PEMIGEWASSET RIVER RESTORATION PROJECT

WOODSTOCK, NH

FINAL REPORT

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A Final Report to

~The New Hampshire Department of Environmental Services~
~New Hampshire Fish and Game~
~New Hampshire State Conservation Committee~

Submitted by

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PEMIGEWASSET CHAPTER TROUT UNLIMITED

N.H. FISH & GAME DIVISION FISHERIES HABITAT ACCOUNT

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DAVIS CONSERVATION FOUNDATION

ERROL & KELLY CHASE

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1
INTRODUCTION 1
WATERSHED MAP 2
PROJECT PERFORMANCE TARGETS AND MILESTONES 3
Performance Target 1: Plan and permit proposed work 3
Milestone 1A: Obtain letters of support from all landowners who abut Phase I project reach 4
Milestone 1B: Obtain permits to perform proposed work 4
Milestone 1C: Carry out pre-construction surveys and generate Planning Report for Phase I 6
Milestone 1D: Select construction contractor(s) 9
Performance Target 2: Construct Phase 1 portion of Pemigewasset River Restoration Project 10
Milestone 2A: Mobilization 10
Milestone 2B: Construction 16
INITIAL OBSERVATIONS AND TIPS FOR PROPONENTS OF OTHER PROJECTS 35
Performance Target 3: Evaluate restoration work 40
Milestone 3A: Pre-construction documentation 40
Milestone 3B: Post construction monitoring 40

FIGURES

Figure 1 – Watershed of Project Area 2
Figure 2 – 2007 Aerial Photo of Project Area 3

APPENDICES

Appendix A – Impaired Water Listing
Appendix B – Proposed Restoration Work Plan Sheets 6-10
Appendix C – Sample Abutter Notification Letter
Appendix D – 2/5/2007 Meeting Attendance List
Appendix E – Cross-Sections Location Map
Appendix F – Stormwater Pollution Prevention Plan
Appendix G – Existing Site Plan & Channel Profile
Appendix H – Project Fact Sheet and Information Guide & Media Documentation
Appendix I – Pre and Post Construction Photographs
Appendix J – Photographic Depiction of Work Areas Plan
Appendix K - Pollutant Removal Estimates

Executive Summary

The Pemigewasset River Restoration Project included an evaluation phase and design, permitting and construction phase to restore a river in Woodstock, New Hampshire. Project proponents sought to reduce river bank erosion, protect a man made pond and improve in-channel and off-channel fish habitat. Problem evaluation began in 2003 with design, landowner coordination and permitting occurring in 2006-2009. Construction was completed in the fall of 2009. Total project cost including evaluation, design, permitting, in kind material donation, and construction was approximately $700,000. Funding for the evaluation phase was through an s319 Watershed Assessment Grant issued by the New Hampshire Department of Environmental Services. Major funding for the implementation phase was provided by NH DES ($315,000), NH Fish and Game ($52,000), New Hampshire State Conservation Commission-Moose Plate Funds ($47,500) Davis Conservation Foundation ($10,000), Errol and Kelly Chase, and the Pemigewasset Chapter of Trout Unlimited. This report documents the work that occurred within this implementation phase. Two of the three performance targets have been met to date; target #1 is to plan and permit the project, target #2 is to construct the project, and target 3 is to evaluate the project. Evaluation will continue for 2 years after construction and therefore target #3 will be satisfied by fall of 2011.

Introduction

This project was the implementation phase of a multi-year project to evaluate and address the source of significant bank instability on a ½ mile reach of the Pemigewasset River in Woodstock, NH that had led to its 303(d) listing as a impaired water due to streambank destabilization (see **Appendix A**). The evaluation phase of this restoration project is well-documented in a previous s319 funded study entitled *Pemigewasset River Restoration Study-Woodstock, NH, October 2004* that is on file at the New Hampshire Department of Environmental Services. The implementation phase of the project involved the design, permitting and construction of a geomorphically compatible solution to reduce accelerated bank erosion and river bed aggradation through the reshaping of the horizontal and vertical alignment of the river and through the use of training structures to aid in maintaining this new alignment and sediment transport competency. Existing and future monitoring of the constructed project is the last element of this project, and will provide valuable insight into the cause and effect relationship of the work that was performed so that proponents of other similar projects are afforded the opportunity build on the lessons learned from this river restoration project.

Watershed Map

The watershed draining to the restoration project area is approximately 186 square miles and drains from a high point of 5,249 feet (Mount Lafayette) to the river elevation at approximately 645 feet. Much of the watershed lies within the White Mountain National Forest.

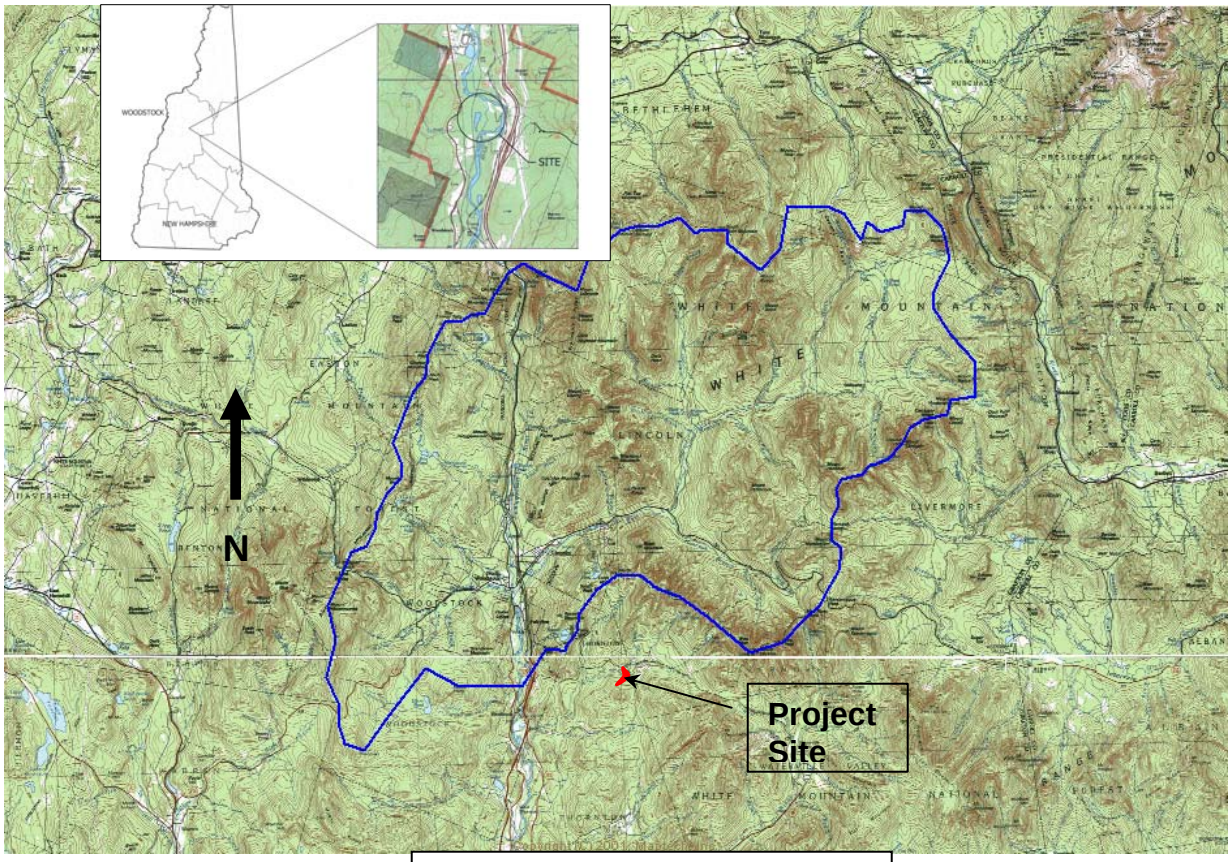

Figure -1 Watershed of the project area

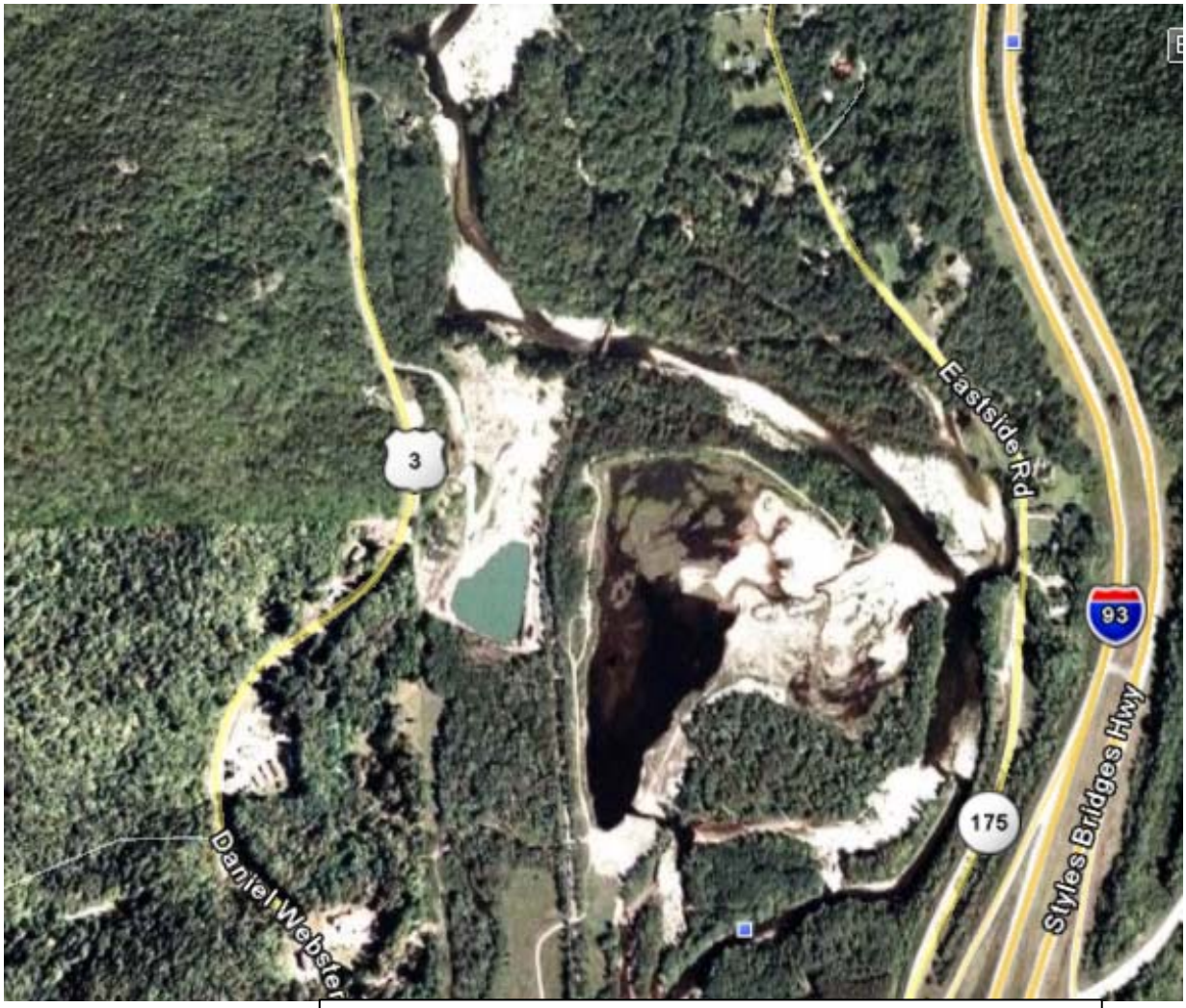

Figure -2 2007 Aerial photo of project area- *courtesy Google Earth*

The proposed restoration work can be seen in **Appendix B.**

Project Performance Targets and Milestones

<u>Performance Target 1:</u> Plan and permit proposed work
Verification: All abutters along the Phase I reach attend project informational meeting and sign letters of support for proposed project. DES receives abutters list, meeting attendance sheet(s), and copies of letters. A contract with construction contractor(s) is/are developed and signed.

Milestone 1A: Obtain letters of support from all landowners who abut Phase I project reach

Gaining landowner and abutter permission is an absolutely essential task for any river restoration project and is a prerequisite to obtaining permits from the various agencies to perform work in uplands and wetlands, respectively. This element is often the most underestimated task in project development as project proponents may have sought and received verbal permission to move forward with a project in concept, but once design and modeling result in site plans showing specific features and earthwork, some previously supporting abutters may get cold feet. With this in mind, all landowners within the conceptual project area and all abutters within ¼ mile downstream of the restoration project area were invited to a meeting to discuss a conceptual design that had been previously developed, but not modeled or at the final design stage. Letters were sent out by certified mail (see **Appendix C** for a copy of an example letter) and each landowner was contacted by phone to remind them of the meeting and answer general questions about the proposed project.

The meeting was held on February 5, 2007 and landowners from as far away as Connecticut attended (see **Appendix D** for meeting attendance list) and participated in discussions about the projects goals and how it might affect their property. Based upon input and concerns from some landowners a portion of the work in the lower end of the study area was eliminated from further consideration. Landowner concerns related to the proposed elimination of an island and perceived loss of waterfront that would have resulted from the restoration of this lower section of the study area. This is a very common project challenge for fluvial geomorphically-based river restoration projects, as these projects often require adjustments in the horizontal alignment of the channel that leave one landowner (where the channel is proposed to be shifted away from their parcel) feeling that they have gained new property and the landowner on the opposite side of the river feeling that their land has been lost due to the movement of the channel closer to their parcel[1]. Some landowners signed letters of support at the meeting and some landowners opted to agree in concept with the preliminary design, but wanted to wait for the results of hydraulic modeling to see more precisely the effects of the work on certain areas of their property. Through an iterative and collaborative process with landowners (design > modeling > landowner input > refinement of the design > refinement of the modeling) a final design (See **Appendix B** containing sheets 6-10 of the 10 sheet design set) was presented to affected landowners in personal visits to their homes and property and infrastructure (DOT Highway and DOT Rail). All letters of support and access were signed and are on file with DES.

Milestone 1B: Obtain permits to perform proposed work

As might be expected with a project that proposes to perform large scale reconstruction work within 36 acres of jurisdictional wetlands, significant environmental due diligence is required. While the receipt of a permit is an obvious goal to move a project from design to implementation, the process of demonstrating the value of the project and likelihood of certain outcomes is a valuable component of any project's development.

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1 In reality, land use law states that a property line that follows the thread or bank of a river does not change parcel boundaries if the feature that the boundary is based upon (say the thread of the river) changes rapidly either as a result of river bank avulsion or human induced changes such as a river restoration project.

It is only by having the review by knowledgeable agency staff that tough questions are asked and a project improved. With each permitting agency having staff with different perspectives and professional experiences a project proponent can, and should, view the permitting process as a way to enlist multidisciplinary expertise that helps to improve the project and gives the project the best chance of being resilient to a host of implementation challenges that might have otherwise been missed by a project proponent.

The following permits were applied for and received:

- NH DES Alteration of Terrain Permit
- NH DES Wetland Dredge and Fill Permit
- EPA NPDES Construction General Permit

There were numerous other agencies and organizations that were involved in providing input on the project including:

- US Army Corps of Engineering (wetlands)
- US Fish and Wildlife Agency (Threatened and Endangered Species and Habitats)
- The Federal Emergency Management Agency (floodplain issues)
- NH Department of Resources and Economic Development (Threatened and Endangered Species and Habitats)
- NH Fish and Game Department (fisheries and Threatened and Endangered Species)
- NH Department of Transportation (rail and right of way)
- NH Office of Energy and Planning (floodplain issues)
- The Town of Woodstock Selectmen (floodplain issues)
- The Town of Woodstock Conservation Commission (wetlands and easements)
- The Pemigewasset Local Advisory Committee (water quality)
- The Merrimack Valley Paddlers Association (recreational boating interests)

In order to facilitate productive and timely project development a joint meeting was held onsite on August 23rd, 2007 to discuss the project goals, anticipated permit requirements. Many of the above agencies or groups were invited and attended this meeting and it proved to be highly productive in delineating areas of interest and concerns to be addressed, thereby reducing regulatory oversight redundancies. The value of this coordinated approach cannot be overstated.

Through the permitting process the project was determined to be categorized as a restoration project by the US Army Corps of Engineers that would be regulated by the NH Programmatic General Permit (see NH DES Wt 303.04 (t)(1)) rather than require an Individual Army Corps Permit. This determination had two important effects. First, the project proponents did not need to acquire a 401 Water Quality Certification and secondly, the permit application review fee typically charged by the NH DES was reduced from over $163,000 to a standard base fee of $200. Without the latter it is unclear as to whether the funds needed to permit and construct the project would have been available in the near future.

Another permit that may typically be needed on a river restoration project where in channel work is proposed is a Conditional Letter of Map Revision from FEMA. In the case of this project there was no mapped floodway, and as a result, the project proponents need only satisfy to the local government agency (town of Woodstock) that the project would not raise the 100 year Base Flood Elevation (BFE) by 1 foot or more. Modeling of the effects of the project on the BFE (Using HEC-RAS and consistent with FEMA data collection protocols) was conducted nevertheless, and the results of the modeling were presented at a joint meeting with the Town of Woodstock Selectmen and Conservation Commission (see **Appendix E** for model cross-section locations) The model demonstrated that the project would result in no rise in the BFE except in on small area were a 0.2 foot increase was predicted. Subsequent to NH DES Alteration of Terrain (AOT) Permit application submission for the project, changes to the AOT Rules occurred on January 1, 2009. These Rules now require hydraulic model development for projects that proposed to place substantial fill within the floodplain and such modeling efforts should be a necessary component of most river restoration project irrespective of regulatory requirements.

Permit applications for NH DES Alteration of Terrain (AOT), and Wetland Dredge and Fill (Wetlands) Programs are on file at the NH DES. The EPA requires the development of a Stormwater Pollution Prevention Plan for projects that propose to disturb one or more acres of earth and such a plan was developed for this project and can be found in **Appendix F**. The requirements for such a plan did not place any additional controls on the project that were not already conditions of either the AOT or Wetlands permits, however the format of the Plan did offer a single reference for the contractor in which all water quality controls are contained.

Milestone 1C: Carry out pre-construction surveys and generate Planning Report for Phase I

In order to effectively document and evaluate the project area before and after the completion of the restoration, it is necessary to perform a crosssectional survey of the river bed and adjacent floodplain prior to work, again immediately after work, after the first high flow (bankfull) event that is likely to induce channel adjustment, and lastly 2 years after construction when the restoration work has been subject to various flows and river ice influences. All data collection efforts followed the Site Specific Project Plan (SSPP) that was prepared for the project and is consistent with the Generic Quality Assurance Project Plan (QAPP) for Stream Morphology Data Collection. A copy of the SSPP and QAPP are on file with DES.

The locations of the cross-sections to be evaluated are shown on a cross-section plan contained in **Appendix G**. As changes are not expected to occur at all cross-sections over short periods of time where the channel is not subject to channel changing influences (such as the cross-sections outside of the work area from a pre construction to post construction period of approximately 6 weeks) the following schedule of cross-sectional surveys was agreed upon by the project proponent and NH DES:

TIME PERIOD	CROSS-SECTIONS TO BE SURVEYED	DATE SURVEYED
Preconstruction	**15**, **14**, 13, 12,11, 10	August 2009
Post construction	**15**, **14**	October 2009
After large/bankfull event	**15, 14**, 13,	November 2009
2 Yrs after const. completion	**15**, **14**, 13, 12, 11, 10	To be completed in 2011
Note: cross-sections in **bold** are those that are within the active project area where channel reconstruction took place		

Comparison of the cross-sectional surveys over time will be helpful in evaluating a number of indices of channel stability. Of primary importance is the maintenance of an approximate 1,300 square foot bankfull cross-sectional area that was previously determined to provide adequate sediment transport competency, and leads to neither channel aggradation nor degradation. Secondary interests of cross-sectional data include lateral positioning and depths of the channel thalweg as well as the location of channel top of banks. These secondary indicators may be difficult to measure given the limited spatial extent of data and inherent resolution challenges of surveying a cobble dominated river bed and so the utility of this secondary information may be confined to providing a supporting role in making assessments of channel equilibrium conditions over time.

Collection of cross-sectional data will continue in 2011 and will accompany an evaluation of channel equilibrium that is to be provided to DES in a supplemental submittal in 2011.

In addition to documenting pre construction conditions significant pre-construction planning occurred to ensure that the “stage was set” for construction when the low flow conditions arrived. Work in rivers with unregulated flow (where no upstream dams or only run of the river dams exist) is inherently risky with productivity coming to a halt or even losing previously completed work when flows increase. Therefore the priority of any river project should be to minimize the period of time that work is done in the river. This requires significant planning by both the contractor to amass the necessary equipment, materials, and personnel at the job site and by the project proponent to secure the necessary construction easements and notifications to various land owners and agencies.

Preconstruction documents were prepared and sent to agencies, landowners, and media outlets informing them of the anticipated start of construction, project duration, name and contact information of the contractor and anticipated construction sequencing (see **Appendix H** for copies of such releases and media coverage).

Preconstruction photos were taken of the project area (see **Appendix I**) following DES Photodocumentation Standard Operating Procedures (SOPs), and photos were taken of easement areas where stockpiling, staging and access areas would be utilized by the contractor to ensure that such areas would be returned to preconstruction conditions after the project was completed. Pictures were also taken of areas within the jurisdiction of the NH Comprehensive Shoreland Protection Act (CSPA) in order to document compliance with the tree/sapling cutting limits within the Waterfront Buffer and Natural Woodland Buffer.

In order to avoid the need for filing for a CSPA Permit the contractor was prohibited from performing earthwork within the CSPA and strict limits on tree clearing were made part of the contract documents. Prior to initiation of construction the limits of tree/sapling clearing were identified with surveyors tape.

Another planning element of this project was to secure written options for the purchase of some of the unique materials that would be used on the project. Most notably was the large stone that would be used in the construction of the rock vanes and rock cross vanes. Due to the size (minimum 6'x 4'x 3'), quantity (over 1,300 cubic yards), and quality (flat-sides) of rock required for the construction of the vanes it was anticipated that a contractor would have a difficult time finding and transporting the rock to the project area and that this would have likely resulted in higher bid prices. Rock of this size and weight can damage overroad dump trucks or require that rocks be strapped to flat bed trucks for transport to the staging area. Subsequent off loading of these overroad trucks, loading of off road dump trucks for transport to the river would have further increased the cost and time needed to complete the vanes, so various options (including transport by rail) were investigated during this preconstruction planning stage of the project and it was determined that a local source of rock exists within in a gravel pit near the project area. Experience in constructing these vanes and contacts made to contractors who had previously installed the vanes indicated that successful and timely construction of the vanes requires rock that has at least two flat surfaces and unless the rock was from a quarry (which would have further raised the cost of such material), the contractor must have available double the amount of rock needed that would be actually be used to construct the vanes to allow for proper selection of the rock with suitably flat surfaces and sizes. The stockpile of rock available for the contractor for this project was approximately 3 times the amount used in the construction of the vanes and this proved to be important in constructing the vanes quickly so that the in-river construction period was minimized. As part of the planning process literature reviews were conducted of past river restoration projects that have employed rock vanes. These documents indicate that the most common mode of project/vane failure is poor quality control in the construction of the vanes. More specifically, failure to adequately key one rock against another so that they abut tightly, or failure to maintain the gradual, but consistent, slope of the top surface of the vanes. This can be brought about, in large part, by the use of poor quality of rock that does not exhibit the desirable angular characteristic necessary to facilitate tight joints between abutting joints and smooth vane top surfaces.

Milestone 1D: Select construction contractor(s)

In order to select the appropriate contractor to perform the work, and consistent with funding agency procurement requirements, contract documents were prepared. These documents include technical specifications that are specific to the materials and work to be completed, include insurance and bonding requirements, as well as general contract conditions that apply to most government-funded projects. Provisions that required that a bidder demonstrate their ability to perform the necessary restoration work were also made part of the contract documents. The project was bid on a fixed fee basis rather than on a time and materials basis that is often used on projects of this nature. The use of the fixed feed approach was due to the funding limits of the proponents and the design of the project which relies on project features working together to achieve a successful restoration. In other words the project could not be left in an unfinished state due to lack of funds and remain in that condition until additional funding was secured. A copy of the contract documents are on file with NH DES.

Because the construction of fluvial geomorphically based river restoration projects are relatively new to most site work contractors and the project included the unique aspect of the project proponent providing much of the material that would be used to construct the project, a mandatory pre-bid meeting was held on the project site. This afforded the contractor the opportunity to have a better idea of what is being constructed, the size of material provided by the project proponents that needed to be moved and placed, to see the reach of the river in which they would be working, and lastly to ask questions of the designers and project proponents.

There was much interest in the project and the pre-bid meeting was well-attended. Many contractors expressed concerns about being able to move and precisely place the large stone in the construction of the vanes and the short six week window in which they were to complete all restoration work. As a result, two contractors submitted bids along with a description of their experience in similar work and a listing of equipment (and associated hourly rates) available for the project. The contract was awarded to the low bidder: Alvin J Coleman and Sons, Inc of Conway, New Hampshire. The project began on September 1, within two weeks of the contract award.

<u>Performance Target 2</u>: Construct Phase 1 portion of Pemigewasset River Restoration Project
Verification: Successfully construct 1635 linear feet of river bank, floodplain fills at Pond entrance and side channels.

Proposed river restoration features were successfully constructed in 2009. **Appendix J** contains a plan of the proposed work and associated photos of the various restoration features that were constructed as part of this project.

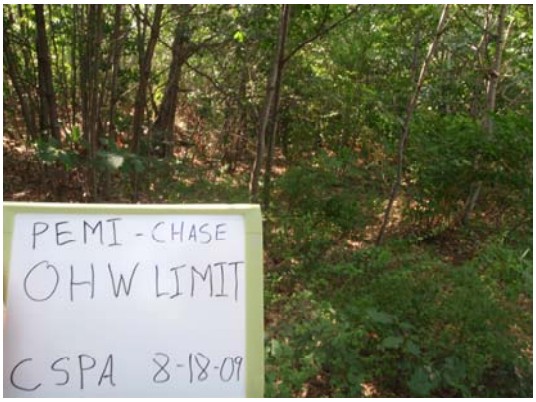
***Milestone 2A**: Mobilization*

Mobilization consisted of moving equipment onsite, installing signage, constructing a temporary crossing of a DOT-owned railroad track, and preparing the existing access route for travel by heavy equipment.

Heavy equipment is delivered to the site and is assembled

Project and safety signage is put in place

Temporary railroad crossing was constructed to better facilitate crossing of railroad tracks by heavy equipment



Areas of CSPA jurisdiction were flagged and a Brontosaurus was used to mechanically trim tree branches along the existing access to the river.

Equipment squeezing through (post-trim). Still a tight fit for the size of equipment used on this job

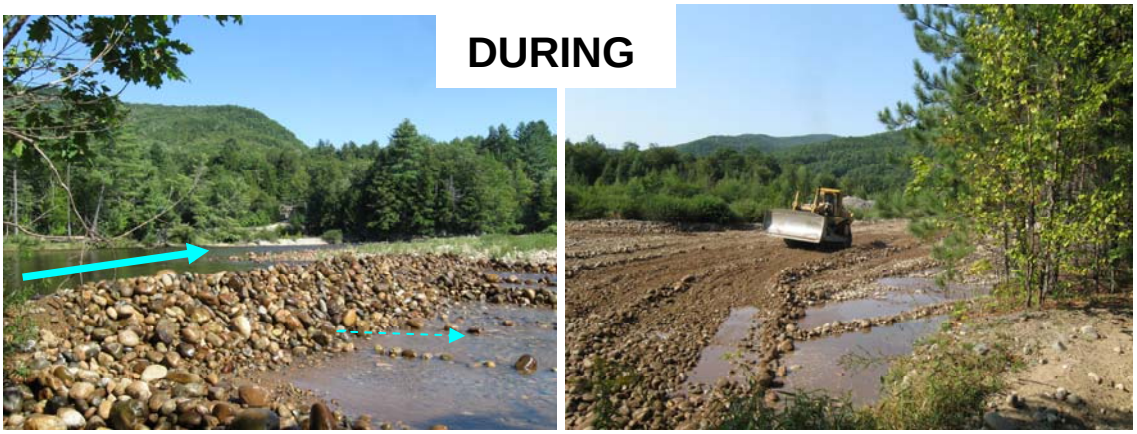
Sorting through rock stockpile (provided by Owner) available for use in constructing rock vanes and for breaking up to make NHDOT Class B Stone Fill

Loading and transporting materials from stockpile, over temporary rail crossing, along access route and to work area

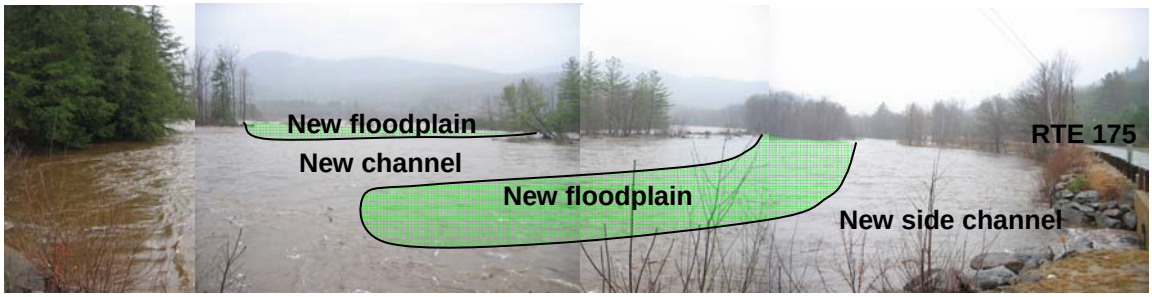
Construction stakeout and setting of temporary benchmarks was performed by Owner's Engineer. Multiple rounds of layout were performed due to the extent of channel grading that occurred and challenges in setting/maintaining grade stakes in a cobble-bottomed river bed.

Milestone 2B: Construction

Construction of the various proposed features generally followed the anticipated construction sequence that was set forth on the plans; however, the sequencing of the construction of certain elements (that could only be constructed during low flow) was moved forward to take advantage of low flow periods. The following photographs are presented in the order in which the construction of the depicted features occurred.



Blocking off the portion of the river's flow that was entering the pond



Not the type of flow conducive to river work- looking west from Rte 175 across mainstem of Pemigewasset River toward pond inlet during 5-24-2005 storm (flows peaked at 19,400 cfs that day)

Relocating material in the uppermost portion of the project from the right river bar/bank to build out the severely eroding left bank (see top right photo).

Looking upstream

Right bank

Left bank

Looking dowstream

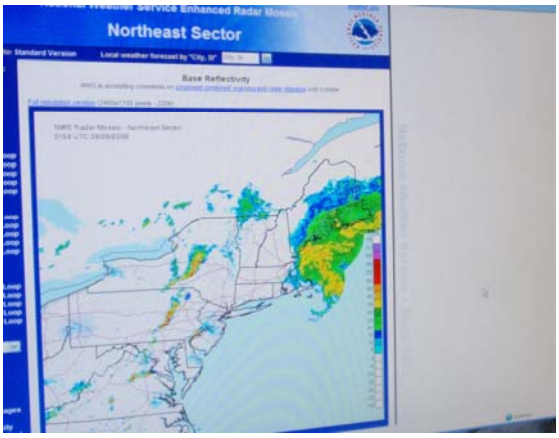
Left bank

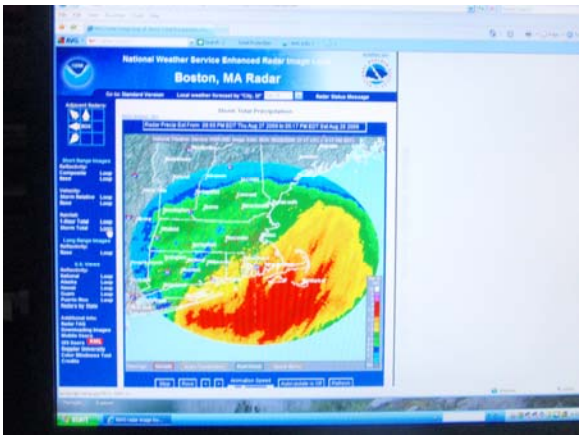
Right bank

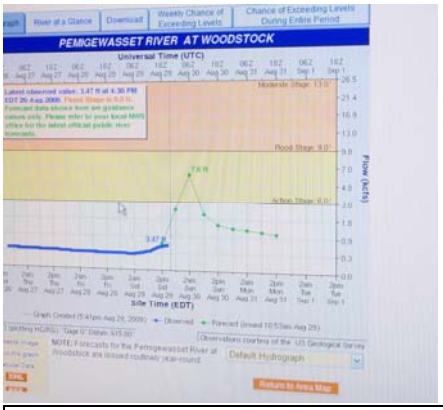
Completion of rough grading (floodplain, top of bank, and channel banks) in upper portion of project

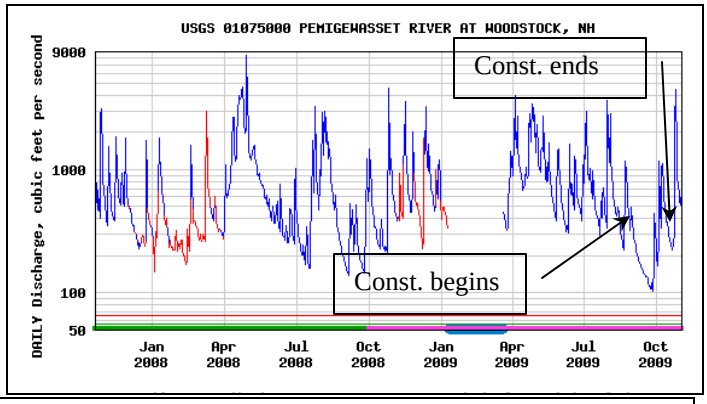
Complete filling of left bank side channel entrance(s)

A temporary diversion channel was constructed for use in diverting the main river flow around work area on the lower portion of the project in the event that higher flows were encountered.

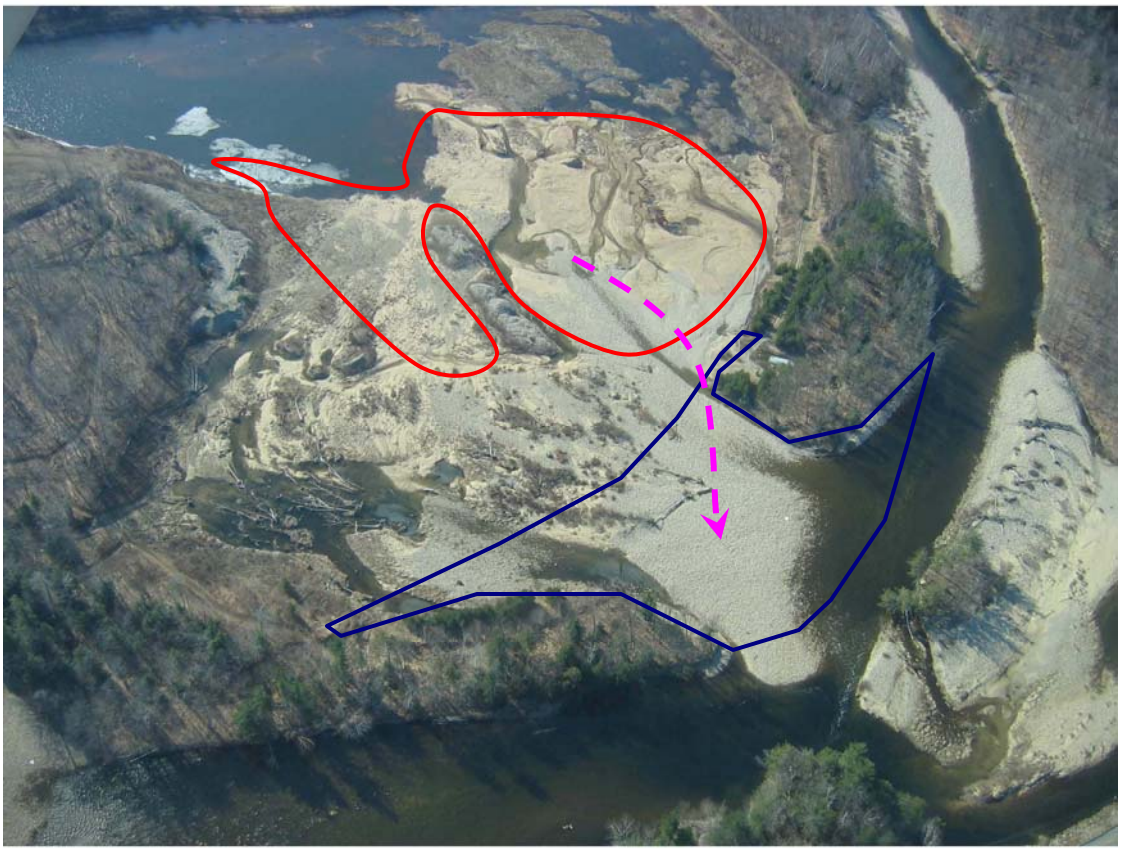








Weather and groundwater levels and river forecasts were checked on a daily basis. Although a few storms came close, the river was at its lowest flow in two years during the period of construction. As a result the river diversion feature was never needed



2003 aerial photo depicting where material for the project was excavated from within the pond and pond inlet delta area (excavation areas shown in red) and used as fill to create a new riverbank and floodplain (area shown in blue).

Many areas within and adjacent to the pond were dug to depths exceeding 20 ft

Photo looking upstream showing progress of fill placement into mainstem of the Pemigewasset River to create new bank and floodplain at former pond inlet/breach along right banks. Tall PVC grade stake defines intended top of right bank. In places, fill was placed to a thickness of 10 feet

2007 aerial photo showing where material was removed to below pond water surface elevation. New edge of pond shown in red

Concurrent with work to dig out the pond and re-establish the floodplain at the former pond entrance, work was done in the lower portion of the project to widen the main channel by moving the left bank further to the east towards Rte 175.

Looking northwest from Rte 175 with work to consolidate the left bank (peninsula) shown on the foreground and work to re-establish the right bank/floodplain at the former entrance to the pond in the middle left side of the photo.

Working with bulldozers on the peninsula. The bulldozers made short work of this portion of the project as they are well suited to moving large amounts of material the short distance that the material had to be moved (<200 ft) in this mass grading effort.

Because revegetation of newly created floodplain and banks was to be accomplished through transplanting riparian shrubs that were growing on material that was to be excavated and used as fill, proper sequencing of cut and fills was important.

