



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

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June 25, 2009

65-42 WQS/RJB
Matthew Kras
166 Lincolnway
Valparaiso, Indiana 46383

65-42 WQS/RJB
Fred Plant, Physical Plant Manager
610 Don Hovey Drive
Valparaiso, Indiana 46383

Dear Mr. Kras and Mr. Plant:

**Re: Construction Run-Off MCM
Audit/Inspection Report**

The Construction Run-Off Minimum Control Measure is one of the six components that must be implemented by an MS4 in accordance with 327 IAC 15-13. Enclosed is the final Audit/Inspection Report for the Construction Run-Off Minimum Control Measure. The purpose of the Audit/Inspection process is to identify issues that the MS4 can utilize to improve the implementation of the Construction Run-Off Minimum Control Measure. The report provides general background information, observations, recommendations, and requirements. In addition, the report may also identify program deficiencies and/or violations of a permit that will require the MS4 to respond or address within specified timelines.

This correspondence includes the Audit/Inspection Summary and supporting documentation that was obtained during the program assessment. The Audit/Inspection Summary is a cumulative overview of the MS4 program for the Construction Run-Off Minimum Control Measure. Part of the audit/inspection may also include projects that are owned and operated by an MS4. These sites are inspected and evaluated based on requirements of 327 IAC 15-5. Compliance for these projects is recorded on the "On-Site Evaluation for Erosion and Sediment Control" form that is utilized by IDEM for all projects subject to the requirements of 327 IAC 15-5.

Please review the enclosed report. If you have any questions, please contact me at 317-234-5026 (dwolf@idem.in.gov) or Randy Braun at 317-234-3980 (rbraun@idem.in.gov).

Sincerely,

Douglas Wolf, CPESC
Storm Water Specialist
Office of Water Quality, Watershed Planning Branch
Wetlands and Storm Water Section

Enclosures

cc: Randy J. Braun, CPESC, Storm Water Program Manager
Reggie Korthals, MS4 Coordinator

**Audit/Inspection Summary Report
Construction Run-Off Minimum Control Measure
Regulated MS4 Entities (327 IAC 15-13)**

Date of Audit/Inspection: March 25 and 26, 2009

Paperwork to complete the Audit/Inspection Report were provided o 5/11/09.

MS4 Name: Valparaiso and Valparaiso University
(Items in this report that are associated with Valparaiso University appear underlined)

MS4 Permit Number: INR040073

MS4 Operator/Contact:

Name: Matthew Kras

Address: 166 Lincolnway

City: Valparaiso **State:** Indiana **Zip:** 46383

Phone: (219)462-1161

E-Mail: mkras@valpo.us

Valparaiso University Contact:

Name: Fred Plant, Physical Plant Manager

Address: 610 Don Hovey Drive

City: Valparaiso **State:** Indiana **Zip:** 46383

Phone: 219-464-5132

E-Mail: Fred.Plant@valpo.edu

MS4 Participants:

Identify the all participants representing the MS4. Include the name, title, role (Inspector Construction Program Manager, etc.), contact information (e-mail and phone number) for each participant.

Name, Title, Role, Phone, E-Mail

- Matthew Kras, P.E., CPESC, Stormwater Engineer, Program Manager/ Plan Reviewer/Inspector
219-462- 1161, mkras@valpo.us (Participated on 3/26/09)
- Nate McGinley, Engineering Department - Chief Inspector, Site Inspector, Plan Reviewer 219-462-1161,
nmcginley@valpo.us (Participated on 3/25/09)

Section I - Baseline Information:

- **Construction Certification Date:** 12/22/06
- **Post Construction Certification Date:** 12/22/06
- **Projects Regulated by MS4:**
 - All new projects are regulated upon the effective date of the construction site ordinance. The MS4 did not assume responsibility for projects that were active prior to passage of the local ordinance. These projects remain under the regulatory authority of IDEM and the SWCD.
 - All new and active projects within the MS4 area, including those where construction was initiated prior to the effective date of the construction site ordinance.

