

**Pennsylvania State Programmatic General Permit
(PASPGP-4)**

Monitoring Report

July 25, 2014

**Prepared by
The U.S. Army Corps of Engineers
Baltimore, Philadelphia and Pittsburgh Districts**

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I. BACKGROUND

The U.S. Army Corps of Engineers, Baltimore District, Philadelphia District, and Pittsburgh District (the Corps Districts) have implemented a State Programmatic General Permit (SPGP) in the Commonwealth of Pennsylvania since March, 1995. On July 1, 2011, the Districts issued the fourth rendition of this programmatic permit, known as Pennsylvania State Programmatic General Permit-4 (PASPGP-4). The PASPGP-4 was issued for a five year period and will expire on June 30, 2016, unless suspended or revoked earlier by the Corps. The PASPGP-4 covers regulated activities in waters of the United States, including jurisdictional wetlands within the Commonwealth of Pennsylvania, except for certain exempted waterways. This Monitoring Report is prepared in accordance with the requirements of the PASPGP-4, issued on July 1, 2011, Part VIII D which requires reporting and evaluation of the permit.

Section 404(e) of the Clean Water Act (CWA) (33 United States Code [U.S.C.] Section [§] 1344) allows for the issuance of general permits on a statewide basis, which operate in conjunction with a State regulatory program that protects the aquatic environment in a manner equivalent to the Department of the Army (DA) regulatory program, provided that the activities permitted under each category of such DA general permits are similar in nature and result in no more than minimal individual or cumulative adverse effects on the aquatic environment. The PASPGP-4 was issued pursuant to Section 404(e) and is based on and consistent with the requirements of the CWA 404(b)(1) Guidelines, the National Environmental Policy Act (NEPA), Section 7 of the Endangered Species Act, Section 106 of the National Historic Preservation Act, and Section 7(a) of the Wild and Scenic Rivers Act.

During development of the PASPGP-4, compliance with the CWA 404(b)(1) Guidelines as contained in the Environmental Protection Agency's Guidelines for Specification of Disposal Sites for Dredged or Fill Material (40 CFR Part 230), and NEPA were assessed. The 404(b)(1) Guidelines in 40 CFR Part 230.7 set forth conditions for the issuance of Federal General Permits, which include SPGPs. Specifically, compliance with the 404(b)(1) Guidelines is accomplished if the SPGP meets the applicable restrictions on the discharge in 40 CFR Part 230.10, and the permitting authority determines that: (1) projects covered by each activity authorized by an SPGP are similar in nature and similar in their impact upon water quality and the aquatic environment; (2) projects will have only minimal adverse effects when performed separately; and (3) projects will have only minimal individual and cumulative adverse effects on water quality and the aquatic environment. A Finding of Compliance was detailed in the PASPGP-4 Environmental Assessment/Statement of Findings (EA/SOF) document.

These determinations/findings in the EA/SOF were made based on an evaluation of the potential individual and cumulative impacts associated with the activities authorized by the PASPGP-4. This evaluation was based upon the criteria listed above and upon consideration of the prohibitions listed in: 40 CFR Part 230.10(b); the factors in 40 CFR Part 230.10(c); the factual determination in 40 CFR Part 230.11 (based upon Subparts C

through F of the Guidelines); and NEPA assessment requirements. The consideration of “off-site” alternatives in 40 CFR Part 230.10(a) is not directly applicable to Federal General Permits. However, for any project specific activity to be determined in full compliance with the Section 404(b)(1) Guidelines, and therefore eligible for authorization by the PASPGP-4, the activity must meet the applicable restrictions in 40 CFR Part 230.10(d) which requires appropriate and practicable steps be taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem.

The Commonwealth of Pennsylvania implements a statewide permit program for protecting waters of the Commonwealth under the authority of the Dam Safety and Encroachments Act and implemented through their Chapter 105 Dam Safety and Waterway Management Rules and Regulations. In accordance with Chapter 105, the Pennsylvania Department of Environmental Protection (PADEP) applies evaluation criteria consisting of alternatives analysis; avoidance and minimization of impacts to waters of the Commonwealth; and compensatory mitigation for unavoidable impacts to waters of the Commonwealth, when reviewing a Chapter 105 permit application, or registration requests. The evaluation criteria within the Commonwealth’s program are similar to Federal criteria under Section 404(b)(1) of the Federal Clean Water Act (404(b)(1) Guidelines).

The basic structure and design of the PADEP Chapter 105 permitting program provides an appropriate framework for compliance with the 404(b)(1) Guidelines given the specific and parallel language of the PADEP Chapter 105 regulations. The PASPGP-4, includes additional measures to insure compliance with the 404(b)(1) Guidelines. As a result of the monitoring efforts associated with the PASPGP-1, the eligibility limit of PASPGP-2 was reduced from five acres to one acre. This carried through to the PASPGP-3 and PASPGP-4 so that projects with the greatest inherent potential for ‘more than minimal impacts’, due to their size of impact, have been removed from PASPGP-4 eligibility. In order to receive an expedited permit review rather than a more lengthy Corps Individual Permit review process, applicants typically show an interest in reducing aquatic impacts equal to or below the one acre impact threshold for PASPGP-4 eligibility. Further, to ensure compliance with the CWA 404(b)(1) Guidelines and NEPA, PASPGP-4 was structured to incorporate the terms and conditions of the associated PADEP authorization and 401 Water Quality Certification, including any General and Special Conditions, which, if applicable, may require compensatory mitigation. Only projects determined to meet the minimal impact requirements of NEPA are authorized by PASPGP-4. As part of development of PASPGP-4, where the potential for more than minimal adverse impacts to the aquatic environment, individually and cumulatively, was determine to exist, a requirement for a Corps review of the application/registration is required (Category III activity). For these applications/registrations, the Corps makes a case-by-case determination on the applicability of PASPGP-4, including a determination of no more than minimal individual and cumulative impacts to the aquatic environment.

Since the Federal and State programs are so similar, the Corps Districts and PADEP, working with Federal and State resource agencies, and other public stake holders, implemented a SPGP within Pennsylvania to protect waters of the United States, including wetlands, while meeting the following goals:

1. Reduce the administrative burden of duplicative programs and reviews by both the Corps and the PADEP through interagency cooperation;
2. Streamline the permit review process for State and Federal authorizations;
and
3. Add predictability to the permit program for applicants.

The PASPGP-4 builds upon the existing PADEP Chapter 105 Dam Safety and Waterway Management Rules and Regulations administered by the PADEP with some delegations to County Conservation Districts (CCDs). The PASPGP-4 is designed to reduce unnecessary duplicative project evaluations for applicants and to promote more effective and efficient use of Federal and State resources, while providing equivalent environmental protection for aquatic resources. Single and complete project activities that result in no more than one acre of impact to waters of the United States and have no more than minimal impacts to the aquatic environment, individually or cumulatively, are eligible for authorization by the PASPGP-4. The “PASPGP-4 Cumulative Impacts Project Screening Form” is used for all applications and registrations to ensure that cumulative impacts associated with overall projects are considered during the review process. In addition, this form was developed as a means for PADEP to quickly determine if a Corps review is required (Category III activity as defined below). The form also requires information related to other wetlands which may exist on the property of the proposed project. This information is requested in order to ensure: (1) that no more than minimal cumulative impacts occur as a result of the overall project; (2) compliance with NEPA; and (3) that the Corps and PADEP are reviewing all proposed impacts to aquatic resources associated with an overall project. As part of the Corps Category III review, the Corps considers the potential for adverse impacts and makes a determination as to whether the impacts to aquatic resources are no more than minimal. To ensure compliance with Federal laws and regulations, all PASPGP-4 authorizations are subject to the general terms and conditions of the PASPGP-4, the individual case-specific review process, and in some cases, project specific special conditions added by the Corps.

The PASPGP-4 consists of three categories of activities:

Category I includes 28 different activity types such as: (1) PADEP General Permits that include activities such as fish habitat structures; boat ramps; stream bank stabilization; utility line crossings; minor road crossings; and (2) PADEP Waivers (Section 105.12) that include activities such as small dams not exceeding 3 feet in height in a stream not exceeding 50 feet in width; and maintenance of artificial ponds or reservoirs to their original storage capacity. For a complete listing of the Category I activities see PASPGP-4, Part IV, A.

Category II activities are those that require PADEP to publish the application in the Pennsylvania Bulletin. This includes PADEP Individual Permits, Dam Permits, and Environmental Assessment (EA) approvals. For a complete listing of the Category II activities see PASPGP-4, Part IV, B.

Category III includes 15 different activity types such as: Category I or II projects requested for a Category III review by the Corps or other Federal and/or State resource agencies; activities exceeding impact thresholds of Category I or II (greater than 250 linear feet of stream channel); activities authorized by PADEP Waiver 2; and maintenance of jurisdictional dams. All applications/registrations for a Category III activity are coordinated with the Corps, either through forwarding of application/registration, or direct coordination between the PADEP and the Corps. The Corps coordinates the proposed project with other Federal and State resource agencies as applicable. After completion of the Corps review and coordination process, project specific special conditions may be added to the PASPGP-4 authorization. Special conditions may be added to ensure no more than minimal adverse impacts to the aquatic environment; to ensure compliance with Section 7 of the Endangered Species Act and/or Section 106 of the National Historic Preservation Act; and compensatory mitigation, as necessary. For a complete listing of the Category III activities see PASPGP-4, Part IV, C.

Applications/registrations associated with Category I and II activities are not sent to the Corps for review prior to verification of a PASPGP-4. The Corps and other State and Federal agencies can review proposed Category II activities through a listing of applications in the Pennsylvania Bulletin. Based upon a review of the project as posted in the Bulletin, the Corps and/or other resource agencies may request that the application be processed as a Category III activity (Corps review of the project). It should be noted the Corps and/or resource agencies can request review of a Category I activity as well.

Under PASPGP-4, the review process insures that all impacts associated with the overall project are considered during review of the application/registration. The review of an overall project is supported by development of and use of the PASPGP-4 Cumulative Impacts Project Screening Form, which is required to be submitted by PADEP as part of all applications/registrations. Further, Corps and PADEP staff, including delegated CCDs, were provided training with regard to PASPGP-4 review requirements, including how overall project, single and complete project, and cumulative impacts are defined and considered. The avoidance and minimization of impacts to the aquatic environment is also supported and required by the General and Procedural Conditions of PASPGP-4.

Where the District Engineer determines that any proposed work may result in more than minimal adverse effects on the aquatic ecosystem, either individually or cumulatively, discretionary authority would be exercised to require a Corps Individual Permit evaluation. Discretionary authority may also be asserted for any proposed activity where there are concerns for high quality aquatic resources, other environmental concerns under the 404(b)(1) Guidelines and NEPA, or otherwise may be considered contrary to the public interest.

The PASPGP-4 ensures compliance with Section 7 of the Endangered Species Act (ESA) through use of a Pennsylvania Natural Diversity Inventory (PNDI) screening, bog turtle habitat evaluations, mussel surveys, and follow-up coordination with the resource agencies as needed. To further ensure compliance with Section 7 of the Endangered Species Act, projects that would typically qualify as a Category I or II activity, but have been identified as potentially effecting Federally listed species or their habitat are sent to the Corps for a project specific review as a Category III activity. Compliance is further ensured through the requirements established in PASPGP-4, Part VI, A (General Conditions), 3.

The PASPGP-4 and its associated Standard Operating Procedures (SOP) were developed in close coordination with the resource agencies, specifically with the U.S. Fish and Wildlife Service (USFWS), with respect to threatened and endangered species. Coordination has been maintained with these agencies both programmatically and in terms of project specific permit evaluations. Refinements to the ESA coordination process have been implemented and documented through modifications to the SOP, as needed.

For the Federally listed bog turtle, a process was implemented for review of projects where wetland impacts are proposed in the 15 counties where bog turtle populations are known to occur, or where there is a PNDI conflict. For example, projects are screened through PNDI and, depending on results, a bog turtle habitat assessment is performed by staff or consultants trained in bog turtle habitat identification (Phase 1 Bog Turtle Habitat Assessments). Prior to PADEP General Permit (GP) registration and verification of the PASPGP-4, sites are field reviewed for bog turtle habitat for the following GPs: GP-5 (Utility Line Stream Crossings), GP-6 (Agricultural Crossings and Ramps), GP-7 (Minor Road Crossings), GP-8 (Temporary Road Crossings), GP-9 (Agricultural Activities) and GP-11 (Maintenance, Testing, Repair, Rehabilitation, or Replacement of Water Obstructions or Encroachments). If potential bog turtle habitat is identified through the Phase 1 Habitat Assessment, additional coordination with the Corps, USFWS and PFBC is required. Clearance associated with potential bog turtle habitat must be obtained from either the Corps or USFWS prior to verification of the PASPGP-4, if applicable.

To ensure compliance with Section 106 of the National Historic Preservation Act, PASPGP-4 was conditioned so that, on a case-by-case basis, cultural resources listed in the latest published version of the National Register of Historic Places or properties listed as eligible or potentially eligible for inclusion therein, are given the consideration required by Section 106 of the National Historic Preservation Act. This is accomplished by the applicant notifying the Pennsylvania Historic and Museum Commission (PHMC) through use of the PADEP Historical Resources Notification Form, prior to submitting a joint permit application to PADEP. The PADEP Historical Resources Notification Form is not required when applying for a PADEP General Permit due to the limited scope of work and the low likelihood of impacting any resources. However, in such cases, the Corps or other State and Federal resource agencies, including PHMC, can require a Category III review of the application, which includes addressing any Section 106

concerns that may exist. In addition, any application/registration that identifies a potential effect on historic or archeological resource is sent to the Corps as a Category III activity for review. Further, General Condition 17 of the PASPGP-4 (Part VI. A. 17) provides further assurance that authorized activities will comply with Section 106.

The PASPGP-4 is applicable in the Commonwealth of Pennsylvania for regulated activities in navigable waters of the United States, and waters of the United States, including jurisdictional wetlands, that are located within the geographic regulatory boundaries of the three Corps Districts, with the following exceptions:

The following regulated activities are **not** eligible for PASPGP-4 authorization:

1. Single and complete or linear projects that will have more than minimal individual or cumulative adverse environmental impacts as determined by the Corps of Engineers.
2. Single and complete projects that do not comply with all terms and conditions of the PASPGP-4, including the terms and conditions specific to each listed category of activity.
3. Single and complete projects that will result in a total of more than 1.0 acre of temporary and/or permanent impacts, both direct and/or indirect, to navigable waters of the United States and waters of the United States, including jurisdictional wetlands, as defined above in Part II.
4. Activities located waterward of the ordinary high water mark (OHWM) on non-tidal waters and/or the mean high water line (MHWL) on tidal waters on the following Pennsylvania waterbodies:
 - a. The Delaware River, downstream of the Morrisville-Trenton Railroad Bridge in Morrisville, Pennsylvania;
 - b. The Schuylkill River downstream of the Fairmount Dam in Philadelphia, Pennsylvania;
 - c. All of the Ohio River;
 - d. All of the Beaver River;
 - e. All of the Little Beaver Creek;
 - f. All of the Mahoning River;
 - g. All of the Monongahela River;
 - h. The Youghiogheny River from its mouth at McKeesport, Pennsylvania to river mile 31.2 at West Newton, Pennsylvania;
 - i. The Allegheny River, from its mouth in Pittsburgh, Pennsylvania to river mile 197.4 at Kinzua Dam, north of Warren, Pennsylvania;

- j. The Kiskiminetas River from its mouth near Freeport, Pennsylvania to river mile 26.8 at Saltsburg, Pennsylvania;
 - k. Tenmile Creek from its mouth at Millsboro, Pennsylvania to river mile 2.7; and
 - l. Lake Erie activities which require submittal of a Joint Permit Application or EA to the PADEP. For Lake Erie, the OHWM is located at elevation 573.4.
4. Instances where USEPA's Regional Administrator has notified the District Engineer and applicant in writing that he is exercising his authority under 404 (c) of the CWA to prohibit, deny, restrict, or withdraw the use of any defined area for specification as a disposal site for the discharge of dredged or fill material.
 5. Designated Special Case circumstances identified by the Regional Administrator of the U.S. Environmental Protection Agency (USEPA), as defined in the MOA between the DA and the USEPA concerning the determination and limits of geographic jurisdiction of the 404 program. Geographic areas established by the USEPA would be advertised by Corps Public Notice as ineligible for Federal authorization under the PASPGP-4.
 6. Activities that have been denied a PADEP Chapter 105 Permit, a CWA Section 401 Water Quality Certification, or a Coastal Zone Consistency Determination.

Any activities that would divert more than 10,000 gallons per day of surface water or groundwater in to or out of the Great Lakes Basin (Lake Erie watershed).

Several important modifications were incorporated into the PASPGP-4 from the Pennsylvania State Programmatic General Permit-3 (PASPGP-3). These included adding: applications/registrations associated with both coal and non-coal mining activities as a Category III activity; a definitions section; and several waterways that were previously ineligible. These changes are discussed in detail in the Special Public Notice #11-44 announcing the issuance of the PASPGP-4 (Enclosure 1).

The PASPGP-4 has continued to foster close working relationships at the field level between Corps and PADEP staff. Interagency pre-application meetings with applicants remain an important component of the permit process. During the review period the Baltimore District completed 603 pre-application meetings, while Philadelphia District completed 481 and Pittsburgh District completed 417. These coordinated efforts have been a crucial tool in further implementing the avoidance and minimization goals and requirements of the CWA 404(b)(1) Guidelines and consideration of NEPA requirements. As a result of these efforts, many project impacts have been avoided and/or reduced prior the application/registration being received by Corps and/or PADEP. Pre-application meetings allow the Corps and other resource agencies to review the proposed project prior to the application/registration being submitted and provides an

opportunity for the Corps to request a Category III review if warranted. By participating in pre-application meetings, the Corps and other agencies are assisting the applicant with the avoidance and minimization of project impacts. As a result, many of these projects can be authorized under a Category I or II activity without a Corps review.

II. THE PASPGP-4 MONITORING COMMITTEE

The Monitoring Committee consists of representatives from the PADEP, the three Corps Districts, USEPA, USFWS, Pennsylvania Game Commission (PGC), Pennsylvania Fish and Boat Commission (PFBC), the PHMC and one or two representatives from delegated CCDs. Each listed agency has designated a specific point of contact (POC) to serve on the Committee. Any concerns from an agency or office are directed to the committee through the designated POC.

The interagency monitoring effort has been ongoing since the inception of the PASPGP-2, and continues under PASPGP-4, with the purpose of:

1. Creating a record of discussions, and actions taken, to address any questions that arise related to the PASPGP-4 permit, the related review processes, and the associated SOP;
2. Addressing procedural and case specific concerns as they arise, relative to implementation and administration of PASPGP-4;
3. Providing a forum for the discussion and resolution of procedural problems/issues/questions in a timely and proactive manner; and
4. Providing a forum for all participating agencies to discuss further streamlining of review processes.