Peninsula/ left bank taking shape-Note preservation of herbaceous vegetation for later transplanting on banks

Top of bank plantings. Holes were predug dug 3-4 feet below bankfull elevation and a smaller excavator was used to excavate, transport, place plantings and then backfill. Presoaking the holes was done sporadically when dry windy conditions prevailed

Planting holes were flooded with water from the excavator bucket prior to planting and then irrigated again after planting when dry windy conditions occurred. The ability to grab the saplings with significant portions of root systems and organic material appeared to lessen drought-induced stress.

A variety of shrubs and saplings were transplanted, with willows placed with their roots below the capillary fringe (where possible) and along banks, and other upland samplings planted along the top of the new floodplain surface. Black dots in aerial photo at left are sapling transplants

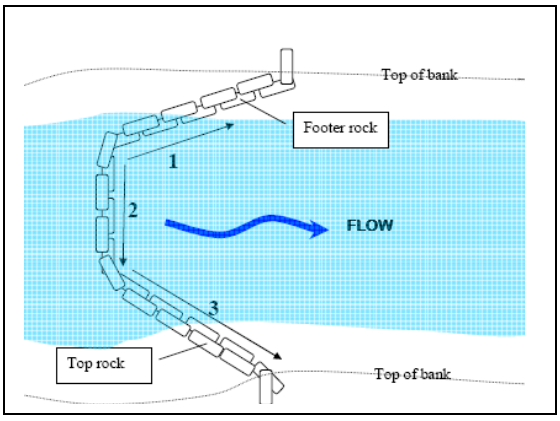
Having plenty of rock available for use in the vanes often meant that rock was delivered to the future vane location and if that rock was not used in construction of the vane it was reloaded and transported to the next vane location.

With the channel rough graded a good shallow working platform was created for the excavators to construct the rock vanes. Vane alignment was staked out and a large excavator was used to excavate trenches (up to 8 feet below the channel bed) for placement of the lower (footer) rocks below the proposed channel grade. The consolidated nature of the bed material combined with low water velocity minimized trench sidewalls from slumping.

The contractor chose to use a rock grapple attachment on the stick of the excavator to better facilitate handling and precise placement of the rocks used in the construction of the rock vanes. Because this grapple attachment is ill-suited to digging the trench for the vanes another excavator with a standard bucket was used for the trenching work. A standard bucket with a hydraulic thumb attachment would be a reasonable compromise for projects that would otherwise not require two excavators to be onsite.

Rock footers are in place and ready for the second tier of rocks (see above right photo). Typically the most efficient way to construct the vanes is to set 3 footer rocks and then place the corresponding top rocks to the design elevations necessary to meet the proposed slope of the top surface of the vane. Placing too many footer rocks ahead of top rocks without knowing the thickness of the top rocks to be used results in a challenge in selecting the appropriate rock to meet the desired elevation and rock vane slope.

Setting large footer rocks into underwater trenches in the proper alignment and ensuring that the rock tightly abuts that adjacent rock was very challenging for both the equipment operator and field personnel directing the operator. Further, rock placement and backfilling resulted in the suspension of finer material in the water within the trench that obscured visibility, resulting in delays in placing the next rock. To minimize additional suspension of particles by the excavator tracking back and for to select rocks, the excavator (and rock) was positioned and worked from the downstream side of the trench.



Top rocks in place with fine grading of the channel to come later. Typically construction of the rock cross vanes started with the most upstream corner of the vane arm and proceeded towards the top of bank (see 1 on figure at left). Work on the sill arm would then at the upstream corner of the vane arm (the original starting point) and continue across the river and up the vane arm to the opposite top of bank (see 2 &3).

View of completed rock cross vanes (prior to backfilling and fine grading) with lower cross vane visible in upper right photo. Productivity in rock cross vane construction ranged from 10 – 40 linear feet per hour on this project with an average of 20 linear feet per hour.

Construction of rock cross vanes in the side along Rte 175 channel were completed. Unlike work in the mainstem of the river, flows were low enough in the side channel for a turbidity curtain to be installed and have some functionality

Fine grading of the channel included backfilling of cross vanes, establishment of a thalweg and point bars and the creation of a deep pool.

During overbank events water will flow over the restored floodplain surface that was constructed at the former entrance to the pond, and while flat floodplain grades and transplanted vegetation will slow the velocity of the water once it reaches the end of the restored floodplain the water will drop down a slope to the pond. To prevent erosion of this slope the slope was graded to a 5H:1V angle, geotextile fabric was installed, NH DOT Class B Stone Fill was placed over the fabric, and then organic material was used to cover the stone fill to provide a suitable substrate for vegetation establishment.

Floodplain grade control structures were installed in various locations within the project. The intent of these structures that are constructed with their top surfaces set flush with the adjacent grade is to provide a durable feature that will distribute flows and minimize scour of the restored floodplain during overbank events. The photo at left shows the 8” wide x 3 foot deep trench ready for placement of stone. The photo at right shows a partially completed section of the structure.

Upon completion of material excavation within and adjacent to the pond the contractor constructed aquatic benches for improved littoral and riparian habitat. These benches were graded at a gradual slope such that some shallow (< 1 foot deep) areas exist within the pond adjacent to deep water habitat (up to 25') that was created during material removal. Herbaceous vegetation and Willow and Alder shrubs were transplanted along this bench and in the water. Root wads and logs were also incorporated into the benches to provide a habitat continuum between the deep and shallow water zones.

After the contractor had completed the construction of the major project elements and the typical high water period had passed, Trout Unlimited volunteers made supplemental plantings of dormant willows and dogwood along the newly created banks. Planting stock with stems ¾” diameter or greater were sustainably harvested from a nearby source downstream of the project. Smaller branches that were trimmed during the processing to make dormant cuttings were bundled together to form fascines (see middle right photo). All cuttings were soaked in aerated water and shielded from sunlight for two weeks until buds were just starting to form. Over 400 cuttings and 10 fascines were planted by the volunteers using shovels and a gas powered jackhammer with a 2” point that aided in penetrating the coarse bank material.

Initial Observations and Tips for Proponents of Other Projects

A series of high flow events occurred immediately after construction and thus provided a good chance to observe how the constructed features and new channel reacted to the stress of high flows and a mid-winter ice jam.

Construction of the project during the low water times of year is a necessity for permit compliance as well as increasing productivity. One additional benefit of completing rock vanes prior to leaf fall is that the leaves transported down the river supplied a significant quantity of organic material that is trapped by the vanes and aided in plugging the gaps that existing between vane rocks. This also serves as a soil amendment by improving the water retention capacity of the otherwise coarse grained bank material and should support a greater diversity of vegetation in these zones.

A few beavers found our transplants (and even the dormant willow cuttings) to be an easy source of food. During and immediately after the high flow events their food (see picture of foodstock and lodge located in river in lower right photo) would be washed away and they would return to cut down more of the vegetation. While the cutting of Maples and Willows may aid in the stump and stem resprouting, it is unlikely that other species such as Oak will survive. Live trapping and relocation of beavers may be a wise approach to use until vegetative transplants have had a couple of years to become established.

These photos show evidence of the transport, sorting and deposition of channel bed material that takes place during higher flow events. Note the finer material that has accumulated on both the upstream and downstream sides of the rock vanes.

In addition to serving as a channel training and grade control structures the rock vanes provide a significant habitat function by generating complex flow and substrate variability for fish, aquatic insects, and other water-dependant organisms.

Ice jams and subsequent break up can be a powerful and somewhat unpredictable force that is tough to accommodate in the design of river restoration projects. Areas within the project reach are occasionally subject to ice jams (as can be seen in the photo at upper left taken in 2008- two years before construction). Recent work by the US Army Corps of Engineers Cold Regions Research Laboratory (CRREL) in Hanover, NH has looked at how engineered river structures such as rock vanes can be designed to withstand the ice jam/breakup events. While this research was not available prior to design of this project, the rock vanes meet most of the CRREL's suggested design parameters and initial observations (see remaining photos taken during the first winter after construction) indicate that the vanes with their long sloping top surfaces and carefully backfilled upstream faces allow the ice to ride up over the vanes without causing damage to the vanes or adjacent river bank.

<u>Performance Target 3</u>: Evaluate restoration work
Verification: Collect and compare pre and post construction photos and cross section measurements to evaluate the conditions1) immediately before construction 2) immediately after construction 3) after the first bank full event and 4) two years after construction.

Milestone 3A: Pre-construction documentation
Completed in 2009

Milestone 3B: Post construction monitoring
To be completed in 2010 &2011.

The premise of many fluvial geomorphically based river restoration projects is that the goal of channel equilibrium (where the river channel neither aggrades nor degrades over time) will be met if the constructed improvements are based upon a design that mimics a stable reference reach of the channel, while accounting for immovable features that are beyond the control of the project (dams, bridges, roads, homes, etc). Because the channel forming (bankfull) flow was used in the design of this project one cannot truly evaluate whether the channel is in equilibrium until a least one bankfull event has occurred. Even then, a case can be made that the time horizon for evaluation must include a number of overbank events, as well as other natural events (such as ice jams) to truly look at how the restored channel responds to these stimuli. Nonetheless, a reasonable assessment can be made over a shorter term of some key channel variables that are useful in determining channel stability while acknowledging the naturally variability that exists within river systems. Balancing the need to provide feedback to the funding agencies so that assessments of project success or failure can be made, with the confidence of an assessment of a project that has experienced a range of conditions resulted in an agreement to extend the evaluation period for two years after construction and to include at least one bankfull event. The continued survey of crossections over time this time period as well as the evaluation of other indicators (not readily discerned in crossections-such as vegetation establishment) will allow the project to be evaluated in a manner that provides a reasonable balance between accountability for funds expended and scientific rigor.

Once the two year and bankfull evaluation criteria have been met an evaluation of channel stability and vegetation success will be submitted in a supplemental submittal that can be appended to this report and will then satisfy the third performance target of this grant-funded project. This will provide a stronger basis for well-founded recommendations that can be used by other river restoration project proponents.

Appendix A

Impaired Water Listing

Assessment Unit ID NHRIV700010203-01
Assessment Unit Name PEMIGEWASSET RIVER
Primary Town WOODSTOCK

Size 5.7200 MILES
Beach N
Assessment Unit Category*- 5-M

2008, 305(b)/303(d) - All Reviewed Parameters by Assessment Unit

Designated Use Description	*Desig. Use Category	Desig. Use Threat	Parameter Name	Parameter Threatened (Y/N)	Parameter Category*	TMDL Schedule	Expected To Attain Date	Source Name (Impairments only)
Aquatic Life	5-M		ALKALINITY, CARBONATE AS CACO3	N	3-PNS			
			Aluminum	N	5-M	2017		Source Unknown
			Ammonia (Unionized)	N	2-G			
			Benthic-Macroinvertebrate Bioassessments (Streams)	N	3-ND			
			CHLORIDE	N	3-PAS			
			COPPER	N	3-PNS			
			DISSOLVED OXYGEN SATURATION	N	3-PAS			
			Fishes Bioassessments (Streams)	N	3-ND			
			LEAD	N	3-PNS			
			NICKEL	N	3-ND			
			OXYGEN, DISSOLVED	N	3-ND			
			Other flow regime alterations	N	4C-M			Streambank Modifications/destablization
			ZINC	N	3-PAS			
			pH	N	5-M	2016		Source Unknown
Drinking Water After Adequate Treatment	2-G							
Fish Consumption	4A-M		Mercury	N	4A-M	2017		Atmospheric Deposition - Toxics
Primary Contact Recreation	2-G		CHLOROPHYLL-A	N	2-G			
			ESCHERICHIA COLI	N	2-G			
Secondary Contact Recreation	2-G		ESCHERICHIA COLI	N	2-G			
Wildlife	3-ND							

Severe	Poor	Likely Bad	No Data	Likely Good	Marginal	Good
Not Supporting, Severe	Not Supporting, Marginal	Insufficient Information – Potentially Not Supporting	No Data	Insufficient Information – Potentially Full Supporting	Full Support, Marginal	Full Support, Good

*DES Categories; 2-G = Supports Parameter well above criteria, 2-M = Supports Parameter marginally above criteria, 2-OBS = Exceeds WQ criteria but natural therefore not a WQ exceedence, 3-ND = Insufficient Information/No data, 3-PAS= Insufficient Information/Potentially Attaining Standard, 3-PNS= Insufficient Information/Potentially Not Attaining Standard, (4A=Impaired/TMDL Completed, 4B=Impaired/Other Measure with rectify Impairment, 4C=Impaired/Non-Pollutant, 5=Impaired/TMDL needed) M=Marginally Impairment, P=Severe Impairment, T=Threatened (http://des.nh.gov/organization/divisions/water/wmb/swqa/index.htm)

Appendix B

Proposed Restoration Work Plan Sheets 6-10

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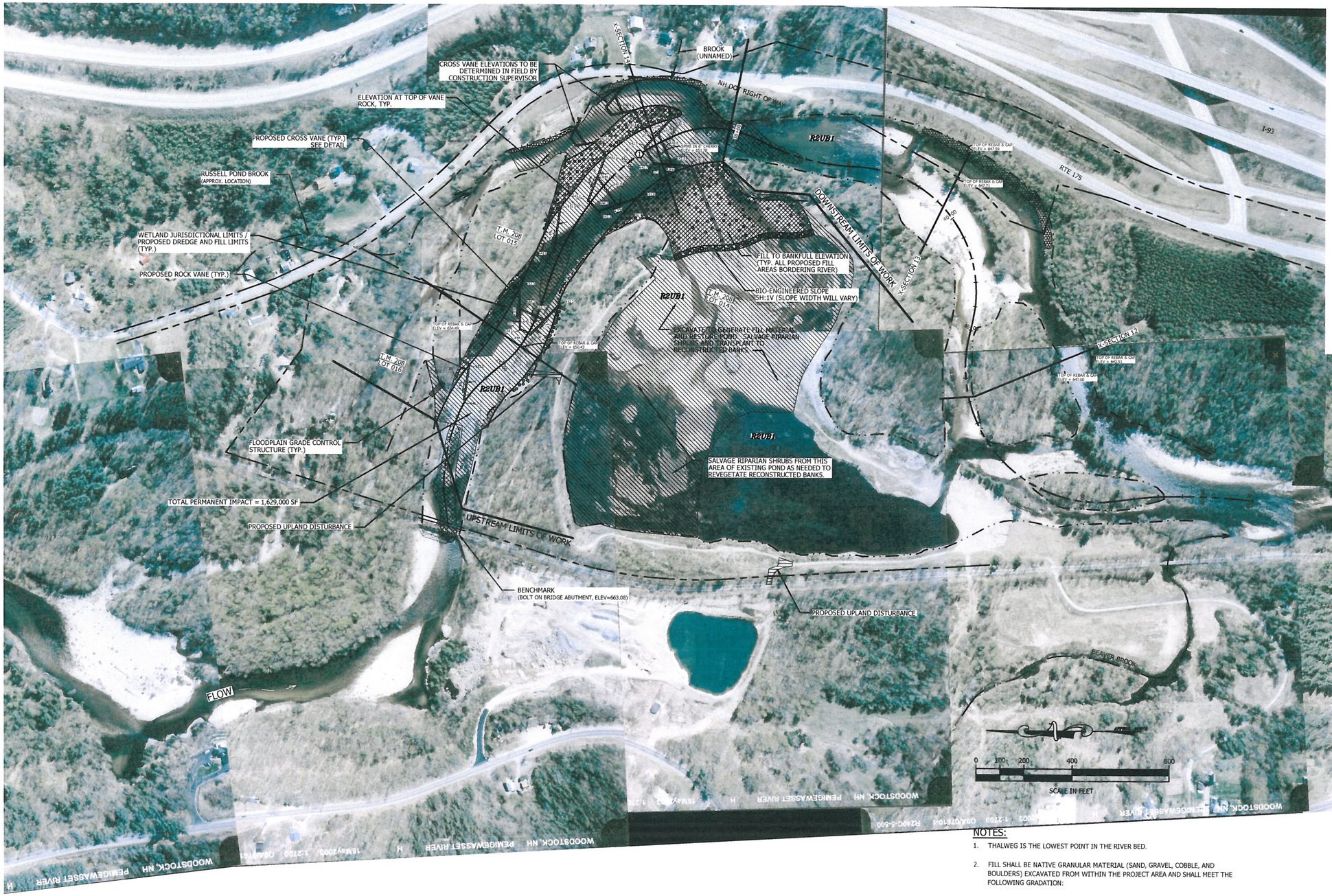
KEY NOTES

1. PROPOSED MEANDER RADIUS = 675' (3.2*Wbkf)



LEGEND

- PROPOSED TOP OF BANK (BANKFULL ELEVATION)
- PROPOSED THALWEG (PROFILE ALIGNMENT)
- PROPOSED DREDGE & FILL
- PROPOSED BANK FULL FILL
- PROPOSED ROCK VANE
- PROPOSED ROCK CROSS VANE
- PROPOSED POOL-GLIDE COMPLEX
- EXISTING POOL-GLIDE COMPLEX (NO MODIFICATIONS)
- PROPOSED SHRUB/SAPLING TRANSPLANTS (SCHEMATIC ONLY - NOT FOR QUANTITIES)
- PROPOSED FLOODPLAIN GRADE CONTROL STRUCTURE
- EXISTING RIP-RAP
- PROPERTY LINE

NOTES:

1. THALWEG IS THE LOWEST POINT IN THE RIVER BED.
2. FILL SHALL BE NATIVE GRANULAR MATERIAL (SAND, GRAVEL, COBBLE, AND BOULDERS) EXCAVATED FROM WITHIN THE PROJECT AREA AND SHALL MEET THE FOLLOWING GRADATION:

SIEVE SIZE	% PASSING BY WEIGHT
10" (250mm)	90-100
5" (125mm)	50-75
1" (25mm)	30-40
NO. 5 (4mm)	10-20
NO. 10 (2mm)	5-10

3. FILL SHALL BE PLACED IN MAXIMUM 12" LOOSE LIFTS AND MACHINE COMPACTED.
4. △ THE VOLUME OF MATERIAL NEEDED TO REESTABLISH THE FLOOD PLAIN AT THE ENTRANCE TO THE POND IS ESTIMATED TO BE 28,000 CUBIC YARDS. THIS REPRESENTS A CUT OF APPROXIMATELY ONE FOOT ACROSS THE PROPOSED IMPACT AREA SHOWN WITHIN THE POND.

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PEMIGEWASSET CHAPTER TROUT UNLIMITED

PEMIGEWASSET RIVER RESTORATION PROJECT

WOODSTOCK, NH

PROPOSED SITE PLAN

NO.	DATE	REVISION DESCRIPTION	ENG	DWG
△	3/2009	REVISIONS IN RESPONSE TO NHDES COMMENT LETTER	TBP	KRP

DATE: JAN 2009	PROJECT #: 04131/06195
ENGIN'D BY: SPS	DRAWN BY: SPS/JFM
CHECK'D BY: TBP	ARCHIVE #: H-4065

SHEET 6 OF 10

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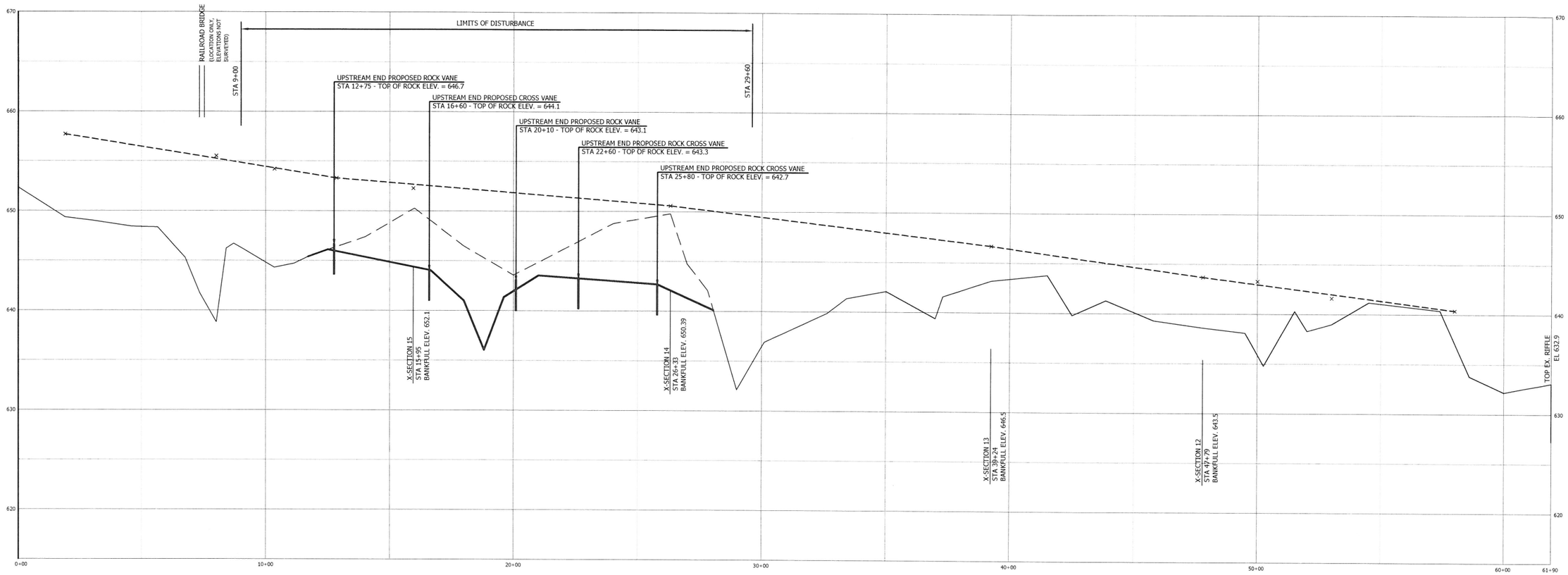
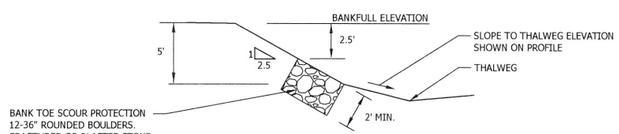


RIVER PROFILE

0 100H 200H 400H 800H

0 2.5V 5V 10V 20V

SCALE IN FEET



TYPICAL BANK TOE SCOUR PROTECTION AND GRADING DETAIL

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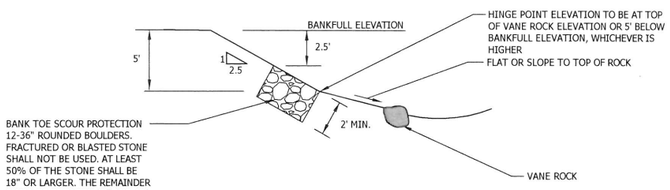
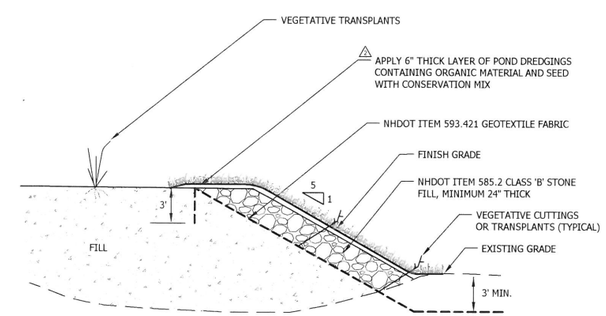


TYPICAL VANE BACKFILL DETAIL

NOT TO SCALE

PROFILE LEGEND:

EXISTING THALWEG TO REMAIN (DEEPEST PORTION OF CHANNEL BED)	———
EXISTING GRADE ALONG PROPOSED THALWEG ALIGNMENT	— — — —
BANKFULL (TOP OF ANY RECONSTRUCTED BANKS OR GRAVEL BARS)	- - - - - -
BANKFULL INDICATOR SURVEY POINT	×
PROPOSED THALWEG (DEEPEST PORTION OF CHANNEL BED)	———



BIO-ENGINEERED SLOPE DETAIL

NOT TO SCALE

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PEMIGEWASSET CHAPTER TROUT UNLIMITED

PEMIGEWASSET RIVER RESTORATION PROJECT

WOODSTOCK, NH

PROPOSED CHANNEL PROFILE

NO.	DATE	REVISION DESCRIPTION	ENG	DWG
1	1/21/09	REVISE DETAILS	TBP	JFM
△1	3/2009	REVISIONS IN RESPONSE TO NHDES COMMENT LETTER	TBP	KRP

DATE: JAN 2009	PROJECT #: 04131/06195
ENGIN'D BY: TBP	DRAWN BY: SPS/JFM
CHECK'D BY: SPS	ARCHIVE #: H-4065

SHEET 7 OF 10

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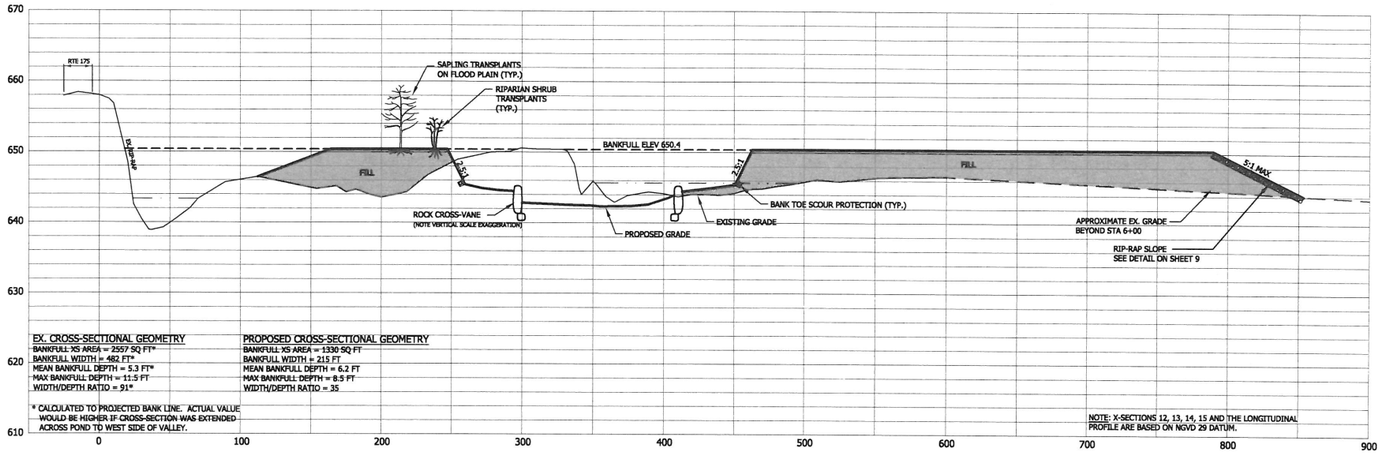


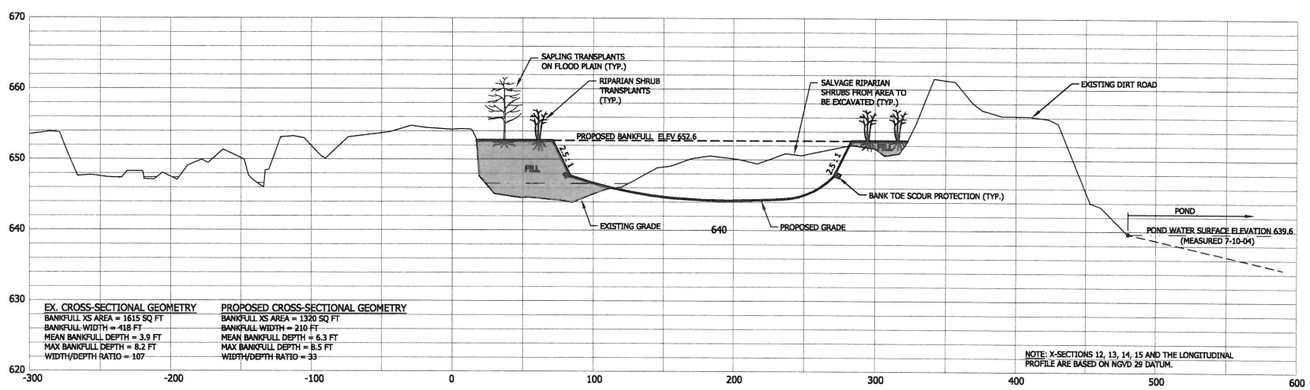
EX. CROSS-SECTIONAL GEOMETRY	PROPOSED CROSS-SECTIONAL GEOMETRY
BANKFULL XS AREA = 2557 SQ FT*	BANKFULL XS AREA = 1330 SQ FT
BANKFULL WIDTH = 482 FT*	BANKFULL WIDTH = 215 FT
MEAN BANKFULL DEPTH = 5.3 FT*	MEAN BANKFULL DEPTH = 6.2 FT
MAX BANKFULL DEPTH = 11.5 FT	MAX BANKFULL DEPTH = 8.5 FT
WIDTH/DEPTH RATIO = 91*	WIDTH/DEPTH RATIO = 35

* CALCULATED TO PROJECTED BANK LINE. ACTUAL VALUE WOULD BE HIGHER IF CROSS-SECTION WAS EXTENDED ACROSS POND TO WEST SIDE OF VALLEY.

NOTE: X-SECTIONS 12, 13, 14, 15 AND THE LONGITUDINAL PROFILE ARE BASED ON NGVD 29 DATUM.

X-SECTION 14

LOCATED AT POND INLET
SURVEYED 8-27-04
1" = 50' (H)
1" = 10' (V)

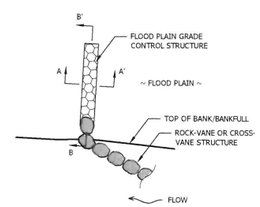


EX. CROSS-SECTIONAL GEOMETRY	PROPOSED CROSS-SECTIONAL GEOMETRY
BANKFULL XS AREA = 1615 SQ FT	BANKFULL XS AREA = 1320 SQ FT
BANKFULL WIDTH = 418 FT	BANKFULL WIDTH = 210 FT
MEAN BANKFULL DEPTH = 3.9 FT	MEAN BANKFULL DEPTH = 6.3 FT
MAX BANKFULL DEPTH = 8.2 FT	MAX BANKFULL DEPTH = 8.5 FT
WIDTH/DEPTH RATIO = 107	WIDTH/DEPTH RATIO = 33

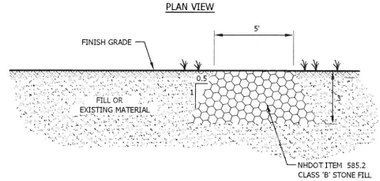
NOTE: X-SECTIONS 12, 13, 14, 15 AND THE LONGITUDINAL PROFILE ARE BASED ON NGVD 29 DATUM.

X-SECTION 15

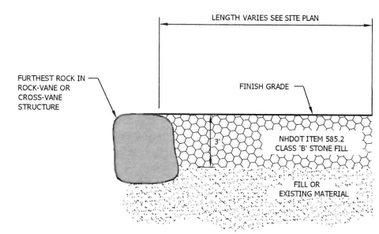
LOCATED ACROSS RIFFLE
SURVEYED 7-10-04 WITH T.U. VOLUNTEERS
1" = 50' (H)
1" = 10' (V)



PLAN VIEW



SECTION A - A'



SECTION B - B'

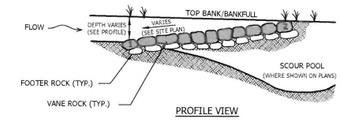
NOTES:

1. FLOOD PLAIN GRADE CONTROL STRUCTURES SHALL BE PLACED PERPENDICULAR TO THE RIVER SLOPE WITH THE FINISH TOP SURFACE RELATIVELY LEVEL AND FLUSH WITH FINISH GRADES.

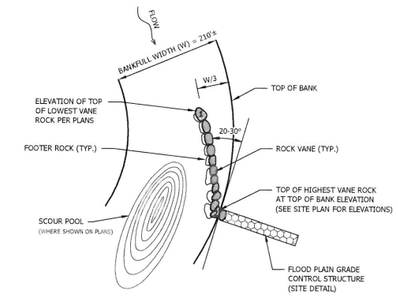
2. FLOOD PLAIN GRADE CONTROL STRUCTURES SHALL ABUT THE DOWNSTREAM ENDS OF THE CROSS VANES AND ROCK VANES TO CREATE A CONTINIOUS MASS OF ROCK EXTENDING INTO THE FLOOD PLAIN. VOID SPACES SHALL BE CHINKED WITH SMALL BOULDERS, COBBLE, OR ROCK FRAGMENTS AS NEEDED SUCH THAT NO VOIDS GREATER THAN FOUR INCHES (4") IN SIZE ARE PRESENT.

FLOOD PLAIN GRADE CONTROL STRUCTURE DETAIL

NOT TO SCALE



PROFILE VIEW



PLAN VIEW

NOTES:

1. THE LENGTH OF ROCK VANES VARIES. REFER TO SITE PLAN FOR LENGTHS.

2. ANGLE OF DEPARTURE FROM BANK VARIES FROM 20 % TO 30%. REFER TO SITE PLAN FOR DEPARTURE ANGLES.

3. ALL VANE ROCKS AND FOOTER ROCKS SHALL BE ANGULAR, FLAT, OR CUBED IN SHAPE. FOR VANE ROCKS, THE OPPOSING SURFACES DEFINED BY THE A AND B AXES SHALL BE RELATIVELY FLAT AS NEEDED TO CREATE A UNIFORM SLOPE ON THE VANE TOP SURFACE AND ALLOW SUFFICIENT CONTACT WITH FOOTER ROCKS. UNIFORM, CUBED ROCKS SHALL BE USED FOR VANE ROCKS. ROCKS WITH MORE ROUNDNESS MAY BE USED FOR FOOTER ROCKS, HOWEVER, AT LEAST ONE SURFACE DEFINED BY THE A AND B AXES SHALL BE RELATIVELY FLAT AS NEEDED TO ALLOW SUFFICIENT CONTACT WITH VANE ROCKS. REFER TO VANE AND FOOTER ROCK DIMENSION DETAIL FOR MINIMUM ROCK SIZES.

4. VANE ROCKS SHALL BE OFFSET A MINIMUM OF 1.5 FEET UPSTREAM FROM THE STREAMWARD VERTICAL FACE OF THE UNDERLYING FOOTER ROCK. REFER TO " VANE AND FOOTER ROCK OVERLAP DETAIL".

5. FLOOD PLAIN GRADE CONTROL STRUCTURES SHALL ABUT THE DOWNSTREAM ENDS OF THE ROCK VANES TO CREATE A CONTINIOUS MASS OF ROCK EXTENDING INTO THE FLOOD PLAIN AS SHOWN ON THE SITE PLAN. VOID SPACES SHALL BE CHINKED WITH SMALL BOULDERS, COBBLE, OR ROCK FRAGMENTS AS NEEDED SUCH THAT NO VOIDS GREATER THAN FOUR INCHES (4") IN SIZE ARE PRESENT.

ROCK VANE DETAIL

NOT TO SCALE

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PEMIGEWASSET CHAPTER TROUT UNLIMITED
PEMIGEWASSET RIVER RESTORATION PROJECT
WOODSTOCK, NH

PROPOSED CROSS SECTIONS 14 & 15

NO.	DATE	REVISION DESCRIPTION	ENG	DWG
1	1/21/09	REVISE CROSS SECTIONS	TBP	JFM

DATE: JAN 2009	PROJECT #: 04131/06195
ENGIN'D BY: TBP	DRAWN BY: SPS/JFM
CHECK'D BY: SPS	ARCHIVE #: H-4065

SHEET 8 OF 10

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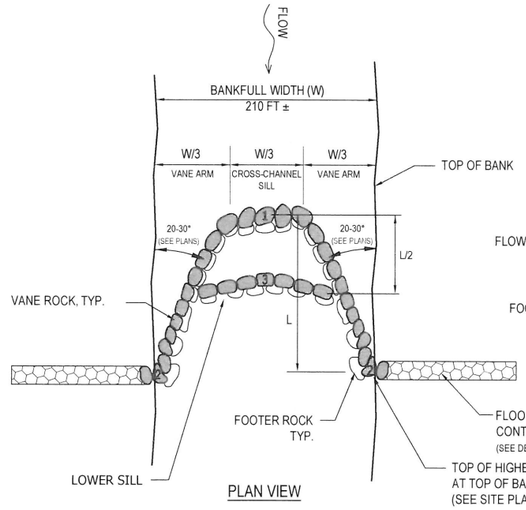
CONSTRUCTION SEQUENCE

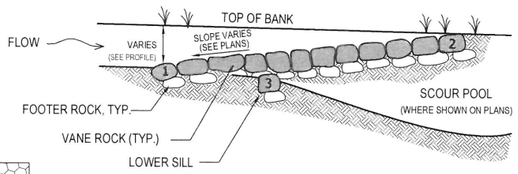
THE FOLLOWING CONSTRUCTION SEQUENCE IS PROVIDED AS A GUIDE. PRIOR TO BEGINNING ANY WORK, THE CONTRACTOR SHALL REVIEW HIS PROPOSED CONSTRUCTION SEQUENCE, METHODS, AND TIMING WITH THE OWNER AND THE ENGINEER. NO WORK SHALL PROCEED WITHOUT THE OWNER'S WRITTEN APPROVAL OF THE CONTRACTOR'S WORK PLAN.

NO WORK SHALL BEGIN UNTIL: (1) THE OWNER PROVIDES WRITTEN NOTICE TO PROCEED; (2) ALL REQUIRED LOCAL, STATE, AND FEDERAL APPROVALS AND PERMITS HAVE BEEN OBTAINED; AND (3) TEMPORARY CONSTRUCTION AND ACCESS EASEMENTS HAVE BEEN SECURED.