The MS4 is a non-traditional MS4 (University, Prison, College, etc.) and does not regulate projects within the MS4. This item applies to Valparaiso University only.

• **MS4 Boundaries for Administration of the Construction Minimum Control Measure:**

County MS4:

Urbanized Areas Only

Entire County, Excluding Incorporated Areas

Municipality, City, Town:

The corporate limits of Valparaiso are subject to the MS4 construction site ordinance.

Other: Valparaiso University is responsible to ensure compliance with 327 IAC 15-5 to meet the requirements of the Construction Run-Off Minimum Control Measure.

• **Enforcement Mechanism Available and Process (*Check all that apply and describe*):**

Fines **Stop Work Orders** **Penalties** **Other:**

The typical process for enforcement actions/mechanisms: A verbal warning is given on site or via phone call. If the follow-up visit finds issues unaddressed then a "Letter of Erosion Control Violation" is delivered or faxed to the site/responsible parties with a corrective action date. If compliance is not achieved by the specified date; a fine is issued for the violation. If compliance is not achieved after a fine has been issued; a stop work order is issued for the site until compliance issues/violations have been corrected.

Valparaiso University is regulated and subject to the requirements of 327 IAC 15-5. All projects that occur within the boundaries of the University are considered to be owned and operated by the University.

• **Plan Review Process:**

Submitted plans are reviewed using the technical review checklist [IDNR checklist] for compliance with the city's storm water management ordinance. The technical review is completed by the City of Valparaiso Engineering staff which includes Matthew Kras and Nate McGinley.

• **Compliance Inspection Process:**

▪ **Regulated Projects:**

Matthew Kras and Nate McGinley of the Engineering Department are the inspectors for all sites. Mr. McGinley is the Chief Inspector.

The frequency of compliance inspections is typically on a weekly basis with daily visits if rainfall has been heavy. Residential subdivisions are visited weekly. Each subdivision has a certain day, each week, with the day changing periodically week to week. Large sites or developments see site inspections after every rainfall and weekly. Written reports are not completed after each visit.

A standardized inspection form is not used by the inspector to conduct and guide inspections however if a violation is found in a follow up inspection a standardized "Notice of Erosion Control Violation" form is used. The form has a line for the nature of the violation and reference to the city ordinance with an area to record notes for the description of the violation corrective

actions. The form has 3 types of check boxes for enforcement notices: Warning, Stop Work Order and Fine. The warning check box area has a blank for a corrective action due date. The notice has a signature block for who serves the notice.

A program named TrakIT is used to organize file and retain all information associated with a permitted project. Project files in this program contain all correspondence, inspection dates, site inspection field notes, deficiencies found, deficiencies corrected, site photos, document phone calls, emails, and site contacts. The program also creates a violation sheet which is sent to the developer/builder when problems are found during an inspection. The TrakIT program is used by other city departments and can be cross referenced and used by other city permitting compliance programs.

▪ **Projects Owned and Operated by the MS4:**

Matthew Kras and Nate McGinley of the Engineering Department conduct the self site monitoring as required by 327 IAC 15-5-7 (18). The inspection process is similar for those projects that are permitted by the MS4.

Valparaiso University is regulated and subject to the requirements of 327 IAC 15-5. All projects that occur within the boundaries of the University are considered to be owned and operated by the University. Representatives of the University must also have a mechanism in place to monitor and manage these projects.

• **Post-Construction Measures and/or Principles Applied:**

Post-construction measures that are used on construction projects are as follows: detention basin forebays, bioretention, wetland retention basins, extended detention, rain gardens, storm sewer inserts/filters/traps, no curbs with grass swales vs. enclosed storm sewer/curb and gutter (Harrison West Subdivision, and Sturdy Road Project), catch basin hoods/snouts and sumps, and native vegetation. After the installation of these practices, the City maintains the storm water quality measures. The city conducts the maintenance/cleaning, landscaping, and repair.