The Monitoring Committee is co-chaired by the Baltimore District Corps of Engineers and PADEP. Under PASPGP-4, a Monitoring Committee meeting was held on September 21, 2011 to discuss the newly authorized PASPGP-4 and the associated review processes and SOP. To date, no issues of concern have been brought to the attention of the co-chairs, nor have any members of the Committee requested any further meetings. As such, no further Monitoring Committee meetings have been held. A meeting will be scheduled after finalization of this report to review the findings and recommendations with the Committee members. The Monitoring Committee venue will also be used during any development of future SPGPs to discuss and refine existing processes, and ensure compliance with State and Federal regulations. If necessary, additional meetings will be held to discuss PASPGP-4 related Federal/State coordination processes and consistency issues that may arise.

III. MONITORING REPORT REQUIREMENTS

This Monitoring Report is prepared in accordance with the requirements of the PASPGP-4, issued on July 1, 2011, Part VIII D which requires reporting and evaluation of the permit. Specifically, the following is a requirement of PASPGP-4:

1. The Baltimore District, in consultation with the other Corps Districts in Pennsylvania and the PASPGP-4 Interagency Monitoring Committee, shall review operational issues related to successful implementation of the PASPGP-4 and shall coordinate and provide modifications to the operational procedures, and/or the PASPGP-4 as appropriate.
2. PADEP will provide the following data and statistics on an annual basis to the Corps:
 - a. The number of Individual Chapter 105 Water Obstruction and Encroachment Permits (WOEP), Dam Safety Permits, EA Approvals for Waived Activities (11 and 16) and Water Quality Certifications issued by each PADEP Office and/or the Delegated CCDs;
 - b. The processing time associated with each permit type;
 - c. The number, type, and scope of permitted wetland and stream impacts, including both temporary and permanent impacts;
 - d. The number, type, scope, acreage and/or linear footage of, and location of wetland replacement or other mitigation areas;
 - e. Pertinent data concerning operation of the Pennsylvania Wetlands Replacement Project (PWRP) or other in-lieu fee programs, if appropriate; and
 - f. Total number of Chapter 105 GP types processed by county.
3. Prior to the expiration of the PASPGP-4 the Corps, with recommendations from the resource agencies will evaluate the PASPGP-4, including its terms and conditions, and will determine if:
 - a. The PASPGP-4 has met its intended goal of reducing duplication;
 - b. Authorizations/verifications comply with applicable laws and regulations; and
 - c. Only projects with minimal adverse environmental effects were verified.

Based on this review and evaluation, the Corps will further determine whether reissuance, modification, suspension, or revocation of the PASPGP is appropriate. These determinations will be in writing, will include the basis for each determination, and will be available to the public.

IV. METHODOLOGY

This monitoring report covers work authorized by PASPGP-4 during the time period of July 1, 2011 through June 30, 2013, unless specified differently. The annual programmatic monitoring data was compiled by the Corps with supplemental data provided by PADEP.

Corps data was obtained from the Corps Operations and Maintenance Business Information Link (OMBIL) Regulatory Module 2 (ORM 2) data base. Data associated with Category I and II activities was entered into the data base by the Corps based on the permits and applications/registrations received from PADEP. Category III activity data was entered into the data base as part of the Corps review of Category III applications/registrations.

PADEP was not able to provide all of the data required by PASPGP-4, Part VIII, D, 2, due to not tracking some of the data, failure of some PADEP offices and delegated CCDs to submit complete information or due to problems associated with inaccurate data entry. Additionally, during data export from eFACTS, an error occurred preventing the exportation of impact data for those authorizations. Therefore, the following information was not provided:

- a. The processing time associated with most GPs, except for GP-11 and a portion of GP-4, GP-5, GP-7 and GP-8s for the second year of the monitoring effort. Only those GPs entered into eFACTS have processing time tracked.
- b. The number, type, and scope of permitted wetland and stream impacts, including both temporary and permanent impacts for all of the GPs, except for GP-11 and a portion of GP-4, GP-5, GP-7 and GP-8s for the second year of the monitoring effort. A portion of the data for the remaining GPs was received, but was not inclusive of all authorizations/registrations.
- c. The number, type, scope, acreage and/or linear footage of, and location of wetland replacement or other mitigation areas. Information was provided for GP-11 and a portion of GP-4, GP-5, GP-7 and GP-8s for the second year of the monitoring effort. A portion of the data for the remaining GPs was received, but was not inclusive of all authorizations/registrations. PADEP was not able to differentiate between the type of mitigation required, such as wetland establishment, restoration, enhancement, etc.; only the acreage/linear footage of mitigation required.
- d. Total number of Chapter 105 GP types processed by county. PADEP was able to supply partial PADEP data related to GPs acknowledged, but data was not inclusive of all registrations issued during the two year period. The GP data provided included the PADEP GP acknowledgement number, which corresponds to the county of issuance.

- e. GP-15 data. There is no data provided for GP-15 because none were registered during the monitoring period.

To address the difficulties with data gathering, PADEP has developed a tracking form to be completed by PADEP staff when acknowledging GP registrations effective January 2014. Submission of the tracking form to PADEP Central Office is required on a quarterly basis and the data will be summarized and used to address the data needs required by PASPGP-4.

A work group was established to set up the protocol for preparing this Monitoring Report, with previous monitoring efforts related to prior PASPGPs used as guidance. It was determined that file reviews should be conducted as well as field compliance inspections of ongoing and/or completed work to document compliance with permit processes and permit compliance. In order to determine the number of projects needing a file and/or field review for the purpose of the monitoring effort, the Corps utilized the number of verifications documented in the ORM2 data base. This information was used in calculating the random sample size for review of Category I, II and III activities.

In assessing Category I and II activities, a decision was made to conduct a file review of 5% of the 8,169 PASPGP-4 Category I and II activities verified during the review period. A random sample was generated for each Corps District utilizing the number of Category I and II verifications from ORM2 within each of the three Corps Districts. Taking 5% of the number of Category I and II verifications resulted in a total of 410 files requiring a review (Baltimore District 205, Philadelphia District 80, and Pittsburgh District 125). These projects represented a wide variety of projects/activity types.

A total of 1,327 Category III activity applications/registrations were verified by the three Corps Districts during the review period. A file review of 10% of the applications/registrations was determined appropriate. A random sample was generated utilizing the number of Category III applications/registrations from ORM2 within each of the three Corps Districts, resulting in a random sample size of 134 (Baltimore District 64, Philadelphia District 18, and Pittsburgh District 52), which also represented a variety of projects and activity types.

A. File Review

PASPGP-4 Category I and II activity verifications processed by PADEP are sent to the Corps after issuance for data base entry and filing. For Category III activities, a copy of the application/registration is sent by PADEP to the appropriate Corps District for concurrent evaluation. Utilizing the Corps files containing the Category I, II and III verifications, a file review of the randomly selected sample was conducted. Issues with locating the randomly selected files within the Districts did arise as part of the file review process, but was minimal. In those cases a replacement file was selected from the randomly generated list of verifications.

Category I and Category II Activity File Reviews

- As part of the monitoring effort, Baltimore District completed 206 file reviews, Philadelphia District completed 80 and Pittsburgh District completed 121. The attached File Review Form (Enclosure 2) was completed as part of each evaluation.
- The following was assessed during the Corps file review:
 - PASPGP-4 Category of activity correctly determined
 - Cover Letter/Transmittal Form from PADEP/CCD included
 - PASPGP-4 Cumulative Impacts Project Screening Form included
 - Complete application/registration package received
 - Project location map included
 - Latitude & Longitude included
 - Are plans included in the file
 - Is the State Authorization included
 - Copy of PNDI included
 - Bog turtle habitat clearance (for listed counties)
 - Documentation for Section 106 Historic Clearance (for Cat II only)
 - PADEP Record of Decision (for Cat II only) included
 - Review process followed in accordance with the PASPGP-4 to ensure single and complete review and to ensure no more than minimal cumulative impact through use of a Declaration of Restrictive Covenant, when necessary, to protect remaining aquatic resources.

Category III Activity File Reviews

- As part of the monitoring effort, Baltimore District completed 64 file reviews, Philadelphia District completed 18 and Pittsburgh District completed 52. The attached File Review Form (Enclosure 3) was completed as part of each evaluation.
- The following was assessed during the Corps file review:
 - PASPGP-4 Category of activity correctly determined
 - Cover Letter/Transmittal Form from PADEP/CCD included
 - PASPGP-4 Cumulative Impacts Project Screening Form included
 - Complete application/registration package received
 - Project location map included
 - Latitude & Longitude included
 - Are plans included in the file
 - Copy of PNDI included
 - Bog turtle habitat clearance (for listed counties)

- Documentation for Section 106 Historic Clearance (for Cat II only)
- Corps Memorandum for Recorded included
- Is the State authorization included
- Review process followed in accordance with the PASPGP-4 to ensure single and complete review and to ensure no more than minimal cumulative impact through use of a Declaration of Restrictive Covenant, when necessary, to protect remaining aquatic resources.
- Impacts and Mitigation data
- Compliance with special conditions

B. Field Review

As part of the monitoring effort, Corps staff attempted to contact the permittee to determine project status. In some cases, Corps staff was unable to contact the permittee due to lack of sufficient information, or did not receive a return telephone call from the permittee, which accounted for 36% of the files reviewed. In cases where the Corps was unable to contact the permittee, or in cases where the permittee informed the Corps that the authorized work had not been started, a field review was not performed. Of the permittees successfully contacted, 53% informed the Corps that the authorized work had commenced or had been completed. The 53% was comprised of 139 projects (110 Category I and II verifications, and 29 Category III verifications) in Baltimore District, 71 projects (56 Category I and II verifications, and 15 Category III verifications) in Philadelphia District and 108 projects (82 Category I and II verifications, and 26 Category III verifications) in Pittsburgh District. The goal of the monitoring effort was to perform a field inspection on all of these sites, however, one of the completed projects was not inspected in Baltimore District and 28 were not inspected in Pittsburgh District, due to staffing and weather related issues.

Overall field compliance inspections within Baltimore and Pittsburgh Districts resulted in 3% of all Category I and II verifications issued during the review period being inspected, and 5% of the Category III projects being inspected. Philadelphia District performed field compliance inspections on 4% of Category I and II and 5% of Category III verifications.

Corps project managers were the principle investigators for the project file and field reviews. Project compliance was documented using the Field Compliance Inspection Forms (Enclosure 4). The investigator confirmed and documented the work type, location, dimensions, project variations for authorized work and compliance with special conditions. Based upon these factors, investigators determined whether the project was in compliance with the PASPGP-4.

Two criteria were used to gauge project compliance. First, project managers identified if the work was in compliance with the authorized scope of work including the approved plans. Second, project managers assessed if the project was in compliance with the

conditions of the authorization, including general and activity-specific special conditions, if appropriate. If a project was deemed to be non-compliant during the field inspection, the investigators noted the severity of the non-compliance based on the extent, type of resource impacted, and permissibility of the action.

Spread sheets reflecting the findings of the file and field reviews were developed for all the projects reviewed. The data is broken down by Category I and II projects (non-reporting to the Corps) and Category III projects (reporting to the Corps).

Through the monitoring effort, 3% (318/9496) of the PASPGP-4 applications/registrations processed during the review period were field inspected. Not being able to successfully contact permittees as discussed previously, as well as, work not commencing on 42% of the issued verifications, contributed to this number appearing low. However, it should be noted that Corps' National Performance Measures only require compliance inspections of 5% of General Permits each fiscal year, and each of the Districts did meet or exceed this requirement, as discussed below.

In addition to the field compliance inspections randomly chosen for this report, the Corps Districts also performed compliance inspections of ongoing or completed authorized work in Pennsylvania during the first two years of PASPGP-4, which is prior to the field inspections associated with this monitoring effort. As part of these inspections, when appropriate, the Corps Districts took enforcement action for work not in compliance with the authorizations. In Baltimore District, 321 permit compliance inspections were conducted and 43 permit noncompliance actions were completed. Philadelphia District conducted 125 permit compliance inspections and completed 12 permit noncompliance actions. In Pittsburgh District, 156 compliance inspections were conducted and 4 permit noncompliance actions were taken. This combined effort resulted in a total of 778 compliance inspections in Pennsylvania during the first two years of PASPGP-4, not including those performed in association with this monitoring effort. It should be noted, however, that these inspections were not necessarily performed on PASPGP-4 verifications, as Corps standards allow for the inspection of any verification issued during the previous 5 years. The majority of these compliance inspections were associated with PASPGP-3 or PASPGP-4 verifications, and since only minor changes occurred from PASPGP-3 to PASPGP-4, such inspections provide insight into compliance with PASPGP-4. Combining these two compliance efforts and comparing to the number of PASPGP-4 verifications issued during the first two years, shows an overall compliance effort equating to 12%. In addition to compliance inspections being performed by the Corps, PADEP also performed compliance inspections as part of the Chapter 105 program.

As part of the Corps file and field review, an effort was made to identify any programmatic processing issues encountered as part of review of the file and/or inspection of the authorized work. This programmatic information will be utilized as part of any future modifications of PASPGP-4, the PASPGP-4 review processes, including the SOP, or the development of future SPGPs in Pennsylvania.

V. OPERATIONAL DATA/FINDINGS

A. General:

According to the Corps data, PASPGP-4 verification was issued for 9,496 applications/registrations during the monitoring period (Category I, II, and III activities). The top five counties for PASPGP-4 verifications within each District were:

- Baltimore District: Bradford (585), Susquehanna (408), York (319), Lancaster (301), and Lycoming (281)
- Philadelphia District: Montgomery (312), Chester (223), Bucks (213), Berks (194) and Delaware County (149)
- Pittsburgh District: Washington (374), Allegheny (312), Westmoreland (284) Butler (189), and Erie (174)

These fifteen top counties, representing 22% of the 67 counties in the state, accounted for approximately 45% of the total PASPGP-4's applications/registrations reviewed during time frame.

B. Category I and II Authorizations:

i. Data for PASPGP-4 Category I and II activities was gathered from the three Corps Districts and PADEP for the time period July 1, 2011 through June 30, 2013:

- Data was generated from the file and field reviews as discussed above.
- The number of PASPGP-4 verifications, authorized impacts, and mitigation data was obtained from ORM2 and PADEP. Impact data for Category I and II activities was entered into ORM2 by the Corps based on the information provided by PADEP. In some cases, data concerning the amount of impacts was not provided, thus resulting in incomplete data. Mitigation data for Category I and II activities was not entered into the data base by the Corps. While not specifically tied to a Category I activity, PADEP provided partial GP data for the monitoring period. Since the majority of PADEP GPs would be a Category I activity, PADEP data is being presented in this section. For the period July 1, 2011 through June 30, 2013, PADEP data reflects the acknowledgement of 4,906 PADEP GPs.

ii. Data

Wetland impacts and mitigation: Only partial data was received from PADEP regarding impacts and mitigation. For Category I and II activities, the Corps also tracked impacts in the ORM 2 data base, but did not track mitigation.

Stream impacts and mitigation: Only partial data was received from PADEP regarding impacts and mitigation for stream impacts. For Category I and II activities, the Corps only tracked impacts in the ORM 2 data base.

The PWRP was developed as an in-lieu-fee program available to permit applicants to provide mitigation for impacts to waters of the Commonwealth. This in-lieu-fee program was also utilized by the Corps for impacts to waters of the United States, including wetlands. During the monitoring period, PADEP authorized contributions into the PWRP 58 times. The 58 authorizations, which include new permits and violation settlements, accounted for \$166,000.00 of monetary contributions to provide mitigation for 13.90 acres of wetlands. One wetland project was implemented at a cost of \$15,580.00.

The PWRP does not meet the current standards for in-lieu-fee programs as established in the 2008 Joint USEPA and Army Corps of Engineers Mitigation Rule (the Rule). The PWRP received the full five years of grandfathering allowed under the Rule and was no longer available for use as acceptable Federal mitigation on June 8, 2013, but remains operational for use as mitigation for State authorizations. The PADEP is developing a new in-lieu-fee program and has submitted a prospectus to the Corps.

- For Category I and II activities, Corps data reflects the following number of Category I and II activities being verified by PADEP (total of 8,169):
 - Baltimore District – 4088
 - Philadelphia District – 1585
 - Pittsburgh District – 2496

- Corps data reflects the following impacts being authorized by PADEP through Category I and II PASPGP-4 verifications:
 - Baltimore District – 62,658 linear feet of permanent stream impact, 21.35 acres of permanent wetland impact, 121,197 linear feet of temporary stream impact, and 204.39 acres of temporary wetland impact. Of these totals, 13,595 linear feet of permanent stream impact, 3.96 acres of permanent wetland impact, 41,728 linear feet of temporary stream impact, and 35.20 acres of temporary wetland impact were associated with Shale Gas activities.
 - Philadelphia District – 8016 linear feet of permanent stream impact, 55.74 acres of permanent wetland impact, 214 linear feet of temporary stream impact, and 4.85 acres of temporary wetland impact.
 - Pittsburgh District – 70,848 linear feet of permanent stream impact, 43.57 acres of permanent wetland impact, 116,543 linear feet of temporary stream impact, and 32.46 acres of temporary wetland impact. Of these totals, 6,332 linear feet of temporary stream impact, and 0.20 acre of temporary wetland impact was associated with Shale Gas activities.