1. DETERMINE THE LOCATIONS OF CONSTRUCTION ACCESS WAYS AND OBTAIN ANY REQUIRED ACCESS EASEMENTS, INCLUDING BUT NOT LIMITED TO ACCESS AGREEMENT WITH THE NH DOT BUREAU OF RAIL FOR ACCESS THROUGH CONN'S PIT. CALL DIG SAFE AND DETERMINE THE LOCATIONS OF UNDERGROUND UTILITIES. PROVIDE SIGNAGE ON BOTH BANKS OF RIVER UPSTREAM OF WORK AREA NOTIFYING RECREATIONAL BOATERS OF THE RIVER WORK.
2. EVALUATE ALL PROPOSED WORK AND ACCESS AREAS FOR THE PRESENCE OF WOOD TURTLES. ANY NESTING AREAS ARE TO BE FENCED OFF WITH ORANGE CONSTRUCTION FENCE AND SHALL NOT BE DISTURBED. IDENTIFY THE LOCATIONS OF RIPARIAN SHRUB AND SAPLING DONOR AREAS AND OBTAIN ANY REQUIRED CONSTRUCTION EASEMENTS. CLEAR VEGETATION NEEDED TO IMPROVE EXISTING ACCESS TO AREAS OF WORK LIMITING VEGETATION REMOVAL TO THE ABSOLUTE MINIMUM NECESSARY FOR SAFE ACCESS.
3. IDENTIFY SOURCE OF ROCK FOR ROCK AND CROSS VANES AND OBTAIN ENGINEER'S APPROVAL.
4. INSTALL STABILIZED CONSTRUCTION ENTRANCES AND SEDIMENT BARRIERS AS MAY BE APPROPRIATE.
5. CONSTRUCT SOUTHERLY VANE ARM (INCLUDING FLOODPLAIN GRADE CONTROL STRUCTURE) AND CROSS-CHANNEL SILL OF CROSS-VANE AT STATION 17+00. SALVAGE AND TRANSPLANT RIPARIAN SHRUBS AND SAPLINGS AS NEEDED.
6. GRADE CHANNEL AND BANKS BETWEEN STATIONS 9+00 AND 21+00. USE EXCAVATED MATERIAL FOR FILL ALONG THE EAST RIVERBANK. SALVAGE AND TRANSPLANT RIPARIAN SHRUBS AND SAPLINGS.
7. COMPLETE CONSTRUCTION OF CROSS-VANE AT STATION 17+00 (INCLUDING FLOODPLAIN GRADE CONTROL STRUCTURE)
8. CONSTRUCT ROCK VANE AT STATION 13+00, INCLUDING FLOODPLAIN GRADE CONTROL STRUCTURE.
9. COMPLETE INSTALLATION OF RIPARIAN SHRUB AND SAPLING TRANSPLANTS IN FILL AREA ALONG EAST RIVERBANK.
10. FILL AND INSTALL FLOODPLAIN GRADE CONTROL STRUCTURE IN SIDE CHANNEL ALONG EAST RIVERBANK AT STATION 12+00.
11. EXCAVATE TEMPORARY DIVERSION CHANNEL ACROSS GRAVEL BAR BETWEEN STATION 21+00 AND FLOODPLAIN CHANNEL ALONG ROUTE 175. SALVAGE AND STOCKPILE DOWNED TREES WITH REMINANT ROOT MASSES INTACT.
12. CONTRUCT GRAVEL/COBBLE BERM ACROSS PROPOSED RIVER ALIGNMENT NEAR STATION STATION 22+00 AS NEEDED TO DIVERT FLOWS TO THE DIVERSION CHANNEL AND PRECLUDE FLOWING WATER FROM THE WORK AREA BETWEEN STATIONS 22+00 AND 28+00.
13. GRADE CHANNEL AND BANKS BETWEEN 22+00 AND 28+00. SALVAGE AND STOCKPILE DOWNED AND ROOTED TREES WITH ROOT MASSES INTACT.
14. CONSTRUCT CROSS-VANES AT STATIONS 23+00 AND 26+00
15. △1 COMPLETE FILL ALONG WEST RIVERBANK AND INSTALL BIO-ENGINEERED SLOPE AND FLOODPLAIN GRADE CONTROL STRUCTURES.
16. PLACE FILL ALONG EAST RIVERBANK DOWNSTREAM FROM TEMPORARY DIVERSION CHANNEL AND INSTALL FLOODPLAIN GRADE CONTROL STRUCTURES AND RIPARIAN SHRUB AND SAPLING TRANSPLANTS.
17. REMOVE BERM AND FILL TEMPORARY DIVERSION CHANNEL SO THAT FLOWS ARE DIRECTED TO THE MAIN CHANNEL.
18. CONSTRUCT ROCK VANE AT STATION 21+00, INCLUDING FLOODPLAIN GRADE CONTROL STRUCTURE.
19. CONSTRUCT ROCK CROSS-VANES IN FLOODPLAIN CHANNEL ALONG ROUTE 175.
20. COMPLETE RIPARIAN SHRUB AND SAPLING TRANSPLANTS ON BOTH SIDES OF THE RIVER.
21. REMOVE SEDIMENT BARRIERS, RESTORE DISTURBED ARES, AND COMPLETE POND GRADING AS NEEDED.



PLAN VIEW



PROFILE VIEW

ROCK CROSS VANE NOTES:

1. CROSS VANES ARE IN-STREAM STRUCTURES CONSTRUCTED FOR THE PURPOSES OF REDUCING SHEAR STRESS ON STREAMBANKS AND CONTROLLING THE STREAMBED GRADE. CROSS VANES SHALL CONSIST OF BOTH FOOTER ROCKS (PLACED BELOW THE INVERT OF THE PROPOSED CHANNEL) AND VANE ROCKS.
2. THE CONSTRUCTION OF CROSS VANES REQUIRES EQUIPMENT WHICH CAN PLACE LARGE ROCK IN PRECISE LOCATIONS. AN EXCAVATOR OF SUITABLE SIZE WITH A THUMB IS REQUIRED.
3. VANE ROCKS SHALL BE PLACED SO AS TO HAVE A FINAL SMOOTH SURFACE ALONG THE TOP PLANE OF THE VANE ARMS AND SILLS. A COMPLETED CROSS VANE HAS A SMOOTH, CONTINUOUS TOP SURFACE SLOPING FROM THE TOP OF BANK ELEVATION TO THE CROSS-CHANNEL SILL. VANE ROCKS SHALL BE PLACED WITH TIGHT, CONTINUOUS SURFACE CONTACT BETWEEN ADJOINING ROCKS WITH NO SIGNIFICANT GAP BETWEEN ROCKS.
4. REFER TO THE SITE PLAN FOR TOP OF VANE ROCK ELEVATIONS ALONG THE STRUCTURE. THE TOP SURFACES OF THE VANE ROCKS SHALL SLOPE UNIFORMLY BETWEEN THE SPOT ELEVATIONS SHOWN ON THE SITE PLAN.
5. THE ANGLE OF DEPARTURE FROM BANK VARIES FROM 20° TO 30°. REFER TO THE SITE PLAN FOR DEPARTURE ANGLES.
6. ALL VANE ROCKS AND FOOTER ROCKS SHALL BE ANGULAR, FLAT, OR CUBED IN SHAPE AND SHALL BE OF SUFFICIENT HARDNESS TO RESIST WEATHERING (POROUS, SOFT ROCK, OR SEDIMENTARY SHALL NOT BE USED). FOR VANE ROCKS, THE OPPOSING SURFACES DEFINED BY THE A AND B AXES SHALL BE RELATIVELY FLAT AS NEEDED TO CREATE A UNIFORM SLOPE ON THE CROSS VANE TOP SURFACE AND ALLOW SUFFICIENT CONTACT WITH FOOTER ROCKS. UNIFORM, CUBED ROCKS SHALL BE USED FOR VANE ROCKS. ROCKS WITH MORE ROUNDNESS MAY BE USED FOR FOOTER ROCKS, HOWEVER, AT LEAST ONE SURFACE DEFINED BY THE A AND B AXES SHALL BE RELATIVELY FLAT AS NEEDED TO ALLOW SUFFICIENT CONTACT WITH VANE ROCKS.
7. REFER TO "VANE AND FOOTER ROCK DIMENSION DETAIL" FOR MINIMUM VANE AND FOOTER ROCK SIZES.
8. ROCK WICH FAILS TO MEET THE SIZE, SHAPE, AND/OR DURABILITY REQUIREMENTS WILL NOT BE ALLOWED.
9. PRIOR TO TRUCKING ROCK TO THE PROJECT SITE, THE ENGINEER WILL VISIT THE ROCK SOURE SITE(S) WIT HTHE CONTRACTOR TO DETERMINE THE SUITABILITY OF THE ROCK.
10. THE DOWNSTREAM ENDS OF THE CROSS VANE SHALL BE KEYED INTO THE STREAMBANK AT THE TOP OF BANK ELEVATION. FLOOD PLAIN GRADE CONTROL STRUCTURES SHALL ABUT THE DOWNSTREAM ENDS OF THE CROSS VANES TO CREATE A CONTINUOUS MASS OF ROCK EXTENDING INTO THE FLOOD PLAIN AS SHOWN ON THE SITE PLAN. VOID SPACES SHALL BE CHINKED WITH SMALL BOULDERS, COBBLE, OR ROCK FRAGMENTS AS NEEDED SUCH THAT NO VOIDS GREATER THAN FOUR INCHES (4") IN SIZE ARE PRESENT.
11. THE CROSS-CHANNEL AND LOWER SILLS SHALL BE KEYED INTO THE STREAMBED AS SHOWN ON THE CHANNEL PROFILE.
12. THE TOP SURFACES OF THE VANE ROCKS IN THE LOWER SILL SHALL BE AT THE GRADES SHOWN ON THE SITE PLAN. THE VANE ROCKS AT EITHER END OF THE LOWER SILL SHALL ABUT AND MAKE CONTACT WITH THE ADJACENT FOOTER ROCK IN THE VANE ARM.
13. FOOTER ROCKS SHALL BE FIRMLY KEYED INTO THE STREAMBED. VANE ROCKS SHALL BEAR ON FOOTER ROCKS OFFSET FROM THE DOWNSTREAM OR STREAMWARD VERTICAL FACE OF THE OVERLYING VANE ROCK WITH A MINIMUM OVERLAP OF 18" AS SHOWN ON THE "VANE AND FOOTER ROCK OVERLAP DETAIL."
14. VOIDS BETWEEN FOOTER ROCKS, AND BETWEEN FOOTER ROCKS AND VANE ROCKS SHALL BE CHINKED WITH SMALL BOULDERS, COBBLE OR ROCK FRAGMENTS SUCH THAT NO VOIDS GREATER THAN FOUR INCHES (4") IN SIZE WILL BE PRESENT.
15. UPON COMPLETION OF EACH CROSS VANE STRUCTURE, THE BANK SLOPES AND STREAM BOTTOM SHALL BE RESHAPED AS SHOWN ON THE "VANE BACKFILL DETAIL" OR AS SPECIFIED BY THE CONSTRUCTION SUPERVISOR.

ROCK CROSS-VANE DETAIL

NOT TO SCALE

EROSION CONTROL GENERAL NOTES

A. KEEP SITE MODIFICATION TO A MINIMUM.

1. EXPOSE AREAS OF OF BARE SOIL TO EROSIVE ELEMENTS FOR THE SHORTEST TIME POSSIBLE.
2. SAVE AND PROTECT DESIRABLE EXISTING VEGETATION WHERE POSSIBLE. ERECT BARRIERS TO PREVENT DAMAGE FROM CONSTRUCTION EQUIPMENT. ORANCE SNOW FENCE OR SURVEYORS. FLAGGING SHALL BE USED TO PREVENT DISTURBANCE OF TURTLE NESTING SITES IDENTIFIED IN THE PRE-CONSTRUCTION SURVEY THAT IS TO OCCUR ONE WEEK PROIR TO THE START OF WORK.

B. MINIMIZE POLLUTION OF WATER DURING CONSTRUCTION ACTIVITIES.

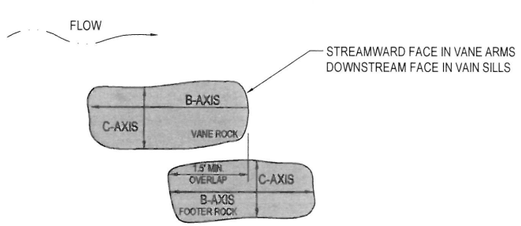
1. MONITOR WEATHER CLOSELY AND ADJUST ACTIVITIES TO PREVENT STORM / FLOOD RELATED DAMAGE.
2. PROTECT FINE-GRAINED BARE SOIL AREAS EXPOSED BY GRADING ACTIVITIES WITH QUICK ESTABLISHING VEGETATION OR MULCHES.
3. △3 USE DIVERSIONS AS SHOWN ON PLANS AND AS NEEDED TO DIRECT WATER FLOW AROUND THE CONSTRUCTION AREA AND AWAY FROM THE EROSION PRONE AREAS. INSTALL SIGNAGE UPSTREAM OF DIVERSION TO DIRECT RECREATIONAL BOATERS SAFELY AROUND WORK AREA.
4. PLACE CONSTRUCTION FACILITIES, MATERIALS, AND EQUIPMENT STORAGE AREAS AWAY FROM FLOWING WATER.
5. SEDIMENT PROTECTION AND ITS INTRODUCTION TO THE RIVER SHALL BE MINIMIZED. STREAM RESTORATION PROJECTS TYPICALLY REQUIRE WORK IN AND ADJACENT TO FLOWING WATER AND, AS A RESULT, SOME TURBIDITY IS UNAVOIDABLE. THE MOST EFFECTIVE METHODS OF MINIMIZING TURBIDITY ARE CAREFUL PLANNING TO AVOID AND MINIMIZE WORK IN FLOWING WATER, DIVERTING FLOWING WATER AROUND WORK AREAS WHERE FINE MATERIALS ARE ENCOUNTERED.
6. IN-STREAM WORK SHALL OCCUR ONLY DURING PERIODS OF LOW FLOWS. CONSTRUCTION SHALL BE PLANNED TO MINIMIZE WORK IN FLOWING WATER.
7. △3 MATERIAL CONTAINING HUMUS OR ORGANIC MATTER SHALL NOT BE APPLIED TO FLOOD PLAIN SURFACES BETWEEN SEPTEMBER 15 AND APRIL 15. HUMUS SHALL ONLY BE APPLIED TO FLOOD PLAINS IF IT CAN BE SEEDED AND MULCHED BY SEPTEMBER 15 SO THAT VEGETATIVE COVER WITH WINTER RYE CAN BE ESTABLISHED PRIOR TO THE END OF THE GROWING SEASON. THIS CONDITION SHALL NOT AFFECT THE ESTABLISHMENT OF SURFACES USING GRANULAR MATERIAL.
8. THE CONTRACTOR SHALL MAINTAIN EROSION CONTROL AND DIVERSION MEASURES IN GOOD CONDITION UNTIL SUCH TIME THAT THE MEASURES ARE NO LONGER NEEDED. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL REMOVE ANY TEMPORARY EROSION CONTROL MEASURES INSTALLED DURING CONSTRUCTION AND RESTORE ALL DISTURBED AREAS TO PRE-PROJECT CONDITIONS OR BETTER.
9. A SUPPLY OF LARGE STOTE (NHDOT CLASS 'B' OR LARGER) AND GEOTEXTILE FABRIC SHALL BE KEPT ON SITE AND MADE AVAILIBLE FO USE IN PROTECTING THE CONSTRUCTION AREA IN THE EVENT OF FLOODING.
10. THE CONTRACTOR SHALL PROVIDE FOR STABILIZED CONSTRUCTION ENTRANCES. WICH MUST BE MAINTAINED SO AS TO PREVENT TRACKING OR FLOWING OF SEDIMENTS ONTO PUBLIC ROADWAYS. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAYS SHALL BE REMOVED IMMEDIATELY.
11. EXISTING ROADS USED TO ACCESS THE PROJECT AREA SHALL BE RESTORED TO THE PRE-PROJECT CONDITIONS OR BETTER. USE OF DIRT ACCESS ROADS SHALL BE MINIMIZED WHEN WET.
12. ROADWAYS CREATED TO ACCESS THE PROJECT AREA SHALL BE REMOVED AND DISTURBED AREAS RESTORED TO PRE-PROJECT CONDITIONS BY APPLYING HUMUS, SEED, AND MULCH.
13. MATERIALS SUCH AS JUTE MESH, MULCH NETTING, AND OTHER PRODUCTS MANUFACTURED FOR EROSION CONTROL SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND INSTRUCTIONS.
14. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT THE SPILL OF CHEMICAL POLLUTANTS WHCIH MAY INCLUDE, BUT ARE NOT LIMITED TO. FUEL, OIL, GREASE, AND HYDRAULIC FLUID.
15. ALL EQUIPMENT USED ON THE PROJECT SHALL BE FREE OF LEAKS AND EXCESSIVE DEPOSITS OF MATERIALS SUCH AS FUEL, HYDRAULIC FLUID, AND OTHER LUBRICANTS.
16. AT THE START OF EACH WORKDAY, THE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF EACH PIECE OF EQUIPMENT TO CHECK FOR LEAKS. DURING EQUIPMENT OPERATIONS, THE CONTRACTOR SHALL WATCH FOR LEAKS WHICH MAY DEVELOP.
17. IN THE EVENT A PIECE OF EQUIPMENT DEVELOPS A LEAK DURING THE CONSTRUCTION WORK, THE CONTRACTOR SHALL IMMEDIATELY REMOVE THE MACHINE FROM THE RIVER CHANNEL AREA AND SHALL REPAIR THE LEAK. ALL EXCESS FLUIDS WILL BE CLEANED FROM THE MACHINE PRIOR TO ITS RETURE TO THE WORK AREA. ANY SPILLAGE OF FLUIDS DURING REPAIRS SHALL BE CLEANED UP, WITH CONTAMINATED SOIL REMOVED FROM THE PROJECT AREA AND DISPOSED OF IN AN APPROVED LOCATION FOR THE TYPE OF MATERIALS.
18. THE CONTRACTOR SHALL PROVIDE FOR SAFE FUELING OF ALL EQUIPMENT WITHIN THE WORK AREA. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE FUELED WITHIN THE RIVER CHANNEL AREA.
19. ALL FUEL STORED ON SITE MUST BE IN A SUITABLE CONTAINER. ANY FUEL STORAGE CONTAINER USED ON SITE WHICH HAS A CAPACITY OF GREATER THAN FIVE (5) GALLONS MUST BE CONSTRUCTED OF A DOUBLE WALL DESIGN OR MUST HAVE A SUITABLE CONTAMINANT STRUCTURE AS PART OF THE TANK. TANKS SHALL MEET NFPA STANDARDS.
20. IN THE EVENT THAT THE CONTRACTOR MUST SERVICE OR REPAIR EQUIPMENT DURING CONSTRUCTION, APPROPRIATE MEASURES WILL BE TAKEN TO PREVENT CONTAMINATION OF THE SOIL AND/OR WATER DURING THE SERVICE/REPAIR OPERATIONS. UNDER NO CIRCUMSTANCES WILL EQUIPMENT BE SERVICED IN THE STREAM CHANNEL AREA. ALL EQUIPMENT MUST BE REMOVED FROM THE CHANNEL AREA BEFORE SERVICING.
21. ALL WASTE LUBRICANTS AND OTHER CHEMICALS WIL BE DISPOSED OF IN SEALED, WATER TIGHT TANKS. NO MORE THAN FIVE (5) GALLONS OF WASTE LUBRICANTS WILL BE RETAINED ON SITE. ALL WASTE FLUIDS, FILTERS, PARTS AND OTHER ITEMS RELATED TO MACHINERY SERVICE AND REPAIR SHALL BE REMOVED FROM THE WORK AREA AND DISPOSED OF IN AN APPROPRIATE MANNER.
22. THE CONTRACTOR SHALL PROVIDE ADEQUATE SANITARY FACILITIES FOR THEIR WORK FORCE AND PROTECT OBSERVERS. CHEMICAL TOILETS SHALL BE PROVIDED IN A QUANTITY THAT IS CONSISTEN WITH THE REQUIREMENTS OF STATE AND/OR FEDERAL REGULATIONS. CHEMICAL TOILETS WILL BE PLACED NO CLOSER THAN 75 FEET FROM THE EDGE OF FLOWING WATER. THE CONTRACTOR WILL PROVIDE FOR ROUTINE MAINTENANCE AND CLEANING OF THE SANITARY FACILITIES.

C. PROTECT AREA AFTER CONSTRUCTION.

1. ESTABLISH WINTER RYE GRASS OR OTHER SUITABLE VEGETATION ON ALL DISTURBED AREAS THAT ARE ABOVE BANK FULL. SELECT SPECIES ADAPTED TO THE SITE CONDITIONS AND THE FUTURE USE OF THE AREA.

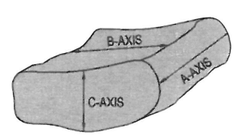
DEWATERING NOTES

1. THE CONTRACTOR SHALL PREPARE A PLAN FOR CONTROLLING STREAMFLOWS DURING INSTALLATION OF THE ROCK VANE AND CROSS VANE STRUCTURES. THIS PLAN SHALL BE APPROVED BY THE PROJECT ENGINEER PRIOR TO CONSTRUCTION.
2. TO ALLOW FOR OPTIMUM CONSTRUCTION OF IN-STREAM STRUCTURES AND CHANNEL EXCAVATION, A TEMPORARY DIVERSION CHANNEL SHALL BE USED TO DIRECT FLOWING WATER AROUND THE WORK AREA WHERE POSSIBLE.
3. IN SOME INSTANCES, FLOWS MAY EXCEED THOSE REASONABLY EXPECTED TO BE DIVERTED OR DEWATERED AND THE CONTRACTOR MAY BE REQUIRED TO SUSPEND WORK UNTIL SUCH TIME THAT THE FLOWS RETURN TO A MANAGEABLE LEVEL.
4. WHEN FLOODING CONDITIONS CAN EB REASONABLY EXPECTED, THE CONTRACTOR SHALL PREPARE THE SITE IN A MANNER WHICH MINIMIZES THE POTENTIAL FOR FLOOD-RELATED DAMAGE AND REMOVE EQUIPMENT, MATERIALS SUBJECT TO MOBILIZATION, AND FUEL TANKS FROM FLOOD-PRONE AREAS.



VANE AND FOOTER ROCK OVERLAP DETAIL

NOT TO SCALE



VANE ROCKS

	A-AXIS	B-AXIS	C-AXIS
MINIMUM	6 FT	4 FT	3 FT

FOOTER ROCKS

	A-AXIS	B-AXIS	C-AXIS
MINIMUM	5 FT	3.5 FT	2.5 FT

VANE AND FOOTER ROCK DIMENSION DETAIL

NOT TO SCALE

△3 MONITORING

1. A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL OR A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE ("MONITOR") SHALL BE EMPLOYED TO INSPECT THE SITE FROM THE START OF ALTERATION OF TERRAIN ACTIVITIES UNTIL THE SITE IS IN FULL COMPLIANCE WITH THE ALTERATION OF TERRAIN PERMIT ("PERMIT").
2. DURING THIS PERIOD, THE MONITOR SHALL INSPECT THE SUBJECT SITE AT LEAST ONCE A WEEK, AND IF POSSIBLE, DURING ANY 1/2 INCH OR GREATER RAIN EVENT (I.E. 1/2 INCH OR PRECIPITATION OR MORE WITHIN A 24 HOUR PERIOD). IF UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THIS EVENT.
3. THE MONITOR SHALL PROVIDE TECHNICAL ASSISTANCE AND RECOMMENDATIONS TO THE CONTRACTOR ON THE APPROPRIATE BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROLS REQUIRED TO MEET THE REQUIREMENTS OF RSA 485-A:17 AND ALL APPLICABLE DES PERMIT CONDITIONS.
4. WITHIN 24 HOURS OF EACH INSPECTION, THE MONITOR SHALL SUBMIT A REPORT WITH PHOTOGRAPHS TO DES VIA EMAIL (TO CRAIG RENNIE AT: craig.rennie@des.nh.gov)
5. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR'S NAME, ADDRESS, AND PHONE NUMBER SHALL BE SUBMITTED TO DES VIA EMAIL (SEE ABOVE).

RIPARIAN SHRUB & SAPLING TRANSPLANT NOTES

1. FILL AREAS AND OTHER AREAS IDENTIFIED ON THE PLANS ARE TO BE VEGETATED WITH MATURE RIPARIAN SHRUBS AND SAPLINGS TRANSPLANTED FROM BORROW AREAS OR OTHER SITES APPROVED BY THE ENGINEER.
2. RIPARIAN SHRUBS AND SAPLINGS SHALL BE NATIVE, MATURE STOCK WITH ROOTED DEPTH OF AT LEAST 3 FEET. ALLOWABLE SPECIES INCLUDE WILLOW, ALDER, AND DOGWOOD. SHRUB DONOR AREAS SHALL BE APPROVED BY THE ENGINEER PRIOR TO HARVEST.
3. RIPARIAN SHRUBS AND SAPLINGS MUST BE HARVESTED SUCH THAT THE MAJORITY OF THE ROOTMASS IS OBTAINED AND DAMAGE TO THE PLANT MATERIAL IS MINIMAL. ROOTS SHALL BE DUG TO A MINMUM DEPTH OF 3 FEET.
4. THE CONTRACTOR SHALL STAGE TRANSPLANTING OF SHRUBS AND SAPLINGS SUCH THAT THE MATERIALS CAN BE IMMEDIATELY RE-PLANTED. DOUBLE HANDLING OF THE SHRUBS AND SAPLINGS SHALL BE AVOIDED.
5. THE CONTRACTOR SHALL AVOID EXCESSIVE DAMAGE TO THE SHRUB AND SAPLING TOPS DURING THE HARVESTING AND PLANTING PROCESS. LARGE SHRUBS AND SAPLINGS SHALL BE BUNDLED AND TIED PRIOR TO DIGGING TO REDUCE BARK DAMAGE.
6. SHRUBS AND SAPLINGS SHALL BE PLACED IN A HOLE AS DEEP OR DEEPER THAN THE HEIGHT OF THE ROOTBALL, BUT IN NO CASE LESS THAN 3 FEET. BACKFILLL AND TAMP TO REMOVE VOIDS IN THE SOIL. WATER SHALL BE USED TO WASH BACKFILL MATERIAL AROUND THE ROOTMASS.
7. WITHIN 50 FEET OF THE RIVERANK:
   SHRUBS AND SAPLINGS SHALL BE PLANTED ON 15 FOOT CENTERS IN STAGGERED ROWS PARALLELING THE RIVERBANKS. THE FIRST ROW SHALL BE OFFSET APPROXIMATELY 2.5 FEET FROM THE TOP OF BANK.

   BEYOND 50 FEET FROM THE TOP OF BANK:
   SHRUBS AND SAPLINGS SHALL BE PLANTED 25 FEET ON CENTER (MAXIMUM) OR AS DIRECTED BY THE ENGINEER.
8. WHERE APPROPRIATE RIPARIAN SHRUB AND SAPLING DONOR AREAS SHALL BE RESTORED AS DIRECTED BY THE ENGINEER.
9. WHERE APPROPRIATE, AREAS DISTURBED TO GAIN ACCESS TO DONOR AREAS SHALL BE RESTORED TO CONDITIONS EQUAL OR BETTER THAN ORIGINAL CONDITION.

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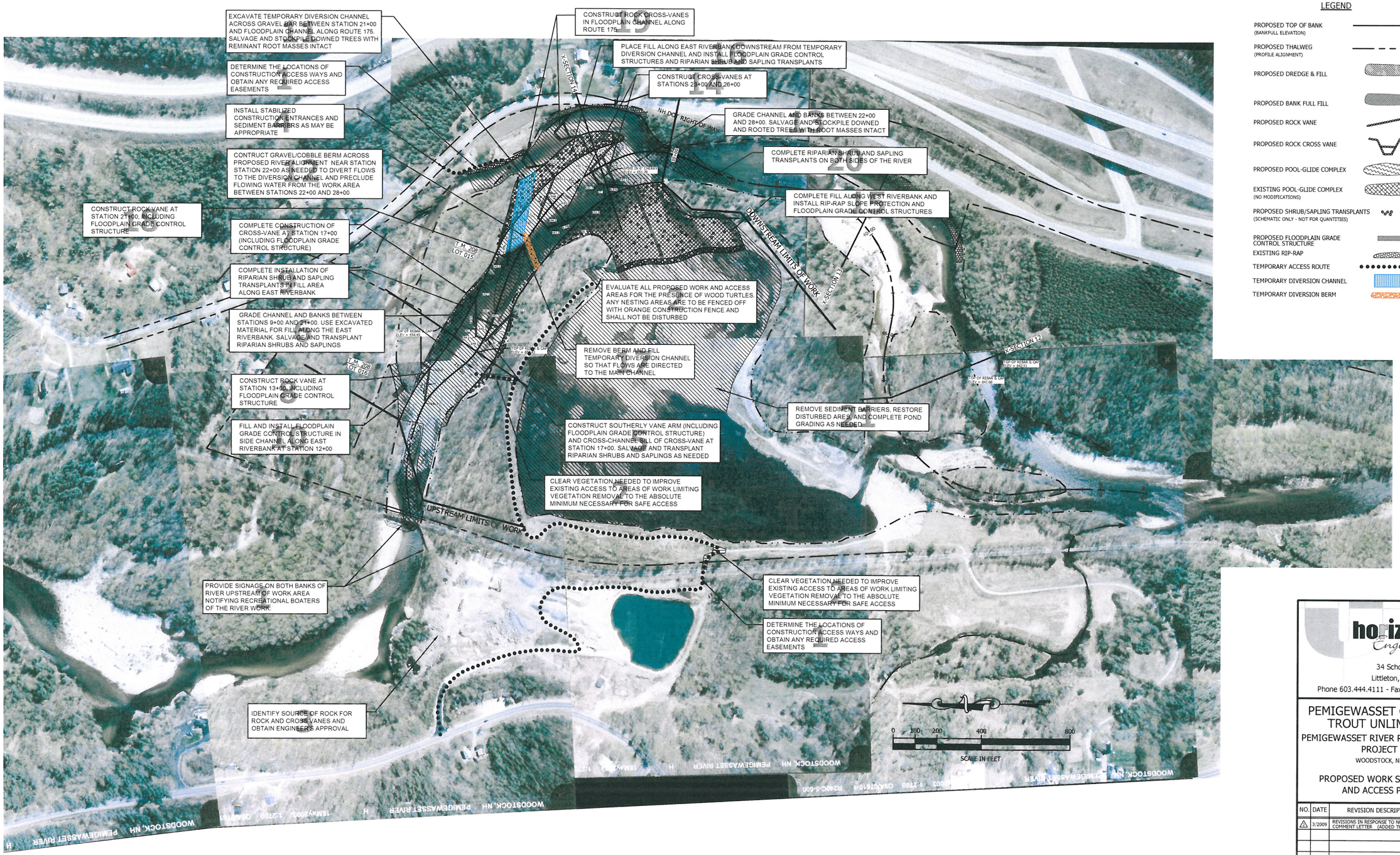
PEMIGEWASSET CHAPTER
TROUT UNLIMITED
PEMIGEWASSET RIVER RESTORATION PROJECT
WOODSTOCK, NH

GENERAL NOTES AND DETAILS

NO.	DATE	REVISION DESCRIPTION	ENG	DWG
1	1/21/09	REVISE NOTES AND DETAILS	TBP	JFM
△1	3/2009	REVISIONS IN RESPONSE TO NHDES COMMENT LETTER	TBP	KRP

DATE: JAN 2009	PROJECT #: 04131/06195
ENGIN'D BY: TBP	DRAWN BY: SPS/JFM
CHECK'D BY: SPS	ARCHIVE #: H-4065

SHEET 9 OF 10



LEGEND

- PROPOSED TOP OF BANK (BANKFULL ELEVATION)
- PROPOSED THALWEG (PROFILE ALIGNMENT)
- PROPOSED DREDGE & FILL
- PROPOSED BANK FULL FILL
- PROPOSED ROCK VANE
- PROPOSED ROCK CROSS VANE
- PROPOSED POOL-GLIDE COMPLEX
- EXISTING POOL-GLIDE COMPLEX (NO MODIFICATIONS)
- PROPOSED SHRUB/SAPLING TRANSPLANTS (SCHEMATIC ONLY - NOT FOR QUANTITIES)
- PROPOSED FLOODPLAIN GRADE CONTROL STRUCTURE
- EXISTING RIP-RAP
- TEMPORARY ACCESS ROUTE
- TEMPORARY DIVERSION CHANNEL
- TEMPORARY DIVERSION BERM

horizons Engineering LLC
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Phone 603.444.4111 - Fax 603.444.1343

PEMIGEWASSET CHAPTER TROUT UNLIMITED

PEMIGEWASSET RIVER RESTORATION PROJECT

WOODSTOCK, NH

PROPOSED WORK SEQUENCE AND ACCESS PLAN

NO.	DATE	REVISION DESCRIPTION	ENG	DWG
1	3/2009	REVISIONS IN RESPONSE TO NHDES COMMENT LETTER (ADDED THIS SHEET)	TBP	KRP

DATE: JAN 2009	PROJECT #: 04131/06195
ENGIN'D BY: SPS	DRAWN BY: SPS/JFM
CHECK'D BY: TBP	ARCHIVE #: H-4065

SHEET 10 OF 10

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Appendix C

Sample Abutter Notification Letter

Project No.06195
January 17, 2007

Janet K. & Daniel F. Adams
Owner of Woodstock Map 210, Lot 010-000
Post Office Box 128
Woodstock, New Hampshire 03293

Subject: Pemigewasset River Restoration Project

Dear Mr. & Mrs. Adams:

As you may or may not be aware, over the past couple of years a portion of the Pemigewasset River in Woodstock has been under study to determine sources of accelerated bank erosion and river instability. The local Pemigewasset chapter of Trout Unlimited acquired some grant funds for a private company (Horizons Engineering) to evaluate the river and provide the chapter with some ideas of ways to improve fish habitat while at the same time lessening bank erosion. Horizons Engineering, a firm out of Littleton, NH with significant experience in river projects (including the state contract to evaluate the devastating floods in Southwest NH in Alstead), has completed their assessment of the river and has developed some design ideas that could be implemented.

We are contacting you as an abutter or nearby landowner to discuss these ideas with you. We have invited the engineers to be available to discuss their findings and suggested improvements and answer questions at a meeting at 7:00 PM on Monday February 5th, at the Woodstock Town Offices. It is very important to us that as an abutter you have a chance to ask questions and later grant permission to perform work in the river near your property. The best chance to do this will be at this meeting. If for some reason you are unable to attend this meeting please let us know by calling (603) 444-4111 and asking for the Horizons Engineering Project Manager, Tyler Phillips.

Sincerely,

Todd Baldwin
President
Pemigewasset Chapter of Trout Unlimited

Appendix D

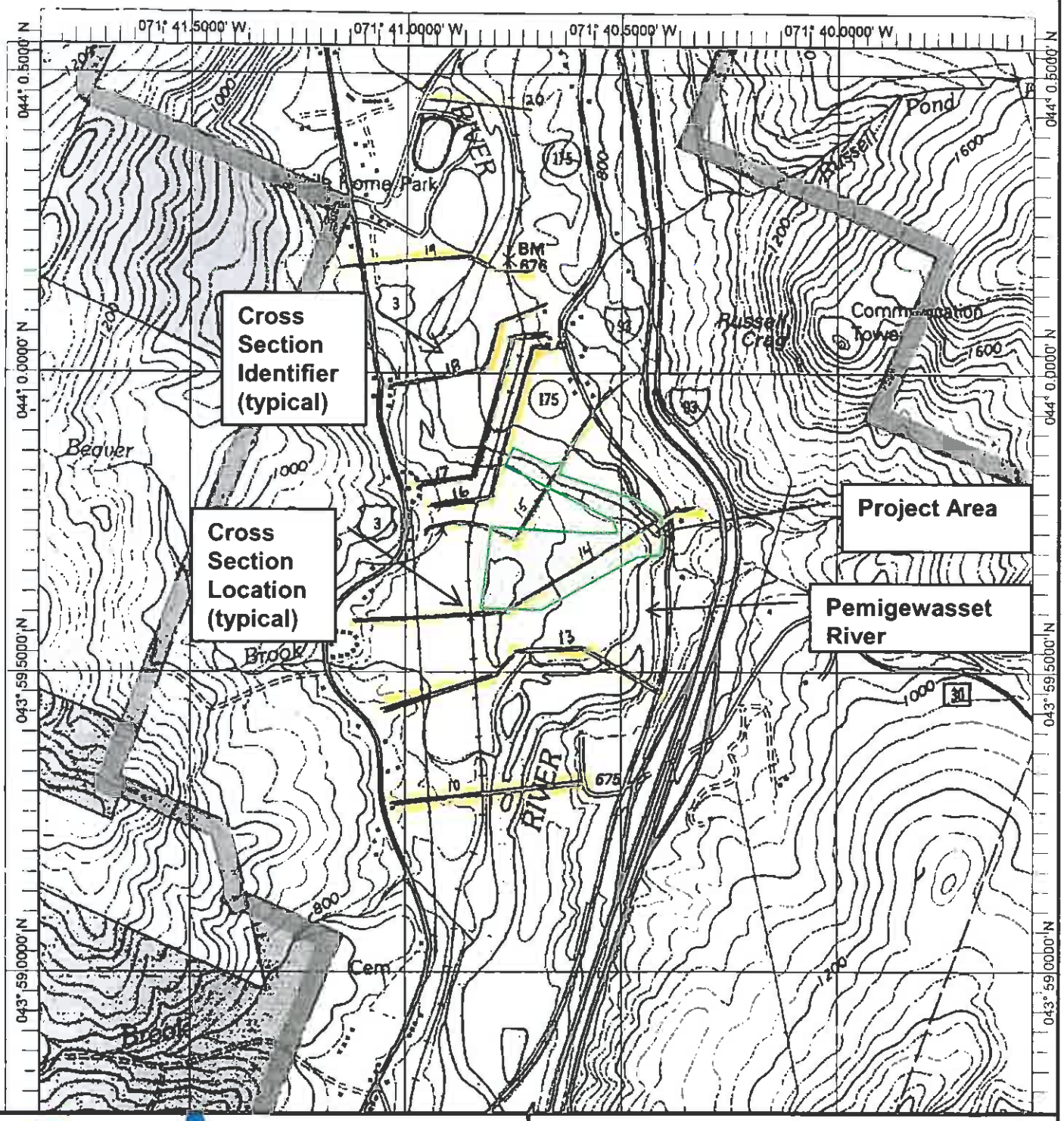
2/5/2007 Meeting Attendance List

February 5, 2007 Meeting ~ **Trout Unlimited Pemigewasset River Project** ~ 7:00 PM Woodstock

NAME	PARCEL	PHONE	COMMENTS	
Dan + Janet Adams		745-3516		
Bob + Judy Cauley		745-6813		
Bruce Whitmore		968-7548		
Chris Boodmars	N/A	845-7214		
Kathy McIntyre	021	860-367-3796		
Gary Giordano	021	860-885-4892		
Taylor Kruse		508 [illegible]		
Danielle Bud John Duroche	555 DWH	745-4747		
Charles Harrington		745-3344		
Ethel & Kelly Clark		745-5099		
Lil + Len Sullivan		3016		
Juette Bugeaud		745-8918		
Vin Osgood		348 7199	I'll be glad to speak w/you Thanks	
Joyce + Steve Hackett III				
Kate O'Donnell	N/A	491-1486		
[illegible]		745-5099		
Steve Landry	DES			

Appendix E

Cross-Sections Location Map



horizons Engineering PLLC
34 School Street
Littleton, NH 03561
(603) 444-4111

Cross Section Location Map

Pemigewasset River Restoration Project

Woodstock, New Hampshire

Project No. 06195

Appendix F

Stormwater Pollution Prevention Plan

horizons Engineering LLC

STORMWATER POLLUTION PREVENTION PLAN

Pemigewasset Chapter of Trout Unlimited
Pemigewasset River Restoration
Woodstock, New Hampshire

USEPA CONSTRUCTION GENERAL PERMIT

STORMWATER POLLUTION PREVENTION PLAN

Pemigewasset River Restoration
Woodstock, New Hampshire

Prepared For:
Pemigewasset Chapter of Trout Unlimited
36 Chickenboro Rd
Thornton, NH 03285
Contact: Mr. Todd Baldwin

Prepared By:
Horizons Engineering, LLC
34 School Street
Littleton, NH 03561
(603) 444-4111
Contact: Mr. Tyler Phillips, CPESC

Project Number: 06195

Prepared: JULY 2009

Note: this document and all documentation required by this Permit must be retained for at least three (3) years from the date that Permit coverage expires or is terminated.