Section II - Field Audit/Inspection Summary:

This summary has been prepared based on the assessment of individual projects regulated by the MS4 and projects that are owned and operated by the MS4. The purpose of the Construction Minimum Control Measure Audit/Inspection is to identify the strengths and weaknesses of an MS4 program. The ultimate goal is to strengthen the ability for an MS4 to administer the Construction Run-Off Minimum Control Measure as required by 327 IAC 15-13.

• **Projects Owned and Operated by the MS4:**

All projects that are owned and operated by an MS4 are subject to the requirements of 327 IAC 15-5. Therefore, IDEM staff and/or agents of IDEM may choose to inspect these sites for compliance at a later date. It is the responsibility of the MS4 to comply with 327 IAC 15-5 and other state and federal regulations. This responsibility may extend beyond the local Department that administers the MS4 program and include other Departments within the MS4. The MS4 must work with other Departments to ensure that each is knowledgeable of the requirements associated with state and federal permits.

Project(s) Inspected: At the time of the audit inspection, one Valparaiso MS4 owned and operated project was under construction, but this site was not inspected. The project is a sewer re-construction project. Construction activities at Valparaiso University were inspected in October of 2007. The site inspected was named "Valparaiso University Soil Stockpile Area".

Observations:

Valparaiso MS4: Not applicable

Valparaiso University MS4: Valparaiso University Soil Stockpile Area was assessed in October of 2007. During this inspection deficiencies and violations were identified and reported to the University. Future projects will be inspected for compliance.

• **Projects Regulated by the MS4:**

Project(s) Evaluated to Assess the MS4 Regulatory Program:

- A. Cumberland Crossing [field audit visit date: 3/25/09 with Nate McGinley]
- B. The Orchards Subdivision [field audit visit date: 3/26/09 with Matthew Kras]
- C. The Beach Subdivision [field audit visit date: 3/26/09 with Matthew Kras]

Plan Review - Observations:

Observations are based upon a brief examination of two of the three projects listed above.

- Plans in general appear to have a reliance on silt fence. Silt fence being used beyond its capabilities when compared to the specifications described in the Indiana Storm Water Quality Manual. The use of additional control measures must be identified during the plan review process and incorporated into storm water pollution prevention plan.
- The plans did not include run-off control measures [diversions and water bars]. Upon evaluation of the plans and observations at the site it appears these measures should have been incorporated into the plans. In general it appears that control of runoff with temporary measures during early construction phases are not incorporated into project plans.
- In general, construction sequences do not describe or include all land disturbing activities that are planned for the project or the control measures for the planned construction activities.

Cumberland Crossing [field audit visit date: 3/25/09 with Nate McGinley]

This project had various permitting issues with USACE 404 wetland permitting delays for areas identified as jurisdictional wetlands. Construction and project progress was stalled due to key project areas/features that were located in wetland areas and that did not have permits prior to the start of the construction.

The construction sequence of the storm water pollution prevention plan and perimeter control measures had to be revised on site to address protection of wetland areas associated with storm water systems. Revisions to the project implementation/construction storm water control plan were the result of compliance inspections, recommendations, and site management.

Post construction measures on this project include wetland retention basins, wet detention basins, rain gardens, and storm sewer inserts/filters/traps.

The Orchards Subdivision [field audit visit date: 3/26/09 with Matthew Kras]

The plans did not have adequate construction sequence detail that outlined the installation of the storm water detention areas in relation to adequate sediment control off-site runoff.

This project was submitted prior to the ordinance for post-construction, therefore post-construction measures were not present other than vegetated dry detention areas.

Compliance Inspections - Observations:

Observations are based upon a brief examination of the three projects listed above.