This impact data, while reflecting information in the ORM2 data base, may inaccurately reflect the actual amount of impacts associated with Shale Gas activities. Identification of Shale Gas impacts in ORM2 was dependent on the correct work type being entered into ORM2. If impacts were not entered using a Shale Gas work type, the impact acreages would be included in the non Shale Gas acreages.

iii. The following findings have been formulated from data for PASPGP-4 Category I and II activities for the time period July 1, 2011 through June 30, 2013:

- The file review for Category I and II activities in Baltimore District determined that 95% of Category I and II file reviews were processed under the appropriate category. Philadelphia District determined that 90% of the files reviewed as part of this Monitoring Report were processed under the appropriate category, while 100% percent of the files reviewed in Pittsburgh District were processed correctly. Complete permit applications/registrations were included in 93% of Baltimore District files, 80% of Philadelphia District files, and 90% of the Pittsburgh District files.
- The Baltimore District determined that 90% of Category I and II projects, where work had commenced or been completed, were in compliance with the PASPGP-4 authorization, while Philadelphia District determined 71% and Pittsburgh District determined 89%. The remaining projects were found to be out of compliance with the PASPGP-4 verification for various reasons such as: additional fill beyond that authorized, was discharged into waters of the United States; culvert pipes were not depressed as required in permit; and failure to remove temporary fills.
- Where applicable, Category I and II verifications received by the Corps contained a PNDI receipt in 78% of the files in Baltimore District, 72% in Philadelphia District and 59% in Pittsburgh District. We believe this low percentage is partially due to the fact that many of the Corps Category I and II files did not include the entire permit application/registration package as submitted to PADEP for review and approval. Instead of sending the complete application/registration, only a copy of the acknowledged GP Registration Form was forwarded to the Corps in many cases. In addition, the PADEP review process requires submittal and clearance of a PNDI before issuance of an authorization/registration.
- In accordance with the PASPGP-4, additional screening beyond PNDI is required for activities impacting wetlands within the 15-county range of the bog turtle. The Corps looked for the presence of a USFWS clearance letter or documentation of a bog turtle habitat assessment during the file review. Of the random sample of Category I and II applications/registrations that received a file review, 36% of the files in Baltimore District included the necessary documentation. In Philadelphia District, 30% of the files contained the necessary documentation. We believe this low percentage is partially due to the fact that many of the Corps Category I and II project files did not include the entire

application/registration package as submitted to PADEP for review and approval. Instead of sending the complete application/registration, only a copy of the acknowledged GP Registration Form was forwarded to the Corps in many cases. Further, it is unclear if Corps staff consistently looked for a USFWS clearance letter when reviewing the file, when documentation of a habitat assessment was not present in the file.

C. Category III Authorizations:

i. Data for PASPGP-4 Category III activities was gathered from the three Corps Districts for the time period July 1, 2011 through June 30, 2013:

- Data was generated from the file and field reviews as discussed above.
- The number of PASPGP-4 verifications, authorized impacts, and mitigation data was obtained from ORM2

ii. Data:

- Total number of Category III verifications issued by the three Corps Districts was 1327. Baltimore District issued 632, while Philadelphia District issued 177, and Pittsburgh District issued 518.
- ORM2 data reflects the following impacts being authorized by the Corps through PASPGP-4 Category III verifications:
 - Baltimore District – 70,284 linear feet of permanent stream impact, 47.49 acres of permanent wetland impact, 268,475 linear feet of temporary stream impact, and 192.80 acres of temporary wetland impact. Of these totals, 3091 linear feet of permanent stream impact, 17.74 acres of permanent wetland impact, 212,277 linear feet of temporary stream impact, and 165.50 acres of temporary wetland impact were associated with Shale Gas activities.
 - Philadelphia District – 13,371 linear feet of permanent stream impact, 30.36 acres of permanent wetland impact, 6036 linear feet of temporary stream impact, and 12.52 acres of temporary wetland impact.
 - Pittsburgh District – 51,298 linear feet of permanent stream impact, 92.57 acres of permanent wetland impact, 147,400 linear feet of temporary stream impact, and 181.06 acres of temporary wetland impact. Of these totals, 1,851 linear feet of permanent stream impact, 0.03 acre of permanent wetland impact, 95,159 linear feet of temporary stream impact, and 157.42 acres of temporary wetland impact were associated with Shale Gas activities.

This impact data, while accurately reflecting the information in the ORM2 data base related to impacts does not accurately reflect the actual amount of impacts associated

with Shale Gas activities. Identification of Shale Gas impacts in ORM2 was dependent on the correct work type being entered into ORM2 by Corps staff. Cases were identified where impacts were not entered using a Shale Gas work type, thus the impact acreages are included in the non Shale Gas acreages.

It should also be noted, that activities temporarily impacting forested and/or scrub shrub wetlands may have been included in either the temporary or permanent acreages. The reason for this is associated with some activities having temporary wetland impacts, but which result in the permanent conversion of wetland type. As an example, utility line installation through a forested wetland may result in only temporary impacts to the wetland itself, thus impacts viewed as temporary since wetland conditions are restored, but the area may be permanently maintained resulting a change from forested to emergent community type. For this reason, such impacts could have been entered into either one of the categories.

It is also important to note that in the Corps ORM2 data base many stream projects were entered as permanent impact even though the project itself may have been beneficial to the aquatic environment. Such projects are considered self mitigating, or the impacts are temporary. These include, but are not limited to: stream bank restoration, stream bank stabilization and temporary impacts, such as those associated with utility line crossings, culverts and bridges. For these types of projects, mitigation is typically not required and no mitigation would be entered into ORM2.

- ORM2 data reflects the following compensatory wetland mitigation being required by the Corps as part of Category III activity verifications during the review period.
 - In Baltimore District – the purchase of 6.41 credits from an in-lieu fee program, purchase of 0.12 credit from a Mitigation Bank, 52.66 acres of wetland enhancement, 12.25 acres of wetland preservation, 5.0 acres of wetland establishment, and 9.26 acres of wetland reestablishment was required.
 - In Philadelphia District – the purchase of 3000.2 credits from an in-lieu fee program (see below for discussion on credits purchased), 1.5 acres of wetland enhancement, 0.48 acre of wetland preservation, 6.49 acres of wetland establishment, 1.36 acres of wetland reestablishment, and 0.23 acre of wetland rehabilitation was required.
 - In Pittsburgh District – the purchase of 0.34 credits from an in-lieu fee program, 5.47 acres of wetland enhancement, 6.12 acres of wetland preservation, 26.79 acres of wetland establishment, 15.41 acres of wetland reestablishment, and 0.25 acre of wetland rehabilitation was required.

It should be noted that the Philadelphia District data for in-lieu fee program credits reflects a data entry of acreage for one project (0.2 acre), and a monetary amount for a second project (\$3000.00). The impact acreage associated with the second project was 0.3 acre. The credits reflected in the data for Baltimore and Pittsburgh District was based

on acreage. As such, for consistency purposes, a total of 0.5 acre of in-lieu fee program credits was required by Philadelphia District, resulting in an overall in-lieu fee program credit purchase for the three Districts of 7.25 acres.

- ORM2 data reflects the following compensatory stream mitigation being required by the Corps as part of Category III activity verifications during the review period.
 - In Baltimore District – 124,288 linear feet of stream enhancement, 3,103 linear feet of reestablishment, and 5,571 linear feet of stream rehabilitation was required.
 - In Philadelphia District – 500 linear feet of stream enhancement, 2713 linear feet of stream establishment, and 1101 linear feet of stream reestablishment was required.
 - In Pittsburgh District – 13,450 linear feet of stream enhancement, 5,624 linear feet of stream preservation, 988 linear feet of stream establishment, 14,949 linear feet of stream reestablishment, and 5,086 linear feet of stream rehabilitation was required.

- iii. The following findings have been formulated based on the file reviews for PASPGP-4 Category III projects for the time period July 1, 2011 through June 30, 2013:
 - Reason for Category III review – In Baltimore District 94% of the files reviewed indicated that the application/registration was processed under the appropriate PASPGP-4 category, while in Philadelphia District 98% and Pittsburgh District 100% were processed under the appropriate category

 - Where applicable, a PNDI receipt was included in 91% of the Baltimore District project files. For the six files where a PNDI could not be located in the project file, three of the projects were PADEP Emergency Permits, which often result in the Corps or PADEP running a PNDI, and not the applicant. During the coordination process for these Emergency Permits, a hardcopy of the PNDI results may not have been printed out and placed in file, or provided by PADEP to the Corps. The other three projects were related to Marcellus Shale Gas activities. These project files are very large with multiple applications/registrations associated with the overall project. The PNDI may have been overlooked during file review, or the project may have received a clearance letter from USFWS, thus resulting in a PNDI receipt not being required.

 - A PNDI receipt was included in 100% of the project files in Philadelphia District.

 - A PNDI receipt was included in 86% of the Pittsburgh District files. Of the nine files where a PNDI clearance was not found: eight received a

clearance letter/avoidance measures from USFWS, therefore, a PNDI receipt was not necessary to document Section 7 clearance; one was a segment of a pipeline project that extended into West Virginia where there is no PNDI system.

- For the Category III files reviewed, 89% of the files in Baltimore District included bog turtle habitat survey documentation, where applicable. In Philadelphia District the bog turtle survey documentation was found in 93% of the files requiring documentation. There are no bog turtle counties located within the Pittsburgh District.
- Documentation regarding compliance with Section 106 of the National Historic Preservation Act was included in 80% of the project files in Baltimore District. For the nine projects that comprised the 20% that did not have documentation, all of the verifications were PADEP Emergency Permits. Section 106 compliance for these projects is ensured through PASPGP-4, Part VI, A. General Conditions, 17.
- Documentation regarding compliance with Section 106 of the National Historic Preservation Act was included in 83% of the project files in Philadelphia District. For the 3 projects that comprised the 17% that did not have 106 documentation: One project involved pond maintenance dredging within an authorized PADEP dam. Because the work would be conducted within areas previously disturbed, the project was of minimal impact to aquatic resources, with little likelihood to impact historic or archeological resources. Another project involved the installation of fish habitat enhancement structures (PADEP, GP-1 normally a CAT I activity) that was sent to the Corps due to a Federally Threatened and Endangered (T&E) species issue. The T&E species issue was quickly resolved and the project referred back to the PADEP to attach the PASPGP-4 to the GP-1. Due to the nature of the project (a benefit to the aquatic environment), the limited scope of analysis, and the fact that the area has been disturbed by the construction of residential housing, little likelihood existed for impact to historic or archeological resources. The final project was determined to be a CAT I activity and was referred back to the PADEP for processing and verification. It should be noted, while documentation was not found in the Corps files, Section 106 compliance for these projects is ensured through PASPGP-4, Part VI, A. General Conditions, 17. Documentation regarding compliance with Section 106 of the National Historic Preservation Act was included in 67% of the project files in Pittsburgh District. For the 22 projects that comprised the 33% that did not have documentation: Eight were Pennsylvania Department of Transportation (PennDOT) projects where the electronic application/registration was not printed and placed in the physical file, as such during the file review no letter was found in file, however, appropriate documentation was in the application/registration; four were minor road crossings or culvert replacements where there was previous disturbance and low potential for impacts to historic or archeological resources; eight were linear projects

where the historic or archeological resources were outside the Corps scope of analysis; one was a pipeline maintenance project where an exposed line was re-covered, due to previous disturbance there was a low potential for impacts to historic or archeological resources; one was a pipeline placed in a previously disturbed right of way, due to previous disturbance there was low potential for impacts to historic or archeological resources. It should be noted, while documentation was not found in the Corps file, Section 106 compliance for these projects is ensured through PASPGP-4, Part VI, A. General Conditions, 17.

- The required permit transmittal cover sheet from PADEP was included in 69% of the Category III permit files in Baltimore District, 100% in Philadelphia District, and 33% in Pittsburgh District. Overall, a permit transmittal cover sheet was included in 64% of the permit files reviewed, which is lower than that found as part of the PASPGP-3 monitoring effort (67%).
- The Baltimore District required compensatory mitigation for 11% of the Category III activities reviewed, while Philadelphia District required for 17% and Pittsburgh District required for 16%. These numbers may seem low, but the majority of Category III projects forwarded to the Corps were sent due to the need for Section 7 or Section 106 coordination and clearance, or due to stream projects exceeding 250 linear feet, and not necessarily projects with wetland or stream impacts that typically result in a loss of aquatic resources which would require compensatory mitigation. For example, stream restoration projects where the work itself is beneficial to the aquatic environment by reducing sediment loading and/or establishing riparian plantings along the stream banks are self mitigating. Thus, mitigation is typically not required for these types of “impacts”. Further, many applications/registrations were associated with activities resulting in temporary impacts to streams and/or wetlands, which typically does not result in the need for compensatory mitigation.
- The Baltimore District determined that 82% of the Category III projects, where work has commenced or was completed, were in compliance with the verified PASPGP-4, including all General and Special Conditions. Philadelphia District determined 79% of Category III projects were in compliance with the verified PASPGP-4, while Pittsburgh District determined that 89% of Category III projects were in compliance with the issued PASPGP-4. The remaining projects were not in compliance for reasons such as, work in excess of what was authorized, and those reasons listed for Category I and II projects, most notably for culvert pipes that were not properly depressed.
- The Baltimore District determined 31% of Category III projects involved resource agency coordination and 72% were issued with special conditions. In Philadelphia District 39% of Category III projects involved resource agency coordination and 67% were issued with special

conditions. In Pittsburgh District 30% of Category III projects involved resource agency coordination during the permit process and 65% were issued with special conditions. Examples of special conditions that were required as a result of the Category III review and agency coordination for these cases included: Memorandum of Agreements to ensure no adverse effect to historic and cultural resources; avoidance measures to protect endangered species; requirements for a Declaration of Restrictive Covenant; monitoring to ensure temporary impacts to aquatic resources were successfully restored (see discussion in Shale Gas section below), and requirements for wetland and/or stream mitigation.

D. PADEP Data

i. Data for PADEP authorizations was compiled by Central Office based on reporting from PADEP program areas and delegated CCDs for the time period July 1, 2011 through June 30, 2013. Data compilation was accomplished through the following efforts:

- General Permit data was recorded from copies of General Permit registrations provided to Central Office by PADEP program areas and CCDs.
 - This GP data covers the entire two (2) year reporting time period and includes temporary and permanent impact data to waterways and wetlands. However, this data only represents 48% of total GP registrations.
- General Permit data was reported by CCDs through standard quarterly reports to Central Office.
 - This GP data is limited only to the number of GPs registrations processed by each delegated CCD and spans the entire two (2) year reporting time period.
- Various permit data entered by PADEP program areas was exported from eFACTS, however, only certain permit types were entered for the entire two (2) year reporting time period.
 - This data includes GP-11s, EAs and WOEPs authorized during the entire two (2) year reporting time frame.
 - This data includes specific other GP data for the second year of reporting as required under the implementation of PADEPs Permit Decision Guarantee (PDG). These GPs include a subset of the GP-4s, GP-5s, GP-7s and GP-8s registered.
 - GP-4s, GP-5s, GP-7s and GP-8s in eFACTS are typically related to Oil & Gas registrations.

- Unfortunately, during data export from eFACTS, an error occurred preventing the exportation of impact data for those authorizations. The error was not able to be rectified in a timely manner, therefore no impact data is included with those authorizations tracked in and exported from eFACTS
- ii. The following information was determined using the available data collected. Care should be used in comparing and using averages generated from the data since project complexity and the resources affected greatly influence these values:
- PADEP authorized 439 Individual Chapter 105 WOEPs during the first monitoring year and 558 during the second monitoring year for a total of 997 permits during the monitoring period,
 - PADEP authorized 8 EA approvals during the first monitoring year and 18 during the second monitoring year for a total of 26 EAs permits during the monitoring period,
 - The average processing time associated with each authorization type utilizing eFACTS data is provided below. It is important to note that the processing times include applicant completeness/technical deficiency response times. Time frames were not readily available for other GP registrations nor do they encompass all registrations, only those entered into eFACTS:

Average Processing Times

Authorization Type	Total Processing Days	Total Business Days
WOEP	238	171
EA	108	53
GP-11	64	47
GP-8	50	37
GP-7	57	42
GP-5	36	27
GP-4	46	34

- PADEP and the delegated CCDs registered use of 4,903 GPs during the two year monitoring period. The following table provides a breakdown of the GP types registered:

Total GPs Registered

GP Number	Total Registered
GP-1	63
GP-2	61
GP-3	436
GP-4	238
GP-5	1,183
GP-6	115
GP-7	345
GP-8	422
GP-9	14
GP-10	0
GP-11	2,026
GP-15	0
TOTAL	4,903

- Aquatic resource impact data was available for 2,353 of the 4,903 (48%) GPs registered. It is not appropriate to average impacts since a single registration may include multiple uses of a GP. The following table provides a summary of those impacts by resource and impact type as follows:

Total GP Impact Data Recorded

GP Registrations	Permanent Impacts (acres):		Temporary Impacts (acres):	
	Stream/Floodway	Wetlands	Stream/Floodway	Wetlands
2,353	54.7	17.8	12,712.3	31.0

- The PWRP was developed as an in-lieu-fee program available to permit applicants to provide mitigation for impacts to waters of the Commonwealth. This in-lieu-fee program was also utilized by the Corps for impacts to waters of the United States, including wetlands. During the monitoring period, PADEP authorized contributions into the PWRP 58 times. The 58 authorizations, which include new permits and violation settlements, accounted for \$166,000.00 of monetary contributions to

provide mitigation for 13.90 acres of wetlands. One wetland project was implemented at a cost of \$15,580.00.

- The PWRP does not meet the current standards for in-lieu-fee programs as established in the 2008 Joint USEPA and Army Corps of Engineers Mitigation Rule (the Rule). The PWRP received the full five years of grandfathering allowed under the Rule and was no longer available for use as acceptable Federal mitigation on June 8, 2013, but remains operational for use as mitigation for State authorizations. The PADEP is developing a new in-lieu-fee program and has submitted a prospectus to the Corps.

E. Overall – Category I, II & III

i. Compliance

Our field compliance monitoring effort found that in Baltimore District, for the Category I, II, and III verifications inspected, 89% of the projects were in compliance with the verifications. In Philadelphia and Pittsburgh Districts, 84% and 91% of the inspections revealed that the projects were in compliance with the verifications, respectively.

Where appropriate, based on the findings of the above referenced field inspections, the Corps pursued resolution of any work not performed in compliance with the issued verifications or any unauthorized activities, often in coordination with PADEP.

It is interesting to note that the compliance rate for Category I and II activities in Baltimore District is 90% and for Category III activities it falls to 82%. Category I and II compliance in Philadelphia District is 86% and for Category III activities 79%. Category I and II compliance in Pittsburgh District is 89% and for Category III activities 88%. We feel this can be explained by the fact that Category III projects by their nature are larger and more complex, thereby increasing the opportunities for non-compliance. These types of authorizations often result in additional requirements on the applicant, above and beyond what is typically required in a Category I or II activity authorization. To improve compliance with these authorizations, it is important that all conditions be written clearly and concisely so that applicants can easily understand them. This will also increase the enforceability of the conditions if noncompliance work occurs.