TABLE OF CONTENTS

Section Title	Page Number
1. General Purpose and General SWPPP Conditions	1
A. Purpose	1
2. General SWPPP Conditions and Liability	1
A. Conditions	1
3. Project and Site Information	1
A. Project Information	1
B. Site Information	1
4. Site and Activity Description	2
A. Owner Name	2
B. Operator Name	2
C. Nature of Project	2
D. Site Plan	3
5. Plan Availability	3
6. Stormwater Controls	4
A. Table of Controls	4
B. Stabilization Measures	5
C. Structural Controls Narrative	5
D. Post-Construction Stormwater Controls	5
E. Construction Materials	6
F. Tracking of Sediments by Vehicles and Dust Control	6
G. Construction Wastes	6
H. Pollutants From Sources Other Than Construction	6
7. Non-Stormwater Discharges	6
A. Excavation/Trench Dewatering	6
8. Maintenance of Controls	6
A. General	6
B. Specific	7
9. Inspections	7
A. Frequency	7
B. Inspector Qualifications	8
C. Inspection Records	8
10. Spills/Release Reporting	8
11. Records	9
A. Site Activity	9
B. Inspections	9
12. Notice of Termination	9
13. Endangered Species	10
14. Copy of EPA Construction General Permit	10
15. State and Local Permit Compliance	10
A. State Compliance	10
B. Local Compliance	10
16. Plan Updates	11
17. Total Maximum Daily Loads (TMDLs)	11
18. Other Applicable Requirements	11
A. Stormwater Infiltration	11
19. Certification	12
A. Owner	12
B. Operator/Contractor	12

List of Appendices

Appendix A - EPA CGP General Permit Conditions
Appendix B - Overview Plan
Appendix C - USGS Site Locus Map
Appendix D - Stormwater Management Site Plan Sheets
Appendix E - Site Inspection Form
Appendix F - Incident Reporting Form
Appendix G -Activity Log
Appendix H- Notice of Termination Form
Appendix I- Endangered Species Correspondence
Appendix J- EPA Construction General Permit and Signed Notice of Intent Form

1. General Purpose

A. Purpose:
   1) Identify all potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges leaving the project site
   2) Describe practices to be used to reduce pollutants in stormwater discharge leaving the project site
   3) Assure compliance with the terms of this Permit and the New Hampshire Department of Environmental Services Alteration of Terrain and Dredge and Fill Permits.

2. General SWPPP Conditions and Liability

A. Conditions:
   1) The Stormwater Pollution Prevention Plan (SWPPP) must be implemented as written from commencement of construction activity until Final Stabilization (defined by New Hampshire Department of Environmental Services (NHDES) as vegetative growth at 85% of original vegetative cover or 100% coverage by other durable surfacing such as pavement or river cobble/sand matrix) of disturbed areas or pre-defined individual project phases is complete.
   2) Once Final Stabilization has been achieved at the site no further inspections will be required for that project phase area.
   3) If sediment escapes from the site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize off-site impacts.
   4) In addition to these General SWPPP Permit conditions, EPA Construction General Permit conditions must be adhered to. A copy of these Permit conditions and the associated liability for non-compliance can be found in **Appendix A** of this SWPPP.

3. Project and Site Information

A. Project Information
   1) The name of the project is Pemigewasset River Restoration.
   2) The Horizons Engineering, LLC project number is 06195.

B. Site Information
   1) The Site is located off of Rte 175 in Woodstock, New Hampshire.
   2) The location of the development (relative to Route 175) and the wetland types found onsite, can be seen on the Overview Plan Sheet found in **Appendix B.**

4. Site and Activity Description

A. Owner Name:
   1) The Owner of the project is:
      The Pemigewasset Chapter of Trout Unlimited
      36 Chickenboro Rd
      Thornton, NH 03285
      Contact: Mr. Todd Baldwin

B. The Operator who will be constructing the project is:
      Alvin J. Coleman and Son, Inc.
      9 NH Route 113
      Conway, NH 03818-9505
      Attn: Bryan Bailey

C. Nature of Project
   1) Function
      a. Restore a degraded section of the Pemigewasset River and adjacent man-made pond in Woodstock, NH through a geomorphically compatible design that includes floodplain creation and installation of rock training structures.
   2) Sequencing of Disturbance Activities
      a. While certain sequencing of construction activities has been specified on the plans, no predefined project phases are anticipated.
   3) Estimated Total Acreage of Disturbance
      a. Approximately 37.5 acres will be disturbed.
      b. No change in the composite CN value for the site is anticipated to occur as no significant change to any hard surfaces is to occur.
   4) Soils
      a. The Natural Resource Conservation Service's County Soil Survey indicates that the following soils (wetland types) can be expected to be found onsite:
         i. R2UB1
   5) Location Map
      a. A USGS Project Locus Map showing the site location and Waters of the U.S. within one mile of the site can be found on the USGS location Plan found in **Appendix C**.

D. Site Plan

1) A Stormwater Management Site Plan containing the following features can be found in **Appendix D**:
   a. Direction of stormwater/river flow and approximate slopes anticipated after major grading activities
   b. areas of soil disturbance and areas that will not be disturbed
   c. locations of major structural and non-structural stormwater controls identified in this SWPPP
   d. locations where stabilization practices are expected to occur (vegetating);and
   e. equipment storage areas
   f. locations of all Waters of the U.S. located within the site
   g. locations where stormwater discharges to a surface water
2) Locations of off site material, waste, and borrow areas are not shown on this plan as it is anticipated that select materials (gravel, sand, stone) will come from a pit with the necessary erosion controls in place.
3) Locations of stockpile and material storage areas will be on an as needed basis, as much of the material is not entrainable in stormwater and thus no perimeter controls are anticipated to be needed.

5. Plan Availability

A. A copy of the SWPPP will be kept at the project site and at the following locations:

Pemigewasset Chapter of Trout Unlimited
36 Chickenboro Rd
Thornton, NH 03285
Contact: Mr. Todd Baldwin

Horizons Engineering, LLC
34 School Street
Littleton, NH 03561
Contact: Mr. Tyler Phillips, CPESC

6. Stormwater Controls

A. Table of Controls

Control Type	Location	Timing of Installation	Responsible Party	Spec/Sheet Reference
Silt Fence (SF)	Along the top of bank at access point off of Rte 175 if such access is used..	Prior to working near in the area identified at left	Alvin J. Coleman and Sons, Inc.	See Stormwater Management Site Plan Sheets and Detail Sheets
Construction Exit/Entrance (CE)	At Site exit where construction vehicles enter onto Rte 175	First day	Alvin J. Coleman and Sons, Inc.	See Stormwater Management Site Plan Sheets and Detail Sheets
River Diversion	At location shown on plans	Prior to performing downgradient work	Alvin J. Coleman and Sons, Inc.	See Stormwater Management Site Plan Sheet
Temporary Sanitary Facility	Near staging area	First day of operation	Alvin J. Coleman and Sons, Inc.	N/A
Turbidity Curtain	Near active work areas if turbidity above 10 NTUs extends beyond the project limits for extended periods of time	As needed at applicable locations	Alvin J. Coleman and Sons, Inc.	N/A

B. Stabilization Measures

1) Stabilization of the site will be accomplished in the following manner and consistent with 2) below:
   a. All areas are to be stabilized by using course riverine materials relocated to the proposed locations shown on the plans.
   b. Saplings will be transplanted from other areas of the site to initiate the long term river stabilization process.
2) Except as provided below, stabilization measures must be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.
   a. Where stabilization by the 14th day is precluded by snow cover or frozen ground conditions, stabilization measure must be initiated as soon as practicable.
   b. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the site.
3) No fertilizer, except limestone, can be used within 25 feet of the Ordinary High Water Line along the Pemigewasset River. From 25 feet to 250 feet, low phosphate, slow release nitrogen fertilizer may be used on vegetated areas.
   a. Low phosphate, slow release nitrogen fertilizer means fertilizer that is guaranteed, as indicated on the package label, to contain not more than 2 percent phosphorous and a nitrogen component that is at least 50 percent slow release nitrogen.

C. Structural Controls Narrative

1) A combination of erosion prevention and sediment controls are planned. These controls can be seen on the Stormwater Management Site Plan Sheets found in **Appendix D** and in the Table of Controls above.
2) Removal of sediment accumulations trapped by the silt fence will be accomplished when 50% of the storage capacity is used up or when the contributing drainage areas is stabilized, whichever is reached first.

D. Post-Construction Stormwater Controls

1) The project is not anticipated to generate new stormwater, as such completion of the project itself will assist in controlling both stormwater and river flow.

E. Construction Materials
   1) The following construction materials are expected to be kept on site:
      a. Fuel
      b. Oil
      c. Hydraulic fluid
      d. Grease
      e. Lime
      f. Various other durable construction related materials
   2) Leachable or entrainable construction materials will be kept in a Material Storage area designed to prevent the migration of such material to Waters of the US. Any non-containerized hazardous leachable materials will be located on an impervious liner and under cover.

F. Tracking of Sediments by Vehicles and Dust Control
   1) Construction stabilized entrance/exit will be located where vehicles from the site enter upon a paved surface at the site`s entrance/exits.
   2) Nuisance dust will be controlled through the application of water.

G. Construction Wastes
   1) Construction materials will be kept from entering Waters of the U.S. by routinely policing the site for windblown or otherwise scattered materials on a weekly basis and after large wind storms. All non-usable construction waste materials will be properly disposed of.
   2) Concrete use is not anticipated.
   3) A sanitary facility (Port-a-John) will be made available.

H. Pollutants From Sources Other Than Construction
   1) Not anticipated.

7. Non-stormwater Discharges

A. Excavation/trench Dewatering
   1) Not anticipated

8. Maintenance of Controls

A. General
   1) All erosion and sediment control measures and other protective measures identified in the SWPPP must be maintained in effective operating condition.

If site inspections (see Section 9 below) identify controls that that are not operating effectively, maintenance must be performed as soon as possible and before the next storm event, whenever practicable, to maintain the continued effectiveness of stormwater controls.

2) If existing controls need to be modified or if additional controls are necessary for any reason, implementation must be completed before the next storm event, whenever practicable. If implementation before the next storm event is impractical, the situation must be documented in the SWPPP on the Inspection Form (found in **Appendix E**) and alternative controls must be implemented as soon as possible.

B. Specific

1) All control measures must be properly maintained in accordance with any relevant manufacturer specifications and good engineering practices. If periodic inspections or other information indicates a control has been used inappropriately, or incorrectly, the operator must replace or modify the control for the site situations as soon as practicable.
2) Silt Fence, and all other sediment retention devices must be cleaned out when the sediment occupies 50% of the device's storage capacity.
3) If sediment escapes the construction site, offsite accumulations of sediment must be removed by hand immediately. Note that sediments that enter wetlands, streams or other water bodies outside of the limits of construction may require a NH DES Wetland Dredge and Fill Permit prior to their removal.

9. Inspections

A. Frequency

Inspection frequency needed to comply with the terms of this permit is as follows:

1) Once per week.
2) Inspection may be reduced to once a month during frozen ground conditions.
3) Inspections may be waived if, and when, *all* of the following conditions occur:
   a. Frozen ground conditions are expected to continue for extended periods of time (i.e., more than a month)
   b. land disturbance activities have been suspended
   c. all disturbed areas have been temporarily stabilized
   d. The beginning and ending dates of the waiver period are documented in the SWPPP.

   Once these conditions have been met, inspections may be suspended until one month before the ground thaws. The beginning and ending of the waiver period will be recorded on the Inspection Forms (see **Appendix E**).

B. Inspector Qualifications
   1) Inspections will be conducted by Qualified Personnel.
      a. Qualified Personnel is defined by EPA as "a person knowledgeable in the principles and practices of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact stormwater quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of stormwater discharges form the construction activity".

C. Inspection Records
   1) All inspection activities will be recorded on Inspection Forms. One inspection form shall be used for each inspection. A copy of the inspection form is provided in **Appendix E.** Copies of completed inspection forms should be kept with the SWPPP and retained by the operator for at least three years from when the Notice of Termination has been filed.

10. Spills/Release Reporting

A. Spillage or release of petroleum products or hazardous materials shall not be allowed under this permit.

B. All reasonable steps shall be taken to prevent the discharge of such materials to the environment.
   1) No fueling shall occur within wetland areas.
   2) Preventative measures include locating products on a bermed impervious liner in within the Material and/or Equipment Storage Area where containers are unlikely to be knocked over or backed into by vehicles and construction equipment.
   3) Hydraulic Equipment should be kept in good working order and must be free from significant leaks, especially when working near surface waters or wetlands.
   4) A spill clean up kit should be kept on hand near the storage area to clean up drips and small spills.

C. Spills or discharges of any size shall be reported to the owner in a timely manner. Releases in excess of reportable quantities (25 gallons if to the ground, or any quantity if to water) shall be reported consistent with applicable local, state, and federal requirements.

D. Spills or discharges of any discernable quantity of petroleum or hazardous materials shall be recorded on the Incident Reporting Form found in **Appendix F**. Steps shall be taken immediately to prevent a repeat situation and the SWPPP shall be revised within 7 calendar days to reflect such changes.

11. Records

A. Site Activity
   1) The following activities shall be recorded on an Activity Log. A sample Activity Log can be found in **Appendix G**:
      a. Dates when major grading activities occur
      b. dates when construction activities temporarily or permanently cease on a portion of the site
      c. dates when stabilization measures are initiated
   2) Activity Logs sheets should be kept with the SWPPP.

B. Inspections
   1) Completed inspection forms should be retained with the SWPPP for three years after the Notice of Termination is filed.

12. Notice of Termination

A. A Notice of Termination (NOT) must be filed when permit coverage is no longer needed. A NOT must be filed by all parties who have submitted a Notice of Intent (NOI). A copy of the NOT form is included in **Appendix H**. The NOT must be submitted within 30 days of one of the following conditions being met:
   1) Final stabilization has been achieved on all portions of the site for which you are responsible or on a phase by phase basis. Final Stabilization is defined by EPA as a well-distributed vegetative growth at 70% of original vegetative cover or other durable material such as stone or cobble surfacing.
   2) Another operator has assumed control (in accordance with Section 11.C of **Appendix A**) over all areas of the site that have not been finally stabilized.
   3) Coverage under and individual or alternative general NPDES permit has been obtained.

B. All NOTs must be submitted to one of the following addresses:
   1) For regular U.S. Mail delivery:

      EPA Storm Water Notice Processing Center
      Mail Code 4203M
      U.S. EPA
      1200 Pennsylvania Avenue, NW
      Washington, DC 20460

   2) For overnight/express mail delivery:

      EPA Stormwater Notice Processing Center
      Room 7420
      U.S. EPA
      1201 Constitutional Avenue, NW
      Washington, DC 20460

C. Authorization to discharge terminates at midnight of the day the NOT is signed.

13. Endangered Species

A. A file review for federally listed endangered species has been conducted by The NH Division of Forest and Lands (Natural Heritage Bureau). No such species are known to exist within, or under the influence of the site. Correspondance with the New Hampshire Fish and Game Department (NHF&G) indicates that Wood Turtles may be present onsite and therefore a daily evaluation for nesting turtles shall be undertaken in all areas of active work. Any nesting turtle areas shall be fenced off and any turtles not on nests shall be relocated to outside the project area after contacting Kim Tuttle at NH F&G. The results of this evaluation can be found in **Appendix I.**

14. Copy of EPA Construction General Permit

A. A Copy of the EPA Construction General Permit and the Signed Notice of Intent (NOI) can be found in **Appendix J**.

15. State and Local Permit Compliance

Federal requirements specified in this SWPPP shall be considered additive. In cases where Federal requirements and State or local standards conflict, the more stringent requirement or standard shall apply.

A. State Compliance
   1) NH DES Alteration of Terrain Permit
      a. A NHDES AOT permit has been issued for the site. All earth disturbance activity, stabilization measures, and stormwater controls will performed/constructed consistent with the Permit conditions
   2) NH DES Wetland Dredge and Fill Permit
      a. A NHDES Dredge and Fill permit has been issued for the site. All earth disturbance activity, stabilization measures, and stormwater controls will performed/constructed consistent with the Permit conditions

B. Local Compliance
   1) The project has been designed and demonstrated that it will not have a significant effect on Base Flood Elevations and therefore satisfies National Flood Insurance Program requirements.

16. Plan Updates

A. The SWPPP (including any SWPPP associated plan sheets) will be amended whenever there is a change in the design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants to the Waters of the U.S. that has not previously been addressed in the SWPPP.

B. The SWPPP will be amended if during inspection or investigations by site staff, or by local, state, tribal or federal officials, it is determined that the SWPPP is ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the construction site.

C. Based upon the results of an inspection, the SWPPP will be modified as necessary to include additional or modified controls designed to correct problems identified.

D. Revisions to the SWPPP will be completed within seven (7) calendar days following the inspection. Implementation of these additional or modified controls must be completed before the next storm event, whenever practicable. If implementation before the next storm event in impracticable, the situation must be documented in the SWPPP on the Inspection Form (found in **Appendix E**) and alternative controls must be implemented as soon as possible.

17. Total Maximum Daily Loads (TMDLs)

A. There are no Total Maximum Daily Loads established (for applicable pollutants of concern) for waters near the site.

18. Other Applicable Requirements

A. Stormwater Infiltration
   1) Stormwater infiltration structures are ill suited to the site due to the shallow depth to groundwater.

19. Certification

A. By Owner

I _____, certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

B. By Operator

I _____, certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

APPENDIX A

EPA CGP
GENERAL CONDITIONS

Appendix G - Standard Permit Conditions

STANDARD PERMIT CONDITIONS

1. Duty To Comply

You must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

A. You must comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

B. The Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. §2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. §3701 note) (currently $27,500 per day for each violation).

   The Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than 2 years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

C. Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Pursuant to 40 CFR Part 19 and the Act, administrative penalties for Class I violations are not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. §2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. §3701 note) (currently $11,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $27,500). Pursuant to 40 CFR Part 19 and the Act, penalties for Class II violations are not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. §2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. §3701 note) (currently $11,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $137,500).

2. Duty to Reapply

If you wish to continue an activity regulated by this permit after the expiration date of this permit, you must apply for and obtain a new permit.

3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for you in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to Mitigate

You must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Proper Operation and Maintenance

You must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by you to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by you only when the operation is necessary to achieve compliance with the conditions of this permit.

6. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. Your filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

7. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privileges.

8. Duty to Provide Information

You must furnish to EPA, within a reasonable time, any information which EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. You must also furnish to EPA upon request, copies of records required to be kept by this permit.

9. Inspection and Entry

You must allow EPA, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

A. Enter upon your premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

D. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

10. Monitoring and Records

A. Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity.

B. You must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of EPA at any time.

C. Records of monitoring information must include:

   1. The date, exact place, and time of sampling or measurements;
   2. The individual(s) who performed the sampling or measurements;
   3. The date(s) analyses were performed

4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and
6. The results of such analyses.

D. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

E. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

11. Signatory Requirements

A. All applications, including NOIs, must be signed as follows:

1. For a corporation: By a responsible corporate officer. For the purpose of this Part, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
2. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or
3. For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

B. All reports required by this permit, including SWPPPs, must be signed by a person described in Appendix G, Subsection 11.A above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described in Appendix G, Subsection 11.A;
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
3. The signed and dated written authorization is included in the SWPPP. A copy must be submitted to EPA, if requested.

C. Changes to Authorization. If an authorization under Subpart 2.1 is no longer accurate because a different operator has responsibility for the overall operation of the construction site, a new NOI satisfying the requirements of Subpart 2.1 must be submitted to EPA prior to or together with any reports, information, or applications to be signed by an authorized representative. The change in authorization must be submitted within the time frame specified in Subpart 2.2, and sent to the address specified in Subpart 2.3.

D. Any person signing documents required under the terms of this permit must include the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is,

to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

E. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

12. Reporting Requirements

A. Planned changes. You must give notice to EPA as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR §122.42(a)(1).

B. Anticipated noncompliance. You must give advance notice to EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

C. Transfers. This permit is not transferable to any person except after notice to EPA. EPA may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (See 40 CFR §122.61; in some cases, modification or revocation and reissuance is mandatory.)

D. Monitoring reports. Monitoring results must be reported at the intervals specified elsewhere in this permit.

1. Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by EPA for reporting results of monitoring of sludge use or disposal practices.

2. If you monitor any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by EPA.

3. Calculations for all limitations which require averaging of measurements must use an arithmetic mean.

E. Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.

F. Twenty-four hour reporting.

1. You must report any noncompliance which may endanger health or the environment. Any information must be provided orally within 24 hours from the time you become aware of the circumstances. A written submission must also be provided within five days of the time you become aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

2. The following shall be included as information which must be reported within 24 hours under this paragraph.

a. Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR §122.41(g).)

b. Any upset which exceeds any effluent limitation in the permit

c. Violation of a maximum daily discharge limitation for any of the pollutants listed by EPA in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)

3. EPA may waive the written report on a case-by-case basis for reports under Appendix G, Subsection 12.F.2 if the oral report has been received within 24 hours.

G. Other noncompliance. You must report all instances of noncompliance not reported under Appendix G, Subsections 12.D, 12.E, and 12.F, at the time monitoring reports are submitted. The reports must contain the information listed in Appendix G, Subsection 12.F.

H. Other information. Where you become aware that you failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Permitting Authority, you must promptly submit such facts or information.

13. Bypass

A. Definitions.

1. Bypass means the intentional diversion of waste streams from any portion of a treatment facility

2. Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

B. Bypass not exceeding limitations. You may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Appendix G, Subsections 13.C and 13.D.

C. Notice–

1. Anticipated bypass. If you know in advance of the need for a bypass, you must submit prior notice, if possible at least ten days before the date of the bypass.

2. Unanticipated bypass. You must submit notice of an unanticipated bypass as required in Appendix G, Subsection 12.F (24-hour notice).

D. Prohibition of bypass.

1. Bypass is prohibited, and EPA may take enforcement action against you for bypass, unless:

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c. You submitted notices as required under Appendix G, Subsection 13.C.

2. EPA may approve an anticipated bypass, after considering its adverse effects, if EPA determines that it will meet the three conditions listed above in Appendix G, Subsection 13.D.1.

14. Upset

A. Definition. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond your reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

B. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Appendix G, Subsection 14.C are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

C. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that you can identify the cause(s) of the upset;

2. The permitted facility was at the time being properly operated; and

APPENDIX B

OVERVIEW PLAN

KEY NOTES

1. PROPOSED MEANDER RADIUS = 675' (3.2*Wbkf)

PROPOSED TOP OF BANK (BANKFULL ELEVATION)
PROPOSED THALWEG (PROFILE ALIGNMENT)
PROPOSED DREDGE & FILL
PROPOSED BANK FULL FILL
PROPOSED ROCK VANE
PROPOSED ROCK CROSS VANE
PROPOSED POOL-GLIDE COMPLEX
EXISTING POOL-GLIDE COMPLEX (NO MODIFICATIONS)
PROPOSED SHRUB/SAPLING TRANSPLANTS (SCHEMATIC ONLY - NOT FOR QUANTITIES)
PROPOSED FLOODPLAIN GRADE CONTROL STRUCTURE
EXISTING RIP-RAP
PROPERTY LINE

NOTES:

1. THALWEG IS THE LOWEST POINT IN THE RIVER BED.
2. FILL SHALL BE NATIVE GRANULAR MATERIAL (SAND, GRAVEL, COBBLE, AND BOULDERS) EXCAVATED FROM WITHIN THE PROJECT AREA AND SHALL MEET THE FOLLOWING GRADATION:

SIEVE SIZE	% PASSING BY WEIGHT
10" (250mm)	90-100
5" (125mm)	50-75
1" (25mm)	30-40
NO. 5 (4mm)	10-20
NO. 10 (2mm)	5-10

3. FILL SHALL BE PLACED IN MAXIMUM 12" LOOSE LIFTS AND MACHINE COMPACTED.
4. △1 THE VOLUME OF MATERIAL NEEDED TO REESTABLISH THE FLOOD PLAIN AT THE ENTRANCE TO THE POND IS ESTIMATED TO BE 28,000 CUBIC YARDS. THIS REPRESENTS A CUT OF APPROXIMATELY ONE FOOT ACROSS THE PROPOSED IMPACT AREA SHOWN WITHIN THE POND.

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EPA NPDES CGP SWPPP FOR
PEMIGEWASSET CHAPTER TROUT UNLIMITED
PEMIGEWASSET RIVER RESTORATION PROJECT
WOODSTOCK, NH

OVERVIEW PLAN

NO.	DATE	REVISION DESCRIPTION	ENG	DWG
△1	3/2009	REVISIONS IN RESPONSE TO NHDES COMMENT LETTER	TBP	KRP

DATE: SEPT 2009	PROJECT #: 04131/06195
ENGIN'D BY: SPS	DRAWN BY: SPS/JFM
CHECK'D BY: TBP	ARCHIVE #: H-4065

SHEET 6-SP

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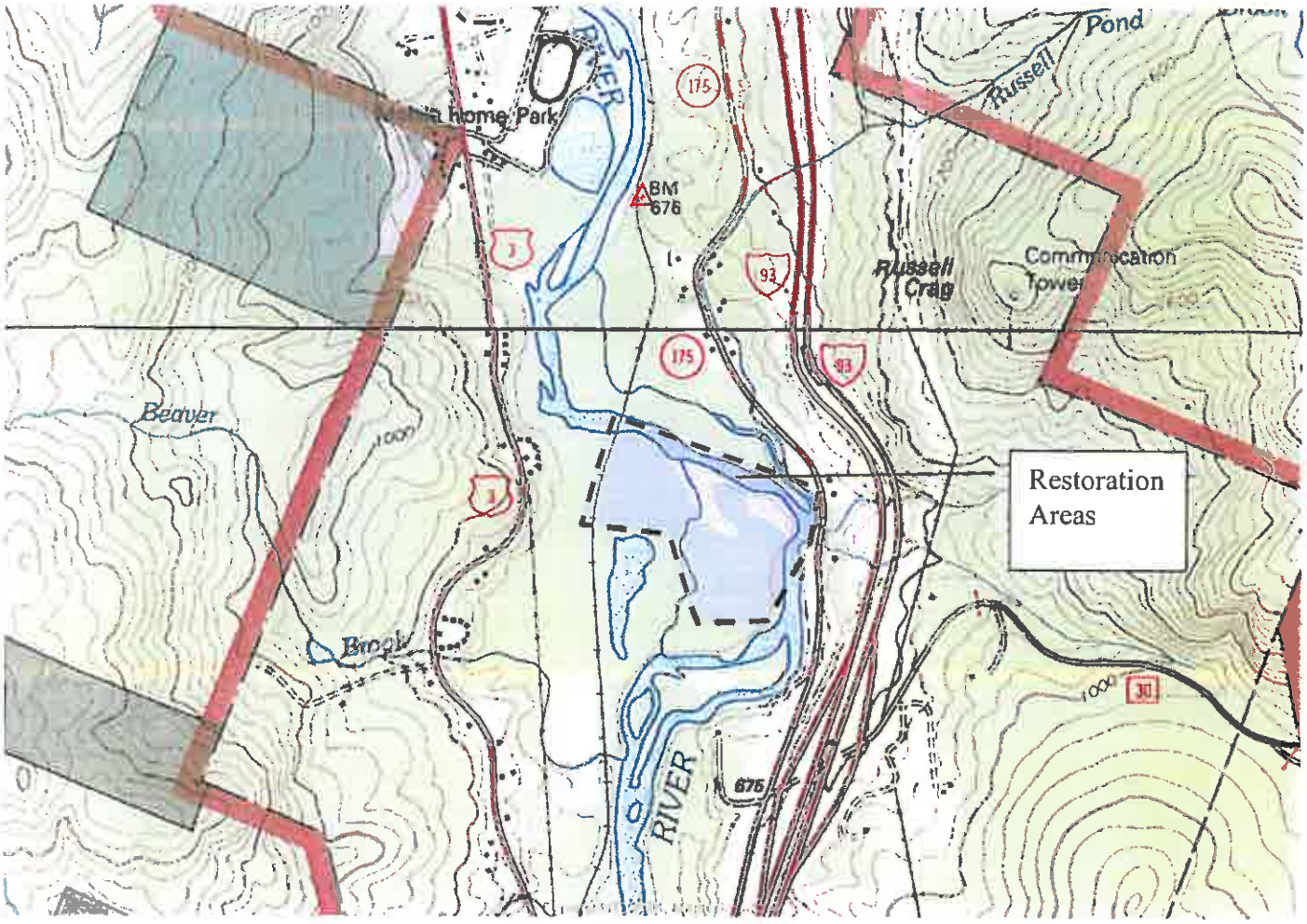
APPENDIX C

USGS SITE LOCUS MAP



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Pemigewasset River Restoration Project
Woodstock, New Hampshire
USGS Site Locus Map
Project Number 06195

APPENDIX D

STORMWATER MANAGEMENT
SITE PLAN SHEETS

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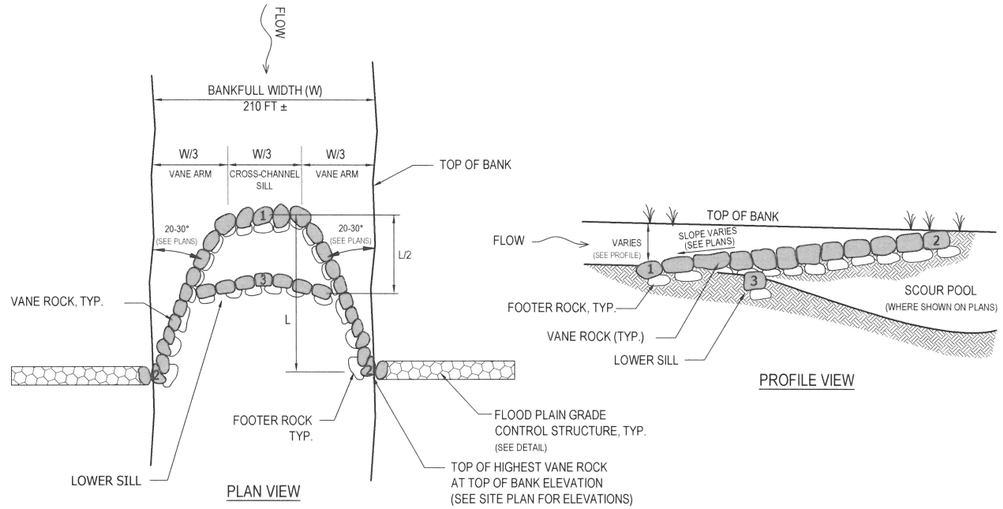
CONSTRUCTION SEQUENCE

THE FOLLOWING CONSTRUCTION SEQUENCE IS PROVIDED AS A GUIDE. PRIOR TO BEGINNING ANY WORK, THE CONTRACTOR SHALL REVIEW HIS PROPOSED CONSTRUCTION SEQUENCE, METHODS, AND TIMING WITH THE OWNER AND THE ENGINEER. NO WORK SHALL PROCEED WITHOUT THE OWNER'S WRITTEN APPROVAL OF THE CONTRACTOR'S WORK PLAN.

NO WORK SHALL BEGIN UNTIL: (1) THE OWNER PROVIDES WRITTEN NOTICE TO PROCEED; (2) ALL REQUIRED LOCAL, STATE, AND FEDERAL APPROVALS AND PERMITS HAVE BEEN OBTAINED; AND (3) TEMPORARY CONSTRUCTION AND ACCESS EASEMENTS HAVE BEEN SECURED.

1. DETERMINE THE LOCATIONS OF CONSTRUCTION ACCESS WAYS AND OBTAIN ANY REQUIRED ACCESS EASEMENTS, INCLUDING BUT NOT LIMITED TO ACCESS AGREEMENT WITH THE NH DOT BUREAU OF RAIL FOR ACCESS THROUGH CONN'S PIT. CALL DIG SAFE AND DETERMINE THE LOCATIONS OF UNDERGROUND UTILITIES. PROVIDE SIGNAGE ON BOTH BANKS OF RIVER UPSTREAM OF WORK AREA NOTIFYING RECREATIONAL BOATERS OF THE RIVER WORK.
2. EVALUATE ALL PROPOSED WORK AND ACCESS AREAS FOR THE PRESENCE OF WOOD TURTLES. ANY NESTING AREAS ARE TO BE FENCED OFF WITH ORANGE CONSTRUCTION FENCE AND SHALL NOT BE DISTURBED. IDENTIFY THE LOCATIONS OF RIPARIAN SHRUB AND SAPLING DONOR AREAS AND OBTAIN ANY REQUIRED CONSTRUCTION EASEMENTS. CLEAR VEGETATION NEEDED TO IMPROVE EXISTING ACCESS TO AREAS OF WORK LIMITING VEGETATION REMOVAL TO THE ABSOLUTE MINIMUM NECESSARY FOR SAFE ACCESS.
3. IDENTIFY SOURCE OF ROCK FOR ROCK AND CROSS VANES AND OBTAIN ENGINEER'S APPROVAL.
4. INSTALL STABILIZED CONSTRUCTION ENTRANCES AND SEDIMENT BARRIERS AS MAY BE APPROPRIATE.
5. CONSTRUCT SOUTHERLY VANE ARM (INCLUDING FLOODPLAIN GRADE CONTROL STRUCTURE) AND CROSS-CHANNEL SILL OF CROSS-VANE AT STATION 17+00. SALVAGE AND TRANSPLANT RIPARIAN SHRUBS AND SAPLINGS AS NEEDED.
6. GRADE CHANNEL AND BANKS BETWEEN STATIONS 9+00 AND 21+00. USE EXCAVATED MATERIAL FOR FILL ALONG THE EAST RIVERBANK. SALVAGE AND TRANSPLANT RIPARIAN SHRUBS AND SAPLINGS.
7. COMPLETE CONSTRUCTION OF CROSS-VANE AT STATION 17+00 (INCLUDING FLOODPLAIN GRADE CONTROL STRUCTURE).
8. CONSTRUCT ROCK VANE AT STATION 13+00, INCLUDING FLOODPLAIN GRADE CONTROL STRUCTURE.
9. COMPLETE INSTALLATION OF RIPARIAN SHRUB AND SAPLING TRANSPLANTS IN FILL AREA ALONG EAST RIVERBANK.
10. FILL AND INSTALL FLOODPLAIN GRADE CONTROL STRUCTURE IN SIDE CHANNEL ALONG EAST RIVERBANK AT STATION 12+00.
11. EXCAVATE TEMPORARY DIVERSION CHANNEL ACROSS GRAVEL BAR BETWEEN STATION 21+00 AND FLOODPLAIN CHANNEL ALONG ROUTE 175. SALVAGE AND STOCKPILE DOWNED TREES WITH REMNANT ROOT MASSES INTACT.
12. CONSTRUCT GRAVEL/COBBLE BERM ACROSS PROPOSED RIVER ALIGNMENT NEAR STATION STATION 22+00 AS NEEDED TO DIVERT FLOWS TO THE DIVERSION CHANNEL AND PRECLUDE FLOWING WATER FROM THE WORK AREA BETWEEN STATIONS 22+00 AND 28+00.
13. GRADE CHANNEL AND BANKS BETWEEN 22+00 AND 28+00. SALVAGE AND STOCKPILE DOWNED AND ROOTED TREES WITH ROOT MASSES INTACT.
14. CONSTRUCT CROSS-VANES AT STATIONS 23+00 AND 26+00
15. △1 COMPLETE FILL ALONG WEST RIVERBANK AND INSTALL BIO-ENGINEERED SLOPE AND FLOODPLAIN GRADE CONTROL STRUCTURES.
16. PLACE FILL ALONG EAST RIVERBANK DOWNSTREAM FROM TEMPORARY DIVERSION CHANNEL AND INSTALL FLOODPLAIN GRADE CONTROL STRUCTURES AND RIPARIAN SHRUB AND SAPLING TRANSPLANTS.
17. REMOVE BERM AND FILL TEMPORARY DIVERSION CHANNEL SO THAT FLOWS ARE DIRECTED TO THE MAIN CHANNEL.
18. CONSTRUCT ROCK VANE AT STATION 21+00, INCLUDING FLOODPLAIN GRADE CONTROL STRUCTURE.
19. CONSTRUCT ROCK CROSS-VANES IN FLOODPLAIN CHANNEL ALONG ROUTE 175.
20. COMPLETE RIPARIAN SHRUB AND SAPLING TRANSPLANTS ON BOTH SIDES OF THE RIVER.
21. REMOVE SEDIMENT BARRIERS, RESTORE DISTURBED AREAS, AND COMPLETE POND GRADING AS NEEDED.