- The inspector conducts inspections in an organized professional manner, is knowledgeable about the project and knows the contractors and responsible parties of the project.
- The MS4 has a process in place to hold pre-construction meetings.
- The MS4 did not inspect for the presence of project permit posting information that meets the basic requirements of 327 IAC 15-5 (Rule 5) and the MS4 ordinance. This information must be displayed on all permitted sites. Only one of the 3 sites, Cumberland Crossing, had site information posted.
- The MS4 does not utilize a form or checklist to document deficiencies, violations, or corrective action. The only document used is the "Notice of Erosion Control Violation" report.
- The MS4 inspectors need to be more knowledgeable in the use and principles for a wider variety of the erosion and sediment control measures. A variety of measures are contained in the Indiana Storm Water Quality Manual.
 - One example is the use and purpose of rock check dams. A drainage channel on the Cumberland Crossing project had banks that were disturbed with an incorrectly/inappropriately placed rock check dam located in front of a culvert inlet that had resulted in aggregate being washed into the culvert inlet. The purpose of a rock check dam is not for sediment control/protection of a stream culvert. Channel stabilization and protection of the channel from sedimentation is the appropriate goal/strategy for protection of the stream and culvert.
- "Notice of Erosion Control Violation" report critique:
 - The report does not contain specific corrective information.
 - Reports do not have a category or block for identifying or describing off-site or water resource sedimentation impacts. The primary objective of storm water regulations is to minimize the discharge of pollutants, principally sediment, that are associated with active construction sites. This information will prove useful when the inspector may have to recall events or defend issues that occurred during the inspection.
 - The inspection report does not record individuals that were present or those individuals that the inspector discussed issues/violations with at the time of the inspection. This information will prove useful when the inspector may have to recall events or defend issues that occurred during the inspection.
 - Reports should not be issued if they are required by ordinance to be signed by the serving official. Note the "The Orchards Subdivision" report appears to have been issued without a signature of the serving official.
- The site reports did not provide enough information or instructions regarding nature of the violations and corrective actions needed and why a "Notice of Erosion Control Violation" warning was issued.

Section III - Program Assessment, Comments, Recommendations, and Requirements:

- **Comments:**
 - Over the past several years IDEM has referred several complaints to the MS4. The MS4 followed up on these complaints and resolved issues in a prompt and efficient manner.
 - During the audit, several potential concerns with plan content were identified. It appears that the plan review process may need to be evaluated as there may be several key elements that are being deemed acceptable; including, but not limited to the level of detail of the construction sequence, over reliance on silt fence and general lack of use of runoff control measures.
 - Inspection documentation reports lack sufficient corrective action detail and specific information regarding the nature of the violations.

• **Overall Program Assessment:**

(S = Satisfactory, M = Marginal, U = Unsatisfactory, NE = Not Evaluated, NA = Not Applicable)

S M U NE NA

- (1) **The ordinance for the Construction Site Run-Off Control Minimum Control Measure meets the intent of 327 IAC 15-5.**
- (2) **The MS4 reviews the Construction Site Run-Off MCM a minimum of once every five (5) years.**
- (3) **The MS4 has developed requirements for the implementation of measures associated with erosion, sedimentation, and other waste on construction sites.**
- (4) **The MS4 reviews and approves construction plans that are submitted in accordance with the local MS4 ordinance.**

Comment: The Valparaiso MS4 reviews plans in accordance with the local ordinance. This item does not apply to the Valparaiso University MS4.

- (5) **The MS4 has procedures to administer an inspection program.**
Comment: The City of Valparaiso demonstrated that they have a process in place, however refer to compliance inspection observations in Section II. This item does not apply to the Valparaiso University MS4.

- (6) **The MS4 has procedures to enforce the Construction Run-Off MCM.**
Comment: Refer to the description of the enforcement process in Section I of this report.

- (7) **The MS4 has procedures to identify priority sites for inspection and enforcement.**
Comment: The City of Valparaiso regularly inspects sites from a minimum of weekly to daily depending up the frequency of rainfall events. It should be noted that the The Orchards Subdivision may not have been inspected at this frequency since the date of the violation notice was dated 46 days after the field audit visit date. This item does not apply to the Valparaiso University MS4.

- (8) **MS4 personnel responsible for plan review, inspection, and enforcement of construction activities attend annual training.**
Comment: Matthew Kras has attended training to become better aware of the issues associated with erosion and sediment control and storm water management and is a Certified Professional in Erosion and Sediment Control (CPESC). Mr. Kras has attended an area training event sponsored by NIRPC in the past year.