The findings of this study suggest that the vast majority of permittees are in compliance with their Category III PASPGP-4 authorization. For the purpose of this report, non-submittal of the PASPGP- 4 Self-Certification Form was not viewed as non-compliance, even though submission of the form is a General Condition of PASPGP-4. In addition, the success or failure of compensatory mitigation was not evaluated as part of this monitoring effort because mitigation success is not dependent on the type of authorization issued.

ii. Processing Times

- Category I and II Activities
 - Processing times for PASPGP-4 Category I and II activities corresponds to the processing times of the PADEP authorization/registration as they are issued concurrently by PADEP. Average processing times were not provided by PADEP for Category I and II activities.
 - In November 2012 the PDG and Permit Review Process was established to standardize the review process and processing times for PADEP permit authorizations. The purpose is to make the Department's permitting process more predictable and efficient without compromising thorough review in order to protect the environment, health, safety, welfare and property of the people in the Commonwealth. The Bureau of Waterways Engineering and Wetlands have developed SOPs for receiving, accepting, reviewing, withdrawing, denying and approving WOEPs including EAs for waived activities and Chapter 105 General Permits. Each of the authorizations have two parts. All have a 10 business day Completeness Review for submission. Incomplete package submissions will be given 60 calendar days to submit missing information prior to moving ahead with the review. The WOEP, the EA and GP-11 Maintenance, Testing, Repair, Rehabilitation or Replacement have a Technical Review which is 93 business days for the WOEP, 86 business days for the EA and 86 business days for GP-11. The technical review period also allows 60 days for incomplete technical information submission. All General Permits have the 10 business day Completeness Review then an Eligibility Review. GP's 1, 2, 3, 4, 6, 7, 8, 9, and 15 all have a 43 business day eligibility review period. The GP-5 Utility Line Crossing has 50 business days eligibility review time. The first step after the 10 business day completeness review is to determine PASPGP Category. Permit Applications/Registrations are not forwarded to the Army Corps of Engineers unless the information is determined to be complete by PADEP in accordance with the PDG.
- Category III Activities
 - Corps' National Corps Performance Measures require issuance of 75% of Corps General Permit verifications within 60 days of receipt of a Federally complete application. Using the 60 days review timeframe for comparison, PASPGP-4 Category III verification processing times (the date application was determined Federally complete for processing until the date of verification issuance) was calculated from ORM2 data. During the monitoring period, Baltimore District issued 92% within 60 days with an average processing time of 24 days. Philadelphia District issued 83% within

60 days with an average processing time of 47 days, and Pittsburgh District issued 81% within 60 days with an average processing time of 28 days. Overall, between the three Corps Districts, the average processing time for Category III activities was 33 days. In many cases, applications/registrations sat idle waiting on additional information to be submitted by the applicant. Some projects also had an extended review time due to Section 106 or Section 7 concerns or other issues.

VI. PASPGP-4 EMPLOYEE SURVEY

As part of the PASPGP-4 monitoring effort, a survey was sent to Corps and PADEP staff (Enclosure 5 and 6 respectively). The goal of the survey was to gather recommendations and input to improve the overall SPGP process. Letters were also sent to the State and Federal resource agencies asking for their suggestions and comments on the existing PASPGP-4 and review process, and recommendations for consideration in development of future SPGPs in Pennsylvania (Enclosure 7).

A. Corps and PADEP staff Survey:

- i. The following comments were received from Corps staff.

Ten Corps employee responses were received. The experience of these employees ranged from having experience with all four PASPGPs to having experience with only PASPGP-4. In general those who responded indicated an overall support of the PASPGP and recommended continuation of a SPGP program in Pennsylvania. The following list is a summary of comments and recommendations received.

- If not for PASPGP-4 Category I and II verifications made by the State, we would be inundated with additional permits. (Category I and II authorizations issued by the State account for 87% of all PASPGPs).
- A mitigation threshold was suggested to be added to PASPGP to assist applicants in providing the appropriate information with the application/registration which would possibly help to further streamline the review process.
- It was recommended to provide coordination transparency between agencies when requesting additional project information.
- Upon receipt by PADEP, all permit applications/registrations should be sent directly to the Corps regardless of application/registration completeness to expedite Corps review.
- Projects with temporary impacts should have the Category III reporting threshold raised to allow more flexibility. (See further discussion of this issue in the Shale Gas Activities section of this report).

- Increase reporting threshold to 500 linear feet for temporary stream impacts.
- Would be beneficial if PADEP Regional Offices establish a pre-application process to help facilitate processing of permits.

ii. The following comments were received from PADEP

Surveys were sent out by PADEP Central Office to the Regional Waterways and Wetlands Program, the Oil and Gas Program and Mining. Seven PADEP employee responses were received. The experience was similar to the Army Corps of Engineers staff having different levels of experience with the PASPGP process. Those who responded indicated that there has been an overall benefit to the regulated public by providing “one stop shopping” for both State and Federal authorizations but the SPGP program in Pennsylvania needs improvement. The following list is a summary of comments and recommendations received.

- Helpful to applicant – the “one stop shop” goal is effective and helpful.
- For the majority of projects this system is implemented without difficulty for staff or the Corps (as perceived by PADEP staff).
- The Army Corps of Engineers’ views on single and complete project seem to vary from project to project and between reviewers.
- Criteria for eligibility and reporting conditions are more complex than necessary.
- Army Corps of Engineers staff availability, not always available to participate in pre-application meetings or meets separately with applicants.
- Recommend eliminating categories for SPGP in favor of eligible/non-eligible.
- Simplify criteria requiring individual Army Corps of Engineers review/permitting vs. PADEP authorization with SPGP
- Periodic updates from Army Corps of Engineers and PADEP to alert regional staff of recent issues and policy changes would be useful.
- Overall this is a good process that we have no trouble implementing.
- Corps members have been very helpful if any questions arise.

- B. State and Federal agency comments, suggestions, recommendations.
- i. The following comments were received from other State and Federal resource agencies:
 - a. USFWS:
 - i. Part III, Section A, Activities NOT (sic) eligible for PASPGP-4 (Page 9) and Part VI (C)(2), Category III Activities (Page 20). Under Part III (A,) Activities that are NOT eligible for PASPGP-4, Point #3 states that single and complete projects that will result in a total of more than 1.0 acre of temporary and/or permanent impacts, both direct and/or indirect, to waters of the United States, including jurisdictional wetlands, as defined above in Part II are not eligible for PASPGP-4. This appears to contradict guidance found on Page 20, which allows for activities exceeding thresholds if reviewed as a Category III activity (Part IV (C)(2)). We request clarification on this point.
 - ii. The PASPGP-4 says that there are specific thresholds which should not be exceeded to qualify for the PASPGP-4 permit; however, it then says that applicants can still get a PASPGP-4 if they exceed the thresholds, as long as the Corps of Engineers can verify that no more than minimal adverse environmental impacts would occur. We recommend including guidelines within the PASPGP-4 or its SOPs that would define what constitutes “minimal adverse environmental impacts.”
 - iii. Part VI, Section A, #2, Aquatic Life Movements (Page 26). We find the current recommendation for maintaining the movements of aquatic life to be largely inadequate and recommend expanding this measure to include additional protective measures.
 - iv. To be more protective of aquatic life; maintain aquatic habitat connectivity both up and downstream; maintain hydraulic characteristics of streams during high water events; minimize the rise in upstream flood elevations; provide safe, effective wildlife passage, and facilitate unobstructed aquatic life movements (as is required by PASPGP-4) within a stream, we recommend that the permit process include Best Management Practices (BMPs) specific to stream crossing characteristics and structure type. We support BMPs similar to the ones that have been developed by the New England Corps District, but would recommend that they be altered to reflect Pennsylvania’s specific needs. We attached our recommendations for Pennsylvania BMPs (enclosed). We recommend that these be included as an attachment to the PASPGP-4 and 5. We would be happy to discuss these recommendations with you further, if necessary.
 - v. Part VI, Section B, #8, Threatened and Endangered Species (Page 34). The last sentence of the last paragraph should read:

“If, however, adverse effects cannot be avoided, the activity is not eligible for Federal authorization under the PASPGP-4, unless adverse effects to Federally-listed species and the “take” of such species has been evaluated and authorized via formal Section 7 or Section 10 consultation between the USFWS (of NMFS) and another lead Federal action agency”

b. Pennsylvania Fish and Boat Commission:

- i. Part IV, section A, number 19, subsection (b) *Other Restoration Activities*: The 250 linear foot reporting threshold should not apply to activities undergoing review through an Environmental Review Committee (ERC) meeting, only the one acre threshold should apply.
- ii. Part VI, section A, number 2 *Aquatic Life Movements*: The condition states that “no activity may substantially disrupt the movement of those species of aquatic life indigenous to the waterbody”. The PFBC would prefer to expand on this condition by adding a stream crossing best management practices recommendation list, in order to ensure continued aquatic passage at stream crossings throughout the state. The addition of a recommendations list to the PASPGP would facilitate structure design to ensure fish passage in aquatic environments. The stream crossing best management practices recommendation list closely reflects that found in the New England General Permit, but amended to reflect conditions that are appropriate for Pennsylvania. See attached documents for your review and potential inclusion into PASPGP5 (Enclosure 8 of this Report).

VII. SHALE GAS ACTIVITIES

During the last year of PASPGP-3 (approximately Fall, 2010 through Spring, 2011) there was a noted upsurge in the amount of Shale Gas related applications/registrations being submitted to the Baltimore and Pittsburgh Districts for review as Category III activities. Due to the Delaware River Basin Commissions moratorium restricting Shale Gas activities, Philadelphia District did not receive any applications/registrations for such activities. The applications/registrations received by Baltimore and Pittsburgh Districts consisted mostly of sections of gas gathering pipelines and waterlines. It became apparent upon further review these applications/registrations were for portions of expansive networks of much larger overall gas gathering systems. Thus the applicants were seeking authorization for construction of a portion of a larger overall project, or were related and dependent on phases which had been previously authorized, or were currently under review for PASPGP-4 verification. These systems typically included: gathering lines, water lines, compressor stations, road crossings, and fresh water impoundments. Through the summer of 2011 (end of PASPGP-3/beginning of PASPGP-4) the number of Shale Gas related projects/applications being submitted to the Corps Districts for review as Category III activities steadily increased. Associated with the increase in Category III applications/registrations, and the change from PASPGP-3 to PASPGP-4, was also an increase in questions from applicants and consultants on the review process for linear projects under PASPGP-4. Recognizing the increase in linear type projects in Pennsylvania as a result of the Shale Gas exploration and development,

and to further explain the processing requirements of PASPGP-4, the Baltimore and Pittsburgh Districts hosted PASPGP-4 Linear Project Workshops, with assistance from PADEP, PHMC, and USFWS, on October 18, 2011 in State College, Pennsylvania, and on November 4, 2011 in Pittsburgh, Pennsylvania. In addition, the Corps and PADEP attended several meetings with the Marcellus Shale Coalition, both prior to PASPGP-4 and during PASPGP-4, to discuss further streamlining of the permit process and provide guidance on the PASPGP-4 review requirements. As a result of these workshops, the inquiries in regard to the PASPGP-4 processing procedures have been greatly reduced. In addition, Corps and PADEP staff facilitated numerous meetings with individual Shale Gas companies during the first two years of PASPGP-4 to further address questions and streamline the permit review process for these types of projects. The Corps and PADEP continue to work with members of the Shale Gas industry and other State and Federal resource agencies, to further look for ways to streamline the review process of Category III activities, and such streamlining procedures will be considered during development of any future PASPGP. A large portion of the Category III applications/registrations being received by the Corps is related to Shale Gas activities. In 2013, Shale Gas activities comprised 70% and 41% of the PASPGP-4 Category III activities in Baltimore District and Pittsburgh District, respectively.

Under PASPGP-3, the Corps reviewed 73 applications/registrations (Baltimore 40; Pittsburgh 33) with average review times of 108 days from the date the application/registration was received, and 37 days from the date Federally complete for processing (Baltimore 134, and 29; Pittsburgh 77, and 46, respectively). Under PASPGP-4, the Corps completed the review of 656 applications/registrations (Baltimore 441, Pittsburgh 215), with average review times of 112 days from the application/registration receipt date, and 32 days from the date Federally complete for processing (Baltimore 151, and 33; Pittsburgh 73, and 31 respectively). As such, the review times are very similar from PASPGP-3 to PASPGP-4, however reduced timeframes have been observed over time, especially as mentioned above for 2013.

The following is an overview of the data for Shale Gas related Category III applications/registrations. This data was gathered from the Baltimore and Pittsburgh Districts for the time period July 1, 2011 through June 30, 2013. During the first year of PASPGP-4, Baltimore District completed the processing of 177 Category III applications/registrations, with an average review time of 18 days from the date the application/registration was Federally complete for processing. During the second year of PASPGP-4, the average overall processing time increased to 39 days from the date Federally complete, and the number of applications/registrations received increased to 264. Overall, 441 applications/registrations were verified, with the total processing time from date of application/registration receipt averaging 151 days, and 33 days on average from the date Federally complete for processing.

For Pittsburgh District, during the first year of PASPGP-4, verifications were issued for 89 applications/registrations, with an average review time of 31 days from the date the application/registration was Federally complete for processing. During the second year of PASPGP-4, the overall average processing time was 31 days from the date Federally complete, and the number of applications/registrations received increased to 126. Overall, 215 applications/registrations were verified, and the total average processing

time from date of application/registration receipt was 73 days, and 31 days on average from the date that application/registration was Federally complete.

For PASPGP-4 Category III verifications issued during the review period, 73 Shale Gas related Category III applications/registrations required wetland/stream mitigation (Baltimore 61; Pittsburgh 12), which equates to 11% of the total Shale Gas related Category III verifications issued by Baltimore and Pittsburgh Districts. The majority of the impacts related to these types of activities were temporary in nature such as: temporary road crossings, trenching and backfilling wetlands, and coffer damming then trenching and backfilling stream crossings. To assure that the impacts were truly temporary, and that the aquatic resources were being successfully restored, the Corps Districts started including Special Conditions as part of verification. These Special Conditions required the applicant to send in post construction documentation demonstrating that all aquatic resources had been restored to original contours and elevations. The documentation was also required to include a discussion on the stability of restored stream channels and information regarding the successful reestablishment of hydrophytic vegetation and hydrology in wetland areas.

During the first two years of PASPGP-4, approximately 778 verifications for Shale Gas related activities required the referenced monitoring of temporary impacts (Baltimore 617; Pittsburgh 161). As of March 3, 2014, approximately 241 (Baltimore 198; Pittsburgh 43) of the monitoring reports were received by the Corps. While this timeframe extends beyond the monitoring period of this report, a decision was made to include the findings of these reports as the majority would be associated with verifications issued during the two year monitoring period. Based on a review of the monitoring reports, the following determinations have been made:

- In Baltimore District:
 - Approximately 1319 wetland crossings and 1323 stream crossings were assessed as part of the monitoring reports.
 - 11.8% of the wetland crossings were described or identified in the reports as not being successfully restored. Failure was typically associated with fill remaining in the wetland area, thus the area not being returned to original grade and contours.
 - 28.4% of the wetland areas were described as lacking vegetation, or being dominated by non-hydrophytic vegetation. While this could be viewed as the area being unsuccessfully restored, the reports did indicate that the lack of vegetation could be associated with inadequate time for vegetation establishment, and the dominance by non-hydrophytic vegetation may be attributed to stabilization of the area using an upland seed mix.
 - 7.4% of the stream crossings were described or identified in the reports as not being successfully restored. Failure was typically associated with stream channel widths not matching upstream and downstream areas, excess stone or riprap remaining in the channel, or channel instability not evident in upstream and downstream areas.

- In Pittsburgh District:

The below numbers are reflective of current information derived from the 43 monitoring reports received by the Pittsburgh District; however, it is important to note that the majority of the monitoring reports received by the District, are the initial post project reports. In the majority of post project reports erosion and sedimentation controls are still in place, and vegetation (while planted or seeded and mulched) is not completely restored at each crossing. The District did not count these projects as being unsuccessful for the purposes of this review.

- Approximately 390 wetland crossings and 926 stream crossings were assessed as part of the monitoring reports.
- 1% of the wetland crossings were described or identified in the reports as not being successfully restored. Failure was typically associated with fill remaining in the wetland area, thus the area not being returned to original grade and contours.
- 1% of the wetland areas were described as lacking vegetation, or being dominated by non-hydrophytic vegetation. While this could be viewed as the area being unsuccessfully restored, the reports did indicate that the lack of vegetation could be associated with inadequate time for vegetation establishment, and the dominance by non-hydrophytic vegetation may be attributed to stabilization of the area using an upland seed mix.
- 1% of the stream crossings were described or identified in the reports as not being successfully restored. Failure was typically associated with stream channel widths not matching upstream and downstream areas, excess stone or riprap remaining in the channel, or channel instability not evident in upstream and downstream areas.

With regard to the wetland areas lacking vegetation coverage or being dominated by non-hydrophytic vegetation, the Corps is proposing further inspections to determine whether or not these sites will successfully reestablish as wetlands or if further corrective measures are needed. The data from these monitoring reports and subsequent field reviews will be used in the development of PASPGP-5.

VIII. RECOMMENDATIONS

Overall, the PASPGP-4 has successfully reduced duplication of effort between the Army Corps of Engineers and PADEP. This is evident by the majority of PASPGP-4 verifications being comprised of Category I and II activities that do not require an Army Corps of Engineers case-by-case evaluation. In addition, the application/registration processing time appears to be reasonable, with most PASPGP-4 verifications being issued in 60 days or less.

In order to expedite the log-in process of incoming applications/registrations by the Army Corps of Engineers, and ensure that applicable applications/registrations get assigned to an Army Corps of Engineers project manager for processing, it is essential that

Transmittal Cover Sheet included as part of the PASPGP-4 Technical Support Document, which identifies the type of PASPGP-4 activity (Category I, II or III) and the reason for being sent as a Category III activity, be included with all applications/registrations being sent to the Army Corps of Engineers from PADEP. A cover sheet was also required under PASPGP-3, and utilization of the sheet was problematic. Based on the PASPGP-3 monitoring effort, the cover sheet was only received with 67% of the Category III applications/registrations received by the Army Corps of Engineers. This monitoring effort has revealed that use of the PASPGP-4 cover sheet is still an issue in some Districts, as 69% of Category III activity applications/registrations received in Baltimore District had the cover sheet, while 100% in Philadelphia District and 33% in Pittsburgh District had the cover sheet. Some of the issues related to use of the form can be attributed to PADEP revising their GP registration forms and guidance to staff indicating that use of the new registration forms eliminated the need for use of the cover sheet. Further guidance has been issued by PADEP to support continued use of the cover sheet.

For entry of projects into the ORM2 data base, impact acreages are required. As such, it is essential that the Army Corps of Engineers receive a complete copy of all Category I and II applications/registrations, including information on the acreage of verified impacts. This monitoring effort revealed that complete Category I and II permit applications/registrations were received 93% of the time in Baltimore District, 79% in Philadelphia District, and 90% in Pittsburgh District. Based on the PASPGP-3 monitoring effort, it would appear that the frequency of the Army Corps of Engineers receiving complete Category I and II applications/registrations has increased, as under PASPGP-3 complete applications/registrations were included in 82% of the Army Corps of Engineers' files. While an improvement has been observed under PASPGP-4, additional improvement is necessary.