ROCK CROSS VANE NOTES:

1. CROSS VANES ARE IN-STREAM STRUCTURES CONSTRUCTED FOR THE PURPOSES OF REDUCING SHEAR STRESS ON STREAM BANKS AND CONTROLLING THE STREAM BED GRADE. CROSS VANES SHALL CONSIST OF BOTH FOOTER ROCKS (PLACED BELOW THE INVERT OF THE PROPOSED CHANNEL) AND VANE ROCKS.
2. THE CONSTRUCTION OF CROSS VANES REQUIRES EQUIPMENT WHICH CAN PLACE LARGE ROCK IN PRECISE LOCATIONS. AN EXCAVATOR OF SUITABLE SIZE WITH A THUMB IS REQUIRED.
3. VANE ROCKS SHALL BE PLACED SO AS TO HAVE A FINAL SMOOTH SURFACE ALONG THE TOP PLANE OF THE VANE ARMS AND SILLS. A COMPLETED CROSS VANE HAS A SMOOTH, CONTINUOUS TOP SURFACE SLOPING FROM THE TOP OF BANK ELEVATION TO THE CROSS-CHANNEL SILL. VANE ROCKS SHALL BE PLACED WITH TIGHT, CONTINUOUS SURFACE CONTACT BETWEEN ADJOINING ROCKS WITH NO SIGNIFICANT GAP BETWEEN ROCKS.
4. REFER TO THE SITE PLAN FOR TOP OF VANE ROCK ELEVATIONS ALONG THE STRUCTURE. THE TOP SURFACES OF THE VANE ROCKS SHALL SLOPE UNIFORMLY BETWEEN THE SPOT ELEVATIONS SHOWN ON THE SITE PLAN.
5. THE ANGLE OF DEPARTURE FROM BANK VARIES FROM 20° TO 30°. REFER TO THE SITE PLAN FOR DEPARTURE ANGLES.
6. ALL VANE ROCKS AND FOOTER ROCKS SHALL BE ANGULAR, FLAT, OR CUBED IN SHAPE AND SHALL BE OF SUFFICIENT HARDNESS TO RESIST WEATHERING (POROUS, SOFT ROCK, OR SEDIMENTARY SHALL NOT BE USED). FOR VANE ROCKS, THE OPPOSING SURFACES DEFINED BY THE A AND B AXES SHALL BE RELATIVELY FLAT AS NEEDED TO CREATE A UNIFORM SLOPE ON THE CROSS VANE TOP SURFACE AND ALLOW SUFFICIENT CONTACT WITH FOOTER ROCKS. UNIFORM, CUBED ROCKS SHALL BE USED FOR VANE ROCKS. ROCKS WITH MORE ROUNDNESS MAY BE USED FOR FOOTER ROCKS, HOWEVER, AT LEAST ONE SURFACE DEFINED BY THE A AND B AXES SHALL BE RELATIVELY FLAT AS NEEDED TO ALLOW SUFFICIENT CONTACT WITH VANE ROCKS.
7. REFER TO "VANE AND FOOTER ROCK DIMENSION DETAIL" FOR MINIMUM VANE AND FOOTER ROCK SIZES.
8. ROCK WHICH FAILS TO MEET THE SIZE, SHAPE, AND/OR DURABILITY REQUIREMENTS WILL NOT BE ALLOWED.
9. PRIOR TO TRUCKING ROCK TO THE PROJECT SITE, THE ENGINEER WILL VISIT THE ROCK SOURCE SITE(S) WITH THE CONTRACTOR TO DETERMINE THE SUITABILITY OF THE ROCK.
10. THE DOWNSTREAM ENDS OF THE CROSS VANE SHALL BE KEYED INTO THE STREAM BANK AT THE TOP OF BANK ELEVATION. FLOOD PLAIN GRADE CONTROL STRUCTURES SHALL ABUT THE DOWNSTREAM ENDS OF THE CROSS VANES TO CREATE A CONTINUOUS MASS OF ROCK EXTENDING INTO THE FLOOD PLAIN AS SHOWN ON THE SITE PLAN. VOID SPACES SHALL BE CHINKED WITH SMALL BOULDERS, COBBLE, OR ROCK FRAGMENTS AS NEEDED SUCH THAT NO VOIDS GREATER THAN FOUR INCHES (4") IN SIZE ARE PRESENT.
11. THE CROSS-CHANNEL AND LOWER SILLS SHALL BE KEYED INTO THE STREAM BED AS SHOWN ON THE CHANNEL PROFILE.
12. THE TOP SURFACES OF THE VANE ROCKS IN THE LOWER SILL SHALL BE AT THE GRADES SHOWN ON THE SITE PLAN. THE VANE ROCKS AT EITHER END OF THE LOWER SILL SHALL ABUT AND MAKE CONTACT WITH THE ADJACENT FOOTER ROCK IN THE VANE ARM.
13. FOOTER ROCKS SHALL BE FIRMLY KEYED INTO THE STREAM BED. VANE ROCKS SHALL BEAR ON FOOTER ROCKS OFFSET FROM THE DOWNSTREAM OR STREAMWARD VERTICAL FACE OF THE OVERLYING VANE ROCK WITH A MINIMUM OVERLAP OF 18" AS SHOWN ON THE "VANE AND FOOTER ROCK OVERLAP DETAIL."
14. VOIDS BETWEEN FOOTER ROCKS, AND BETWEEN FOOTER ROCKS AND VANE ROCKS SHALL BE CHINKED WITH SMALL BOULDERS, COBBLE OR ROCK FRAGMENTS SUCH THAT NO VOIDS GREATER THAN FOUR INCHES (4") IN SIZE WILL BE PRESENT.
15. UPON COMPLETION OF EACH CROSS VANE STRUCTURE, THE BANK SLOPES AND STREAM BOTTOM SHALL BE RESHAPED AS SHOWN ON THE "VANE BACKFILL DETAIL" OR AS SPECIFIED BY THE CONSTRUCTION SUPERVISOR.

ROCK CROSS-VANE DETAIL

NOT TO SCALE

EROSION CONTROL GENERAL NOTES

A. KEEP SITE MODIFICATION TO A MINIMUM.

1. EXPOSE AREAS OF OF BARE SOIL TO EROSIVE ELEMENTS FOR THE SHORTEST TIME POSSIBLE.
2. SAVE AND PROTECT DESIRABLE EXISTING VEGETATION WHERE POSSIBLE. ERECT BARRIERS TO PREVENT DAMAGE FROM CONSTRUCTION EQUIPMENT. ORANGE SNOW FENCE OR SURVEYORS FLAGGING SHALL BE USED TO PREVENT DISTURBANCE OF TURTLE NESTING SITES IDENTIFIED IN THE PRE-CONSTRUCTION SURVEY THAT IS TO OCCUR ONE WEEK PRIOR TO THE START OF WORK.

B. MINIMIZE POLLUTION OF WATER DURING CONSTRUCTION ACTIVITIES.

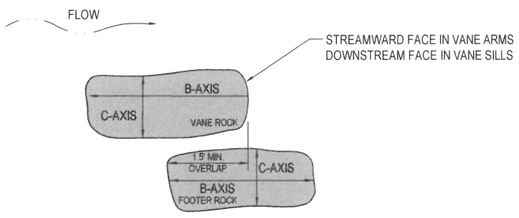
1. MONITOR WEATHER CLOSELY AND ADJUST ACTIVITIES TO PREVENT STORM / FLOOD RELATED DAMAGE.
2. PROTECT FINE-GRAINED BARE SOIL AREAS EXPOSED BY GRADING ACTIVITIES WITH QUICK ESTABLISHING VEGETATION OR MULCHES.
3. △1 USE DIVERSIONS AS SHOWN ON PLANS AND AS NEEDED TO DIRECT WATER FLOW AROUND THE CONSTRUCTION AREA AND AWAY FROM THE EROSION PRONE AREAS. INSTALL SIGNAGE UPSTREAM OF DIVERSION TO DIRECT RECREATIONAL BOATERS SAFELY AROUND WORK AREA.
4. PLACE CONSTRUCTION FACILITIES, MATERIALS, AND EQUIPMENT STORAGE AREAS AWAY FROM FLOWING WATER.
5. SEDIMENT PROTECTION AND ITS INTRODUCTION TO THE RIVER SHALL BE MINIMIZED. STREAM RESTORATION PROJECTS TYPICALLY REQUIRE WORK IN AND ADJACENT TO FLOWING WATER AND, AS A RESULT, SOME TURBIDITY IS UNAVOIDABLE. THE MOST EFFECTIVE METHODS OF MINIMIZING TURBIDITY ARE CAREFUL PLANNING TO AVOID AND MINIMIZE WORK IN FLOWING WATER, DIVERTING FLOWING WATER AROUND WORK AREAS WHERE FINE MATERIALS ARE ENCOUNTERED.
6. IN-STREAM WORK SHALL OCCUR ONLY DURING PERIODS OF LOW FLOWS. CONSTRUCTION SHALL BE PLANNED TO MINIMIZE WORK IN FLOWING WATER.
7. △1 MATERIAL CONTAINING HUMUS OR ORGANIC MATTER SHALL NOT BE APPLIED TO FLOOD PLAIN SURFACES BETWEEN SEPTEMBER 15 AND APRIL 15. HUMUS SHALL ONLY BE APPLIED TO FLOOD PLAINS IF IT CAN BE SEEDED AND MULCHED BY SEPTEMBER 15 SO THAT VEGETATIVE COVER WITH WINTER RYE CAN BE ESTABLISHED PRIOR TO THE END OF THE GROWING SEASON. THIS CONDITION SHALL NOT AFFECT THE ESTABLISHMENT OF SURFACES USING GRANULAR MATERIAL.
8. THE CONTRACTOR SHALL MAINTAIN EROSION CONTROL AND DIVERSION MEASURES IN GOOD CONDITION UNTIL SUCH TIME THAT THE MEASURES ARE NO LONGER NEEDED. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL REMOVE ANY TEMPORARY EROSION CONTROL MEASURES INSTALLED DURING CONSTRUCTION AND RESTORE ALL DISTURBED AREAS TO PRE-PROJECT CONDITIONS OR BETTER.
9. A SUPPLY OF LARGE STONE (NHDOT CLASS 'B' OR LARGER) AND GEOTEXTILE FABRIC SHALL BE KEPT ON SITE AND MADE AVAILABLE FOR USE IN PROTECTING THE CONSTRUCTION AREA IN THE EVENT OF FLOODING.
10. THE CONTRACTOR SHALL PROVIDE FOR STABILIZED CONSTRUCTION ENTRANCES, WHICH MUST BE MAINTAINED SO AS TO PREVENT TRACKING OR FLOWING OF SEDIMENTS ONTO PUBLIC ROADWAYS. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAYS SHALL BE REMOVED IMMEDIATELY.
11. EXISTING ROADS USED TO ACCESS THE PROJECT AREA SHALL BE RESTORED TO THE PRE-PROJECT CONDITIONS OR BETTER. USE OF DIRT ACCESS ROADS SHALL BE MINIMIZED WHEN WET.
12. ROADWAYS CREATED TO ACCESS THE PROJECT AREA SHALL BE REMOVED AND DISTURBED AREAS RESTORED TO PRE-PROJECT CONDITIONS BY APPLYING HUMUS, SEED, AND MULCH.
13. MATERIALS SUCH AS JUTE MESH, MULCH NETTING, AND OTHER PRODUCTS MANUFACTURED FOR EROSION CONTROL SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND INSTRUCTIONS.
14. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT THE SPILL OF CHEMICAL POLLUTANTS WHICH MAY INCLUDE, BUT ARE NOT LIMITED TO, FUEL, OIL, GREASE, AND HYDRAULIC FLUID.
15. ALL EQUIPMENT USED ON THE PROJECT SHALL BE FREE OF LEAKS AND EXCESSIVE DEPOSITS OF MATERIALS SUCH AS FUEL, HYDRAULIC FLUID, AND OTHER LUBRICANTS.
16. AT THE START OF EACH WORKDAY, THE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF EACH PIECE OF EQUIPMENT TO CHECK FOR LEAKS. DURING EQUIPMENT OPERATIONS, THE CONTRACTOR SHALL WATCH FOR LEAKS WHICH MAY DEVELOP.
17. IN THE EVENT A PIECE OF EQUIPMENT DEVELOPS A LEAK DURING THE CONSTRUCTION WORK, THE CONTRACTOR SHALL IMMEDIATELY REMOVE THE MACHINE FROM THE RIVER CHANNEL AREA AND SHALL REPAIR THE LEAK. ALL EXCESS FLUIDS WILL BE CLEANED FROM THE MACHINE PRIOR TO ITS RETURN TO THE WORK AREA. ANY SPILLAGE OF FLUIDS DURING REPAIRS SHALL BE CLEANED UP, WITH CONTAMINATED SOIL REMOVED FROM THE PROJECT AREA AND DISPOSED OF IN AN APPROVED LOCATION FOR THE TYPE OF MATERIALS.
18. THE CONTRACTOR SHALL PROVIDE FOR SAFE FUELING OF ALL EQUIPMENT WITHIN THE WORK AREA. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE FUELED WITHIN THE RIVER CHANNEL AREA.
19. ALL FUEL STORED ON SITE MUST BE IN A SUITABLE CONTAINER. ANY FUEL STORAGE CONTAINER USED ON SITE WHICH HAS A CAPACITY OF GREATER THAN FIVE (5) GALLONS MUST BE CONSTRUCTED OF A DOUBLE WALL DESIGN OR MUST HAVE A SUITABLE CONTAMINANT STRUCTURE AS PART OF THE TANK. TANKS SHALL MEET NFPA STANDARDS.
20. IN THE EVENT THAT THE CONTRACTOR MUST SERVICE OR REPAIR EQUIPMENT DURING CONSTRUCTION, APPROPRIATE MEASURES WILL BE TAKEN TO PREVENT CONTAMINATION OF THE SOIL AND/OR WATER DURING THE SERVICE/REPAIR OPERATIONS. UNDER NO CIRCUMSTANCES WILL EQUIPMENT BE SERVICED IN THE STREAM CHANNEL AREA. ALL EQUIPMENT MUST BE REMOVED FROM THE CHANNEL AREA BEFORE SERVICING.
21. ALL WASTE LUBRICANTS AND OTHER CHEMICALS WILL BE DISPOSED OF IN SEALED, WATER TIGHT TANKS. NO MORE THAN FIVE (5) GALLONS OF WASTE LUBRICANTS WILL BE RETAINED ON SITE. ALL WASTE FLUIDS, FILTERS, PARTS AND OTHER ITEMS RELATED TO MACHINERY SERVICE AND REPAIR SHALL BE REMOVED FROM THE WORK AREA AND DISPOSED OF IN AN APPROPRIATE MANNER.
22. THE CONTRACTOR SHALL PROVIDE ADEQUATE SANITARY FACILITIES FOR THEIR WORK FORCE AND PROTECT OBSERVERS. CHEMICAL TOILETS SHALL BE PROVIDED IN A QUANTITY THAT IS CONSISTENT WITH THE REQUIREMENTS OF STATE AND/OR FEDERAL REGULATIONS. CHEMICAL TOILETS WILL BE PLACED NO CLOSER THAN 75 FEET FROM THE EDGE OF FLOWING WATER. THE CONTRACTOR WILL PROVIDE FOR ROUTINE MAINTENANCE AND CLEANING OF THE SANITARY FACILITIES.

C. PROTECT AREA AFTER CONSTRUCTION.

1. ESTABLISH WINTER RYE GRASS OR OTHER SUITABLE VEGETATION ON ALL DISTURBED AREAS THAT ARE ABOVE BANK FULL. SELECT SPECIES ADAPTED TO THE SITE CONDITIONS AND THE FUTURE USE OF THE AREA.

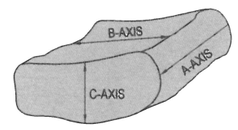
DEWATERING NOTES

1. THE CONTRACTOR SHALL PREPARE A PLAN FOR CONTROLLING STREAM FLOWS DURING INSTALLATION OF THE ROCK VANE AND CROSS VANE STRUCTURES. THIS PLAN SHALL BE APPROVED BY THE PROJECT ENGINEER PRIOR TO CONSTRUCTION.
2. TO ALLOW FOR OPTIMUM CONSTRUCTION OF IN-STREAM STRUCTURES AND CHANNEL EXCAVATION, A TEMPORARY DIVERSION CHANNEL SHALL BE USED TO DIRECT FLOWING WATER AROUND THE WORK AREA WHERE POSSIBLE.
3. IN SOME INSTANCES, FLOWS MAY EXCEED THOSE REASONABLY EXPECTED TO BE DIVERTED OR DEWATERED AND THE CONTRACTOR MAY BE REQUIRED TO SUSPEND WORK UNTIL SUCH TIME THAT THE FLOWS RETURN TO A MANAGEABLE LEVEL.
4. WHEN FLOODING CONDITIONS CAN BE REASONABLY EXPECTED, THE CONTRACTOR SHALL PREPARE THE SITE IN A MANNER WHICH MINIMIZES THE POTENTIAL FOR FLOOD-RELATED DAMAGE AND REMOVE EQUIPMENT, MATERIALS SUBJECT TO MOBILIZATION, AND FUEL TANKS FROM FLOOD-PRONE AREAS.



VANE AND FOOTER ROCK OVERLAP DETAIL

NOT TO SCALE



VANE ROCKS

	A-AXIS	B-AXIS	C-AXIS
MINIMUM	6 FT	4 FT	3 FT

FOOTER ROCKS

	A-AXIS	B-AXIS	C-AXIS
MINIMUM	5 FT	3.5 FT	2.5 FT

VANE AND FOOTER ROCK DIMENSION DETAIL

NOT TO SCALE

△ MONITORING

1. A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL OR A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE ("MONITOR") SHALL BE EMPLOYED TO INSPECT THE SITE FROM THE START OF ALTERATION OF TERRAIN ACTIVITIES UNTIL THE SITE IS IN FULL COMPLIANCE WITH THE ALTERATION OF TERRAIN PERMIT ("PERMIT").
2. DURING THIS PERIOD, THE MONITOR SHALL INSPECT THE SUBJECT SITE AT LEAST ONCE A WEEK, AND IF POSSIBLE, DURING ANY 1/2 INCH OR GREATER RAIN EVENT (I.E. 1/2 INCH OR PRECIPITATION OR MORE WITHIN A 24 HOUR PERIOD). IF UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THIS EVENT.
3. THE MONITOR SHALL PROVIDE TECHNICAL ASSISTANCE AND RECOMMENDATIONS TO THE CONTRACTOR ON THE APPROPRIATE BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROLS REQUIRED TO MEET THE REQUIREMENTS OF RSA 485-A:17 AND ALL APPLICABLE DES PERMIT CONDITIONS.
4. WITHIN 24 HOURS OF EACH INSPECTION, THE MONITOR SHALL SUBMIT A REPORT WITH PHOTOGRAPHS TO DES VIA EMAIL (TO CRAIG RENNIE AT: craig.rennie@des.nh.gov)
5. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR'S NAME, ADDRESS, AND PHONE NUMBER SHALL BE SUBMITTED TO DES VIA EMAIL (SEE ABOVE).

RIPARIAN SHRUB & SAPLING TRANSPLANT NOTES

1. FILL AREAS AND OTHER AREAS IDENTIFIED ON THE PLANS ARE TO BE VEGETATED WITH MATURE RIPARIAN SHRUBS AND SAPLINGS TRANSPLANTED FROM BORROW AREAS OR OTHER SITES APPROVED BY THE ENGINEER.
2. RIPARIAN SHRUBS AND SAPLINGS SHALL BE NATIVE, MATURE STOCK WITH ROOTED DEPTH OF AT LEAST 3 FEET. ALLOWABLE SPECIES INCLUDE WILLOW, ALDER, AND DOGWOOD. SHRUB DONOR AREAS SHALL BE APPROVED BY THE ENGINEER PRIOR TO HARVEST.
3. RIPARIAN SHRUBS AND SAPLINGS MUST BE HARVESTED SUCH THAT THE MAJORITY OF THE ROOT MASS IS OBTAINED AND DAMAGE TO THE PLANT MATERIAL IS MINIMAL. ROOTS SHALL BE DUG TO A MINIMUM DEPTH OF 3 FEET.
4. THE CONTRACTOR SHALL STAGE TRANSPLANTING OF SHRUBS AND SAPLINGS SUCH THAT THE MATERIALS CAN BE IMMEDIATELY RE-PLANTED. DOUBLE HANDLING OF THE SHRUBS AND SAPLINGS SHALL BE AVOIDED.
5. THE CONTRACTOR SHALL AVOID EXCESSIVE DAMAGE TO THE SHRUB AND SAPLING TOPS DURING THE HARVESTING AND PLANTING PROCESS. LARGE SHRUBS AND SAPLINGS SHALL BE BUNDLED AND TIED PRIOR TO DIGGING TO REDUCE BARK DAMAGE.
6. SHRUBS AND SAPLINGS SHALL BE PLACED IN A HOLE AS DEEP OR DEEPER THAN THE HEIGHT OF THE ROOT BALL, BUT IN NO CASE LESS THAN 3 FEET. BACKFILL AND TAMP TO REMOVE VOIDS IN THE SOIL. WATER SHALL BE USED TO WASH BACKFILL MATERIAL AROUND THE ROOT MASS.
7. WITHIN 50 FEET OF THE RIVERBANK:
   SHRUBS AND SAPLINGS SHALL BE PLANTED ON 15 FOOT CENTERS IN STAGGERED ROWS PARALLELING THE RIVERBANKS. THE FIRST ROW SHALL BE OFFSET APPROXIMATELY 2.5 FEET FROM THE TOP OF BANK.

   BEYOND 50 FEET FROM THE TOP OF BANK:
   SHRUBS AND SAPLINGS SHALL BE PLANTED 25 FEET ON CENTER (MAXIMUM) OR AS DIRECTED BY THE ENGINEER.
8. WHERE APPROPRIATE RIPARIAN SHRUB AND SAPLING DONOR AREAS SHALL BE RESTORED AS DIRECTED BY THE ENGINEER.
9. WHERE APPROPRIATE, AREAS DISTURBED TO GAIN ACCESS TO DONOR AREAS SHALL BE RESTORED TO CONDITIONS EQUAL OR BETTER THAN ORIGINAL CONDITION.

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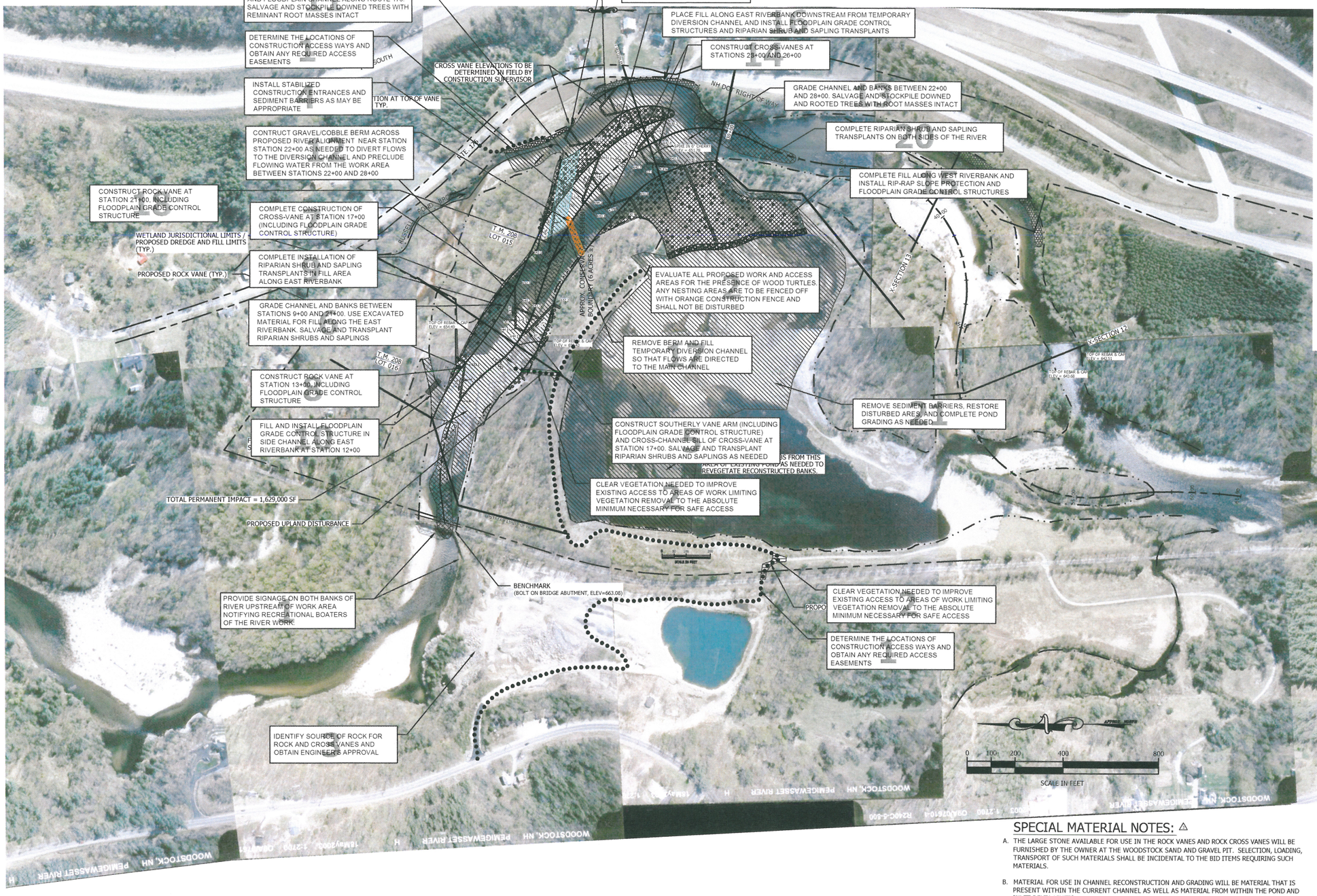
EPA NPDES CGP SWPPP FOR
PEMIGEWASSET CHAPTER TROUT UNLIMITED
PEMIGEWASSET RIVER RESTORATION PROJECT
WOODSTOCK, NH

EROSION CONTROL NOTES & DETAILS

NO.	DATE	REVISION DESCRIPTION	ENG	DWG
1	1/21/09	REVISE NOTES AND DETAILS	TBP	JFM
△1	3/2009	REVISIONS IN RESPONSE TO NHDES COMMENT LETTER	TBP	KRP

DATE: SEPT 2009	PROJECT #: 04131/06195
ENGIN'D BY: TBP	DRAWN BY: SPS/JFM
CHECK'D BY: SPS	ARCHIVE #: H-4065

SHEET 9-SP



PROPOSED TOP OF BANK (BANKFULL ELEVATION)
PROPOSED THALWEG (PROFILE ALIGNMENT)
PROPOSED DREDGE & FILL
PROPOSED BANK FULL FILL
PROPOSED ROCK VANE
PROPOSED ROCK CROSS VANE
PROPOSED POOL-GLIDE COMPLEX
EXISTING POOL-GLIDE COMPLEX (NO MODIFICATIONS)
PROPOSED SHRUB/SAPLING TRANSPLANTS (SCHEMATIC ONLY - NOT FOR QUANTITIES)
PROPOSED FLOODPLAIN GRADE CONTROL STRUCTURE
EXISTING RIP-RAP
TEMPORARY ACCESS ROUTE
TEMPORARY DIVERSION CHANNEL
TEMPORARY DIVERSION BERM

SPECIAL MATERIAL NOTES: △

A. THE LARGE STONE AVAILABLE FOR USE IN THE ROCK VANES AND ROCK CROSS VANES WILL BE FURNISHED BY THE OWNER AT THE WOODSTOCK SAND AND GRAVEL PIT. SELECTION, LOADING, TRANSPORT OF SUCH MATERIALS SHALL BE INCIDENTAL TO THE BID ITEMS REQUIRING SUCH MATERIALS.

B. MATERIAL FOR USE IN CHANNEL RECONSTRUCTION AND GRADING WILL BE MATERIAL THAT IS PRESENT WITHIN THE CURRENT CHANNEL AS WELL AS MATERIAL FROM WITHIN THE POND AND INLET DELTA LIMITS.

C. FILL MATERIAL FOR FLOODPLAIN RESTORATION AT THE INLET OF THE POND WILL BE FURNISHED BY THE OWNER IN THE FORM OF PERMISSION FROM THE LANDOWNER FOR THE CONTRACTOR TO EXCAVATE, LOAD AND TRANSPORT MATERIAL FROM THE DELTA AND POND TO THE FLOODPLAIN RESTORATION AREA. SELECTION, LOADING, TRANSPORT OF SUCH MATERIALS SHALL BE INCIDENTAL TO THE BID ITEMS REQUIRING SUCH MATERIALS

D. CLASS B STONE FILL FOR USE IN THE FLOODPLAIN GRADE CONTROL STRUCTURES AND ON THE BIOENGINEERED SLOPE SHALL BE FURNISHED BY THE CONTRACTOR. PROCUREMENT, TRANSPORT, AND PLACEMENT OF SUCH MATERIALS SHALL BE INCIDENTAL TO THE BID ITEMS REQUIRING SUCH MATERIALS

E. ALL NECESSARY SAPLING AND TRANSPLANT MATERIAL ARE AVAILABLE ONSITE AND WILL BE FURNISHED BY THE OWNER IN THE FORM OF PERMISSION FROM THE LANDOWNER FOR THE CONTRACTOR TO EXCAVATE, LOAD AND TRANSPORT MATERIAL FROM WITHIN THE PROJECT LIMITS TO THE AREAS TO BE PLANTED. EXTREME CARE SHALL BE TAKEN BY CONTRACTOR TO PROTECT SUCH MATERIAL FROM INJURY DURING WORK ACTIVITIES.

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EPA NPDES CGP SWPPP FOR
PEMIGEWASSET CHAPTER TROUT UNLIMITED
PEMIGEWASSET RIVER RESTORATION PROJECT
WOODSTOCK, NH

STORMWATER MANAGEMENT SITE PLAN

NO.	DATE	REVISION DESCRIPTION	ENG	DWG
△	3/2009	REVISIONS IN RESPONSE TO NHDES COMMENT LETTER (ADDED THIS SHEET)	TBP	KRP
△	7/2009	ADDED SPECIAL MATERIALS NOTES	TBP	KRP

DATE: SEPT 2009	PROJECT #: 04131/06195
ENGIN'D BY: SPS	DRAWN BY: SPS/JFM
CHECK'D BY: TBP	ARCHIVE #: H-4065

SHEET 10-SP

R:\06195 Trout Unlimited - Pemi River P & C\DWGS\FINAL\06195_Exhibit.dwg, 10-SP, 2/23/2010 2:05:52 PM, kphilbrick

APPENDIX E

SITE INSPECTION FORM

Site Inspection Form
For
Pemigewasset River Restoration – Woodstock, NH

Date of today's inspection__/__/__ Observer Name_____

Date of last inspection__/__/__ Observer Title/Qual._____

Weather history since last inspection

Storm date(s)	Storm duration	Rainfall amount	Did discharge occur?

Today's Weather_____ Is there any stormwater runoff?_____

Inspection areas *(check off)* Location/comments

- Discharges of sediment from the site? __ no __ yes _____
- Pipe outlets _____
- Swale outlets _____
- Material storage areas _____
- Do any controls need to be maintained? __ no __ yes_____
- Do any controls need to be modified? __ no __ yes_____
- Are any new controls needed? __ no __ yes_____

General notes and comments

_____

_____

_____

_____

_____

_____

_____

Certification

I certify under penalty of law that this document and all its attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed_____ **Date**__/__/__

Copy of inspection results provided to:
(Check box and date)

- **Contractor** __/__/__
- **Owner** __/__/__
- **Other**_____/__/__

APPENDIX F

INCIDENT REPORTING FORM

Incident Reporting Form
For
Pemigewasset River Restoration – Woodstock, NH

Date of spill/release__/__/__ Reporters Name_____
Time of spill/release __:__ AM/PM
Date of this report __/__/__ Title/Qual._____

Description of spill/release
Material type_____
Estimated quantity release to ground _____
Estimated quantity released to water _____
Location of spill/release_____

Narrative explaining how spill/release occurred

_____
_____
_____

Measures taken to control spill/release

_____
_____
_____

Reporting

Size	Contact
▪ *All*	Property Owner
▪ Under 25 gallons if to ground and cleaned up immediately	Local Fire Dept.
▪ Under 25 gallons if to ground and not cleaned up immediately	NH DES(271-3503), Local Fire Dept
▪ Over 25 gallons to ground	NH DES(271-3503), Local Fire Dept
▪ Any amount if to navigable water	National Response Center (800-424-8802), Local Fire Dept.

Steps taken to prevent future spill/release

_____
_____
_____

Certification

I certify under penalty of law that this document and all its attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed_____ **Date**__/__/__

APPENDIX G

ACTIVITY LOG

Activity Log
For
Pemigewasset River Restoration – Woodstock, NH

Location Description	Grading begins		Grading ceases for more than 14 consecutive days*		Stabilization begins		Stabilization is complete (70% coverage)	
	Date	Initials	Date	Initials	Date	Initials	Date	Initials

***Note:** If grading ceases (temporarily or permanently) for more than 14 days on portions of the site, stabilization measures must be initiated as soon as practicable, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.

Where stabilization by the 14th day is precluded by snow cover of frozen ground conditions, stabilization measure must be initiated as soon as practicable.

Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 14 day, temporary stabilization measures do not have to be initiated on that portion of the site.

APPENDIX H

NOTICE OF TERMINATION

THIS FORM REPLACES FORM 3517-7 (8-98)
See Reverse for Instructions

Form Approved OMB Nos. 2040-0086 and 2040-0211

NPDES FORM

United States Environmental Protection Agency
Washington, DC 20460

Notice of Termination (NOT) of Coverage Under a NPDES General Permit for Storm Water Discharges Associated with Construction Activity

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge storm water associated with construction activity under the NPDES program from the site identified in Section III of this form. ALL NECESSARY INFORMATION MUST BE INCLUDED ON THIS FORM.

I. Permit Information

NPDES Storm Water General Permit Tracking Number: ☐☐☐☐☐☐☐☐☐

Reason for Termination (Check only one):

Check here if final stabilization has been achieved on all portions of the site for which you are responsible:

Check here if another operator has assumed control according to Appendix G, Section 11.C over all areas of the site that have not been finally stabilized:

Check here if coverage under an alternative NPDES permit has been obtained:

For residential construction only, check here if temporary stabilization has been completed and the residence has been transferred to the homeowner:

II. Operator Information

Name: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

IRS Employer Identification Number (EIN): ☐☐ - ☐☐☐☐☐☐☐

Street: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

City: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ State: ☐☐ Zip Code: ☐☐☐☐☐ - ☐☐☐☐

Phone: ☐☐☐ - ☐☐☐ - ☐☐☐☐ Fax (optional): ☐☐☐ - ☐☐☐ - ☐☐☐☐

Email (optional): ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

III. Project/Site Information

Project/Site Name: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Project Street/Location: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

City: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ State: ☐☐ Zip Code: ☐☐☐☐☐ - ☐☐☐☐

County or similar government subdivision: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

IV. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name:

Print Title:

Signature:

Date (Month Date Year):

Instructions for Completing EPA Form 3510-13

Notice of Termination (NOT) of Coverage Under a NPDES General Permit for Storm Water Discharges Associated with Construction Activity

NPDES FORM THIS FORM REPLACES FORM 3517-7 (8-98) Form Approved OMB Nos. 2040-0086 and 2040-0211

Instructions for Completing Notice of Termination (NOT) Form

Who May File a NOT Form

Permittees who are presently covered under the EPA-issued National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity may submit a NOT form when final stabilization has been achieved on all portions of the site for which you are responsible; another operator has assumed control in accordance with Appendix G, Section 11.C of the General Permit over all areas of the site that have not been finally stabilized; coverage under an alternative NPDES permit has been obtained; or for residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

"Final stabilization" means that all soil disturbing activities at the site have been completed and that a uniform perennial vegetative cover with a density of at least 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed. See "final stabilization" definition in Appendix A of the Construction General Permit for further guidance where background native vegetation covers less than 100 percent of the ground, in arid or semi-arid areas, for individual lots in residential construction, and for construction projects on land used for agricultural purposes.

Completing the Form

Type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions about this form, refer to *www.epa.gov/npdes/stormwater/cgp* or telephone the Storm Water Notice Processing Center at (866) 352-7755. Please submit original document with signature in ink--DO NOT send copies.

Section I. Permit Information

Enter the existing NPDES Storm Water General Permit Tracking Number assigned to the project by EPA's Storm Water Notice Processing Center. If you do not know the permit tracking number, refer to *www.epa.gov/npdes/stormwater/cgp* or contact the Storm Water Notice Processing Center at (866) 352-7755.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box. Check only one:

If final stabilization has been achieved on all portions of the site for which you are responsible check the corresponding box.

If another operator has assumed control according to Appendix G, Section 11.C over all areas of the site that have not been finally stabilized check the corresponding box.

If coverage under an alternative NPDES permit has been obtained check the corresponding box.

For residential construction only, if temporary stabilization has been completed and the residence has been transferred to the homeowner check the corresponding box.

Section II. Operator Information

Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application. The operator of the project is the legal entity that controls the site operation, rather than the site manager. Provide the employer identification number (EIN from the Internal Revenue Service IRS). If the applicant does not have an EIN enter "NA" in the space provided. Enter the complete address and telephone number of the operator. *Optional:* enter the fax number and e-mail address of the operator.

Section III. Project/Site Information

Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for termination of permit coverage to be valid.

Section IV. Certification

All applications, including NOIs, must be signed as follows:

For a corporation: By a responsible corporate officer. For the purpose of this Part, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

Include the name and title of the person signing the form and the date of signing. An unsigned or undated NOT form will not be considered valid termination of permit coverage.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 0.5 hours per notice, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, 2136, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460. Include the OMB number on any correspondence. Do not sent the completed form to this address

APPENDIX I

ENDANGERED SPECIES CORRESPONDANCE

From: Kim A Tuttle [Kim.Tuttle@wildlife.nh.gov]
Sent: Monday, June 02, 2008 8:35 AM
To: Tyler Phillips
Subject: RE: Pemigewasset River Restoration Project
Thanks, Tyler.

-----Original Message-----
From: Tyler Phillips [mailto:tphillips@horizonsengineering.com]
Sent: Friday, May 30, 2008 4:22 PM
To: Kim A Tuttle
Cc: 'Melissa Coppola (E-mail)'; John A Magee; 'Craig Rennie (E-mail)'
Subject: RE: Pemigewasset River Restoration Project

Hi Kim,
As discussed today we will:

1. contact you when we know our project schedule; and
2. contact Melissa if we intend on bringing in any plants/vegetation from an outside source (it is our intent to transplant (or use cuttings of) willows and dogwoods that exist near the project area) however some form of seeding (likely conservation mix) may be proposed for certain areas where the re-establishment of a floodplain bench is proposed; and
3. fence off areas of bank/habitat that are not proposed for wetlands jurisdictional impact and thereby minimize unnecessary tracking/damage to potential wood turtle habitat.

Tyler Phillips

From: Kim A Tuttle [mailto:Kim.Tuttle@wildlife.nh.gov]
Sent: Friday, May 30, 2008 3:28 PM
To: Tyler Phillips
Cc: Melissa Coppola (E-mail); John A Magee; Craig Rennie (E-mail)
Subject: RE: Pemigewasset River Restoration Project

Hi Tyler,

It looks like we will not be able to get out for a site walk. Please let me know when the work schedule is finalized. Has the planting schedule been run by Melissa Cuppola at NHB for her input? As long as the planting schedule is okay with her in additon to protecting as much existing native vegetation as possible with construction fencing, we do not expect long term impacts to wood turtle, a species of conservation concern. Please feel free to call me at 271-6544 if you have any further questions regarding this job.