Mr. McGinley has acquired experience from on the job training from Mr. Kras and site meetings with IDEM personnel. Nate is a college student attending Purdue Calumet Campus and works only part time so attending seminars or training events has been difficult. It does not appear that Mr. McGinley has attended any formal training programs in the past year.

- (9a) **The Valparaiso MS4 is effectively managing projects that are owned and operated by the MS4.**

Comment: No sites were inspected within the Valparaiso MS4.

- (9b) **The Valparaiso University MS4 is effectively managing projects that are owned and operated by the MS4.**

Comment: One site was evaluated within the Valparaiso University MS4 during the fall of 2007. This inspection identified deficiencies and the need to have policy and procedures in place to effectively manage the project.

- **Recommendations:**

- Plan reviewer must be aware of potential jurisdictional water areas prior to review and approval of construction plans. Cumberland Crossing is a good example of what can occur when the owner of a project has not obtained appropriate permits for land with wetland areas. These are delays for the owner, but also may impact the layout and design of a project with respect to infrastructure, storm water quality measures, and key elements of the project.
- Refer to “Compliance Inspections – Observations” for general comments that should be considered for incorporation or addition to the current inspection process.
- The MS4 field inspection staff and plan review staff, should continue to take advantage of training opportunities to further their understanding of erosion and sediment control and storm water management issues. Nate McGinley needs to take advantage of training opportunities to further his understanding of erosion and sediment control and storm water management issues. Although only one session is required, it is also recommended that staff take advantage of all opportunities for training.
- Valparaiso University staff and/or contractors affiliated with University owned projects should be knowledgeable of erosion and sediment control and storm water management issues. It is important for University staff to have the training and knowledge to manage the projects and/or provide oversight to contractors that may be hired to perform specific duties.

- **Requirements:**

- A report for the sites visited was requested during the field audit. The reports were provided on May 11, 2009 via email. This response was not timely; the inspection date for report for “The Orchards Subdivision” was May 11, 2009 (46 days after the field audit visit date). These reports have been reviewed and incorporated in the report.
- The Rule requires that an MS4 develop an inspection process that includes a method to demonstrate that measures are being implemented. This can easily be achieved by utilizing an inspection form that will document activities at construction sites. The form should be based on the local ordinance and include provisions to identify participants, document violations, identify deficiencies, and corrective actions/dates. It is important that proper documentation is part of the local program. Documentation and record keeping will provide a means for MS4 personnel to recall activities at the site.
- The MS4 should ensure that internal operations for construction projects owned and operated by the MS4 are compliant with 327 IAC 15-5 and the local ordinance. One area that is important and often overlooked is policy and procedures for the implementation of a Self Monitoring Program as required by 327 IAC 15-5-7 (18). The requirement to administer a Self Monitoring Program is a mechanism for the permitted entity to manage and operate a project site. This responsibility extends beyond the local Department that administers the MS4 program and includes other Departments within the MS4. The MS4 must work with other Departments to ensure that each is knowledgeable of the requirements associated with all local, state, and federal permits.

Valparaiso University: Representatives of the University must also have a mechanism in place to monitor and manage projects for which they own and operate.

The MS4s (City of Valparaiso and Valparaiso University) are not required to submit verification of these procedures, however this requirement will be based on performance and evaluated on future site inspections that are conducted by IDEM.

- **Further Action by IDEM:**

IDEM will perform follow-up inspections of projects owned and operated by the MS4 as they become active and will periodically re-visit projects sites that are regulated by the MS4. Additional projects will be visited with MS4 staff to further assess the Construction Run-Off Minimum Control Measure.

- **Report Prepared by: Doug Wolf, CPESC, Storm Water Specialist**

- **Questions regarding this report should be directed to:**

Doug Wolf, CPESC, Storm Water Specialist

Phone: 317-234-5026

E-Mail: dwolf@idem.in.gov

or

Randy J. Braun, CPESC, Storm Water Program Manager

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