The PASPGP-3 Monitoring Report recommended use of a standard decision document by the three Army Corps of Engineers Districts. After publication of the Report, Army Corps of Engineers Headquarters developed a standardized General Permit Decision Document, which is required to be used by all Districts. This standardized form has been used by the Army Corps of Engineers as part of the PASPGP-4 permit review process and requires documentation related to compliance with Section 7 of the ESA and Section 106 of the NHPA. Through use of this form for Category III activity verifications, an increase in adequate file documentation related to Section 7 and Section 106 has been observed.

This monitoring effort finds that the PASPGP-4 is in full compliance with Section 106 of the NHPA. Compliance is assured through the PASPGP-4 General and Special Conditions related to Section 106 and the required review/coordination processes. As mentioned above, use of the required General Permit Decision Document will help ensure that appropriate documentation is included in project files.

We recommend that continued emphasis be placed on file maintenance after the permit has been issued. Specifically this pertains to insuring that the project Self-Certification Forms are placed in the file as well as all Monitoring Reports, compliance inspection reports and any other additional correspondence generated after permit issuance. In addition, to further ensure receipt of this information, it is recommended that ORM 2

generate reminders to project managers identifying due dates for such things as Monitoring Reports, compliance inspections and receipt of Recorded Deed Restrictions.

This monitoring report did not include compliance inspections for any completed compensatory mitigation projects. While mitigation may be required as a condition of the PASPGP-4, success of the mitigation site is not a true reflection of the success of the PASPGP-4 process. The Army Corps of Engineers has and will continue to monitor compensatory mitigation requirements of authorized PASPGP-4 projects. Army Corps of Engineers National Performance Measures further require the inspection of such projects, as the Army Corps of Engineers Districts are required to inspect 5% of mitigation sites annually.

During this monitoring effort, no occurrences of failure to comply with the 404(b)(1) Guidelines or NEPA was noted. In addition, during the field review process, no violations of ESA or the NHPA were found.

We recommend the continuation of the PASPGP Monitoring Committee to allow for facilitated discussions, as needed to address any questions and/or recommendations for improvement of the PASPGP-4 permit process, and development of future SPGPs and associated SOPs in Pennsylvania. This forum could also be used to educate State and Federal resource agency staff of pending changes to PADEP and/or Army Corps of Engineers regulatory programs.

The PASPGP-4 process reflects a workload sharing partnership between the Army Corps of Engineers, PADEP and other Federal, State and local agencies. The PASPGP-4 has successfully reduced duplication of effort between the Army Corps of Engineers and PADEP as reflected in the large number of Category I and II activities verified by the State with no Corps involvement. Even though limited data was provided by the PADEP regarding all PASPGP-4 verifications issued, their efforts clearly reduced the number of projects which would have required an Army Corps of Engineers review absent the PASPGP-4.

The three Army Corps of Engineers Districts in Pennsylvania should develop a standard for entering data in the ORM2 database for in-lieu fee program mitigation. This report found a variation between the Districts, which made compiling and presenting data in consistent fashion problematic.

IX. CONCLUSION

Based upon the information evaluated from July 1, 2011 to June 30, 2013, the Army Corps of Engineers has determined that the work authorized by the PASPGP-4 is in compliance with the CWA 404(b)(1) Guidelines and NEPA, Section 7 of the ESA, and Section 106 of the NHPA. Continuation of the PASPGP-4 and reissuance of a SPGP in Pennsylvania is justified.

X. APPENDICES/ENCLOSURES

1. PASPGP-4 SPN 11-44
2. Category I and II File Review Form
3. Category III File Review Form
4. Field Review Form
5. Corps Employee Survey
6. PADEP Employee Survey
7. Agency Recommendation Letters
8. PFBC Enclosure as part of their comments

Enclosure 1



Public Notice

U.S. Army Corps
of Engineers

Special Public Notice – 11-44

Date: June 3, 2011

Baltimore District

Philadelphia District

Pittsburgh District

Subject: Issuance of the Pennsylvania State Programmatic General Permit - 4 (PASPGP-4) for a five year period.

This Public Notice is issued jointly by the Baltimore, Philadelphia, and Pittsburgh Districts of the U.S. Army Corps of Engineers (Corps). This Public Notice may be viewed on the Baltimore District website at www.nab.usace.army.mil/Wetlands%20Permits.

On July 1, 2006, the District Engineers for Baltimore, Philadelphia, and Pittsburgh Districts, issued the Pennsylvania State Programmatic General Permit - 3 (PASPGP-3) for a five year period. The PASPGP-3 will expire on June 30, 2011, unless a decision is made to suspend, or revoke it before that date.

On November 1, 2010, the District Engineer issued Special Public Notice 10-65, requesting comments on whether to issue, for a 5-year period, the PASPGP-4. Following a thorough review of all comments received in response to the special public notice, the Corps has decided to issue the PASPGP-4.

The purpose of this Public Notice is to inform the public that the PASPGP-4 has been issued by Colonel David E. Anderson, Lieutenant Colonel Philip M. Secrist, III, and Colonel William H. Graham for the Baltimore, Philadelphia, and Pittsburgh Districts of the U.S. Army Corps of Engineers. The PASPGP-4 will be implemented and in full effect within the Commonwealth of Pennsylvania on July 1, 2011.

The PASPGP-4 can be viewed on the Baltimore District website at www.nab.usace.army.mil/Wetlands%20Permits. A hard copy of the PASPGP-4 may be obtained by contacting: Ms. Mary Lou Martin, U.S. Army Corps of Engineers, Baltimore District, State College Field Office, 1631 South Atherton Street, State College, Pennsylvania 16801, or telephone (814) 235-0570.

The following modifications have been incorporated into the PASPGP-4:

- 1. Definitions:** A Definitions Section has been added to clarify terminology used in the PASPGP-4.
- 2. Waters Added Under PASPGP-4 (Delaware, Lehigh and Schuylkill Rivers):** Activities occurring waterward of the Ordinary High Water Mark (OHWM) in the Delaware River, from the Pennsylvania-Delaware border to the Morrisville –Trenton Railroad Bridge in Morrisville, PA; in the Lehigh River, from the mouth to the downstream side of the PA Route 940 Bridge; and in the Schuylkill River, from the Fairmount Dam to Port Carbon, PA are now eligible for PASPGP-4. Activities in these waters were previously ineligible for PASPSP-3 authorization.

These waters were added to the permit, because activities in these waters are not expected to interfere with commercial navigation.

3. Category I:

- a. **Private Residential Construction in Wetlands:** This activity, previously ineligible for PASPGP-3, was added as Category I activity. The work must be authorized by Pennsylvania Department of Environmental Protection (PADEP) General Permit-15 (GP-15). Recorded conservation instruments are not required for this activity.

According to PADEP data, GP-15 was issued six times during the two-year PASPGP-3 Monitoring Period. Since its inception (April 7, 1997), approximately 30 to 40 GP-15s have been issued statewide. Therefore, the potential for cumulative impacts for this type of activity are such that the Corps feels it can be reviewed as a Category I activity. In addition, this activity was added so that development in older subdivisions, where GP-15 applies, would not be held to a more rigorous standard than newer developments, which may qualify for authorization through PASPGP-4. Without inclusion of the GP-15 in the PASPGP-4, a Corps Individual Permit review is required.

b. Activities Waived at 25 PA Code § 105.12(a)(16) - Waiver 16 - Restoration Activities

- i. **Bureau of Abandoned Mine Reclamation (BAMR) approved and/or sponsored restoration activities** - This activity is undertaken and conducted pursuant to a restoration plan, which has been approved, in writing, by PADEP, provided the activity impacts less than 0.05 acre of vegetated wetland as defined by the Corps of Engineers 1987 Wetlands Delineation Manual, including all applicable guidance and regional supplements or the body of water or associated discharge from a body of water has a pH < 5.0, or any of the following elevated metal levels: Aluminum > 0.6 mg/l; Iron > 7.0 mg/l; or Manganese > 4.0 mg/l. This activity was added, because it permits the restoration of highly degraded resources or significant sources of pollution, thereby improving the quality of waterbodies.
- ii. **Other Restoration Activities** – Restoration activities whereby PADEP has issued a programmatic 401 Water Quality Certification conditioned upon receiving approval by the Environmental Review Committee (ERC). To be authorized by PASPGP-4, the activity must be approved by ERC. Note: the activity will be reviewed as Category III, if applicable.
- c. **Existing Structures or Activities completed prior to July 1, 1979:** This corresponds to activities authorized pursuant to 25 Pa. Code § 105.12(b)(1-7) and the operation, maintenance and monitoring of those structures and activities authorized pursuant to 25 Pa. Code § 105.12(c). This activity was added to provide consistency with the state regulations for grandfathered maintenance activities in watersheds < 5 square miles.
- d. **Maintenance:** This corresponds to activities conducted under the terms and conditions of a previously issued PADEP authorization, which requires operation and maintenance in accordance with the terms and conditions of the PADEP authorization. This activity clarifies procedures existing under PASPGP-3.

- e. **Grandfather Clause:** All activities authorized by PASPGP-3, where the authorization did not expire prior to June 30, 2011, are reauthorized by the PASPGP-4 without further notice to the applicable Corps District provided the proposed regulated activities comply with all terms, conditions, limits, and best management practices identified and required by the PASPGP-4 and the applicable PADEP authorizations. In addition, all special conditions attached to the original PASPGP-3 authorization are special conditions of the PASPGP-4 authorization. Requests for modification of the authorized work and/or special conditions must be submitted in writing to the applicable Corps District. The duration of these reauthorizations will be for: the term of the PASPGP-4 (June 30, 2016) or the applicable PADEP Chapter 105 authorization, for Category I or II activities, or five years from the date of the PASPGP-3 Category III verification, whichever is less. This activity was added to ensure that project specific verifications that were issued late in the term of the PASPGP-3 would still be valid for projects where the terms and conditions were not changed in the PASPGP-4.

4. **Category III:**

- a. **Activities Which May Affect Threatened or Endangered Species or Their Habitat:** Modified processing requirements for Endangered Species Act (ESA) compliance. Unless an application already has documented clearance from the U.S. Fish and Wildlife Service (USFWS), or a No Effect Determination from the Corps, the application will be forwarded to the Corps as a Category III Activity. In addition, clarification was added to ensure that activities receiving a conflict with the Pennsylvania Natural Diversity Inventory (PNDI) for a Federally listed species, or PNDI results with avoidance measures for a Federally listed species, are processed as a Category III Activity. These activities are reviewed as a Category III Activity in order to ensure Corps compliance under Section 7 of the Endangered Species Act, as amended.
- b. **Activities Requiring an Environmental Impact Statement (EIS):** These activities correspond to applications containing an EIS, references to an EIS by a Federal agency, or references to the Corps being a cooperating agency on an EIS. These activities were added to ensure Corps compliance under the National Environmental Policy Act.
- c. **Activities within Portions of the Delaware River:** These activities correspond to any activity located water ward of the OHWM in the Delaware River, upstream of the Morrisville-Trenton Railroad Bridge in Morrisville, Pennsylvania. Any activity located waterward of the OHWM in the Delaware River, downstream of the Morrisville-Trenton Railroad Bridge, is not eligible under PASPGP-4. These activities were added to ensure Corps compliance with authorities to issue permits and related laws.
- d. **Activities across State Boundaries:** These activities correspond to activities where the regulated site specific impact is not wholly located within the Commonwealth of Pennsylvania. These activities were added to ensure that ineligible projects do not receive a project specific verification under PASPGP-4.
- e. **Coal and Non-Coal Mining Activities:** These activities are authorized by Chapter 105 permits in conjunction with coal and non-coal mining permits issued by the PADEP District Mining Offices (Bureau of Mining and Reclamation), including PADEP GP-101, PADEP GP-102, and PADEP Waiver 4. Previously, these types of projects were deemed ineligible

for authorization under PASPGP.

By including authorizations issued by PADEP District Mining Office as eligible for PASPGP-4, a more streamlined permit process will exist for applicants. In addition, this process will promote increased compliance with Section 404 of the Clean Water Act. By including as a Category III activity, applications will be forwarded to the Corps for a review and a determination as to if a Corps permit is required. Under the current PASPGP-3, such applications are often not forwarded and compliance with Section 404 permitting requirements is left to the applicant. Important points for consideration with regard to omitting mining from PASPGP-4 are that the Corps' Nationwide Permit 21: Surface Coal Mining Operations is currently suspended within the Appalachian Region. As a result, most regulated activities associated with a surface coal mine operation require a Corps Individual Permit. Part of the Corps Individual Permit process includes a Public Notice that is sent to various resource agencies, other interested parties, and adjacent property owners to the proposed site. The Corps must evaluate all comments received as a result of the Public Notice and in some instances hold a Public Hearing to document and potentially resolve all concerns. This can greatly increase the amount of time necessary between receipt of a complete application and issuance of a permit decision. Furthermore, the Corps Individual Permit process must be utilized, in the absence of Nationwide Permit 21, for all surface mining activities including those with minimal impacts for example a single road crossing or an outfall structure.

- f. **Construction of Mitigation Banks and In Lieu Fee Sites:** These activities correspond to regulated work associated with the construction of Mitigation Bank and In-Lieu-Fee sites. These activities were added to ensure projects associated with the construction of Mitigation Bank and In-Lieu-Fee sites. are authorized in accordance with the Corps and EPA "April 10, 2008, Compensatory Mitigation for Losses of Aquatic Resources: Final Rule" (Mitigation Rule).
- g. **Activities Waived at 25 PA Code § 105.12(a)(2) - Waiver 2 - Water Obstructions in a Stream or Floodway With a Drainage Area of 100 Acres or Less:** These activities correspond to work authorized pursuant to PADEP Waiver 2. On November 1, 2010, the District Engineer issued Special Public Notice # SPN 10-65, proposing that these activities be moved from Category III review to Category I review. Following a thorough review of all comments received in response to the Public Notice, the Corps has decided to keep these activities under Category III review.
- h. **Activities Affecting Corps Civil Works Projects, Corps Property, or Projects Part of Corps Rehabilitation and Inspection Program:** These activities correspond to any work that may alter, use, build upon, attempt to possess, or that may harm or impair any existing or proposed Corps Civil Works project, any Corps-owned or managed property, or projects that are part of a Corps Rehabilitation and Inspection Program. These activities were added under the Category III review to ensure that all projects occurring on or affecting Federally owned Corps of Engineer's property have been reviewed for compliance with 33 U.S.C. 408. As a result of these activities being added under Category III, Special Condition No. 14 under PASPGP-3 (Activities for the Maintenance of Existing Flood Control Projects that are authorized Pursuant to PADEP GP-11) has been removed from the PASPGP-4.

5. General Conditions and Procedural Requirements Added Under PASPGP-4:

- a. **Navigable Waters:** A list of eligible Navigable Waters of the United States was added with conditions relating to aerial transmission lines, encasement, and as-built drawings. This condition was added to ensure compliance with Corps regulations for structures across navigable waters.
- b. **Aids to Navigation:** The permittee must prepare and provide for United States Coast Guard (USCG) approval, a Private Aids To Navigation Application (CG-2554). The form can be found at: http://www.uscg.mil/forms/cg/CG_2554.pdf. Within 30 days of the date of receipt of the USCG approval, the permittee must provide a copy to the applicable Corps District. This condition was added to ensure compliance with USCG regulations

In addition, the following clarifications have been incorporated into the PASPGP-4:

1. **Activities Exceeding Thresholds:** Language has been modified to clarify reporting thresholds, to determine when a project should be forwarded to the Corps for a Category III review.
2. **Projects with Previous Federal Authorization:** Language has been modified to clarify when an application needs to be forwarded as a Category III activity.
3. **Activities Which May Affect Threatened or Endangered Species or Their Critical Habitat:** For activities or projects proposed in waterways occupied by Federally listed, proposed, or candidate mussels or fish: The table has been updated by adding new waterways and counties and by deleting references to specific species. For activities or projects with proposed impacts to Federally regulated wetlands that require bog turtle screening procedures in counties of documented bog turtle occurrence, the county list has been updated by adding a portion of Carbon County and by deleting Franklin County.
4. **Application Submittal:** Language has been removed regarding specific application submittal procedures. Questions regarding these procedures should be directed to the PADEP or Corps.
5. **PASPGP-4 Verification:** The PASPGP-4 expiration date has been clarified.
6. **Navigation:** Language has been added to inform permittees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
7. **Avoidance, Minimization and Compensatory Mitigation:** Language has been added requiring that all mitigation be accomplished in accordance with the Mitigation Rule. Language has been deleted in reference to the Pennsylvania Wetland Replacement Project (PWRP), as

PWRP is required to be in compliance with the Mitigation Rule.

- 8. Threatened and Endangered Species:** A PNDI review is required for all activities, including those activities for which no project-specific application is filed (e.g., Waivers, channel cleaning and culvert repairs carried out under Waiver Letters of Maintenance; activities carried out under E-999X permits, etc.). If there is adverse effects determination on Federally-listed species, the 'take' of such species has to have been evaluated and authorized via formal Section 7 consultation between the USFWS or National Marine Fisheries Service (NMFS) and another Federal action agency.

General:

The Commonwealth's Dam Safety and Waterway Management Rules and Regulations establish a statewide permit program for protecting the waters of the Commonwealth. The Commonwealth's procedures for the granting of permits require the PADEP to apply evaluation criteria consisting of alternatives analysis (for non-water dependent activities), avoidance techniques, the minimization of impacts, and if a permit is to be granted, compensatory mitigation. The evaluative criteria within the Commonwealth's program are similar to Federal criteria under Section 404(b)(1) of the Federal Clean Water Act. The Baltimore District Engineer, in consultation with the Philadelphia and Pittsburgh District Engineers, will continue to evaluate the PASPGP-4 process, to determine if activities have been authorized in accordance with the requirements of the PASPGP-4 and in compliance with federal regulations.

The PASPGP-4 will protect the aquatic resources of the Commonwealth of Pennsylvania within the Baltimore, Philadelphia, and Pittsburgh Districts of the U.S. Army Corps of Engineers; will reduce the administrative burden of the program for both the Corps and the Commonwealth of Pennsylvania through interagency cooperation; will improve the regulatory response time; and will add predictability within the specified limits to the permit program for the potential applicant and the public.

The PASPGP-4 will be applicable for regulated activities in waters of the United States, including jurisdictional wetlands, in the Commonwealth of Pennsylvania that are located within the geographic boundaries of the three Corps Districts.