Sincerely,

Kim Tuttle
NH Fish and Game
Nongame and Endangered Species Program

-----Original Message-----
From: Tyler Phillips [mailto:tphillips@horizonsengineering.com]
Sent: Thursday, May 15, 2008 1:02 PM
To: Kim A Tuttle
Cc: John A Magee; Heidi L Holman
Subject: RE: Pemigewasset River Restoration Project

Hi Kim,
Thanks for getting back to me. I'm available most days (I have a meeting on June 3 that might conflict) so if you and John can coordinate a day that works just let me know (preferably the day before) and I should be able to make it.

Tyler Phillips

From: Kim A Tuttle [mailto:Kim.Tuttle@wildlife.nh.gov]
Sent: Thursday, May 15, 2008 9:02 AM
To: Tyler Phillips
Cc: John A Magee; Heidi L Holman
Subject: RE: Pemigewasset River Restoration Project

Hi Tyler,

Heidi Holman and I are available May 29, May 30, June 2-5. We need to schedule on of those days since wood turtles will be nesting then. Hopefully, John Magee can make one of those dates as well. We will have to watch the weather since we need to go on a sunny day in order to be able to find wood turtles.

Thanks,

Kim Tuttle
NH Fish and Game

-----Original Message-----
From: Tyler Phillips [mailto:tphillips@horizonsengineering.com]
Sent: Wednesday, May 14, 2008 8:03 AM
To: Kim A Tuttle
Cc: John A Magee; 'Craig Rennie (E-mail)'
Subject: RE: Pemigewasset River Restoration Project

Hi Kim,
Just wanted to know if you had a date in mind for looking for turtles within the Pemi Project area.

Tyler Phillips

From: Kim A Tuttle [mailto:Kim.Tuttle@wildlife.nh.gov]
Sent: Thursday, February 21, 2008 3:54 PM
To: Tyler Phillips
Cc: John A Magee; Craig Rennie (E-mail)
Subject: RE: Pemigewasset River Restoration Project

Tyler,

The NHFG Nongame and Endangered Species Program has reviewed NHB08-0444 for the proposed river restoration project on the Pemigewasset River in Woodstock, NH. Although we do not expect impacts to the state endangered peregrine falcon (*Falco peregrinus*), there is a potential to impact wood turtle (*Glyptemys insculpta*), a species of special conservation concern. The Pemigewassett River corridor in this area provides excellent habitat for wood turtle, especially within 300 meters of the River. The construction activities may potentially result in mortality to adult female wood turtles since they utilize terrestrial habitat for greater amounts of time than do the males. Wood turtle nests may also be destroyed from earth moving activities. NHFG would like to conduct a site walk on a sunny morning in mid-May so that we may evaluate the habitat and look for tracks to see if this particular site is being used by wood turtles. We recommend that in order to reduce impacts to wood turtle that construction activities be restricted to as late in the season as possible, preferably not before September. Wood turtles usually will be found closer to the River as autumn approaches and this timing will give the adult females more opportunities to avoid /escape construction vehicles and activities. We further recommend that areas of established grass and shrubby vegetation be fenced off and preserved as this species is often hidden in this type of vegetation. Please feel free to call me at 271-6544 if you have further questions regarding this issue. I'm sure that John Magee will be able to provide me with directions to the site as the survey time approaches.

Sincerely,

Kim Tuttle
NH Fish and Game
Nongame and Endangered Species Program

-----Original Message-----
From: Tyler Phillips [mailto:tphillips@horizonsengineering.com]
Sent: Friday, February 15, 2008 1:47 PM
To: Kim A Tuttle
Subject: Pemigewasset River Restoration Project

Hi Kim,

As discussed I have sent in (and received back) a NHB request/response relative to T&E species for a river restoration project that is proposed for the Pemigewasset River in Woodstock NH that we would like to permit this winter and construct in late summer.

The NHB File ID is: **NHB08-0444.** I have attached their response for your convenience.

Please see John Magee regarding the proposed work as he should have a CD with a set of plans

I have also attached a couple of pictures of the site.

Please let me know if I can be of any assistance or if you have any questions.

Tyler Phillips, CPESC
Project Manager
Horizons Engineering, PLLC

34 School Street
Littleton, NH 03561

Ph: (603) 444-4111
Fx: (603) 444-1343

New Hampshire Natural Heritage Bureau

To: Stephen LaFrance
Horizons Engineering, PLLC
34 School Street
Littleton, NH 03561

Date: 2/4/2009

From: NH Natural Heritage Bureau

Re: Review by NH Natural Heritage Bureau of request dated 2/4/2009

NHB File ID: NHB09-0196

Applicant: Stephen LaFrance

Address: Pemigewasset River, Woodstock NH
Woodstock

Project Categories:
Bank Stablization: Repair bank erosion
Water/Wastewater: Stream restoration

The NH Natural Heritage database has been checked for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government. We currently have no recorded occurrences for sensitive species near this project area.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present

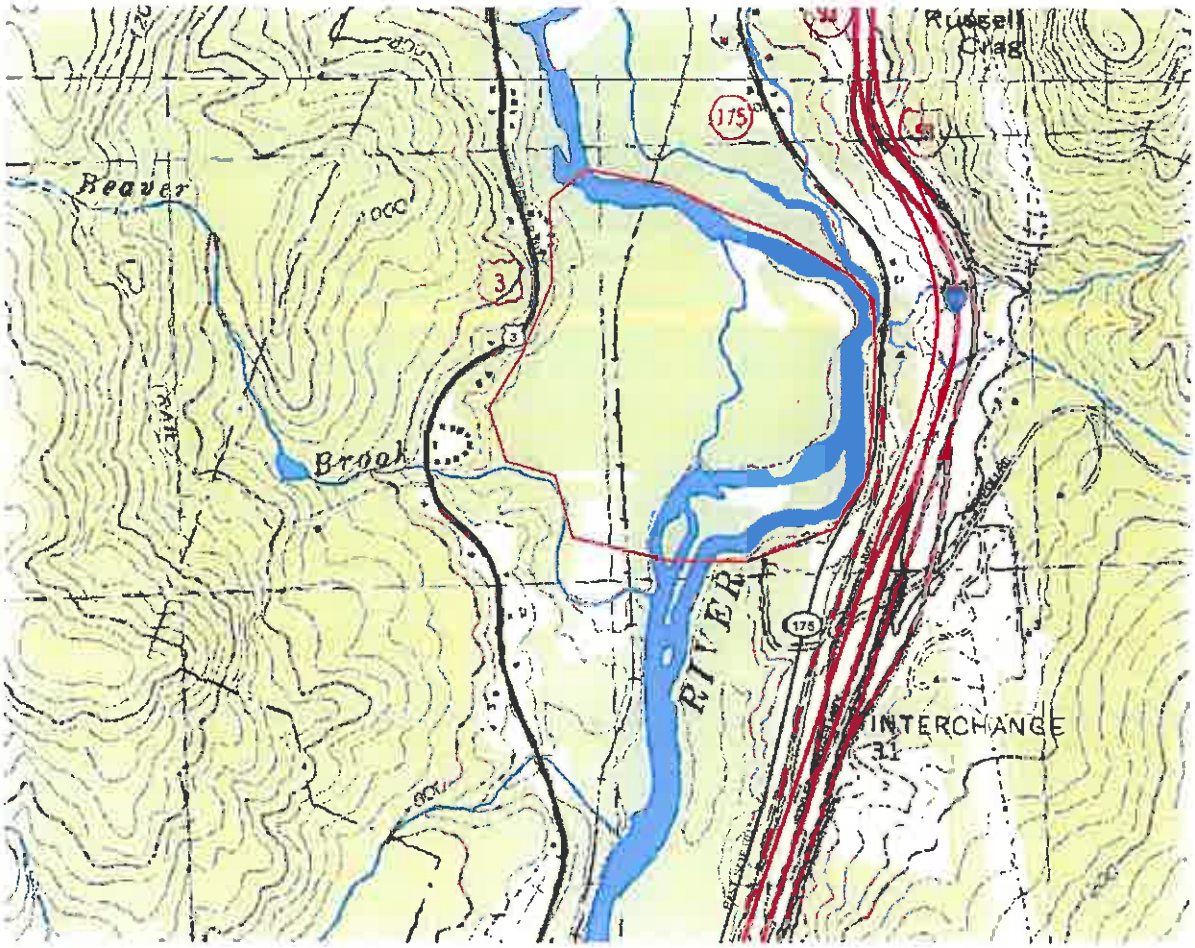
This review is valid through 2/4/2010.

Department of Resources and Economic Development
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DRED/NHB
PO Box 1856
Concord NH 03302-1856

New Hampshire Natural Heritage Bureau

MAP OF PROJECT BOUNDARIES FOR: NHB ID# NHB09-0196



Department of Resources and Economic Development
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APPENDIX J

EPA CONSTRUCTION GENERAL PERMIT
AND
EPA NOTICE OF INTENT

NPDES General Permit for Stormwater Discharges From Construction Activities

As modified effective January 8, 2009

Table of Contents

PART 1: COVERAGE UNDER THIS PERMIT 2

1.1 Introduction 2
1.2 Permit Area 2
1.3 Eligibility 2
1.4 Waivers for Certain Small Construction Activities 6

PART 2: AUTHORIZATION FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITY 6

2.1 How to Obtain Authorization 6
2.2 How to Submit Your NOI 7
2.3 Authorization to Discharge Date 7
2.4 Submission Deadlines 7
2.5 Continuation of the Expired General Permit 8
2.6 Requiring Coverage Under an Individual Permit or an Alternative General Permit 8

PART 3: EFFLUENT LIMITS 9

3.1 Effluent Limits to Reduce Pollutants in Stormwater Discharges 9
3.2 Effluent Limits to Reduce Pollutants in Non-Stormwater Discharges 12
3.3 Effluent Limits Related to Endangered Species 12
3.4 Attainment of Water Quality Standards 12
3.5 Consistency with Total Maximum Daily Loads 12
3.6 Maintenance of Control Measures 13
3.7 Training of Employees 13
3.8 Applicable State, Tribal, or Local Programs 13

PART 4: INSPECTIONS 13

PART 5: STORMWATER POLLUTION PREVETNION PLANS (SWPPPs) 15

5.1 Stormwater Pollution Prevention Plan Framework 15
5.2 SWPPP Contents: Site and Activity Description 16
5.3 Description of Control Measures to Reduce Pollutant Discharges 16
5.4 Non-Stormwater Discharges 17
5.5 Documentation of Permit Eligibility Related to Endangered Species 17
5.6 Documentation of Permit Eligibility Related to Total Maximum Daily Loads. 18
5.7 Copy of Permit Requirements 18
5.8 Applicable State, Tribal, or Local Programs 18
5.9 Inspections 18
5.10 Maintaining an Updated Plan 18
5.11 Signature, Plan Review and Making Plans Available 19
5.12 Requirements for Different Types of Operators 20

PART 6: TERMINATION OF COVERAGE 21

6.1 Submitting a Notice of Termination 21
6.2 When to Submit a Notice of Termination 21

PART 7: RETENTION OF RECORDS 21

PART 8: REOPENER CLAUSE **21**
8.1 Procedures for Modification or Revocation 21
8.2 Water Quality Protection 22
8.3 Timing of Permit Modification 22
PART 9: STANDARD PERMIT CONDITIONS **22**
PART 10: PERMIT CONDITIONS APPLICABLE TO SPECIFIC STATES, INDIAN COUNTRY, OR TERRITORIES **22**
Appendix A - Definitions and Acronyms A-1
Appendix B - Permit Areas Eligible for Coverage B-1
Appendix C - Endangered Species Act Review Procedures C-1
Appendix D - Small Construction Waivers and Instructions D-1
Appendix E - Notice of Intent Form and Instructions E-1
Appendix F - Notice of Termination Form and Instructions F-1
Appendix G - Standard Permit Conditions G-1

National Pollutant Discharge Elimination System General Permit for Discharges from Large and Small Construction Activities

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §1251 et. seq., (hereafter CWA or the Act), as amended by the Water Quality Act of 1987, P.L. 100-4, operators of large and small construction activities that are described in Part 1.3 of this National Pollutant Discharge Elimination System (NPDES) general permit, except for those activities excluded from authorization of discharge in Part 1.3.C of this permit are authorized to discharge pollutants to waters of the United States in accordance with the conditions and requirements set forth herein. Permit coverage is required from the "commencement of construction activities" until "final stabilization" as defined in Appendix A.

This permit shall become effective on June 30, 2008.

This permit and the authorization to discharge shall expire at midnight, June 30, 2010.

Signed:

Stephen S. Perkins, Director, Office of Ecosystem Protection
EPA Region 1

Barbara Finazzo, Director, Division of Environmental Planning and Protection
EPA Region 2

Carl-Axel P. Soderberg, Division Director, Caribbean Environmental Protection Division
EPA Region 2

Jon M. Capacasa, Director, Water Protection Division
EPA Region 3

Tinka Hyde, Director, Water Division
EPA Region 5

Miguel I. Flores, Director, Water Quality Protection Division
EPA Region 6

William A. Spratlin, Director, Water, Wetlands and Pesticides Division
EPA Region 7

Stephen S. Tuber, Assistant Regional Administrator, Office of Partnerships & Regulatory Assistance
EPA Region 8

Alexis Strauss, Director, Water Division
EPA Region 9

Michael Gearheard, Director, Office of Water and Watersheds
EPA Region 10

The signatures are for the permit conditions in Parts 1 through 10 and Appendices A through G, and for any additional conditions which apply to facilities located in the corresponding state, Indian country, or other area.

PART 1: COVERAGE UNDER THIS PERMIT

1.1 Introduction

This Construction General Permit (CGP) authorizes stormwater discharges from large and small construction activities that result in a total land disturbance of equal to or greater than one acre, where those discharges enter surface waters of the United States or a municipal separate storm sewer system (MS4) leading to surface waters of the United States subject to the conditions set forth in this permit. This permit also authorizes stormwater discharges from any other construction activity designated by EPA where EPA makes that designation based on the potential for contribution to an excursion of a water quality standard or for significant contribution of pollutants to waters of the United States. This permit replaces the permit issued in 2003 (68 FR 39087, July 1, 2003), including the modification made to that permit in 2004 (69 FR 76743, December 22, 2004).

This permit is presented in a reader-friendly, plain language format. This permit uses the terms "you" and "your" to identify the person(s) who owns or operates a "facility" or "activity" as defined in Appendix A and who must comply with the conditions of this permit. This format should allow you, the permittee and operator of a large or small construction activity, to easily locate and understand applicable requirements.

The goal of this permit is to minimize the discharge of stormwater pollutants from construction activity.

1.2 Permit Area

If your large or small construction activity is located within the areas listed in Appendix B, you may be eligible to obtain coverage under this permit. Permit coverage is actually provided by legally separate and distinctly numbered permits covering each of the areas listed in Appendix B.

1.3 Eligibility

Permit eligibility is limited to discharges from "large" and "small" construction activity, and to "new projects" and "unpermitted ongoing projects," as defined in Appendix A or as otherwise designated by EPA. This general permit contains eligibility restrictions, as well as permit conditions and requirements. You may have to take certain actions to be eligible for coverage under this permit. In such cases, you must continue to satisfy those eligibility provisions to maintain permit authorization. If you do not meet the requirements that are a pre-condition to eligibility, then resulting discharges constitute unpermitted discharges. By contrast, if you eligible for coverage under this permit and do not comply with the requirements of the general permit, you may be in violation of the general permit for your otherwise eligible discharges.

A. Allowable Stormwater Discharges

Subject to compliance with the terms and conditions of this permit, you are authorized to discharge pollutants in:

1. Stormwater discharges associated with large and small construction activity from "new projects" and "unpermitted ongoing projects" as defined in Appendix A;
2. Stormwater discharges designated by EPA as needing a stormwater permit under 40 CFR §122.26(a)(1)(v) or §122.26(b)(15)(ii);
3. Discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided:
   a. The support activity is directly related to the construction site required to have NPDES permit coverage for discharges of stormwater associated with construction activity;
   b. The support activity is not a commercial operation serving multiple unrelated construction projects by different operators, and does not operate beyond the completion of the construction activity at the last construction project it supports; and
   c. Pollutant discharges from support activity areas are minimized in compliance with Part 3.1.G; and
4. Discharges composed of allowable discharges listed in 1.3.A and 1.3.B commingled with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization.

B. Allowable Non-Stormwater Discharges

You are authorized for the following non-stormwater discharges, provided the non-stormwater component of the discharge is in compliance with Part 5.4 (Non-Stormwater Discharges):

1. Discharges from fire-fighting activities;
2. Fire hydrant flushings;
3. Waters used to wash vehicles where detergents are not used;
4. Water used to control dust in accordance with Part 3.1.B;
5. Potable water including uncontaminated water line flushings;
6. Routine external building wash down that does not use detergents;
7. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used;
8. Uncontaminated air conditioning or compressor condensate;
9. Uncontaminated ground water or spring water;
10. Foundation or footing drains where flows are not contaminated with process materials such as solvents;
11. Uncontaminated excavation dewatering;
12. Landscape irrigation.

C. Limitations on Coverage

1. This permit does not authorize post-construction discharges that originate from the site after construction activities have been completed and the site has achieved final stabilization, including any temporary support activity. Post-construction

stormwater discharges from industrial sites may need to be covered by a separate NPDES permit.

2. This permit does not authorize discharges mixed with non-stormwater. This exclusion does not apply to discharges identified in Part 1.3.B, provided the discharges are in compliance with Part 5.4 (Non-Stormwater Discharges).
3. This permit does not authorize stormwater discharges associated with construction activity that have been covered under an individual permit or required to obtain coverage under an alternative general permit in accordance with Part 2.6.
4. This permit does not authorize discharges that EPA, prior to authorization under this permit, determines will cause, have the reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. Where such a determination is made prior to authorization, EPA may notify you that an individual permit application is necessary in accordance with Part 2.6. However, EPA may authorize your coverage under this permit after you have included appropriate controls and implementation procedures in your permit designed to bring your discharge into compliance with water quality standards.
5. *Discharging into Receiving Waters With an Approved or Established Total Maximum Daily Load Analysis*
   a. You are not eligible for coverage under this permit for discharges of pollutants of concern to waters for which there is a total maximum daily load (TMDL) established or approved by EPA unless implement measures or controls that are consistent with the assumptions and requirements of such TMDL. To be eligible for coverage under this general permit, you must implement conditions applicable to your discharges necessary for consistency with the assumptions and requirements of such TMDL. If a specific wasteload allocation has been established that would apply to your discharge, you must implement necessary steps to meet that allocation.
   b. In a situation where an EPA-approved or established TMDL has specified a general wasteload allocation applicable to construction stormwater discharges, but no specific requirements for construction sites have been identified in the TMDL, you should consult with the State or Federal TMDL authority to confirm that meeting the effluent limits in Part 3 of this permit will be consistent with the approved TMDL. Where an EPA-approved or established TMDL has not specified a wasteload allocation applicable to construction stormwater discharges, but has not specifically excluded these discharges, compliance with the effluent limits in Part 3 of this permit will generally be assumed to be consistent with the approved TMDL. If the EPA-approved or established TMDL specifically precludes such discharges, the operator is not eligible for coverage under the CGP.
6. *Endangered and Threatened Species and Critical Habitat Protection*
   a. Coverage under this permit is available only if your stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities, as defined in Appendix A, are not likely to jeopardize the continued existence of any species that are federally-listed as endangered or threatened ("listed") under the Endangered Species Act (ESA) or result in the adverse

modification or destruction of habitat that is federally-designated as critical under the ESA ("critical habitat").

b. You are not eligible to discharge if the stormwater discharges, allowable non-stormwater discharges, or stormwater discharge-related activities would cause a prohibited "take" of federally-listed endangered or threatened species (as defined under section 3 of the ESA and 50 CFR 17.3), unless such takes are authorized under sections 7 or 10 of the ESA.

c. Determining Eligibility: You must use the process in Appendix C (ESA Review Procedures) to determine eligibility *PRIOR* to submittal of the Notice of Intent (NOI). You must meet one or more of the following six criteria (A-F) for the entire term of coverage under the permit:

Criterion A. No federally-listed threatened or endangered species or their designated critical habitat are in the project area as defined in Appendix C; or

Criterion B. Formal consultation with the Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded and that consultation:

i. Addressed the effects of the project's stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and

ii. The consultation resulted in either:

a. Biological opinion finding no jeopardy to federally-listed species or destruction/adverse modification of federally-designated critical habitat, or

b. Written concurrence from the Service(s) with a finding that the stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities are not likely to adversely affect federally-listed species or federally-designated critical habitat; or

Criterion C. Informal consultation with the Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded and that consultation:

i. Addressed the effects of the project's stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and

ii. The consultation resulted in either:

a. Biological opinion finding no jeopardy to federally-listed species or destruction/adverse modification of federally-designated critical habitat, or

b. Written concurrence from the Service(s) with a finding that the stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities are

not likely to adversely affect federally-listed species or federally-designated critical habitat; or

Criterion D. The construction activities are authorized through the issuance of a permit under section 10 of the ESA, and that authorization addresses the effects of the stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities on federally-listed species and federally-designated critical habitat; or

Criterion E. Stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities are not likely to adversely affect any federally-listed threatened or endangered species or result in the destruction or adverse modification of federally-designated critical habitat; or

Criterion F. The project's stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities were already addressed in another operator's valid certification of eligibility under Criteria A-E which included your construction activities and there is no reason to believe that federally-listed species or federally-designated critical habitat not considered in the prior certification may be present or located in the project area. By certifying eligibility under this criterion, you agree to comply with any measures or controls upon which the other operator's certification was based.

You must comply with any applicable terms, conditions, or other requirements developed in the process of meeting the eligibility requirements of the criteria in this section to remain eligible for coverage under this permit.

7. *Historic Properties*

   [Reserved]

   You are reminded that you must comply with applicable state, tribal and local laws concerning the protection of historic properties and places.

1.4 Waivers for Certain Small Construction Activities

Three scenarios exist under which small construction activities (see definition in Appendix A) may be waived from the NPDES permitting requirements detailed in this general permit. These exemptions are predicated on certain criteria being met and proper notification procedures being followed. Details of the waiver options and procedures for requesting a waiver are provided in Appendix D.

PART 2: AUTHORIZATION FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITY

2.1 How to Obtain Authorization

To obtain coverage under this general permit, you, the operator, must prepare and submit a complete and accurate Notice of Intent (NOI), as described in this Part. Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage.

2.2 How to Submit Your NOI

You must either use EPA's electronic NOI system (accessible at www.epa.gov/npdes/eNOI or use a paper form (included in Appendix E) and then submit that paper form to:

For Regular U.S. Mail Delivery:
EPA Stormwater Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:
EPA Stormwater Notice Processing Center
Room 7420
U.S. EPA
1201 Constitution Avenue, NW
Washington, DC 20004

2.3 Authorization to Discharge Date

You are authorized to discharge stormwater from construction activities under the terms and conditions of this permit seven (7) calendar days after acknowledgment of receipt of your complete NOI is posted on EPA's NPDES website http://www.epa.gov/npdes/stormwater/cgp. The exception to this 7-day timeframe is if EPA delays your authorization based on eligibility considerations of Part 1.3 (e.g., ESA concerns). Under this circumstance, you are not authorized for coverage under this permit until you receive notice from EPA of your eligibility.

2.4 Submission Deadlines

A. *New Projects:* To obtain coverage under this permit, you must submit a complete and accurate NOI and be authorized consistent with Part 2.3 prior to your commencement of construction activities.

B. *Permitted Ongoing Projects:* Permitted ongoing projects are not eligible for coverage under this permit. If you previously received authorization to discharge for your project under the 2003 CGP, your authorization will be automatically continued under that permit until the expiration of this permit and the issuance of a new CGP, or the termination of coverage by you under the 2003 CGP, whichever is earlier. Note: If you are an operator of a permitted ongoing project and you transfer ownership of the project, or a portion thereof, to a different operator, that operator will be required to submit a complete and accurate NOI for a new project in accordance with Part 2.2.

C. *Unpermitted Ongoing Projects:* If you previously did not receive authorization to discharge for your project under the 2003 CGP and you wish to obtain coverage under this permit, you must submit an NOI within 90 days of the issuance date of this permit.

D. *Late Notifications:* Operators are not prohibited from submitting NOIs after initiating clearing, grading, excavation activities, or other construction activities. When a late NOI is submitted, authorization for discharges occurs consistent with Part 2.3. The Agency reserves the right to take enforcement action for any unpermitted discharges that occur between the commencement of construction and discharge authorization.

2.5 Continuation of the Expired General Permit

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedure Act and remain in force and effect. If you were granted permit coverage prior to the expiration date, you will automatically remain covered by the continued permit until the earliest of:

A. Reissuance or replacement of this permit, at which time you must comply with the conditions of the new permit to maintain authorization to discharge; or

B. Your submittal of a Notice of Termination; or

C. Issuance of an individual permit for the project's discharges; or

D. A formal permit decision by EPA to not reissue this general permit, at which time you must seek coverage under an alternative general permit or an individual permit.

2.6 Requiring Coverage Under an Individual Permit or an Alternative General Permit

A. EPA may require you to apply for and/or obtain either an individual NPDES permit or coverage under an alternative NPDES general permit. Any interested person may petition EPA to take action under this paragraph. If EPA requires you to apply for an individual NPDES permit, EPA will notify you in writing that a permit application is required. This notification will include a brief statement of the reasons for this decision and an application form. In addition, if you are an existing permittee covered under this permit, the notice will set a deadline to file the application, and will include a statement that on the effective date of issuance or denial of the individual NPDES permit or the coverage or denial of coverage under the alternative general permit as it applies to you, coverage under this general permit will automatically terminate. Applications must be submitted to EPA at the applicable EPA Regional offices listed in Appendix B of this permit. EPA may grant additional time to submit the application upon your request. If you are covered under this permit and you fail to submit in a timely manner an individual NPDES permit application as required by EPA, then the applicability of this permit to you is automatically terminated at the end of the day specified by EPA as the deadline for application submittal.

B. You may request to be excluded from coverage under this general permit by applying for an individual permit. In such a case, you must submit an individual application in accordance with the requirements of 40 CFR §122.26(c)(1)(ii), with reasons supporting the request, to EPA at the applicable EPA Regional office listed in

Appendix B of this permit. The request may be granted by issuance of an individual permit or coverage under an alternative general permit if your reasons are adequate to support the request.

C. When an individual NPDES permit is issued to you (as an entity that is otherwise subject to this permit), or you are authorized to discharge under an alternative NPDES general permit, the applicability of this permit to you is automatically terminated on the effective date of the individual permit or the date of authorization of coverage under the alternative general permit, whichever the case may be. If you (as an entity that is otherwise subject to this permit) are denied an individual NPDES permit or an alternative NPDES general permit, the applicability of this permit to you is automatically terminated on the date of such denial, unless otherwise specified by EPA.

PART 3: EFFLUENT LIMITS

This section includes technology-based and water quality-based effluent limits that apply to all dischargers, unless otherwise specified. You must select, install, and maintain control measures (e.g., Best Management Practices ("BMPs"), controls, practices, etc.) for each major construction activity, identified in your Part 5 project description, to meet these effluent limits. All control measures must be properly selected, installed, and maintained in accordance with any relevant manufacturer specifications and good engineering practices. You must implement the control measures from commencement of construction activity until final stabilization is complete.

The term "minimize" as used in Part 3 means reduce and/or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice.

3.1 Effluent Limits to Reduce Pollutants in Stormwater Discharges

You must implement control measures to minimize pollutants in stormwater discharges.

A. ***Sediment Controls:*** You must implement the following, where applicable:

1. Sediment Basins: For common drainage locations that serve an area with 10 or more acres disturbed at one time, a temporary (or permanent) sediment basin that provides storage for a calculated volume of runoff from the drainage area from a 2-year, 24-hour storm, or equivalent control measures, must be provided where attainable until final stabilization of the site. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, must be provided where attainable until final stabilization of the site. When computing the number of acres draining into a common location, it is not necessary to include flows from offsite areas and flows from on-site areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin. In determining whether installing a sediment basin is attainable, the operator may consider factors such as site soils,

slope, available area on-site, etc. In any event, the operator must consider public safety, especially as it relates to children, as a design factor for the sediment basin, and alternative sediment controls must be used where site limitations would preclude a safe design.

2. For drainage locations which serve 10 or more disturbed acres at one time and where a temporary sediment basin or equivalent controls is not attainable, smaller sediment basins and/or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions).

3. For drainage locations serving less than 10 acres, smaller sediment basins and/or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions) of the construction area unless a sediment basin providing storage for a calculated volume of runoff from a 2-year, 24-hour storm or 3,600 cubic feet of storage per acre drained is provided.

B. ***Off-Site Sediment Tracking and Dust Control:*** You must minimize off-site vehicle tracking of sediments onto paved surfaces and the generation of dust. If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize off-site impacts.

C. ***Runoff Management:*** You must divert flows from exposed soils, retain/detain flows or otherwise minimize runoff and the discharge of pollutants from exposed areas of the site. You must avoid placement of structural practices in floodplains to the degree technologically and economically practicable and achievable.

D. ***Erosive Velocity Control:*** You must place velocity dissipation devices at discharge locations and along the length of any outfall channel to provide a non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., no significant changes in the hydrological regime of the receiving water).

E. ***Post-Construction Stormwater Management:*** You must comply with any applicable federal, local, state, or tribal requirements regarding the design and installation of post-construction stormwater controls. Structural measures should be placed on upland soils to the degree practicable and achievable.

F. ***Construction and Waste Materials:*** You must:
   1. Prevent the discharge of solid materials, including building materials, to waters of the United States, except as authorized by a permit issued under section 404 of the CWA;

2. Minimize exposure of construction and waste materials to stormwater, and the occurrence of spills, through the use of storage practices, prevention and response practices, and other controls;
3. Prevent litter, construction debris, and construction chemicals (e.g., diesel fuel, hydraulic fluids, and other petroleum products) that could be exposed to stormwater from becoming a pollutant source in stormwater discharges.

G. ***Non-Construction Wastes:*** You must minimize pollutant discharges from areas other than construction (including stormwater discharges from dedicated asphalt plants and dedicated concrete plants).

H. ***Erosion Control and Stabilization:***
1. ***General Requirements:*** You must stabilize the site. You must ensure that existing vegetation is preserved where possible and that disturbed portions of the site are stabilized. You should avoid using impervious surfaces for stabilization.
2. ***Initiation Deadlines:*** You must initiate stabilization measures, except as provided below, as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.
   i. Where stabilization by the 14th day is precluded by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as practicable.
   ii. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the site.
   iii. In arid, semiarid, and drought-stricken areas where initiating perennial vegetative stabilization measures is not possible within 14 days after construction activity has temporarily or permanently ceased, final vegetative stabilization measures must be initiated as soon as practicable.

I. ***Spills / Releases in Excess of Reportable Quantities:*** You are not authorized to discharge hazardous substances or oil resulting from an on-site spill. This permit does not relieve you of the federal reporting requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 relating to spills or other releases of oils or hazardous substances.

Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302, occurs during a 24-hour period:

- you must provide notice to the National Response Center (NRC) (800–424–8802; in the Washington, DC, metropolitan area call 202–267–2675) in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 as soon as site staff have knowledge of the discharge; and

- you must, within 7 calendar days of knowledge of the release, provide a description of the release, the circumstances leading to the release, and the date of the release. You must also implement measures to prevent the reoccurrence of such releases and to respond to such releases.

3.2 Effluent Limits to Reduce Pollutants in Non-Stormwater Discharges

You must minimize any non-stormwater discharges authorized by this permit.

3.3 Effluent Limits Related to Endangered Species

You must protect federally-listed endangered or threatened species, or federally-designated critical habitat to maintain eligibility under Part 1.3.C.6.

3.4 Attainment of Water Quality Standards

A. You must select, install, implement and maintain control measures at your construction site that minimize pollutants in the discharge as necessary to meet applicable water quality standards. In general, except in situations explained in Part 3.4.B below, your stormwater controls developed, implemented, and updated consistent with the other provisions of Part 3 are considered as stringent as necessary to ensure that your discharges do not cause or contribute to an excursion above any applicable water quality standard.

B. At any time after authorization, EPA may determine that your stormwater discharges may cause, have reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. If such a determination is made, EPA will require you to:

   i. Modify your stormwater controls in accordance with Part 3.6 to address adequately the identified water quality concerns;
   ii. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or
   iii. Cease discharges of pollutants from construction activity and submit an individual permit application according to Part 2.6.

All written responses required under this part must include a signed certification consistent with Appendix G, Section 11.

3.5 Consistency with Total Maximum Daily Loads

If you are discharging into a water with an EPA established or approved TMDL, you must implement measures to ensure that your discharge of pollutants from the site is consistent with the assumptions and requirements of the EPA-established or approved TMDL, including any specific wasteload allocation that has been established that would apply to your discharge. See Part 1.3.C.5 for further information on determining permit eligibility related to TMDLs.

3.6 Maintenance of Control Measures

A. You must maintain all control measures and other protective measures in effective operating condition. If site inspections required by Part 4 identify BMPs that are not operating effectively, you must perform maintenance as soon as possible and before the next storm event whenever practicable to maintain the continued effectiveness of stormwater controls.

B. If existing BMPs need to be modified or if additional BMPs are necessary for any reason, you must complete implementation before the next storm event whenever practicable. If implementation before the next storm event is impracticable, you must implement alternative BMPs as soon as possible.

C. You must remove sediment from sediment traps or sedimentation ponds when design capacity has been reduced by 50 percent.

D. You must remove trapped sediment from a silt fence before the deposit reaches 50 percent of the above-ground fence height (or before it reaches a lower height based on manufacturer's specifications).

3.7 Training of Employees

You must train employees and subcontractors as necessary to make them aware of the applicable control measures implemented at the site so that they follow applicable procedures.

3.8 Applicable State, Tribal, or Local Programs

You must ensure that the stormwater controls implemented at your site are consistent with all applicable federal, state, tribal, or local requirements for soil and erosion control and stormwater management.

PART 4: INSPECTIONS

A. ***Inspection Frequency:*** You must conduct inspections in accordance with one of the two schedules listed below. You must specify in your SWPPP which schedule you will be following.
   1. At least once every 7 calendar days, OR
   2. At least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.

B. ***Case-by-Case Reductions in Inspection Frequency:*** You may reduce your inspection frequency to at least once every month if:
   1. The entire site is temporarily stabilized,
   2. Runoff is unlikely due to winter conditions (e.g., site is covered with snow, ice, or the ground is frozen), or
   3. Construction is occurring during seasonal arid periods in arid areas and semi-arid areas.

C. ***Inspection Waiver for Frozen Conditions:*** A waiver of the inspection requirements is available until one month before thawing conditions are expected to result in a discharge if all of the following requirements are met:
   1. The project is located in an area where frozen conditions are anticipated to continue for extended periods of time (i.e., more than one month);
   2. Land disturbance activities have been suspended; and
   3. The beginning and ending dates of the waiver period are documented in the SWPPP.

D. ***Qualified Personnel:*** Inspections must be conducted by qualified personnel (provided by the operator or cooperatively by multiple operators). "Qualified personnel" means a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact stormwater quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of stormwater discharges from the construction activity.

E. ***Scope of Inspections:*** Inspections must include all areas of the site disturbed by construction activity and areas used for storage of materials that are exposed to precipitation. Inspectors must look for evidence of, or the potential for, pollutants entering the stormwater conveyance system. Sedimentation and erosion control measures must be observed to ensure proper operation. Discharge locations must be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to waters of the United States, where accessible. Where discharge locations are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking.

F. ***Reductions in Scope of Inspections for Stabilized Areas:*** Once a definable area has been finally stabilized, no further inspection requirements apply to that portion of the site (e.g., earth-disturbing activities around one of three buildings in a complex are done and the area is finally stabilized, one mile of a roadway or pipeline project is done and finally stabilized, etc).

G. ***Utility Line Inspections:*** Utility line installation, pipeline construction, and other examples of long, narrow, linear construction activities may limit the access of inspection personnel to the areas described in Part 4.E above. Inspection of these areas could require that vehicles compromise temporarily or even permanently stabilized areas, cause additional disturbance of soils, and increase the potential for erosion. In these circumstances, controls must be inspected on the same frequencies as other construction projects, but representative inspections may be performed. For representative inspections, personnel must inspect controls along the construction site for 0.25 mile above and below each access point where a roadway, undisturbed right-of-way, or other similar feature intersects the construction site and allows access to the areas described above. The conditions of the controls along each inspected 0.25 mile segment may be considered as representative of the condition of controls along

that reach extending from the end of the 0.25 mile segment to either the end of the next 0.25 mile inspected segment, or to the end of the project, whichever occurs first.

H. ***Inspection Report:*** For each inspection required above, you must complete an inspection report. At a minimum, the inspection report must include:
   1. The inspection date;
   2. Names, titles, and qualifications of personnel making the inspection;
   3. Weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
   4. Weather information and a description of any discharges occurring at the time of the inspection;
   5. Location(s) of discharges of sediment or other pollutants from the site;
   6. Location(s) of BMPs that need to be maintained;
   7. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
   8. Location(s) where additional BMPs are needed that did not exist at the time of inspection; and
   9. Corrective action required including implementation dates.

The inspection report must be signed in accordance with Appendix G, Section 11 of this permit.

PART 5: STORMWATER POLLUTION PREVETNION PLANS (SWPPPs)

5.1 Stormwater Pollution Prevention Plan Framework

You must prepare a SWPPP <u>before</u> submitting your Notice of Intent (NOI) for permit coverage. At least one SWPPP must be developed for each construction project covered by this permit and the stormwater controls implemented at your site must be documented in the SWPPP. If you prepared a SWPPP for coverage under a previous NPDES permit, you must review and update the SWPPP prior to submitting your NOI.

The SWPPP does not contain effluent limitations; the technology and water quality-based effluent limitations are contained in Part 3 of this permit. The SWPPP is intended to document the selection, design, installation, and implementation of control measures that are being used to comply with the effluent limitations set forth in Part 3.

The SWPPP must:
1. Identify all potential sources of pollutants that may reasonably be expected to affect the quality of stormwater discharges from the construction site; and
2. Describe control measures to be used to meet the effluent limits set forth in Part 3.

5.2 SWPPP Contents: Site and Activity Description

A. ***Construction Site Operators:*** The SWPPP must identify all operators for the project site, and the areas of the site over which each operator has control.

B. ***Nature of Construction Activity:*** The SWPPP briefly must describe the nature of the construction activity, including:
   1. The function of the project (e.g., low density residential, shopping mall, highway, etc.);
   2. The intended sequence and timing of activities that disturb soils at the site;
   3. Estimates of the total area expected to be disturbed by excavation, grading, or other construction activities, including dedicated off-site borrow and fill areas; and
   4. A general location map (e.g., USGS quadrangle map, a portion of a city or county map, or other map) with enough detail to identify the location of the construction site and waters of the United States within one mile of the site.

