User fee for pumpout service -

User fee for porta-potty dumping/cleaning station -

Hours pumpout service is available -

Hours porta-potty station is available -

Marina Name:

Date:

IV. Sewage Pollution Management (cont.)

Signs posted on docks indicating it is against the law to discharge into the waters of the state? Yes No

if Yes, describe:

Comments:

Sketch of system location:

Marina Name:

Date:

IV. Sewage Pollution Management (cont.)

Restroom Facilities Yes No

Required by permit Yes No

Location on docks (over critical area) on upland

number required

number present

Mens - showers
sinks
toilets
urinals

Womens - showers
sinks
toilets

Hours available for use -

Laundry Facilities Yes No

location on docks (over critical area)

on upland

number of washers -
number of dryers -
number of sinks -
other laundry facilities (describe) -

Comments:

Sketch of restroom and laundry facility locations:

Marina Name:

Date:

V. Dredging / Disposal

Dredging required for marina operations Yes No
initial dredging required Yes No
date completed -
maintenance dredging required Yes No
date(s) completed -

Estimated frequency of maintenance dredging -

Dredging approved by permit Yes No
 initial dredging
 maintenance dredging

Approved long-term disposal area Yes No

Estimated life of disposal area -

- diked upland disposal area
- diked wetland disposal area
- off-shore disposal area
- other (specify) -

Comments:

Sketch of area to be dredged and disposal area:

Marina Name:

Date:

VI. Litter Management

Litter problem noted at marina Yes No
if Yes, explain -

Litter receptacles present Yes No

Location of litter receptacles

- on floating docks
- on fixed docks
- on adjacent upland

Number of litter receptacles -

Frequency litter receptacles are checked and/or emptied -

Comments:

Sketch showing location of litter receptacles:

Marina Name:

Date:

VII. Boat Ramp

Boat ramp located at marina Yes No

Open to the public Yes No

Boats can be launched at

- high tide
- mid tide
- low tide

Fee to use ramp -

Car/trailer parking area Yes No
number of spaces allotted for parking -

Sketch showing location and dimensions of boat ramp:

VIII. Storage of Trailered Boats

Designated area for trailered boat storage Yes No

Size of storage area -

Maintenance/Repair work allowed in storage area Yes No

Lease agreement required for storage area Yes No

Sketch showing size and location of storage area:

Marina Name:

Date:

IX. Ships Store / Marina Office Yes No

Location of store on docks on upland

Location of office on docks on upland

Ships Store provided the following:

- Boating supplies
- Fishing supplies
- Groceries
- Clothing
- Gifts
- Other (specify) -

Are the following available at the marina office?

- copy of all permits and amendments
- operations and maintenance manual
- water quality monitoring reports
- copy of marina lease agreement
- copy of marina rules and regulations
- other (list) -

-
-

Sketch showing location of marina office and ships store:

Marina Name:

Date:

X. Permit Conditions:

Marina in compliance with specifications of the permit,
including amendments - Yes No
if No, explain:

Marina in compliance with permit special conditions, (including amendments
and 401 certification conditions) Yes No
if No, explain:

Permit Number	Number of Special Conditions	Number of Amendments	Number of Amendment Conditions

ATTACHMENT I

<p>South Carolina</p> <h1>DHEC</h1> <p>Department of Health and Environmental Control</p>	<h2>PERMIT INSPECTION REPORT FORM</h2>	<p>Office of Ocean and Coastal Resource Management 1362 McMillan Avenue, Suite 400 Charleston, South Carolina 29405 (803) 744-5838 (803) 744-5847 (fax)</p>
THIS FORM IS TO BE USED FOR INSPECTION OF PROJECTS AUTHORIZED UNDER AN ISSUED OCRM PERMIT		
Name of Inspector:	Permit Number:	
Permit Name:		
Address:		
County:	Activity:	
Location:		
Date Inspected:	Was Placard Posted? <input type="checkbox"/> yes <input type="checkbox"/> no	
Permit Activity Status: <input type="checkbox"/> completed <input type="checkbox"/> incomplete <input type="checkbox"/> not started		
The Activity In Compliance With Permit Specifications And Conditions? <input type="checkbox"/> yes <input type="checkbox"/> no		
If The Work Is Not In Compliance With Permit Specifications And Conditions, Describe (use back of sheet if necessary):		
Was The Permittee Notified? <input type="checkbox"/> yes <input type="checkbox"/> no		
If The Permittee Was Notified, Date: Time:		
Inspector's Signature: Date:		