The PASPGP-4 is not applicable for activities located waterward of the OHWM on non-tidal waters and/or the Mean High Water Line (MHWL) on tidal waters on the following Pennsylvania waterbodies:

1. The Delaware River, downstream of the Morrisville-Trenton Railroad Bridge in Morrisville, Pennsylvania;
2. The Schuylkill River, downstream of the Fairmount Dam in Philadelphia, Pennsylvania;
3. All of the Ohio River;
4. All of the Beaver River;
5. All of the Little Beaver Creek;
6. All of the Mahoning River;
7. All of the Monongahela River;
8. The Youghiogheny River from its mouth at McKeesport, Pennsylvania to river mile 31.2 at West Newton, Pennsylvania;
9. The Allegheny River, from its mouth in Pittsburgh, Pennsylvania to river mile 197.4 at

- Kinzua Dam, north of Warren, Pennsylvania;
10. The Kiskiminetas River from its mouth near Freeport, Pennsylvania to river mile 26.8 at Saltsburg, Pennsylvania;
 11. Tenmile Creek from its mouth at Millsboro, Pennsylvania to river mile 2.7; and
 12. Lake Erie activities which require submittal of a Joint Permit Application or Environmental Assessment to the PADEP. For Lake Erie, the OHWM is located at elevation 573.4.

The decision to issue the PASPGP-4, with the above modifications, was made after a thorough evaluation of the probable impacts including cumulative impacts of the proposed PASPGP-4 on the public interest. This decision reflects the national concern for the protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal was balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal were considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural resources, fish and wildlife resources, flood hazards, floodplain functions, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, and, in general, the needs and welfare of the people.

Section 401 Water Quality Certification (WQC) and Coastal Zone Management (CZM) Act Consistency is required for the PASPGP-4. PADEP published a notice in the PA Bulletin indicating its intent to issue a 401 WQC and CZM Consistency for the PASPGP-4.

State or local authorizations, may be required, on a case-by-case basis, for the PASPGP-4 authorization to be valid. A review of the PASPGP-4 indicates that processing procedures and conditions are sufficient such that authorized work will not affect listed species or their critical habitat pursuant to Section 7 of the Endangered Species Act as amended.

The PASPGP-4 is conditioned to assure that on a case by case basis, cultural resources listed in the latest published version of the National Register of Historic Places or properties listed as eligible or potentially eligible for inclusion therein will be given the consideration required by Section 106 of the National Historic Preservation Act. The applicant will notify the Pennsylvania Historical and Museum Commission using the PADEP Cultural Resources Notification Form for all PADEP Individual Permits before applying for PASPGP-4 authorization.

A review of the PASPGP-4 indicates that processing procedures and conditions are sufficient such that authorized work is not likely to have a direct and adverse effect on any designated Wild and Scenic River pursuant to the Wild and Scenic Rivers Act as amended.

A review of the PASPGP-4 indicates that processing procedures and conditions are sufficient such that authorized work will likely result in no more than minimal adverse effects on Essential Fish Habitat (EFH) pursuant to the Magnuson-Stevens Fishery Conservation and Management Act as amended.

It is requested that you communicate the foregoing information to any persons known by you to be interested and not being known to this office who did not receive a copy of this notice. Questions and comments may be directed to Mrs. Patricia Strong, U.S. Army Corps of Engineers, Baltimore District, Pennsylvania Section, P.O. Box 1715, Baltimore, Maryland 21203.

All activities authorized by PASPGP-3, where the authorization did not expire prior to June 30, 2011, are reauthorized by the PASPGP-4 without further notice to the applicable Corps District provided the proposed regulated activities comply with all terms, conditions, limits, and best management practices identified and required by the PASPGP-4 and the applicable PADEP authorizations. In addition, all special conditions attached to the original PASPGP-3 authorization are special conditions of the PASPGP-4 authorization. Requests for modification of the authorized work and/or special conditions must be submitted in writing to the applicable Corps District. The duration of these reauthorizations will be for: the term of the PASPGP-4 (June 30, 2016) or the applicable PADEP Chapter 105 authorization, for Category I or II activities, or five years from the date of the PASPGP-3 Category III verification, whichever is less.

Since the PASPGP-4 is duplicative of some Nationwide Permits (NWP) and offers a more simplified and streamlined regulatory process, the Corps has suspended those NWPs, which are applicable to activities qualifying for PASPGP-4. Special Public Notice 07-37 dated September 11, 2007, further detailing the suspension of the NWPs, remains in effect. This Public Notice is available on the Baltimore District website at www.nab.usace.army.mil/Wetlands%20Permits



Wade B. Chandler
Chief, Pennsylvania Section
Baltimore District, Corps of Engineers

Enclosure 2

PASPGP-4 Category I & II File Review Record

Corps District: Baltimore Philadelphia Pittsburgh

Project Information

Project Name/ORM number: _____

PADEP Permit Number(s): _____

Date of File Review: _____

Date PASPGP-4 Issued: _____

Issued by: PADEP Region: _____ County Conservation District : _____

Category of Activity: I II

Was activity categorized correctly? Yes No if no, explain:

File Review

Cover Letter/Transmittal Form from PADEP/CCD included Yes No

PASPGP-4 Cumulative Impacts Project Screening Form Yes No

Is the application included in the file Yes No

Project location map Yes No

Latitude & Longitude Yes No

Are plans included in the file Yes No

Is the State Authorization included in the file Yes No

Was a copy of the PASPGP-4 General Conditions included with State Authorization Yes No not sure

Copy of PNDI Yes No

Bog turtle habitat clearance (for listed counties) Yes No N/A

Section 106 Historic Clearance (for Cat II only) Yes No

PADEP Record of Decision (for Cat II only) Yes No

Additional information/comments:

Is the project a Residential, Commercial, or Institutional Development? Yes No
If YES, fill out Residential, Commercial, Institutional Section below.

Residential, Commercial, or Institutional Project Review

Draft Conservation Instrument submitted with application? Yes No

Was the appropriate review process implemented? Yes No

If no, explain: _____

Is a copy of the recorded Instrument in the file? Yes No

Impacts/Mitigation Review

Acreage impacted:

Wetland(Permanent) _____ (acre) Stream(Permanent) _____ (linear feet)

Wetland(Temporary) _____ (acre) Stream(Temporary) _____ (linear feet)

Was mitigation required? Yes No

If Yes, Mitigation type: permittee responsible in lieu fee mitigation bank

Mitigation acreage: Wetland _____ **(ac)** Stream _____ **(lf)**

FILE REVIEWER SIGNATURE: _____

Enclosure 3

PASPGP-4 Category III File Review Record

Corps District: Baltimore Philadelphia Pittsburgh

Project Information

Project Name/ORM number: _____

PADEP Permit Number(s): _____

Date of File Review: _____

Date PASPGP-4 Issued: _____

Reason(s) for Category III? _____

Was activity categorized correctly? Yes No if no, explain:

File Review

Cover Letter/Transmittal Form from PADEP/CCD included Yes No

PASPGP-4 Cumulative Impacts Project Screening Form Yes No

Is the application included in the file Yes No

Project location map Yes No

Latitude & Longitude Yes No

Are plans included in the file Yes No

Copy of PNDI Yes No

Bog turtle habitat clearance (for listed counties) Yes No N/A

Section 106 Historic Clearance Yes No N/A GPs

Corps Decision Document Yes No

Is the State Authorization included in the file
PADEP Record of Decision

Yes No
Yes No N/A GPs

Was a copy of the PASPGP-4 General Conditions
included with the PASPGP-4 Authorization

Yes No not sure

Additional information/comments:

Is the project a Residential, Commercial, or Institutional Development? Yes No
If YES, fill out Residential, Commercial, Institutional Section below.

Residential, Commercial, or Institutional Project Review

Draft Conservation Instrument submitted with application? Yes No

Was the appropriate review process implemented? Yes No

If no, explain: _____

Is a copy of the recorded Instrument in the file? Yes No

Impacts/Mitigation Review

Acreage impacted:

Wetland(Permanent) _____ (acre) Stream(Permanent) _____ (linear feet)

Wetland(Temporary) _____ (acre) Stream(Temporary) _____ (linear feet)

Was mitigation required? Yes No

If Yes, Mitigation type: permittee responsible in lieu fee mitigation bank

Mitigation acreage: Wetland _____ (ac) Stream _____ (lf)

COMMUNITY TYPE	IMPACTED AREA	MITIGATION REQUIRED	MITIGATION TYPE (creation, restoration, enhancement)	CONSTRUCTED
PEM	ac	ac	ac	ac
PSS1	ac	ac	ac	ac
PF01	ac	ac	ac	ac
STREAM	Lf	Lf	Lf	Lf
IN-LIEU FEE	\$\$	\$\$	\$\$	\$\$
OTHER				
UNKNOWN				

Required Monitoring Period

Monitoring reports in file?

Do reports comply with permit conditions?

Yes

No

Yes

No

Approved Mitigation Description:

Were as-built plans required by Corps special conditions?

Yes

No

Are as-built plans in the file?

Yes

No

Were Special Conditions added to the permit?

Yes

No

Was a Section 106 MOA required?

Yes (attach copy)

No

Were Resource Agency recommendations submitted during application process?

Yes

No

If yes were they:

1. Not within Scope of Federal review

2. Addressed through: a.)special condition Modified the scope of work

Explain:

Were cumulative effects considered/documentated in the file? Yes No

Was a conservation instrument required by Corps? Yes No

If Yes, the conservation instrument was for: mitigation
 to ensure no more than minimal impacts
 other: _____

FILE REVIEWER SIGNATURE: _____

Enclosure 4

PASPGP COMPLIANCE INSPECTION FORM

Corps District: Baltimore Philadelphia Pittsburgh

ORM File Number: _____ Date Permit Issued: _____ Field Date: _____

PADEP Permit Number: _____ PASPGP Category: Cat I/II Cat III

Site Contact Info: _____

1. PROJECT NAME: _____

- Was the site located: Yes No
- Authorized Work: Started Completed Unknown
- Specific to the authorized work, is work in compliance with authorization: Yes No
(if **NO** describe on Page 2)
 - a) If non-compliant does the project still meet its Category of activity: Yes No

2. DESCRIBE AS-BUILT/WORK: (If more space is needed use space provided on Page 2)

- Site drawing on back Photos Attached/ In Electronic File
- Special conditions: (if required) are they written clearly and enforceable: Yes No
(if **NO**: explain on space provided on Page 2)

3. Mitigation Required: Yes No (if **YES** fill out section below, if **NO** proceed to Section 4)

- Mitigation Type: Stream Wetland ILF Bank (if **ILF** or **Bank** proceed to Section 4)

a) Required (If /ac) Stream: _____ Wetland: _____

- Is mitigation work Started: Yes No
- Is mitigation Completed: Yes No
- Is work compliant with the approved mitigation plan: Yes No
- Is the site meeting success criteria of the approved mitigation plan: Yes No
- Have they followed the approved monitoring protocol: Yes No
- Stream Mitigation Observed: (Structures/flow indicators/quality ~ If more space is needed use Page 2)

- Wetland Mitigation Observed (Soils/Plants/Hydrology ~ If more space is needed use Page 2)

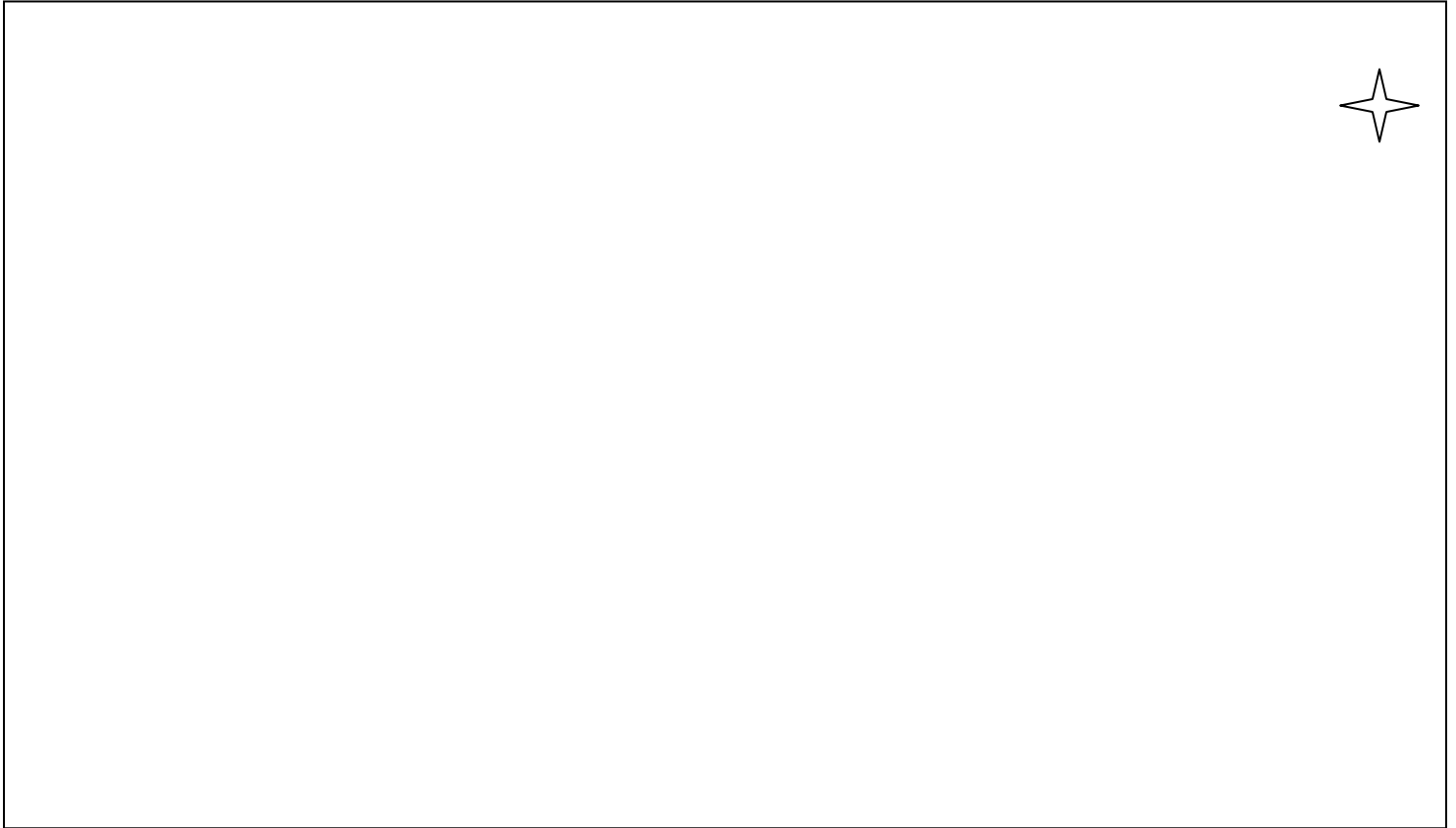
4. RECOMENDATIONS: (If more description is needed use space provided on Page 2)

- Based on the above report further inspection is required
- Based on the above report **NO** further inspection required at this time
- ❖ FORM PREPARED BY: _____ Date: _____
- ❖ Entered in ORM Entered by initials: _____ Date: _____
- ❖ Follow up: Applicant Consultant -Type- Letter Email Phone Date: _____

PASPGP COMPLIANCE INSPECTION FORM

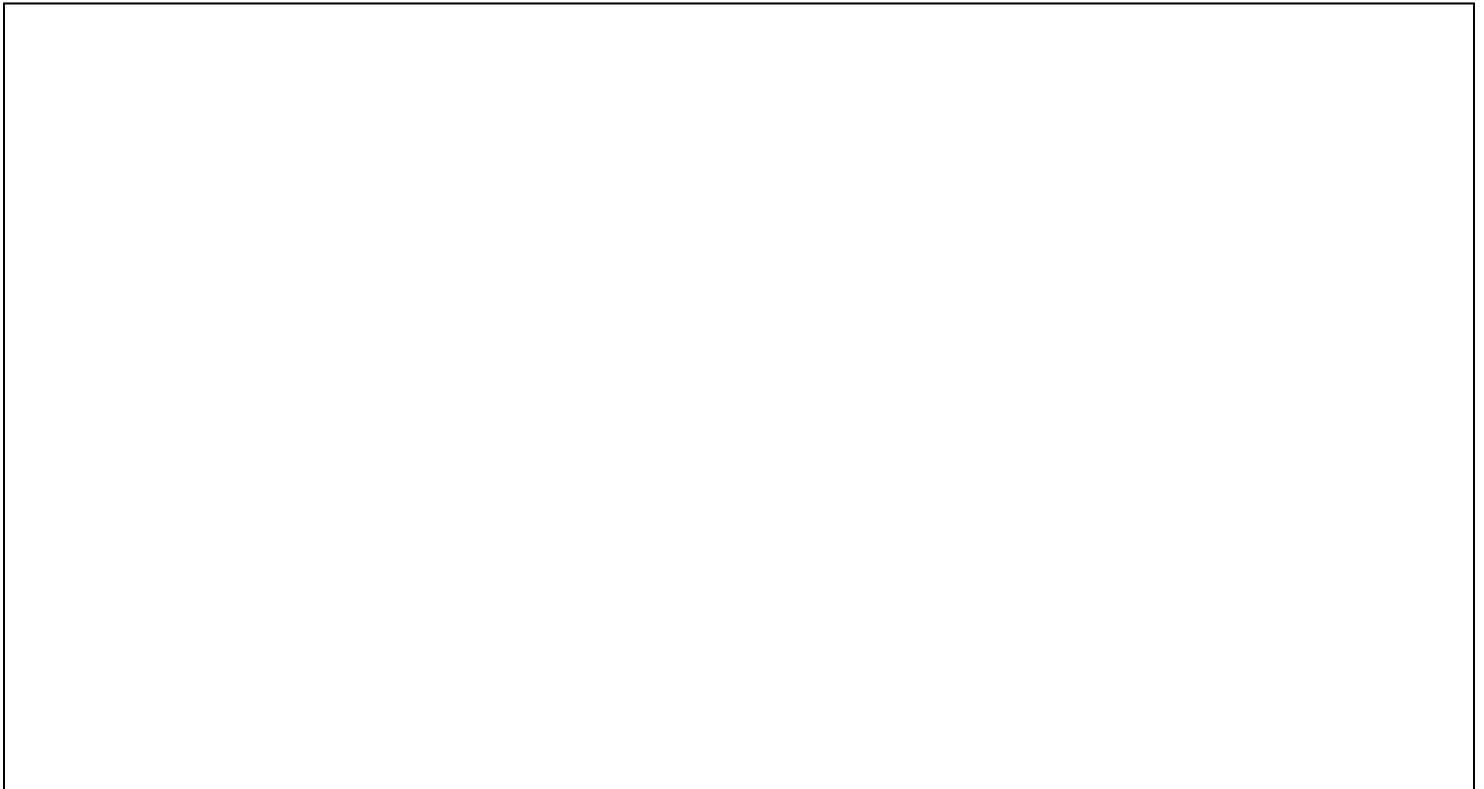
Corps District: **Baltimore** **Philadelphia** **Pittsburgh**

- **Site Drawing (indicate photo locations):**



A large empty rectangular box intended for a site drawing. In the top right corner of this box, there is a simple four-pointed star icon, likely used to indicate a specific location or orientation on the drawing.