C. ***Site Map:*** The SWPPP must contain a legible site map, showing the entire site, identifying:
   1. Direction(s) of stormwater flow and approximate slopes anticipated after grading activities;
   2. Areas of soil disturbance and areas that will not be disturbed (or a statement that all areas of the site will be disturbed unless otherwise noted);
   3. Locations of major structural and nonstructural BMPs identified in the SWPPP;
   4. Locations where stabilization practices are expected to occur;
   5. Locations of off-site material, waste, borrow or equipment storage areas;
   6. Locations of all waters of the United States (including wetlands);
   7. Locations where stormwater discharges to a surface water; and
   8. Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply.

D. ***Construction and Waste Materials:*** The SWPPP must include a description of construction and waste materials expected to be stored on-site with updates as appropriate.

E. ***Locations of Other Industrial Stormwater Discharges:*** The SWPPP must describe and identify the location and description of any stormwater discharge associated with industrial activity other than construction at the site. This includes stormwater discharges from dedicated asphalt plants and dedicated concrete plants that are covered by this permit.

5.3 Description of Control Measures to Reduce Pollutant Discharges

A. ***Control Measures:*** The SWPPP must include a description of all control measures that will be implemented to meet the effluent limits in Part 3. For each major activity identified in the project description the SWPPP must clearly document appropriate control measures, the general sequence during the construction process in which the

measures will be implemented, and which operator is responsible for the control measure's implementation.

B. ***Stabilization:*** The SWPPP must include a description of interim and permanent stabilization practices for the site, including a schedule of when the practices will be implemented.

C. ***Post-Authorization Records:*** The following records must be maintained with the SWPPP following authorization under this permit:
   1. Dates when grading activities occur;
   2. Dates when construction activities temporarily or permanently cease on a portion of the site; and
   3. Dates when stabilization measures are initiated.

5.4 Non-Stormwater Discharges

The SWPPP must identify all allowable sources of non-stormwater discharges listed in Part 1.3.B of this permit, except for flows from fire fighting activities that are combined with stormwater discharges associated with construction activity at the site. The SWPPP must also describe the pollution prevention measures used to eliminate or reduce non-stormwater discharges consistent with Part 3.2.

5.5 Documentation of Permit Eligibility Related to Endangered Species

The SWPPP must include documentation supporting a determination of permit eligibility with regard to Endangered Species, including:

A. Information on whether federally-listed endangered or threatened species, or federally-designated critical habitat may be in the project area;

B. Whether such species or critical habitat may be adversely affected by stormwater discharges or stormwater discharge-related activities from the project;

C. Results of the Appendix C listed species and critical habitat screening determinations;

D. Confirmation of delivery of NOI to EPA or to EPA's electronic NOI system. This may include an overnight, express or registered mail receipt acknowledgment; or electronic acknowledgment from EPA's electronic NOI system;

E. Any correspondence for any stage of project planning between the U.S. Fish and Wildlife Service (FWS), EPA, the U.S. National Marine Fisheries Service (NMFS), or others and you regarding listed species and critical habitat, including any notification that delays your authorization to discharge under this permit; and

F. A description of measures necessary to protect federally-listed endangered or threatened species, or federally-designated critical habitat.

5.6 Documentation of Permit Eligibility Related to Total Maximum Daily Loads

The SWPPP must include documentation supporting a determination of permit eligibility with regard to waters that have an EPA-established or approved TMDL, including:

A. Identification of whether your discharge is identified, either specifically or generally, in an EPA-established or approved TMDL and any associated allocations, requirements, and assumptions identified for your discharge;

B. Summaries of consultation with State or Federal TMDL authorities on consistency of SWPPP conditions with the approved TMDL, and

C. Measures taken by you to ensure that your discharge of pollutants from the site is consistent with the assumptions and requirements of the EPA-established or approved TMDL, including any specific wasteload allocation that has been established that would apply to your discharge.

See Part 1.3.C.5 for further information on determining permit eligibility related to TMDLs.

5.7 Copy of Permit Requirements

Copies of this permit and of the signed and certified NOI form that was submitted to EPA must be included in the SWPPP. Also, upon receipt, a copy of the letter from the EPA Stormwater Notice Processing Center notifying you of their receipt of your administratively complete NOI must also be included as a component of the SWPPP.

5.8 Applicable State, Tribal, or Local Programs

The SWPPP must be updated as necessary to reflect any revisions to applicable federal, state, tribal, or local requirements that affect the stormwater controls you implement at your site.

5.9 Inspections

A record of each inspection and of any actions taken in accordance with Part 4 must be retained with the SWPPP for at least three years from the date that permit coverage expires or is terminated. The inspection reports must identify any incidents of non-compliance with the permit conditions. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the construction project or site is in compliance with this permit.

5.10 Maintaining an Updated Plan

The SWPPP must be modified:

A. To reflect modifications to stormwater control measures made in response to a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants to the waters of the United States that has not been previously addressed in the SWPPP.

B. If during inspections or investigations by site staff, or by local, state, tribal or federal officials, it is determined that the existing stormwater controls are ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the construction site.

C. Based on the results of an inspection, as necessary to properly document additional or modified BMPs designed to correct problems identified. Revisions to the SWPPP must be completed within seven (7) calendar days following the inspection.

5.11 Signature, Plan Review and Making Plans Available

A. ***Retention of SWPPP:*** A copy of the SWPPP (including a copy of the permit), NOI, and acknowledgement letter from EPA must be retained at the construction site (or other location easily accessible during normal business hours to EPA, a state, tribal or local agency approving sediment and erosion plans, grading plans, or stormwater management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service) from the date of commencement of construction activities to the date of final stabilization. If you have day-to-day operational control over SWPPP implementation, you must have a copy of the SWPPP available at a central location on-site for the use of all those identified as having responsibilities under the SWPPP whenever they are on the construction site. If an on-site location is unavailable to store the SWPPP when no personnel are present, notice of the plan's location must be posted near the main entrance at the construction site.

B. ***Main Entrance Signage:*** A sign or other notice must be posted conspicuously near the main entrance of the construction site. If displaying near the main entrance is infeasible, the notice can be posted in a local public building such as the town hall or public library. The sign or other notice must contain the following information:
   1. A copy of the completed Notice of Intent as submitted to the EPA Stormwater Notice Processing Center; and
   2. If the location of the SWPPP or the name and telephone number of the contact person for scheduling SWPPP viewing times has changed (i.e., is different than that submitted to EPA in the NOI), the current location of the SWPPP and name and telephone number of a contact person for scheduling viewing times.

   For linear projects, the sign or other notice must be posted at a publicly accessible location near the active part of the construction project (e.g., where a pipeline project crosses a public road).

C. ***Availability of SWPPP:*** SWPPPs must be made available upon request by EPA; a state, tribal or local agency approving sediment and erosion plans, grading plans, or stormwater management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service to the requestor. The copy of the SWPPP that is required to be kept on-site or

locally available must be made available, in its entirety, to the EPA staff for review and copying at the time of an on-site inspection.

D. ***Signature and Certification:*** All SWPPPs must be signed and certified in accordance with Appendix G, Section 11.

5.12 Requirements for Different Types of Operators

You may meet one or both of the operational control components in the definition of operator found in Appendix A. Part 5.12.C applies to all permittees having control over only a portion of a construction site.

A. If you have operational control over construction plans and specifications, you must ensure that:
   1. The project specifications meet the minimum requirements of this Part and all other applicable permit conditions;
   2. The SWPPP indicates the areas of the project where the operator has operational control over project specifications, including the ability to make modifications in specifications;
   3. All other permittees implementing portions of the SWPPP (or their own SWPPP) who may be impacted by a change to the construction plan are notified of such changes in a timely manner; and
   4. The SWPPP indicates the name of the party(ies) with day-to-day operational control of those activities necessary to ensure compliance with the SWPPP or other permit conditions.

B. If you have operational control over day-to-day activities, you must ensure that:
   1. The SWPPP meets the minimum requirements of this Part and identifies the parties responsible for implementation of control measures identified in the plan;
   2. The SWPPP indicates areas of the project where you have operational control over day-to-day activities;
   3. The SWPPP indicates the name of the party(ies) with operational control over project specifications (including the ability to make modifications in specifications).

C. If you have operational control over only a portion of a larger project (e.g., one of four homebuilders in a subdivision), you are responsible for compliance with all applicable effluent limits, terms, and conditions of this permit as it relates to your activities on your portion of the construction site, including protection of endangered species, critical habitat, and historic properties, and implementation of control measures described in the SWPPP. You must ensure either directly or through coordination with other permittees, that your activities do not render another party's pollutant discharge controls ineffective. You must either implement your portion of a common SWPPP or develop and implement your own SWPPP.
   For more effective coordination of BMPs and opportunities for cost sharing, a cooperative effort by the different operators at a site to prepare and participate in a comprehensive SWPPP is encouraged. Individual operators at a site may, but are not

required to, develop separate SWPPPs that cover only their portion of the project provided reference is made to other operators at the site. In instances where there is more than one SWPPP for a site, cooperation between the permittees is encouraged to ensure the stormwater discharge control measures are consistent with one another (e.g., provisions to protect listed species and critical habitat).

PART 6: TERMINATION OF COVERAGE

6.1 Submitting a Notice of Termination

Submit a complete and accurate Notice of Termination (NOT) either electronically (strongly encouraged) at www.epa.gov/npdes/eNOI or by completing the paper Notice of Termination form included in Appendix F of this permit and submitting that form to the address listed in Part 2.2.

6.2 When to Submit a Notice of Termination

You may only submit a Notice of Termination (NOT) after one or more of the following conditions have been met:

A. Final stabilization has been achieved on all portions of the site for which you are responsible;

B. Another operator has assumed control according to Appendix G, Section 11.C over all areas of the site that have not been finally stabilized;

C. Coverage under an individual or alternative general NPDES permit has been obtained; or

D. For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

The NOT must be submitted within 30 days of one of the above conditions being met. Authorization to discharge terminates at midnight of the day the NOT is signed.

PART 7: RETENTION OF RECORDS

Copies of the SWPPP and all documentation required by this permit, including records of all data used to complete the NOI to be covered by this permit, must be retained for at least three years from the date that permit coverage expires or is terminated. This period may be extended by request of EPA at any time.

PART 8: REOPENER CLAUSE

8.1 Procedures for Modification or Revocation

Permit modification or revocation will be conducted according to 40 CFR §122.62, §122.63, §122.64 and §124.5.

8.2 Water Quality Protection

If there is evidence indicating that the stormwater discharges authorized by this permit cause, have the reasonable potential to cause or contribute to an excursion above any applicable water quality standard, you may be required to obtain an individual permit in accordance with Part 2.6 of this permit, or the permit may be modified to include different limitations and/or requirements.

8.3 Timing of Permit Modification

EPA may elect to modify the permit prior to its expiration (rather than waiting for the new permit cycle) to comply with any new statutory or regulatory requirements, such as for effluent limitation guidelines that may be promulgated in the course of the current permit cycle.

PART 9: STANDARD PERMIT CONDITIONS

The federal regulations require that the Standard Conditions provisioned at 40 CFR §122.41 be applied to all NPDES permits. You are required to comply with those Standard Conditions, details of which are provided in Appendix G.

PART 10: PERMIT CONDITIONS APPLICABLE TO SPECIFIC STATES, INDIAN COUNTRY, OR TERRITORIES

The provisions of this Part provide modifications or additions to the applicable conditions of this permit to reflect specific additional conditions required as part of the state or tribal CWA Section 401 certification process, or the Coastal Zone Management Act (CZMA) certification process, or as otherwise established by the permitting authority. The specific additional revisions and requirements only apply to activities in those specific states, Indian country, and federal facilities. States, Indian country, and federal facilities not included in this Part do not have any modifications or additions to the applicable conditions of this permit.

A. Region 1

1. MAR100000: Commonwealth of Massachusetts, except Indian country
   a. State Water Quality Statutes, Regulations, and Policies:
      i. You must comply with the Massachusetts Clean Waters Act (Ch. 21, ss. 26-53).
      ii. You must comply with the conditions in 314 CMR 4.00 - Surface Water Quality Standards.
      iii. You must comply with the conditions in 314 CMR 3.00 - Surface Water Discharge Permit Program.
      iv. You must comply with the Wetlands Protection Act, Ch. 131, s. 40 and its regulations, 310 CMR 10.00 and any order of Conditions issued by a Conservation Commission or a Superseding Order of Conditions issued by the Massachusetts Department of Environmental Protection.

b. Department of Environmental Protection Storm Water Management Policy:
   i. You must comply with the Massachusetts Storm Water Management Policy, and applicable Storm Water Performance Standards, as prescribed by state regulations promulgated under the authority of the Massachusetts Clean Waters Act, MGL Ch. 21, ss. 26-53 and the Wetlands Protection Act Ch. 131, s. 40.
c. Other State Environmental Laws, Regulations, Policies:
   i. You must comply with the Massachusetts Endangered Species Act [MESA] (MGL Ch. 313A and regulations at 321 CMR 10.00) and any actions undertaken to comply with this storm water permit, shall not result in non-compliance with the MESA.
   ii. You must not conduct activities under this permit that will interfere with implementation of mosquito control work conducted in accordance with Chapter 252 including, s. 5A thereunder and MassDEP Guideline Number BRP G01-02, West Nile Virus Application of Pesticides to Wetland Resource Areas and Buffer Zones, and Public Water Systems.
d. Other Department Directives:
   i. The Department may require you to perform water quality monitoring during the permit term if monitoring is necessary for the protection of public health or the environment as designated under the authority at 314 CMR 3.00.
   ii. The Department may require you to provide measurable verification of the effectiveness of BMPs and other control measures in your management program, including water quality monitoring.
   iii. The Department has determined that compliance with this permit does not protect you from enforcement actions deemed necessary by the Department under its associated regulations to address an imminent threat to the public health or a significant adverse environmental impact which results in a violation of the Massachusetts Clean Waters Act, Ch. 21, ss. 26-53.
   iv. The Department reserves the right to modify the 401 Water Quality Certification if any changes, modifications or deletions are made to the general permit. In addition, the Department reserves the right to add and/or alter the terms and conditions of its 401 Water Quality Certification to carry out its responsibilities during the term of this permit with respect to water quality, including any revisions to 314 CMR 4.00, Surface Water Quality Standards.
e. Permit Compliance
   i. Should any violation of the Massachusetts Surface Water Quality Standards (314 CMR 4.00) or the conditions of this certification occur, the Department will direct you to correct the violations(s). The Department has the right to take any action as authorized by the General Laws of the Commonwealth to address the violation of this permit or the MA Clean Waters Act and the regulations promulgated thereunder. Substantial civil and criminal penalties are authorized under MGL Ch. 21, s. 42 for discharging into Massachusetts' waters in violation of an order or permit issued by this Department. This

certification does not relieve you of the duty to comply with other applicable Massachusetts statutes and regulations.

2. NHR100000: State of New Hampshire
   a. If you disturb 100,000 square feet or more of contiguous area, you must also apply for a "Significant Alteration of the Terrain Permit from DES pursuant to RSA 485-A:17 and Env-Ws 415. This requirement applies to the disturbances of only 50,000 square feet when construction occurs within the protected shoreline (see RSA 483-B and Env-Ws 1400).
   b. You must determine that any excavation dewatering discharges are not contaminated before they will be authorized as an allowable non-storm water discharge under this permit (see Subpart 1.3.B). The water is considered uncontaminated if there is no groundwater contamination within 1,000 feet of the discharge. Information on groundwater contamination can be generated over the Internet via the NHDES web site http://www.des.state.nh.us (One Stop Data Retrieval, Onestop Master Site Table). The web site also provides E-mail access to an NHDES Site Remediation Contact to answer questions about using the Web site.
   c. You must treat any uncontaminated excavation dewatering discharges as necessary to remove suspended solids and turbidity. The discharges must be sampled at a location prior to mixing with storm water at least once per week during weeks when discharges occur. The samples must be analyzed for total suspended solids (TSS) and must meet monthly average and maximum daily TSS limitations of 50 milligrams per liter (mg/L) and 100 mg/L, respectively. TSS (a.k.a. Residue, Nonfilterable) analysis and sampling must be performed in accordance with Tables IB (parameter, units and method) and II (required containers, preservation techniques and holding times) in 40 CFR 136.3 (see: http://www.access.gpo.gov/nara/cfr/waisidx_02/40cfr136_02.html). Records of any sampling and analysis must be maintained and kept with the SWPPP for at least three years after final site stabilization.
   d. During site design and preparation of the storm water pollution prevention plan (SWPPP), you must consider opportunities for groundwater recharge using on-site infiltration. The SWPPP must include a description of any on-site infiltration that will be installed as a post construction storm water management measure (see Subpart 3.4.E) or reasons for not employing such measures. For design considerations for infiltration measures see the September 2001 DES publication titled "Managing Storm Water as a Valuable Resource" which is available online at: http://www.des.state.nh.us/StormWater/construction.htm. Loss of annual recharge to groundwater should be minimized through the use of infiltration measures wherever feasible.

B. Region 2 – No additional requirements.

C. Region 5

1. MNR100000: Indian Country within the State of Minnesota

a. *Fond du Lac Band of Lake Superior Chippewa*

i. A copy of the Storm Water Pollution Prevention Plan must be submitted to the following office at least thirty (30) days in advance of sending the Notice of Intent (NOI) to EPA:

Fond du Lac Reservation
Office of Water Protection
1720 Big Lake Road
Cloquet, MN 55720

CGP applicants are encouraged to work with the FDL Office of Water Protection in the identification of all proposed receiving waters.

ii. Copies of the NOI and the Notice of Termination (NOT) must be sent to the Fond du Lac Office of Water Protection at the same time they are submitted to EPA.

iii. This certification does not pertain to any new discharge to Outstanding Reservation Resource Waters (ORRW) as described in §105 b.3 of the Fond du Lac Water Quality Standards (Ordinance #12/98). Although additional waters may be designated in the future, currently Perch Lake, Rice Portage Lake, Miller Lake, Deadfish Lake and Jaskari Lake are designated as ORRWs. New dischargers wishing to discharge to an ORRW must obtain an individual permit for stormwater discharges from large and small construction activities.

iv. All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in the Water Quality Standards of the Fond du Lac Reservation, Ordinance 12/98 as amended. This includes, but is not limited to, the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of water of the Fond du Lac Reservation for any of the uses designated in the Water Quality Standards of the Fond du Lac Reservation. These uses include wildlife, aquatic life, warm and cold water fisheries, subsistence fishing (netting), primary contact recreation, cultural, wild rice areas, aesthetic waters, agriculture, navigation and commercial.

v. Appropriate steps shall be taken to ensure that petroleum products or other chemical pollutants are prevented from entering waters of the Fond du Lac Reservation. All spills must be reported to the appropriate emergency management agency, and measures shall be taken immediately to prevent the pollution of waters of the Fond du Lac reservation, including groundwater.

vi. This certification does not authorize impacts to cultural, historical, or archeological features or sites, or properties that may be eligible for such listing.

b. *Grand Portage Band of Lake Superior Chippewa* **[Coverage not yet available]**

2. WIR100000: Indian Country within the State of Wisconsin, except the Sokaogon Chippewa Community.

a. No additional requirements

Note: Facilities within the Sokaogon Chippewa Community are not eligible for stormwater discharge coverage under this permit. Contact the Region 5 office for an individual permit application.

D. Region 6

1. NMR100000: The State of New Mexico, except Indian country
   a. In addition to all other provisions of this permit, operators who intend to obtain authorization under this permit for all new stormwater discharges must satisfy the conditions in Part 10.C.1.b., unless a TMDL has been established for the receiving stream which specifies a waste load allocation (WLA) for construction stormwater discharges or the receiving stream is a Tier 3 water, in which case Part 10.C.1.c. applies.
   b. The SWPPP must include site-specific interim and permanent stabilization, managerial, and structural solids, erosion, and sediment control best management practices (BMPs) and/or other controls that are designed to prevent to the maximum extent practicable an increase in the sediment yield and flow velocity from pre-construction, pre-development conditions to assure that applicable standards in 20.6.4 NMAC, including the antidegradation policy, or WLAs are met. This requirement applies to discharges both during construction and after construction operations have been completed. The SWPPP must identify, and document the rationale for selecting these BMPs and/or other controls. The SWPPP must also describe design specifications, construction specifications, maintenance schedules (including a long term maintenance plan), criteria for inspections, as well as expected performance and longevity of these BMPs. BMP selection must be made based on the use of appropriate soil loss prediction models (such as SEDCAD 4.0, RUSLE, SEDIMOT II, MULTISED, etc.), or equivalent, generally accepted (by professional erosion control specialists), soil loss prediction tools. The operator(s) must demonstrate, and include documentation in the SWPPP, that implementation of the site-specific practices will assure that the applicable standards or WLAs are met, and will result in sediment yields and flow velocities that, to the maximum extent practicable, will not be greater than the sediment yield levels and flow velocities from pre-construction, pre-development conditions. The SWPPP must be prepared in accordance with good engineering practices by qualified (e.g., CPESC certified, engineers with appropriate training, etc.) erosion control specialists familiar with the use of soil loss prediction models and design of erosion and sediment control systems based on these models (or equivalent soil loss prediction tools). The operator(s) must design, implement, and maintain BMPs in the manner specified in the SWPPP.
   c. Operators are not eligible to obtain authorization under this permit for all new stormwater discharges to outstanding national resource waters (ONRWs) (also referred to as "Tier 3: waters). According to the Antidegradation Policy at Paragraph 3 of Subsection A of 20.6.4.8 NMAC, in part, "ONRWs may include, but are not limited to, surface waters of the state within national and state monuments, parks, wildlife refuges, waters of exceptional recreational or

ecological significance, and waters identified under the Wild and Scenic Rivers Act." No ONRWs exist at the time this permit is being finalized; however, during the term of the permit, if a receiving water is designated as an ONRW, the operator must obtain an individual permit for stormwater discharges from large and small construction activities.

d. Stormwater discharges associated with construction activity that the State has determined to be or may reasonably be expected to be contributing to a violation of an applicable standard, including the antidegradation policy, are not authorized by this permit. *Note: Upon receipt of this determination, NMED anticipates that, within a reasonable period of time, EPA will notify the general permittee to apply for and obtain an individual NPDES permit for these discharges per 40 CFR Part 122.28(b)(3).*

e. Inspections required under Part 4 must be conducted at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater. The option for inspections at least once per 7 calendar days is not available. The Inspection Waivers provided in Part 4.B and C still apply.

f. Permittees can use temporary erosion controls as described in item 3 of the Appendix A definition of "Final Stabilization" as a method for final stabilization under the permit only under the following conditions:

If this option is selected, you must notify SWQB at the address listed in item g. below at the time the NOT is submitted to EPA. The information to be submitted includes:

- A copy of the NOT;
- Contact information, including individual name or title, address, and phone number for the qualified (see CGP Part 4.10.D) party responsible for implementing the final stabilization measures; and
- The date that the temporary erosion control practice was implemented (this is always prior to, and sometimes significantly prior to, submission of an NOT) and the projected timeframe that the 70% native vegetative cover requirements are expected to be met. (Note that if more than three years is required to establish 70 percent of the natural vegetative cover, this technique cannot be used or cited for fulfillment of the final stabilization requirement – you remain responsible for establishment of final stabilization)

SWQB also requires that you periodically (minimum once/year) inspect and properly maintain the area until the criteria for final stabilization, as defined in Appendix A, item 3 of the CGP, have been met. You must prepare an inspection report documenting the findings of these inspections and signed in accordance with Appendix G, Section 11 of the CGP. This inspection record must be retained along with the SWPPP for three years after the NOT is submitted for the site and additionally submitted to SWQB at the address listed in item g. below. The inspections must at a minimum include the following:

- Observations of all areas of the site disturbed by construction activity:

- Best Management Practices (BMPs)/post-construction storm water controls must be observed to ensure they are effective;
- An assessment of the status of vegetative re-establishment; and
- Corrective actions required to ensure vegetative success within three years, and control of pollutants in storm water runoff from the site, including implementation dates.

Signed copies of discharge monitoring reports, individual permit applications, and all other reports required by the permit to be submitted, shall also be sent to:

Program Manager
Point Source Regulation Section
Surface Water Quality Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

2. NMR10000I: Indian country within the State of New Mexico, except Navajo Reservation Lands that are covered under Arizona permit AZR10000I and Ute Mountain Reservation Lands that are covered under Colorado permit COR10000I
   a. *Pueblo of Acoma.* The following conditions apply only to facilities on or bordering the Pueblo of Acoma with discharges into or flowing into waters of the Pueblo.
      i. A copy of the Notice of Intent and Notice of Termination must be submitted to the Haaku Water Office at the address below at the same time they are submitted to EPA. A copy of the storm water pollution prevention plan must be provided to the Haaku Water Office upon request.
      ii. HAAKU WATER OFFICE
      PO Box 309
      Pueblo of Acoma, NM 87034
   b. *Pueblo of Isleta.* The following conditions apply only to discharges on the Pueblo of Isleta.
      i. Subpart 1.3.C.4, (Eligibility, Limitations on Coverage) first sentence, is revised to read: "This permit does not authorize discharges that EPA or the Pueblo of Isleta, prior to authorization under this permit, determines will cause, have the reasonable potential to cause, or contribute to an excursion above any applicable water quality standard or impairment of a designated use of receiving waters."
      ii. Subpart 2.2. (How to Submit) is amended to require: Copies of all Notices of Intent submitted to EPA must also be sent concurrently to the Pueblo of Isleta at the following address. Discharges are not authorized by this permit unless an accurate and complete Notice of Intent has been submitted to the Pueblo of Isleta.

      <u>Regular U.S. Mail Delivery</u>
      Natural Resources Department
      Pueblo of Isleta

P.O. Box 1270
Isleta, NM 87022

<u>Overnight/Express Mail Delivery</u>
Natural Resources Department
Building L
11000 Broadway, SE
Albuquerque, NM 87105

iii. Part 2 (Authorizations for Discharges of Storm Water from Construction Activity), second sentence, is amended to read: "Discharges are not authorized if your NOI is incomplete or inaccurate, if you failed to submit a copy of the NOI to the Pueblo of Isleta, or if you were never eligible for permit coverage.

iv. Subpart 5.3 (Description of Control Measures to Reduce Pollutant Discharges), section A, last sentence, is amended to read: "For each major activity identified in the project description the SWPPP must clearly describe appropriate control measures, the general sequence during the construction process in which the measures will be implemented, and which operator is responsible for the control measure's implementation and maintenance."

v. Subpart 5.7 (Copy of Permit Requirements), first sentence, is revised to read "Copies of this permit and of the signed and certified NOI form that was submitted to the Pueblo of Isleta and EPA must be included in the SWPPP."

vi. Subpart 4. (Inspections), section A is revised to read "Inspections must be conducted at least once every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater."

vii. Subpart 4. (Inspections), section H, last paragraph, is amended to add: "Copies of inspection reports that identify incidents of noncompliance shall be sent to Pueblo of Isleta at the address listed in Subpart 2.2." (See above)

viii. Subpart 5.11. (Signature, Plan Review and Making Plans Available), section A, first sentence is amended to read:

"A copy of the SWPPP (including a copy of the permit), NOI, and acknowledgement letter from EPA must be retained at the construction site (or other location easily accessible during normal business hours to the Pueblo of Isleta's Natural Resources Department, EPA, a state, tribal or local agency approving sediment and erosion plans, grading plans, or storm water management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service) from the date of commencement of construction activities to the date of final stabilization."

ix. Subpart 5.11. (Signature, Plan Review and Making Plans Available), section C. is amended to read: "SWPPPs must be made available upon request by EPA; representatives of the Pueblo of Isleta Natural Resources Department, a state, tribal or local agency approving sediment and erosion plans, grading

plans, or storm water management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service to the requestor. The copy of the SWPPP that is required to be kept on-site or locally available must be made available, in its entirety, to the EPA staff and the Pueblo of Isleta's Natural Resources Department staff for review and copying at the time of an on-site inspection.

x. Subpart 3.1.A (Sediment Controls), is amended to add: "Erosion and sediment controls shall be designed to retain sediment on-site."

xi. Subpart 3.1.I (Spills/Releases in Excess of Reportable Quantities), first bullet is amended to read: "you must provide notice to the Pueblo of Isleta Natural Resources Department (505-869-5748) and the National Response Center (NRC) (800–424–8802; in the Washington, DC, metropolitan area call 202–426– 2675) in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 as soon as site staff have knowledge of the discharge; and"

xii. Subpart 3.4.B (Attainment of Water Quality Standards After Authorization), is amended to add: "You must provide the Pueblo of Isleta, at the address listed in Subpart 2.2, with a copy of the EPA notification, modifications to your storm water controls, data and certification required by EPA."

xiii. Subpart 6.1. (Submitting a Notice of Termination) is amended to add: Copies of all Notices of Termination submitted to EPA must also be sent concurrently to the Pueblo of Isleta at the following address in Subpart 2.2.

xiv. Any correspondence, other than NOIs and NOTs, with the Pueblo of Isleta concerning storm water discharges authorized by this permit shall sent one of the addresses in Subpart 2.2.

xv. Appendix G, Section 9, first sentence is amended to read: "You must allow the Pueblo of Isleta's Natural Resources Department, EPA, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:..."

xvi. Appendix G, Section 12, subsections A- H are amended to require that when you must notify EPA of an event (e.g., planned changes, anticipated noncompliance, transfers, required reporting due to potential adverse effects or environmental impacts or other noncompliance matters), the Pueblo of Isleta must also be notified.

xvii. Parties wishing to apply for an Equivalent Analysis Waiver (see Appendix D, Section C) must provide a copy of the waiver analysis to the Pueblo of Isleta at the address specified in Subpart 2.2 at the time it is submitted to EPA.

c. *Ohkay Owingeh (San Juan Pueblo).* The following conditions apply only to discharges on Ohkay Owinegeh.

i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Pueblo at the time it is provided to the Environmental Protection Agency, at the following address. A copy of the Storm Water Pollution Prevention Plan must be provided to the Pueblo upon request.

Office of Environmental Affairs
P.O. Box 717
Ohkay Owingeh, NM 87566

ii. Appendix G, Section 10 (Monitoring and records), item D is amended to add: "All monitoring must be conducted in accordance with the Pueblo of San Juan's Quality Assurance Project Plan."

d. *Pueblo of Nambé.* The following conditions apply only to discharges on the Pueblo of Nambé.

i. Copies of the Notice of Intent (NOI), Notice of Termination (NOT), and any analytical data must be provided to the Nambé Pueblo Department of Environment and Natural Resources (DENR) at the time it is provided to the Environmental Protection Agency, at the following address. A copy of the Storm Water Pollution Prevention Plan must be provided to the Pueblo upon request.

ii. All correspondence chall be sent to:

Pueblo of Nambé
Department of Environment and Natural Resources
Rt. 1 Box 117-BB
Santa Fe, NM 87506
505-455-2036 ext. 120 fax: 505-455-8873

e. *Pueblo of Picuris.* The following conditions apply only to discharges on the Pueblo of Picuris.

i. Copies of the Notice of Intent (NOI), Notice of Termination (NOT), and any analytical data (e.g. Discharge Monitoring Reports, etc.) or any other reports must be provided to the Pueblo at the time it is provided to the Environmental Protection Agency. A copy of the Storm Water Pollution Prevention Plan must be provided to the Pueblo upon request.

ii. All correspondence shall be sent to:

Cordell Arellano
Director, Environment Department
Pueblo of Picuris
PO Box 158
Penasco, NM 87553

f. *Pueblo of Pojoaque.* The following conditions apply only to discharges on the Pueblo of Pojoaque.

i. Copies of the Notice of Intent (NOI), Notice of Termination (NOT), and any analytical data (e.g. Discharge Monitoring Reports, etc.) or any other reports must be provided to the Pueblo at the time it is provided to the Environmental Protection Agency. A copy of documents related to the

Storm Water Pollution Prevention Plan must be provided to the Pueblo upon request.

ii. All correspondence shall be sent to:

Luke Mario Duran
Director, Environment Department
Pueblo of Pojoaque
5 West Gutierrez, Suite 2b
Santa Fe, NM 87506

g. *Pueblo of Taos.* The following conditions apply only to discharges on the Pueblo of Taos.

i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Taos Pueblo Governor's Office and the Taos Pueblo Environmental Office at the same time as or prior to submission to the Environmental Protection Agency. A copy of the Storm Water Pollution Prevention Plan must be provided to Pueblo environmental personnel upon request.

ii. All correspondence for both the Taos Pueblo Governor's Office and the Taos Pueblo Environmental Office (same address) shall be sent to:

Governor/ Taos Pueblo Environmental Office (as applicable)
Taos Pueblo
PO Box 1846
Taos, NM 87571

h. *Pueblo of Sandia.* The following conditions apply only to discharges on the Pueblo of Sandia.

i. A copy of the Notice of Intent (NOI) must be provided to the Pueblo at the same, (or prior to) the time it is submitted to the Environmental Protection Agency.

ii. The Pueblo of Sandia objects to use of Low Rainfall Erosivity Waivers (see Appendix D, Part A) for any small construction activities on the Pueblo, so this waiver will not be available for construction projects on the Pueblo. Permittees wishing to apply for all other waivers (see Appendix D) must provide a copy of the waiver certification or analysis to the Pueblo of Sandia Environment Department.

iii. The Storm Water Pollution Prevention Plan (SWPPP) must be available to the Pueblo of Sandia either electronically or hard copy upon request for review. The SWPPP must be made available at least fourteen (14) days before construction begins. The fourteen (14) day period will give Tribal staff time to become familiar with the project site, prepare for construction inspections, and determine compliance with the Pueblo of Sandia Water Quality Standards. Failure to provide a SWPPP to the Pueblo of Sandia may result in denial of the discharge or construction delay.

iv. Discharges are not authorized by this permit unless and until:

a. An accurate and complete NOI has been submitted to the Pueblo: AND

b. An "Authorization to Proceed Letter" with any site specific mitigation requirements has been received from the Pueblo of Sandia following their review of the NOI and SWPPP and the permittee complies with all applicable requirements therein.

v. Before submitting a Notice of Termination (NOT), permittees must clearly demonstrate to the Pueblo of Sandia Environment Department though a site visit or documentation that requirements for site stabilization have been met and any temporary erosion control structures have been removed (or operational control is being passed to another operator). A short letter concurring that conditions for submittal of an NOT have met will be sent to the permittee by the Pueblo. Upon receipt of this letter, and provided the all other applicable requirements of the permit are met, the permittee will be eligible to submit and NOT.

vi. You must telephone the Pueblo of Sandia Environment Department at (505) 867-4533 of any noncompliance that may endanger human health or the environment within ten (10) hours of becoming aware of the circumstance.

vii. All corresondance shall be sent to:

Scott Bulgrin, Water Quality Manager
Pueblo of Sandia
481 Sandia Loop
Bernalillo, NM 87004

i. *Santa Clara Pueblo*. The following conditions apply only to discharges on the Santa Clara Pueblo.

i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Pueblo of Santa Clara Office of Environmental Affairs when they are submitted to the Environmental Protection Agency.

ii. A copy of the storm water pollution prevention plan must be made available to the Pueblo of Santa Clara Office of Environmental Affairs upon request.

iii. Construction site operators must notify the Pueblo of Santa Clara Office of Environmental Affairs by telephone at (505) 753-7326 of any non-compliance discharges that may endanger human health or the environment within twenty-fout (24) hours of becoming aware of the discharge.

iv. All correspondence shall be sent to:

Santa Clara Office of Environmental Affairs Taos Pueblo
One Kee Street
PO Box 580
Espanola, NM 87532
505-753-7326 Tel
505-747-2728 Fax

j. *Pueblo of Tesuque*. The following conditions apply only to discharges on the Pueblo of Tesuque.

i. Copies of the Notice of Intent (NOI), Notice of Termination (NOT), and any analytical data (e.g. Discharge Monitoring Reports, etc.) or any other

reports must be provided to the Pueblo at the time it is provided to the Environmental Protection Agency.

ii. A copy of documents related to the Storm Water Pollution Prevention Plan must be provided to the Pueblo upon request.

iii. All correspondence shall be sent to:

Ryan Swazo-Hinds
Sr. Envirionmental Technician
Pueblo of Tesuque
Environment Department
Rt. 42, Box 360-T
Santa Fe, NM 87506

3. OKR10000F: Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09).
   a. In accordance with Oklahoma's Water Quality Standards (OAC 785:45-5-25), Subpart 1.3.C. (Limitations on Coverage) is modified to add paragraphs 8 and 9 as follows:

      "8. For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Big Lee Creek or any water or watershed designated "ORW" (Outstanding Resource Water) in Oklahoma's Water Quality Standards, this permit may only be used to authorize discharges from temporary construction activities. Discharges from any on-going activities such as sand and gravel mining or any other mineral mining are not authorized.

      9. For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Big Lee Creek or any water or watershed designated "ORW" (Outstanding Resource Water) in Oklahoma's Water Quality Standards, this permit may not be used to authorize discharges from support activities, including concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, or borrow areas."
4. OKR10000I: Indian country within the State of Oklahoma.
   a. In order to protect downstream waters subject to the state of Oklahoma's Water Quality Standards (OAC 785:45-5-25) where receiving waters flow from Indian Country to State waters, Subpart 1.3.C. (Limitations on Coverage) is modified to add paragraphs 8 and 9 as follows:

      "8. For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Big Lee Creek or any water or watershed designated

"ORW" (Outstanding Resource Water) in Oklahoma's Water Quality Standards, this permit may only be used to authorize discharges from temporary construction activities. Discharges from any on-going activities such as sand and gravel mining or any other mineral mining are not authorized.

9. For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Big Lee Creek or any water or watershed designated "ORW" (Outstanding Resource Water) in Oklahoma's Water Quality Standards, this permit may not be used to authorize discharges from support activities, including concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, or borrow areas."

b. *Pawnee Nation of Oklahoma.* The following conditions apply only to discharges on the Pawnee Nation of Oklahoma.
   i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Pawnee Nation at the same time they are submitted to the Environmental Protection Agency.
   ii. A copy of the storm water pollution prevention plan must be made available to Pawnee Nation Department of Environmental Conservation and Safety upon request.
   iii. Construction site operators must notify the Pawnee Nation Department of Environmental Conservation and Safety by telephone at (918) 762-3655 immediately of any non-compliance with any provision of the permit conditions.
   iv. All correspondence shall be sent to:

Pawnee Nation
Department of Environmental Conservation and Safety
PO Box 470
Pawnee, OK 74058

5. TXR10000F: Discharges in the State of Texas that are not under the authority of the Texas Commission on Environmental Quality, including activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline.