- **Additional space, clearly indicate as to which section of the form you are referring:**



A large empty rectangular box provided for additional information or notes. The instructions above this box require the user to clearly indicate which section of the form they are referring to.

Enclosure 5

PASPGP Employee Survey

Employee Information

Corps District: Baltimore Philadelphia Pittsburgh

Name: _____ Email: _____ Phone: _____

Position: _____

PASPGP Experience: I II III IV

PASPGP-4 Review/Comments

- In the below section please provide your thoughts, overall impression, pros/cons, and any other pertinent information that will aid in the overall development of the PASPGP. If more room is needed please use the back of the form, or attach additional pages.

Permit Process:

Permit/SOP:

Agency Coordination:

Necessary Clarifications:

Suggested Improvements:

Additional info:

Enclosure 6

PASPGP Survey

DEP Regional Office:

Oil & Gas

NWRO

NCRO

NERO

Mining

SWRO

SCRO

SERO

Name: _____

Email: _____

Position / Title: _____

Phone: _____

PASPGP Experience: 1 2 3 4

PASPGP-4 Review/Comments

- *In the below section please provide your thoughts, overall impression, pros/cons, and any other pertinent information that will aid in the overall development of the PASPGP. If more room is needed please use the back of the form, or attach additional pages.*

Permit Process:

Permit / PASPGP-4 SOP:

Agency Coordination:

Necessary Clarifications:

PASPGP Survey

Suggested Improvements:

Additional info:

Enclosure 7



DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
STATE COLLEGE FIELD OFFICE
1631 SOUTH ATHERTON STREET, SUITE 101
STATE COLLEGE, PA 16801-6260

August 14, 2013

Ms. Lora Zimmerman
U.S. Fish and Wildlife Service
315 South Allen Street
State College, Pennsylvania 16801

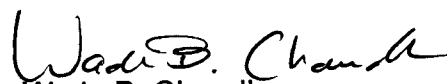
Dear Ms. Zimmerman:

I am writing in regard to the Pennsylvania State Programmatic General Permit-4 (PASPGP-4) which is due to expire June 30, 2016. Section 404(e) of the Clean Water Act allows the Corps to issue a State Programmatic General Permit (SPGP) in those states with a regulatory program that protects the aquatic environment in a manner equivalent to the Department of the Army regulatory program. The Pennsylvania SPGP (PASPGP) was developed after consideration of comments received from the public, non-governmental organizations, and federal, state, and local agencies. Currently, we are in the process of preparing the PASPGP-4 Mid-Point Monitoring Report. One purpose of the report is to identify changes, if any, that may need to be incorporated in the development of PASPGP-5.

Your agency has been identified as a stakeholder in this process. As such, we would appreciate any suggestions and/or ideas you may have to improve upon the current PASPGP-4 permit and process. In addition, we are requesting your early input regarding the development of PASPGP-5. Please submit your suggestions and ideas to my attention at; U.S. Army Corps of Engineers, State College Field Office, 1631 South Allen Street, State College, Pennsylvania 16801, within 30 days of the date of this letter. If we do not hear from you within 30 days, we will assume you have no substantial changes or recommendations to be incorporated into the current PASPGP-4 Mid-Point Monitoring Report or in the development of PASPGP-5 at this time. We will be meeting with all the regulatory review agencies at a later date to discuss the implementation of PASPGP-5, at which time you will again, have the opportunity to provide comments.

If you have any questions regarding this matter, please contact me at (814) 235-0572 or by writing to the address listed above.

Sincerely,


Wade B. Chandler
Chief, Pennsylvania Section
Regulatory Branch



DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
STATE COLLEGE FIELD OFFICE
1631 SOUTH ATHERTON STREET, SUITE 101
STATE COLLEGE, PA 16801-6260

August 14, 2013

Ms. Karen M. Green
National Marine Fisheries Service
James J. Howard Marine Science Laboratory
Building 74, Magruder Road
Highlands, New Jersey 07753


Dear Ms. Green:

I am writing in regard to the Pennsylvania State Programmatic General Permit-4 (PASPGP-4) which is due to expire June 30, 2016. Section 404(e) of the Clean Water Act allows the Corps to issue a State Programmatic General Permit (SPGP) in those states with a regulatory program that protects the aquatic environment in a manner equivalent to the Department of the Army regulatory program. The Pennsylvania SPGP (PASPGP) was developed after consideration of comments received from the public, non-governmental organizations, and federal, state, and local agencies. Currently, we are in the process of preparing the PASPGP-4 Mid-Point Monitoring Report. One purpose of the report is to identify changes, if any, that may need to be incorporated in the development of PASPGP-5.

Your agency has been identified as a stakeholder in this process. As such, we would appreciate any suggestions and/or ideas you may have to improve upon the current PASPGP-4 permit and process. In addition, we are requesting your early input regarding the development of PASPGP-5. Please submit your suggestions and ideas to my attention at; U.S. Army Corps of Engineers, State College Field Office, 1631 South Allen Street, State College, Pennsylvania 16801, within 30 days of the date of this letter. If we do not hear from you within 30 days, we will assume you have no substantial changes or recommendations to be incorporated into the current PASPGP-4 Mid-Point Monitoring Report or in the development of PASPGP-5 at this time. We will be meeting with all the regulatory review agencies at a later date to discuss the implementation of PASPGP-5, at which time you will again, have the opportunity to provide comments.

If you have any questions regarding this matter, please contact me at (814) 235-0572 or by writing to the address listed above.

Sincerely,


Wade B. Chandler
Chief, Pennsylvania Section
Regulatory Branch



DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
STATE COLLEGE FIELD OFFICE
1631 SOUTH ATHERTON STREET, SUITE 101
STATE COLLEGE, PA 16801-6260

August 14, 2013

Mr. John Nichols
U.S. Department of Commerce
NOAA/NMFS
Chesapeake Bay Office
410 Severn Avenue, Suite 107A
Annapolis, Maryland 21403


Dear Mr. Nichols:

I am writing in regard to the Pennsylvania State Programmatic General Permit-4 (PASPGP-4) which is due to expire June 30, 2016. Section 404(e) of the Clean Water Act allows the Corps to issue a State Programmatic General Permit (SPGP) in those states with a regulatory program that protects the aquatic environment in a manner equivalent to the Department of the Army regulatory program. The Pennsylvania SPGP (PASPGP) was developed after consideration of comments received from the public, non-governmental organizations, and federal, state, and local agencies. Currently, we are in the process of preparing the PASPGP-4 Mid-Point Monitoring Report. One purpose of the report is to identify changes, if any, that may need to be incorporated in the development of PASPGP-5.

Your agency has been identified as a stakeholder in this process. As such, we would appreciate any suggestions and/or ideas you may have to improve upon the current PASPGP-4 permit and process. In addition, we are requesting your early input regarding the development of PASPGP-5. Please submit your suggestions and ideas to my attention at; U.S. Army Corps of Engineers, State College Field Office, 1631 South Allen Street, State College, Pennsylvania 16801, within 30 days of the date of this letter. If we do not hear from you within 30 days, we will assume you have no substantial changes or recommendations to be incorporated into the current PASPGP-4 Mid-Point Monitoring Report or in the development of PASPGP-5 at this time. We will be meeting with all the regulatory review agencies at a later date to discuss the implementation of PASPGP-5, at which time you will again, have the opportunity to provide comments.

If you have any questions regarding this matter, please contact me at (814) 235-0572 or by writing to the address listed above.

Sincerely,


Wade B. Chandler
Chief, Pennsylvania Section
Regulatory Branch



DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
STATE COLLEGE FIELD OFFICE
1631 SOUTH ATHERTON STREET, SUITE 101
STATE COLLEGE, PA 16801-6260

August 14, 2013

Mr. Jeff Lapp
U.S Environmental Protection Agency
Region II Office of Environmental Program
1650 Arch Street – 3ES42
Philadelphia, Pennsylvania 19103

Dear Mr. Lapp:

I am writing in regard to the Pennsylvania State Programmatic General Permit-4 (PASPGP-4) which is due to expire June 30, 2016. Section 404(e) of the Clean Water Act allows the Corps to issue a State Programmatic General Permit (SPGP) in those states with a regulatory program that protects the aquatic environment in a manner equivalent to the Department of the Army regulatory program. The Pennsylvania SPGP (PASPGP) was developed after consideration of comments received from the public, non-governmental organizations, and federal, state, and local agencies. Currently, we are in the process of preparing the PASPGP-4 Mid-Point Monitoring Report. One purpose of the report is to identify changes, if any, that may need to be incorporated in the development of PASPGP-5.

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If you have any questions regarding this matter, please contact me at (814) 235-0572 or by writing to the address listed above.

Sincerely,

A handwritten signature in black ink that reads "Wade B. Chandler".

Wade B. Chandler
Chief, Pennsylvania Section
Regulatory Branch



DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
STATE COLLEGE FIELD OFFICE
1631 SOUTH ATHERTON STREET, SUITE 101
STATE COLLEGE, PA 16801-6260

August 14, 2013

Mr. Douglas C. McLearen
Pennsylvania Historical & Museum Commission
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, Pennsylvania 17120-0093


Dear Mr. McLearen:

I am writing in regard to the Pennsylvania State Programmatic General Permit-4 (PASPGP-4) which is due to expire June 30, 2016. Section 404(e) of the Clean Water Act allows the Corps to issue a State Programmatic General Permit (SPGP) in those states with a regulatory program that protects the aquatic environment in a manner equivalent to the Department of the Army regulatory program. The Pennsylvania SPGP (PASPGP) was developed after consideration of comments received from the public, non-governmental organizations, and federal, state, and local agencies. Currently, we are in the process of preparing the PASPGP-4 Mid-Point Monitoring Report. One purpose of the report is to identify changes, if any, that may need to be incorporated in the development of PASPGP-5.

Your agency has been identified as a stakeholder in this process. As such, we would appreciate any suggestions and/or ideas you may have to improve upon the current PASPGP-4 permit and process. In addition, we are requesting your early input regarding the development of PASPGP-5. Please submit your suggestions and ideas to my attention at; U.S. Army Corps of Engineers, State College Field Office, 1631 South Allen Street, State College, Pennsylvania 16801, within 30 days of the date of this letter. If we do not hear from you within 30 days, we will assume you have no substantial changes or recommendations to be incorporated into the current PASPGP-4 Mid-Point Monitoring Report or in the development of PASPGP-5 at this time. We will be meeting with all the regulatory review agencies at a later date to discuss the implementation of PASPGP-5, at which time you will again, have the opportunity to provide comments.

If you have any questions regarding this matter, please contact me at (814) 235-0572 or by writing to the address listed above.

Sincerely,


Wade B. Chandler
Chief, Pennsylvania Section
Regulatory Branch



DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
STATE COLLEGE FIELD OFFICE
1631 SOUTH ATHERTON STREET, SUITE 101
STATE COLLEGE, PA 16801-6260

August 14, 2013

Mr. Dave Spotts
Pennsylvania Fish and Boat Commission
450 Robinson Lane
Bellefonte, Pennsylvania 16823-9616

Dear Mr. Spotts:

I am writing in regard to the Pennsylvania State Programmatic General Permit-4 (PASPGP-4) which is due to expire June 30, 2016. Section 404(e) of the Clean Water Act allows the Corps to issue a State Programmatic General Permit (SPGP) in those states with a regulatory program that protects the aquatic environment in a manner equivalent to the Department of the Army regulatory program. The Pennsylvania SPGP (PASPGP) was developed after consideration of comments received from the public, non-governmental organizations, and federal, state, and local agencies. Currently, we are in the process of preparing the PASPGP-4 Mid-Point Monitoring Report. One purpose of the report is to identify changes, if any, that may need to be incorporated in the development of PASPGP-5.

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If you have any questions regarding this matter, please contact me at (814) 235-0572 or by writing to the address listed above.

Sincerely,

A handwritten signature in black ink that reads "Wade B. Chandler".

Wade B. Chandler
Chief, Pennsylvania Section
Regulatory Branch



DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
STATE COLLEGE FIELD OFFICE
1631 SOUTH ATHERTON STREET, SUITE 101
STATE COLLEGE, PA 16801-6260

August 14, 2013

Mr. Michael DiMatteo
Pennsylvania Game Commission
Environmental Planning & Habitat Protection
2001 Elmerton Avenue
Harrisburg, Pennsylvania 17110

Dear Mr. DiMatteo:

I am writing in regard to the Pennsylvania State Programmatic General Permit-4 (PASPGP-4) which is due to expire June 30, 2016. Section 404(e) of the Clean Water Act allows the Corps to issue a State Programmatic General Permit (SPGP) in those states with a regulatory program that protects the aquatic environment in a manner equivalent to the Department of the Army regulatory program. The Pennsylvania SPGP (PASPGP) was developed after consideration of comments received from the public, non-governmental organizations, and federal, state, and local agencies. Currently, we are in the process of preparing the PASPGP-4 Mid-Point Monitoring Report. One purpose of the report is to identify changes, if any, that may need to be incorporated in the development of PASPGP-5.

Your agency has been identified as a stakeholder in this process. As such, we would appreciate any suggestions and/or ideas you may have to improve upon the current PASPGP-4 permit and process. In addition, we are requesting your early input regarding the development of PASPGP-5. Please submit your suggestions and ideas to my attention at; U.S. Army Corps of Engineers, State College Field Office, 1631 South Allen Street, State College, Pennsylvania 16801, within 30 days of the date of this letter. If we do not hear from you within 30 days, we will assume you have no substantial changes or recommendations to be incorporated into the current PASPGP-4 Mid-Point Monitoring Report or in the development of PASPGP-5 at this time. We will be meeting with all the regulatory review agencies at a later date to discuss the implementation of PASPGP-5, at which time you will again, have the opportunity to provide comments.

If you have any questions regarding this matter, please contact me at (814) 235-0572 or by writing to the address listed above.

Sincerely,

A handwritten signature in black ink that reads "Wade B. Chandler".

Wade B. Chandler
Chief, Pennsylvania Section
Regulatory Branch

Enclosure 8



Title:

Culvert designs for fish passage in Pennsylvania

Author:

Spotts, David E., Pennsylvania Fish and Boat Commission

Publication Date:

09-24-2001

Series:

Recent Work

Publication Info:

Recent Work, Road Ecology Center, John Muir Institute of the Environment, UC Davis

Permalink:

<http://www.escholarship.org/uc/item/9xh563mj>

Additional Info:

Spotts DE. 2001. Culvert designs for fish passage in Pennsylvania. IN: Proceedings of the 2001 International Conference on Ecology and Transportation, Eds. Irwin CL, Garrett P, McDermott KP. Center for Transportation and the Environment, North Carolina State University, Raleigh, NC: pp. 85-91.

Keywords:

Pennsylvania, fish movement, highway culvert designs, stream flows

Abstract:

Pennsylvania contains approximately 83,000 miles (133,547 km) of streams and 119,000 miles (191,471 km) of public roadways. Fish movement can be impeded by highway culvert designs that create sheet flow or increased current velocity within the culvert barrel, and/or perched outlet conditions. The Pennsylvania Fish and Boat Commission and the Pennsylvania Department of Transportation reviewed performance measures of existing culvert designs and conducted a literature review to develop culvert designs that enhance fish passage. Design guidelines were established for pipe culverts and statewide design standards have been adopted for single cell and twin cell box culverts. Pipe culverts can be depressed at varying depths below streambed elevation depending upon the upstream drainage area and the diameter of the pipe. Single and twin cell box culverts are depressed twelve inches (305 mm) below streambed elevation. Box culverts installed in waterways with a stream slope less than four percent are constructed with a different baffle design than those installed with stream slopes greater than four percent. Stream flows are directed to the primary cell of the twin cell box culvert structure while the secondary cell is designed only to accept storm flows. All culvert structures are installed parallel to stream gradient and riprap used to protect the inlet and outlet is placed to match the invert elevation of the structure.



CULVERT DESIGNS FOR FISH PASSAGE IN PENNSYLVANIA

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Abstract: Pennsylvania contains approximately 83,000 miles (133,547 km) of streams and 119,000 miles (191,471 km) of public roadways. Fish movement can be impeded by highway culvert designs that create sheet flow or increased current velocity within the culvert barrel, and/or perched outlet conditions. The Pennsylvania Fish and Boat Commission and the Pennsylvania Department of Transportation reviewed performance measures of existing culvert designs and conducted a literature review to develop culvert designs that enhance fish passage. Design guidelines were established for pipe culverts and statewide design standards have been adopted for single cell and twin cell box culverts. Pipe culverts can be depressed at varying depths below streambed elevation depending upon the upstream drainage area and the diameter of the pipe. Single and twin cell box culverts are depressed twelve inches (305 mm) below streambed elevation. Box culverts installed in waterways with a stream slope less than four percent are constructed with a different baffle design than those installed with stream slopes greater than four percent. Stream flows are directed to the primary cell of the twin cell box culvert structure while the secondary cell is designed only to accept storm flows. All culvert structures are installed parallel to stream gradient and riprap used to protect the inlet and outlet is placed to match the invert elevation of the structure.

Background

Prior to the 1970s, there were few environmental regulations in place to prevent adverse impacts to aquatic resources from highway construction activities. The Pennsylvania Department of Transportation (PennDOT) and the Pennsylvania Fish and Boat Commission (PFBC) developed a memorandum of understanding in 1968, which allowed for environmental reviews to occur during the proposed highway development process. In 1969, the National Environmental Policy Act was legislated and allowed for all Act 120 agencies to review and comment on proposed highway projects.

Fish passage designs were first included within the PennDOT's Design Manual for box culvert construction during the early 1970s. The early designs included several baffle configurations or a notch placed within the culvert floor. These designs were rarely installed, and there was minimal documentation as to their success. Throughout the 1990s, the PFBC recommended that the invert of the box culvert bottoms be installed six to twelve inches (152-305mm) below streambed elevation to allow for fish passage in perennial streams that contained fish populations. These "depressed" culverts were frequently installed across Pennsylvania and often included baffles.

In 1999, several personnel from PennDOT and the PFBC formed a task force to develop fish passage designs for both pipe and box culvert installations. Measurements and physical observation were conducted on hundreds of depressed box culverts that were installed during the 1990s. These data and an extensive literature review were used to develop the culvert designs for fish passage.

Accomplishments

Pipe Culverts

In Pennsylvania, pipe culverts are normally used in highway drainage for ephemeral, intermittent and small perennial stream channels. The guidelines that were developed for pipe culvert installation are dependent upon the diameter of the pipe and upstream drainage area (Table 2).

Table 2.
Standards for Installation of Pipe Culverts

PHYSICAL CRITERIA	INVERT DEPRESSION
Pipe Diameter < 8.0 feet (2.4 m) <u>Drainage Area</u> ≤ 100 acres (0.405 sq km) 100 to 640 acres (2.59 sq km) ≥ 640 acres	None Required 0.5 feet (152 mm) 1.0 feet (305 mm)
Pipe Diameter ≥ 8.0 feet	1/5 Pipe Diameter

Additional guidance for the installation of pipe culverts includes the following:

- Pipes shall be installed parallel to stream slope so that both the inlet and outlet is depressed at specified depths.
- The hydraulic capacity of depressed pipes shall be computed assuming no flow in the depressed area of the pipe.
- The value of Manning's n for the pipe shall be a weighted average of the wetted perimeter of flow. Assume the pipe fills with natural stream material to the level of the natural streambed. Refer to Appendix B of *Hydraulic Design of Highway Culverts, Hydraulic Design Series No. 5. Report No. FHWA-IP-85-15*, Federal Highway Administration, Washington, D.C.
- Riprap used to protect inlets and outlets of drainage pipes shall be placed so that the height of the riprap matches the inverts of the pipe culvert. Excess natural streambed material could be used to choke the riprap and to finish backfilling the streambed to the natural grade line.
- There may be unusual circumstances (i.e., bedrock) in which the standard design guidance for pipe culvert depression may not be practicable. In these cases, the PFBC should be contacted for specific guidance at the earliest opportunity.

Box Culverts

Single and twin cell box culverts are normally installed on perennial stream channels in Pennsylvania for highway drainage. Perennial streams contain benthic macroinvertebrate communities and in most cases support fish populations. The task force decided to depress the invert of the floor of all reinforced concrete box culverts types twelve inches below streambed elevation to enhance fish passage. The intent of this design feature is for the natural stream bottom substrates to "fill in" the newly created channel depression and eventually form a natural channel through the culvert barrel.

Baffles were incorporated into the box culvert designs to enhance fish passage immediately following construction and to promote the collection of natural stream substrates within the culvert barrel. Observations of existing depressed culverts indicated a need to develop different baffle designs for stream gradients less than or greater than four percent. For stream gradients less than four percent, alternating eight-inch (203mm) high baffles are constructed within single cell box culverts at lengths and spacing dependent upon the existing stream channel width (see figure 1, end of paper). Subsequent to project completion, these eight-inch high baffles should eventually be covered by natural stream substrates.

A different type of baffle design was developed for the construction of a single cell box culvert on streams with gradients greater than four percent. The baffle height drops from twelve inches to six inches at a location dependent upon existing stream width (see figure 2, end of paper). This full-length baffle design is recommended for steeper gradient streams to promote stream substrates to collect within the culvert barrel, and to maintain channel stability both upstream and downstream of the culvert placement location.

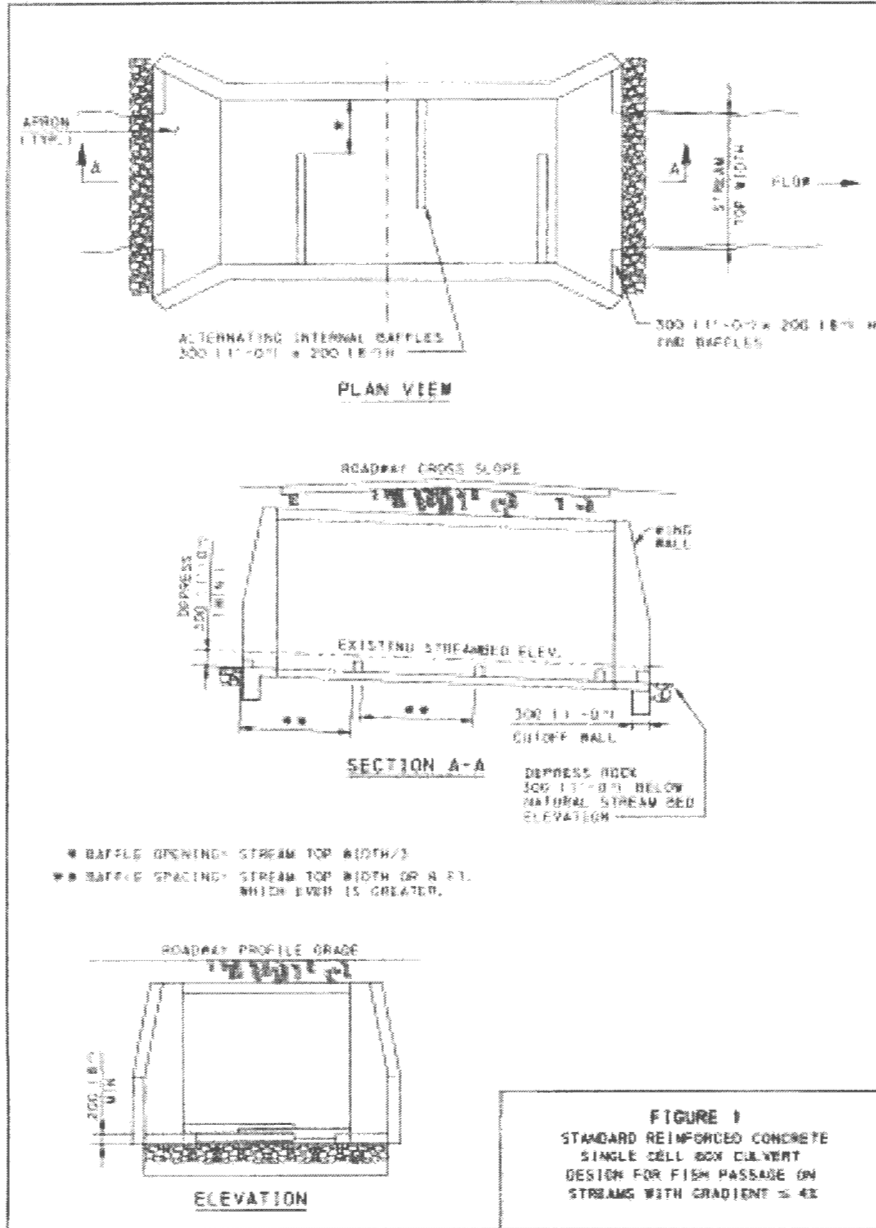
Twin cell box culverts are designed to be installed offset to the configuration of the stream channel (see figures 3 and 4, end of paper). The primary cell is aligned to accept normal stream flows while the secondary cell has

an eighteen-inch (457mm) high weir on the upstream end, and is designed only to transport excess flows during storm events. Baffles within the primary cell of the twin cell structures should follow the design criteria as previously described for single cell culverts on stream gradients less than or greater than four percent.

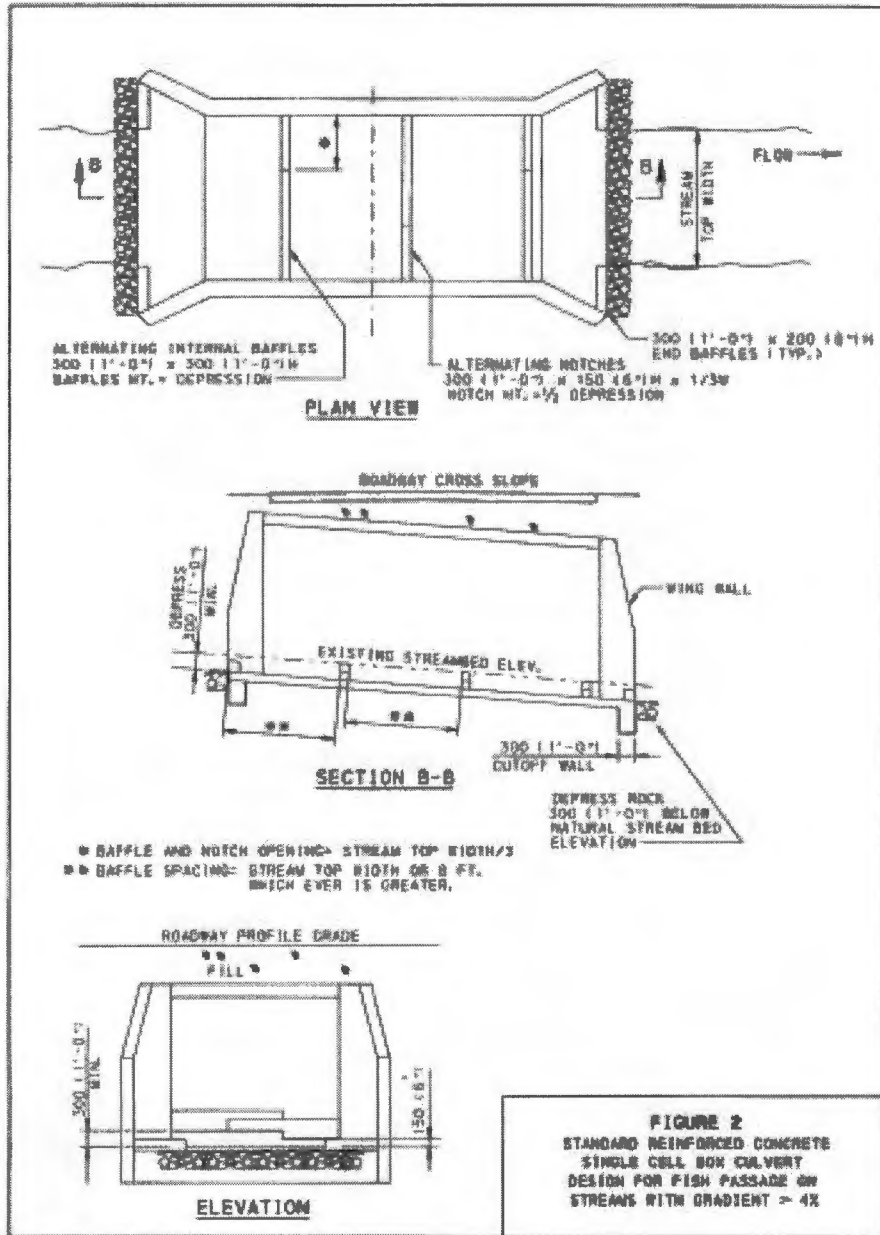
Summary

The PFBC and PennDOT formed a partnership to develop culvert designs for fish passage. Box culvert designs (see figures 1-4) were adopted for statewide implementation by PennDOT, and are referenced as their Design Standard BD-632M. Additional details to the box culvert design standards can be located on PennDOT's Web site at <http://www.dot.state.pa.us/newproducts/index.htm>. Fish passage guidelines were also established for pipe culvert installation, however those guidelines have not been adopted for statewide standards to date. Other public road stakeholders such as the local municipalities, Pennsylvania Turnpike Commission, National Forest Service, and the Pennsylvania Department of Conservation and Natural Resources will also be encouraged to follow these fish passage designs for culvert construction on their respective roadways. We plan to conduct assessments of these new types of culvert structures as they are installed across the Commonwealth and will recommend design changes if necessary.

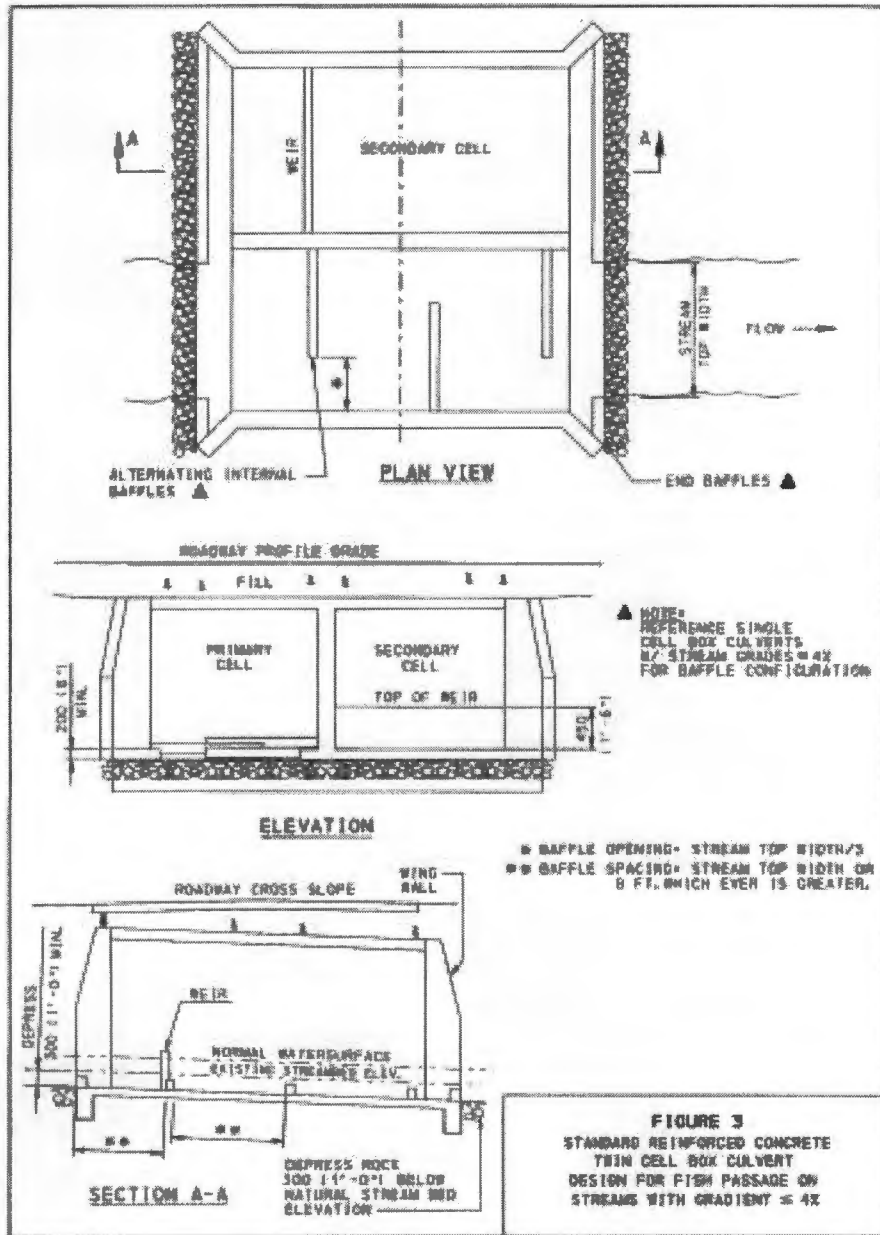
Biographical Sketch: David E. Spotts has been employed by the Pennsylvania Fish and Boat Commission for the past 22 years, and is currently serving as the Chief of the Watershed Analysis Section within the Division of Environmental Services. His primary responsibilities include the review and comment on statewide transportation projects, solid waste applications, and acid deposition issues. He has been an American Fisheries Society member since 1980, and has held many Pennsylvania Chapter offices including Chapter President in 1993. Dave graduated from Mansfield State University with a B.A. degree in biology and a minor in chemistry. He has received notable awards such as the Outstanding Service Award from the Pennsylvania Chapter AFS in 1992 and Vice President Al Gore's Hammer Award in 1996.



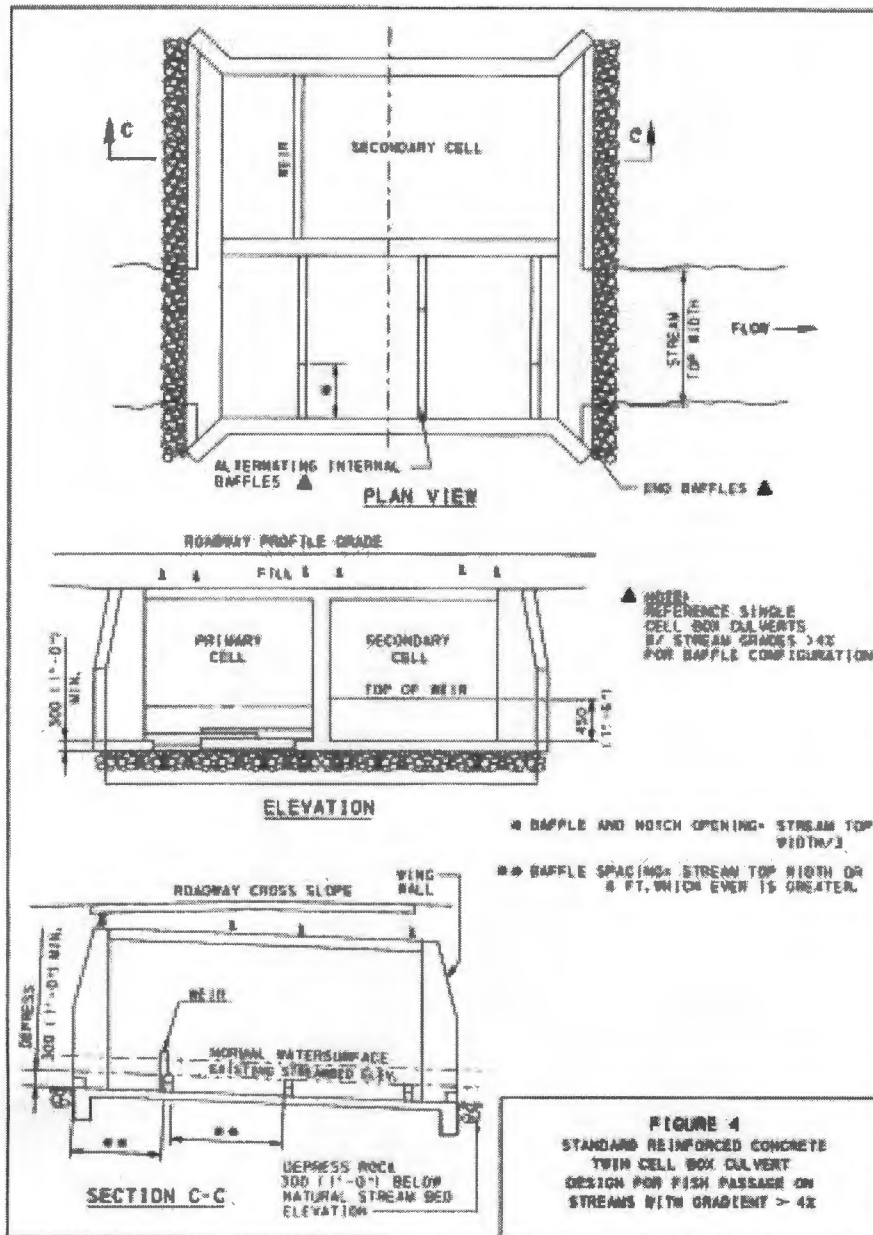
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