NOTE: This permit does not create an obligation to obtain a permit where such obligation does not already exist under federal statute or regulation. For more information on the Clean Water Act §§ 402(l)(2) permitting exemption for uncontaminated discharges of storm water from oil and gas exploration, production, processing, or treatment operations or transmission facilities, visit: http://cfpub.epa.gov/npdes/stormwater/oilgas.cfm

D. Region 8

1. MTR100001:

a. Confederated Salish and Kootenai Tribes. The following conditions only apply for projects on the Flathead Indian Reservation:

i. Permittees must send a Stormwater Pollution Prevention Plan (SWPPP) to the Tribe at least 30 days before construction starts;
ii. Before submitting a Notice of Termination (NOT), permittees must clearly demonstrate to an appointed tribal staff person during an on-site inspection that requirements for site stabilization have been met;
iii. Permittees submitting electronic Notices of Intents (eNOI's) to USEPA must cc a copy to NRD-EPD@cskt.org; and
iv. Written NOIs, SWPPPs, and NOTs shall be mailed to:

Confederated Salish and Kootenai Tribes
National Resources Department
Department Head
P.O. Box 278
Pablo, MT 59855

Permittees may also submit their SWPPP and NOT to NRD-EPD@cskt.org

b. Fort Peck Tribes. The following conditions only apply for projects on the Fort Peck Indian Reservation:
i. The permittee must send a copy of the Notice of Intent (NOI) and the Notice of Termination (NOT) to the Tribes at the same time that the NOI and NOT is submitted to EPA. Copies of the NOI and NOT shall be accepted either electronically or hard copy format and should be sent to:

Deb Madison
Environmental Programs Manager
Fort Peck Assiniboine & Sioux Tribes
P.O. Box 1027
Poplar, MT 59255
Tel: 406.768.2389 Fax: 406.768.5606
E-mail: 2horses@nemont.net

ii. A copy of the proposed SWPPP at the time of NOI/NOT submissions must be sent to the Tribes to ensure that upon closure of the site and/or activities all environmental commitments have been met.

c. Northern Cheyenne Reservation. The following conditions only apply for projects on the Northern Cheyenne Indian Reservation:
i. Permittees must contact the Northern Cheyenne Environmental Protection Department at (406) 477-6506 prior to authorization to discharge under the general permit:
ii. The Tribe shall review and approve SWPPPs prior to approval; and
iii. The Tribe shall review and improve BMPs on site to ensure that Tribal water quality standards are protected.

E. Region 9

1. ASR100000: The Island of American Samoa
   a. Discharges authorized by the general permit shall meet all applicable American Samoa water quality standards.
   b. Permittees discharging under the general permit shall comply with all conditions of the permit.

3. AZR10000I: Indian country lands within the State of Arizona, including Navajo Reservation lands in New Mexico and Utah
   a. White Mountain Apache Tribe. The following condition applies only for projects on the White Mountain Apache Reservation: All NOIs for proposed stormwater discharge coverage shall be provided to the following address:

      Tribal Environmental Planning Office
      P.O. Box 2109
      Whiteriver, AZ 85941

   b. Hoopa Valley Tribe. The following conditions apply only for projects on the Hoopa Valley Reservation:
      i. All notices of intent submitted for stormwater discharges under the general permit in Hoopa Valley Indian Reservation (HVIR) shall be submitted to the Tribal Environmental Protection Agency (TEPA); and
      ii. All pollution prevention plans for stormwater discharge in HVIR shall be submitted to TEPA for review and approval.

   c. 29 Palms Band of Mission Indians. The following conditions apply only for projects on the 29 Palms Band of Mission Indians Reservation:
      i. The 29 Palms Tribal EPA is informed of any future changes made to the proposed CGP;
      ii. For each permitted activity, the U.S. EPA will ensure that all terms and conditions of the proposed CGP are complied with;
      iii Notices of intent must be submitted to the 29 Palms Tribal EPA for review, comment and tracking;
      iv. Copies of stormwater pollution prevention plans (SWPPPs) and supporting Best Management Practices (BMPs) must be submitted to the 29 Palms Tribal EPA for review and compliance;
      v. Copies of all monitoring reports must be provided to the 29 Palms Tribal EPA;
      vi. Depending on the permitted activity, the 29 Palms Tribal EPA reserves the right to stipulate additional monitoring requirements; and
      vii. In order to meet the requirements of Tribal law, including water quality standards, each of the conditions cited in the proposed CGP and the Twenty-Nine Palms Band of Mission Indians certification shall not be made any less stringent.

d. Hualapai Tribe. The following conditions apply only for projects on the Hualapai Reservation:

   i. All notices of intent for proposed stormwater discharges under the CGP and all pollution prevention plans for stormwater discharges on Hualapai Tribal lands shall be submitted to the Water Resource Program through the Tribal Chairman for review and approval, P.O. Box 179, Peach Springs, AZ 86434.

e. Pyramid Lake Paiute Tribe. The following conditions apply only for projects on the Pyramid Lake Paiute Reservation:

   i. All notices of intent (NOIs) must be submitted to the Tribe for review, comments and tracking;

   ii. copies of all Stormwater Pollution Prevention Plan (SWPPPs) and supporting Best Management Practices (BMPs) must be submitted to the Pyramid Lake Paiute Tribe for review and concurrence;

   iii. copies of the criteria for Effluent Limitations Guidelines (ELGs) and the criteria for proposed Qualifying Local Programs (QLPs) to be used for sediment and erosion control pursuant to 40 CFR 122.44(s) be provided to the Pyramid Lake Paiute Tribe; and

   iv. copies of all monitoring reports must be provided to the Pyramid Lake Paiute Tribe.

4. MPR100000: Commonwealth of the Northern Mariana Islands (CNMI)

   a. An Earthmoving and Erosion Control Permit shall be obtained from the CNMI DEQ prior to any construction activity covered under the NPDES general permit.

   b. All conditions and requirements set forth in the USEPA NPDES general permit for discharges from large and small construction must be complied with.

   c. A SWPPP for storm water discharges from construction activity must be approved by the Director of the CNMI DEQ prior to the submission of the NOI to USEPA. The CNMI address for the submittal of the SWPPP for approval is:

      Commonwealth of the Northern Mariana Islands
      Office of the Governor
      Director, Division of Environmental Quality (DEQ)
      P.O. Box 501304 C.K.
      Saipan, MP 96950-1304

   d. An NOI to be covered by the general permit for discharges from large and small construction sites must be submitted to CNMI DEQ (use above address) and USEPA, Region 9, in the form prescribed by USEPA, accompanied by a SWPPP approval letter from CNMI DEQ.

   e. The NOI must be postmarked seven (7) calendar days prior to any storm water discharges and a copy must be submitted to the Director of CNMI DEQ (use above address) no later than seven (7) calendar days prior to any stormwater discharges.

f. Copies of all monitoring reports required by the NPDES general permit must be submitted to CNMI DEQ (use above address).

g. In accordance with section 10.3(h) and (i) of the CNMI water quality standards, CNMI DEQ reserves the right to deny coverage under the general permit and to require submittal of an application for an individual NPDES permit based on a review of the NOI or other information made available to the Director.

F. Region 10

1. AKR100000: The State of Alaska, except Indian country

a. For Storm Water Pollution Prevention Plans

i. Operators of construction projects disturbing at least one acre of land but less than five acres of land shall submit a copy of the Notice of Intent (NOI) to the Alaska Department of Environmental Conservation (ADEC) at the same time it is submitted to the EPA. Submittals to ADEC shall be made to the following address

Alaska Department of Environmental Conservation
Wastewater Discharge/Storm Water
555 Cordova St.
Anchorage, AK 99501

ii. Operators of construction projects that disturb five or more acres of land and that are located outside the areas of the local governments described in numbers iii, iv, v, or vi below, shall submit a copy of the Storm Water Pollution Prevention Plan (SWPPP) and a copy of the NOI to ADEC for review. The SWPPP shall be accompanied by the state-required plan review fee (see 18 AAC 72.955).

iii. Within the Municipality of Anchorage

(1) Operators of construction projects disturbing one or more acres of land shall submit a copy of the SWPPP to either ADEC or the Municipality based on the project type and operator as shown in the following table

Project Type	Submit SWPPP to
Government (federal, state, municipal) road projects and other government transportation projects such as ports, railroads or airports	ADEC
Utility projects for which the utility is initiating the work	Municipality
Work that requires a Building Permit	Municipality
Non-publicly funded transportation projects	Municipality

(2) Submittal of the SWPPP to the Municipality should be made before or at the same time the NOI is submitted to the EPA and ADEC and shall be accompanied by any Municipality-required fee. Copies of the SWPPP shall be submitted to the Municipality at the following address

Municipality of Anchorage
Office of Planning Development and Public Works
4700 South Elmore Rd.
PO Box 196650
Anchorage, AK 99519-6650

(3) Submittals to ADEC shall include a copy of the SWPPP and a copy of the NOI for review and shall be accompanied by the state-required plan review fee (see 18 AAC 72.995).

iv. Within the urbanized area boundary of the Fairbanks North Star Borough check with the Borough for the latest requirements.

Fairbanks North Star Borough
Department of Public Works
PO Box 71267
Fairbanks, AK 99707

v. Within the urbanized area boundary of the City of Fairbanks

(1) Operators of privately-funded construction projects disturbing one or more acres of land shall submit a copy of the SWPPP to the City of Fairbanks.

(2) Submittal of the SWPPP to the City of Fairbanks should be made before or at the same time the NOI is submitted to the EPA and ADEC and shall be accompanied by any City-required fee. Copies of the SWPPP shall be submitted to the City of Fairbanks at the following address

City of Fairbanks
Engineering Division
800 Cushman St
Fairbanks, AK 99701

(3) Operators of publicly-funded projects disturbing one or more acres of land shall submit a copy of the SWPPP and a copy of the NOI to ADEC for review, and shall be accompanied by the state-required plan review fee (see 18 AAC 72.995).

vi. Within the urbanized area boundary of the City of North Pole

(1) Operators of privately-funded construction projects disturbing one or more acres of land shall submit a copy of the SWPPP to the City of North Pole.

(2) Submittal of the SWPPP to the City of North Pole should be made before or at the same time the NOI is submitted to the EPA and ADEC and shall be accompanied by any City-required fee. Copies of the SWPPP shall be submitted to the City of North Pole at the following address

City of North Pole
Department of Public Works
125 Snowman Lane
North Pole, AK 99705

(3) Operators of publicly-funded projects disturbing one or more acres of land shall submit a copy of the SWPPP and a copy of the NOI to ADEC for review, and shall be accompanied by the state-required plan review fee (see 18 AAC 72.995).

vii. For hardrock mines that are designed to process 500 or more tons per day and intend to file a Notice of Intent to begin construction under this permit

(1) The operator shall submit their SWPPP to ADEC for review at least 90 days before the start of construction,

(2) Representatives of the operator and the prime site construction contractor shall meet with ADEC representatives in a pre-construction conference at least 20 days before the start of construction to discuss the details of the SWPPP and stormwater management during construction,

(3) The operator shall submit to ADEC addendums to the SWPPP that address any planned physical alterations, additions to the permitted facility, or unanticipated conditions that arise during planned construction that could significantly change the nature, or increase the quantity, of pollutants discharged from the facility, and

(4) The operator shall have at least one person on-site during construction who is qualified and trained in the principles and practices of erosion and sediment control and has the authority to direct the maintenance of storm water best management practices.

b. For Post-Construction (Permanent) Storm Water Control Measures (Section 3.1.E *[Post-Construction Stormwater Management]* of the CGP)

   i. Operators of construction projects who construct, alter, install, modify, or operate any part of a storm water treatment system and are located outside the Municipality of Anchorage, shall submit a copy of the engineering plans to ADEC for review at the address given above (see 18 AAC 72.600).

   ii. Operators of construction projects who construct, alter, install, modify, or operate any part of a storm water treatment system and are located inside the Municipality of Anchorage, shall submit a copy of the engineering plans to the respective government agency based on project type, as indicated in the table in a.iii.*(1)* above, for review at the addresses given in a.i. or a.iii.*(2)* above.

2. IDR100000: The State of Idaho, except Indian country

   a. *303(d)-listed Water Bodies with Approved TMDLs.*
   Discharges of storm water will be consistent with load allocations established by the applicable TMDL.

   b. *303(d)-listed Water Bodies without Approved TMDLs (High Priority)*
   If a TMDL has not been established for a high priority 303(d)-listed water body, then discharges of storm water may not cause an increase in the total load of listed pollutant(s) in the receiving water body.

   c. *303(d)-listed Water Bodies without Approved TMDLs (Medium or Low Priority)*
   If a TMDL has not been established for a medium or low priority 303(d)-listed water body, then best management practices shall be employed as necessary to prohibit further impairment of the designated or existing beneficial uses in the receiving water body.

   d. *Best Management Practices (BMPs)*
   BMPs must be designed, implemented, and maintained by the permittee to fully protect and maintain the beneficial uses of the receiving water body. The permittee should select appropriate BMPs that are either authorized by the

appropriate designated agency as defined in Idaho Water Quality Standards (IDAPA 58.01.02), recommended in IDEQ's *Catalog of Stormwater BMPs for Idaho Cities and Counties*, or recommended by other local government entities or guidance documents.

e. *Equivalent Analysis Waiver* - Use of the "Equivalent Analysis Waiver" in Appendix D of the permit is not authorized.

f. Operators may contact the Idaho Department of Environmental Quality regional office nearest the construction activity for more information about impaired waterways:

Boise Regional Office:
1445 N. Orchard
Boise ID 83706-2239
Tel: (208)373-0550
Fax: (208)373-0287

Grangeville Satellite Office:
300 W. Main
Grangeville ID 83530
Tel: (208)983-0808
Fax: (208)983-2873

Pocatello Regional Office:
444 Hospital Way #300
Pocatello ID 83201
Tel: (208)236-6160
Fax: (208)236-6168

McCall Satellite Office:
502 N. 3rd Street #9A
P.O. Box 4654
McCall, ID 83638
Tel: (208)634-4900
Fax: (208)634-9405

Idaho Falls Regional Office:
900 N. Skyline, Suite B
Idaho Falls, ID 83402
Tel: (208)528-2650
Fax: (208)528-2695

Twin Falls Regional Office:
1363 Fillmore
Twin Falls, ID 83301
Tel: (208)736-2190
Fax: (208)736-2194

Coeur d'Alene Regional Office:
2110 Ironwood Parkway
Coeur d'Alene ID 83814
Tel: (208)769-1422
Fax: (208)769-1404

Lewiston Regional Office:
1118 "F" Street
Lewiston, ID 83501
Tel: (208)799-4370
Toll Free: 1-877-541-3304
Fax: (208)799-3451

3. ORR100001: Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9):

a. Confederated Tribes of the Umatilla Indian Reservation.
The following conditions apply only for projects within the exterior boundaries of the Umatilla Indian Reservation:

i. The operator shall be responsible for achieving compliance with the Confederated Tribes of the Umatilla Indian Reservation's (CTUIR) Water Quality Standards.

ii. The operator must submit all Storm Water Pollution Prevention Plans required under this general permit to the CTUIR Water Resources Program for review and determination that the SWPPP is sufficient to meet Tribal Water Quality Standards prior to the beginning of any discharge activities taking place.

iii. The operator must submit a copy of the Notice of Intent (NOI) to be covered by this general permit to the CTUIR Water Resources Program at the address below, at the same time it is submitted to EPA.

iv. The operator shall be responsible for reporting an exceedance of Tribal Water Quality Standards to the CTUIR Water Resources Program at the same time it is reported to EPA.
Confederated Tribes of the Umatilla Indian Reservation
Water Resources Program
P.O. Box 638
Pendleton, OR 97801
(541) 966-2420

v. At least 45 days prior to beginning any discharge activities, the operator must submit a copy of the Notice of Intent to be covered under this general permit and an assessment of whether the undertaking has the potential to affect historic properties to CTUIR Tribal Historic Preservation Office (THPO) at the address below. If the project has potential to affect historic properties, the operator must define the area of potential effect (APE). The operator must provide the THPO at least 30 days to comment on the APE as defined.

vi. If the project is an undertaking, the operator must conduct a cultural resource investigation. All fieldwork must be conducted by qualified personnel (as outlined by the Secretary of the Interior's Standards and Guidelines found at http://www.nps.gov/history/local-law/arch_stnds_0.htm). All fieldwork must be documented using Oregon Reporting Standards (as outlined at http://egov.oregon.gov/OPRD/HCD/ARCH/arch_pubsandlinks.shtml). The resulting report must be submitted to the THPO for concurrence before any ground disturbing work can occur. The operator must provide the THPO at least 30 days to review and respond to all reports.
The operator must obtain THPO concurrence in writing. If historic properties are present, this written concurrence will outline measures to be taken to prevent or mitigate effects to historic properties.

Confederated Tribes of the Umatilla Indian Reservation
Cultural Resources Protection Program
Tribal Historic Preservation Office
P.O. Box 638
Pendleton, OR 97801
(541) 966-2340

b. Confederated Tribes of Warm Springs.
The following conditions apply only for projects on the Warm Springs Indian Reservation:

i. All activities covered by this NPDES general permit occurring within a designated riparian buffer zone as established in Ordinance 74 (Integrated Resource Management Plan or IRMP) must be reviewed, approved and permitted through the Tribe's Hydraulic Permit Application process, including payment of any applicable fees.

ii. All activities covered by this NPDES general permit must follow all applicable land management and resource conservation requirements specified in the IRMP.

iii. Operators of activities covered by this NPDES general permit must submit a Storm Water Pollution Prevention Plan to the Tribe's Water Control Board at the following address for approval at least 30 days prior to beginning construction activity:

Chair, Warm Springs Water Control Board
P.O. Box C
Warm Springs, Oregon 97761

4. WAR10000F: Federal Facilities in the State of Washington, except those located on Indian Country

a. Discharges shall not cause or contribute to a violation of surface water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC), sediment management standards (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (40 CFR Part 131.36). Discharges that are not in compliance with these standards are not authorized.

b. Prior to the discharge of stormwater and non-stormwater to waters of the state, the Permittee shall apply all known, available, and reasonable methods of prevention, control, and treatment (AKART). This includes the preparation and implementation of an adequate Stormwater Pollution Prevention Plan (SWPPP), with all appropriate best management practices (BMPs) installed and maintained in accordance with the SWPPP and the terms and conditions of this permit.

c. Sampling & Numeric Effluent Limitations – For Sites Discharging to Certain Waterbodies on the 303(d) List or with an Applicable TMDL

   i. Permittees that discharge to water bodies listed as impaired by the State of Washington under Section 303(d) of the Clean Water Act for turbidity, fine sediment, high pH or phosphorus, shall conduct water quality sampling according to the requirements of this section.

      (1) The operator must retain all monitoring results required by this section as part of the SWPPP. All data and related monitoring records must be provided to EPA or the Washington Department of Ecology upon request.

      (2) The operator must notify EPA when the discharge turbidity or discharge pH exceeds the water quality standards as defined in Parts 10.F.4.d.ii and e.ii below, in accordance with the reporting requirements of Part G.12.F of this permit. All reports must be submitted to EPA at the following address:
      U.S EPA Region 10
      NPDES Compliance Unit - Attn: Federal Facilities Compliance Officer
      1200 6th Avenue, Suite 900
      OCE-133
      Seattle, WA 98101
      (206) 553-1846

   ii. All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current listing by Ecology of impaired waters that exists on November 16, 2005, or the date when the operator's complete NOI is received by EPA, whichever is later.

Parameter identified in 303(d) listing	Parameter/Units	Analytical Method	Sampling Frequency	Water Quality Standard
Turbidity Fine Sediment Phosphorus	Turbidity/NTU	SM2130 or EPA180.1	Weekly, if discharging	If background is 50 NTU or less: 5 NTU over background; or If background is more than 50 NTU: 10% over background
High pH	pH/Standard Units	pH meter	Weekly, if discharging	In the range of 6.5 – 8.5

d. Discharges to waterbodies on the 303(d) list for turbidity, fine sediment, or phosphorus

   i. Permittees which discharge to waterbodies on the 303(d) list for turbidity, fine sediment, or phosphorus shall conduct turbidity sampling at the

following locations to evaluate compliance with the water quality standard for turbidity:

(1) Background turbidity shall be measured in the 303(d) listed receiving water immediately upstream (upgradient) or outside the area of influence of the discharge; and

(2) Discharge turbidity shall be measured at the point of discharge into the 303(d) listed receiving waterbody, inside the area of influence of the discharge; **or**

Alternatively, discharge turbidity may be measured at the point where the discharge leaves the construction site, rather than in the receiving waterbody.

ii. Based on sampling, if the discharge turbidity ever exceeds the water quality standard for turbidity (more than 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or more than a 10% increase in turbidity when the background turbidity is more than 50 NTU), all future discharges shall comply with a numeric effluent limit which is equal to the water quality standard for turbidity. If a future discharge exceeds the water quality standard for turbidity, the permittee shall:

(1) Review the SWPPP for compliance with the permit and make appropriate revisions within 7 days of the discharge that exceeded the standard;

(2) Fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, but no later than 10 days of the discharge that exceeded the standard;

(3) Document BMP implementation and maintenance in the site log book;

(4) Continue to sample daily until discharge turbidity meets the water quality standard for turbidity.

c. Discharges to waterbodies on the 303(d) list for High pH

i. Permittees which discharge to waterbodies on the 303(d) list for high pH shall conduct sampling at one of the following locations to evaluate compliance with the water quality standard for pH (in the range of 6.5 – 8.5):

(1) pH shall be measured at the point of discharge into the 303(d) listed waterbody, inside the area of influence of the discharge; or

(2) Alternatively, pH may be measured at the point where the discharge leaves the construction site, rather than in the receiving water.

ii. Based on the sampling set forth above, if the pH ever exceeds the water quality standard for pH (in the range of 6.5 – 8.5), all future discharges shall comply with a numeric effluent limit which is equal to the water quality standard for pH. If a future discharge exceeds the water quality standard for pH, the permittee shall:

(1) Review the SWPPP for compliance with the permit and make appropriate revisions within 7 days of the discharge;

(2) Fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, but no later than 10 days of the discharge that exceeded the standards;

(3) Document BMP implementation and maintenance in the site log book;

(4) Continue to sample daily until discharge meets the water quality standard for pH (in the range of 6.5 – 8.5).

f. Sampling & Limitations – For Sites Discharging to TMDLs

i. Discharges to waterbodies subject to an applicable Total Maximum Daily Load (TMDL) for turbidity, fine sediment, high pH, or phosphorus, shall be consistent with the assumptions and requirements of the TMDL.

(1) Where an applicable TMDL sets specific waste load allocations or requirements for discharges covered by this permit, discharges shall be consistent with any specific waste load allocations or requirements established by the applicable TMDL.

a. Discharges shall be sampled weekly, or as otherwise specified by the TMDL, to evaluate compliance with the specific waste load allocations or requirements.

b. Analytical methods used to meet the monitoring requirements shall conform to the latest revision of the Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136.

(2) Where an applicable TMDL has established a general waste load allocation for construction stormwater discharges, but no specific requirements have been identified, compliance with this permit will be assumed to be consistent with the approved TMDL.

(3) Where an applicable TMDL has not specified a waste load allocation for construction stormwater discharges, but has not excluded these discharges, compliance with this permit will be assumed to be consistent with the approved TMDL.

(4) Where an applicable TMDL specifically precludes or prohibits discharges from construction activity, the operator is not eligible for coverage under this permit.

ii. Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus, which has been completed and approved by EPA prior to November 16, 2005, or prior to the date the operator's complete NOI is received by EPA, whichever is later.
Information on impaired waterways is available from the Department of Ecology website at:
http://www.ecy.wa.gov/programs/wq/stormwater/construction/impaired.html
or by phone: 360-407-6460.

5. WAR100001: Indian country within the State of Washington

a. Kalispel Tribe.

The following conditions apply only for projects on the Kalispel Reservation:

i. The permittee shall be responsible for achieving compliance with the Kalispel Tribe's Water Quality Standards.
ii. The permittee shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the Kalispel Tribe Natural Resources Department at the same time as it submitted to the U.S. EPA
iii. The permittee shall submit all Storm Water Prevention Plans (SWPP) to the Kalispel Tribe Natural Resources Department thirty (30) days prior to beginning any discharge activities for review.
iv. Prior to any land disturbing activities on the Kalispel Indian Reservation and its dependent communities, the permittee shall obtain a cultural resource clearance letter from the Kalispel Natural Resource Department.
v. All tribal correspondence pertaining to the general permit for discharges of construction stormwater shall be sent to:

Kalispel Tribe Natural Resources Department
PO Box 39
Usk, WA 99180

b. Lummi Nation

The following conditions apply only for projects on the Lummi Reservation:

i. Pursuant to Lummi Code of Laws (LCL) 17.05.020(a), the operator must obtain a land use permit from the Lummi Planning Department as provided in Title 15 of the Lummi Code of Laws and regulations adopted thereunder.
ii. Pursuant to LCL 17.05.020(a), each operator shall develop and submit a Storm Water Pollution Prevention Plan to the Lummi Water Resources Division for review and approval by the Water Resources Manager prior to beginning any discharge activities.
iii. Pursuant to LCL Title 17, each operator shall be responsible for achieving compliance with the Water Quality Standards for Surface Waters of the Lummi Indian Reservation (Lummi Administrative Regulations [LAR] 17 LAR 07.010 through 17 LAR 07.210).
iv. Each operator shall submit a copy of the Notice of Intent to the Lummi Water Resources Division at the same time it is submitted to the Environmental Protection Agency (EPA).
v. Storm Water Pollution Prevention Plans and Notices of Intent shall be submitted to:

Lummi Natural Resources Department
ATTN: Water Resources Manager
2616 Kwina Road
Bellingham, WA 98226

vi. Refer to the Lummi Nation website at *http://www.lummi-nsn.gov* to review a copy of Title 17 of the Lummi Code of Laws and the references upon which the conditions identified above are based.

c. Makah Tribe

The following conditions apply only for projects on the Makah Reservation:

i. The operator shall be responsible for achieving compliance with the Makah Tribe's Water Quality Standards.
ii. The operator shall submit a Storm Water Pollution Prevention Plan to the

Makah Tribe Water Quality Program and Makah Fisheries Habitat Division for review and approval at least thirty (30) days prior to beginning any discharge activities.

iii. The operator shall submit a copy of the Notice of Intent to the Makah Tribe Water Quality Program and Makah Fisheries Habitat Division at the same time it is submitted to EPA.

iv. Storm Water Pollution Prevention Plans and Notices of Intent shall be submitted to:

Makah Fisheries Water Quality and Habitat Division
PO Box 115
Neah Bay, WA 98357

d. Puyallup Tribe of Indians.

The following conditions apply only to stormwater discharges from large and small construction activities that result in a total land disturbance of equal to or greater than one acre, where those discharges enter surface waters of the Puyallup Tribe:

i. Each permittee shall be responsible for achieving compliance with the Puyallup Tribe's Water Quality Standards, including antidegradation provisions. The Puyallup Natural Resources Department will conduct an antidegradation review for permitted activities that have the potential to affect water quality. The antidegradation review will be consistent with the Tribe's Antidegradation Implementation Procedures.

ii. The permittee shall be responsible for meeting any additional permit requirements imposed by EPA necessary to comply with the Puyallup Tribe's antidegradation policies if the discharge point is located within 1 linear mile upstream of waters designated by the Tribe.

iii. Each permittee shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the Puyallup Tribal Natural Resources Department at the address listed below at the same time it is submitted to EPA.

Puyallup Tribe of Indians
3009 E. Portland Avenue
Tacoma, WA 98404
ATTN: Natural Resources Department

iv. All supporting documentation and certifications in the NOI related to coverage under the general permit for Endangered Species Act purposes shall be submitted to the Puyallup Tribal Natural Resources Department for review.

v. If EPA requires coverage under an individual or alternative permit, the permittee shall submit a copy of the permit to the Puyallup Tribal Natural Resources Department at the address listed above.

vi. The permittee shall submit all stormwater pollution prevention plans to the Puyallup Tribal Natural Resources Department for review and approval prior to beginning any activities resulting in a discharge to tribal waters.

Appendix A - Definitions and Acronyms

Definitions

"Arid Areas" means areas with an average annual rainfall of 0 to 10 inches.

"Best Management Practices" (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practice to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

"Commencement of Construction Activities" means the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction-related activities (e.g., stockpiling of fill material).

"Control Measure" as used in this permit, refers to any BMP or other method used to prevent or reduce the discharge of pollutants to waters of the United States.

"CWA" means the Clean Water Act or the Federal Water Pollution Control Act, 33 U.S.C. section 1251 et seq.

"Discharge" when used without qualification means the "discharge of a pollutant."

"Discharge of Stormwater Associated with Construction Activity" as used in this permit, refers to a discharge of pollutants in stormwater from areas where soil disturbing activities (e.g., clearing, grading, or excavation), construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck chute washdown, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located.

"Eligible" means qualified for authorization to discharge stormwater under this general permit.

"Facility" or "Activity" means any "point source" or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.

"Federal Facility" means any buildings, installations, structures, land, public works, equipment, aircraft, vessels, and other vehicles and property, owned by, or constructed or manufactured for the purpose of leasing to, the Federal government.

"Final Stabilization" means that:

1. All soil disturbing activities at the site have been completed and either of the two following criteria are met:
    a. a uniform (e.g,, evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the native background

vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or

b. equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

2. When background native vegetation will cover less than 100 percent of the ground (e.g., arid areas, beaches), the 70 percent coverage criteria is adjusted as follows: if the native vegetation covers 50 percent of the ground, 70 percent of 50 percent (0.70 X 0.50 = 0.35) would require 35 percent total cover for final stabilization. On a beach with no natural vegetation, no stabilization is required.
3. In arid and semi-arid areas only, all soil disturbing activities at the site have been completed and both of the following criteria have been met:
   a. Temporary erosion control measures (e.g., degradable rolled erosion control product) are selected, designed, and installed along with an appropriate seed base to provide erosion control for at least three years without active maintenance by you,
   b. The temporary erosion control measures are selected, designed, and installed to achieve 70 percent vegetative coverage within three years.
4. For individual lots in residential construction, final stabilization means that either:
   a. The homebuilder has completed final stabilization as specified above, or
   b. The homebuilder has established temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for, and benefits of, final stabilization.
5. For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land, staging areas for highway construction, etc.), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to "water of the United States," and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization criteria (1) or (2) or (3) above.

"Indian country" is defined at 40 CFR §122.2 to mean:

1. All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation;
2. All dependent Indian communities with the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and
3. All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-ways running through the same.

"Large Construction Activity" is defined at 40 CFR §122.26(b)(14)(x) and incorporated here by reference. A large construction activity includes clearing, grading, and excavating resulting in a land disturbance that will disturb equal to or greater than five acres of land or will disturb less than five acres of total land area but is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than five acres. Large

construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site.

"Municipal Separate Storm Sewer System" or "MS4" is defined at 40 CFR §122.26(b)(8) to mean a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

1. Owned and operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
2. Designed or used for collecting or conveying stormwater;
3. Which is not a combined sewer; and
4. Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR §122.2.

"New Project" means the "commencement of construction activities" occurs after the effective date of this permit.

"Ongoing Project" means the "commencement of construction activities" occurs before the effective date of this permit.

"Operator" for the purpose of this permit and in the context of stormwater associated with construction activity, means any party associated with a construction project that meets either of the following two criteria:

1. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
2. The party has day-to-day operational control of those activities at a project which are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions). This definition is provided to inform permittees of EPA's interpretation of how the regulatory definitions of "owner or operator" and "facility or activity" are applied to discharges of stormwater associated with construction activity.

"Owner or operator" means the owner or operator of any "facility or activity" subject to regulation under the NPDES program.

"Permitting Authority" means the United States Environmental Protection Agency, EPA, a Regional Administrator of the Environmental Protection Agency or an authorized representative.

"Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

"Pollutant" is defined at 40 CFR §122.2. A partial listing from this definition includes: dredged spoil, solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial or municipal waste.

"Project Area" means:
– The areas on the construction site where stormwater discharges originate and flow toward the point of discharge into the receiving waters (including areas where excavation, site development, or other ground disturbance activities occur) and the immediate vicinity. (Example: 1. Where bald eagles nest in a tree that is on or bordering a construction site and could be disturbed by the construction activity or where grading causes stormwater to flow into a small wetland or other habitat that is on the site that contains listed species.)
– The areas where stormwater discharges flow from the construction site to the point of discharge into receiving waters. (Example: Where stormwater flows into a ditch, swale, or gully that leads to receiving waters and where listed species (such as amphibians) are found in the ditch, swale, or gully.)
– The areas where stormwater from construction activities discharge into receiving waters and the areas in the immediate vicinity of the point of discharge. (Example: Where stormwater from construction activities discharges into a stream segment that is known to harbor listed aquatic species.)
– The areas where stormwater BMPs will be constructed and operated, including any areas where stormwater flows to and from BMPs. (Example: Where a stormwater retention pond would be built.)
– The areas upstream and /or downstream from construction activities discharges into a stream segment that may be affected by the said discharges. (Example: Where sediment discharged to a receiving stream settles downstream and impacts a breeding area of a listed aquatic species.)

"Receiving water" means the "Water of the United States" as defined in 40 CFR §122.2 into which the regulated stormwater discharges.

"Runoff coefficient" means the fraction of total rainfall that will appear at the conveyance as runoff.

"Semi-Arid Areas" means areas with an average annual rainfall of 10 to 20 inches.

"Site" means the land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.

"Small Construction Activity" is defined at 40 CFR §122.26(b)(15) and incorporated here by reference. A small construction activity includes clearing, grading, and excavating resulting in a land disturbance that will disturb equal to or greater than one (1) acre and less than five (5) acres of land or will disturb less than one (1) acre of total land area but is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one (1) acre and less than five (5) acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site.

"Stormwater" means stormwater runoff, snow melt runoff, and surface runoff and drainage.

"Stormwater Discharge-Related Activities" as used in this permit, include: activities that cause, contribute to, or result in stormwater point source pollutant discharges, including but not limited to: excavation, site development, grading and other surface disturbance activities; and measures to control stormwater including the siting, construction and operation of BMPs to control, reduce or prevent stormwater pollution.

"Total Maximum Daily Load" or "TMDL" means the sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background. If a receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure.

"Waters of the United States" is as defined at 40 CFR §122.2.

"Wetland" means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

ACRONYMS

BMP - Best Management Practices
CGP - Construction General Permit
CFR - Code of Federal Regulations
CWA - Clean Water Act
EPA - United States Environmental Protection Agency
ESA - Endangered Species Act
FWS - United States Fish and Wildlife Service
MS4 - Municipal Separate Storm Sewer System
MSGP - Multi-Sector General Permit
NHPA - National Historic Preservation Act
NMFS - United States National Marine Fisheries Service
NOI - Notice of Intent

NOT - Notice of Termination
NPDES - National Pollutant Discharge Elimination System
POTW - Publicly Owned Treatment Works
SHPO - State Historic Preservation Officer
SWPPP - Stormwater Pollution Prevention Plan
THPO - Tribal Historic Preservation Officer
TMDL - Total Maximum Daily Load
WQS - Water Quality Standard

Appendix B - Permit Areas Eligible for Coverage

Permit coverage for stormwater discharges from construction activity occurring within the following areas is provided by legally separate and distinctly numbered permits:

1. EPA Region 1: CT, MA, ME, NH, RI, VT

US EPA, Region 01
Office of Ecosystem Protection
NPDES Stormwater Program
1 Congress St, Suite 1100 (CMU)
Boston, MA 02114-2023

The States of Connecticut, Maine, Rhode Island, and Vermont are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
MAR100000	Commonwealth of Massachusetts (except Indian country)
MAR10000I	Indian country within the State of Massachusetts
CTR10000I	Indian country within the State of Connecticut
NHR100000	State of New Hampshire
RIR10000I	Indian country within the State of Rhode Island
VTR10000F	Federal Facilities in the State of Vermont

2. EPA Region 2: NJ, NY, PR, VI

For NJ, NY, and VI:
US EPA, Region 02
NPDES Stormwater Program
290 Broadway, 24th Floor
New York, NY 10007-1866

For PR:
US EPA, Region 02
Caribbean Environmental Protection Division
NPDES Stormwater Program
1492 Ponce de Leon Ave
Central Europa Building, Suite 417
San Juan, PR 00907-4127

The State of New York is the NPDES Permitting Authority for the majority of discharges within its state. The State of New Jersey and the Virgin Islands are the NPDES Permitting Authority for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
NYR10000I	Indian country within the State of New York
PRR100000	The Commonwealth of Puerto Rico

3. EPA Region 3: DE, DC, MD, PA, VA, WV

US EPA, Region 03
NPDES Stormwater Program
1650 Arch St
Philadelphia, PA 19103

The State of Delaware is the NPDES Permitting Authority for the majority of discharges within its state. Maryland, Pennsylvania, Virginia, and West Virginia are the NPDES Permitting Authority for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
DCR100000	The District of Columbia
DER10000F	Federal Facilities in the State of Delaware

4. EPA Region 4: AL, FL, GA, KY, MS, NC, SC, TN

US EPA, Region 04
Water Management Division
NPDES Stormwater Program
61 Forsyth St SW
Atlanta, GA 30303-3104

Coverage Not Available. Construction activities in Region 4 must obtain permit coverage under an alternative permit.

5. EPA Region 5: IL, IN, MI, MN, OH, WI

US EPA, Region 05
NPDES & Technical Support
NPDES Stormwater Program
77 W Jackson Blvd
(WN-16J)
Chicago, IL 60604-3507

The States of Michigan, Minnesota, and Wisconsin are the NPDES Permitting Authority for the majority of discharges within their respective states. The States of Illinois, Indiana, and Ohio are the NPDES Permitting Authorities for all discharges within their respective states.

Permit No.	Areas of coverage/where EPA is Permitting Authority
MIR10000I	Indian country within the State of Michigan
MNR10000I	Indian country within the State of Minnesota, except the Grand Portage Band of Chippewa
WIR10000I	Indian country within the State of Wisconsin, except the Sokaogon Chippewa (Mole Lake) Community.

6. EPA Region 6: AR, LA, OK, TX, NM (except see Region 9 for Navajo lands, and see Region 8 for Ute Mountain Reservation lands)

US EPA, Region 06
NPDES Stormwater Program
1445 Ross Ave, Suite 1200
Dallas, TX 75202-2733

The States of Louisiana, Oklahoma, and Texas are the NPDES Permitting Authority for the majority of discharges within their respective state. The State of Arkansas is the NPDES Permitting Authority for all discharges within its respective state.

Permit No.	Areas of coverage/where EPA is Permitting Authority
LAR10000I	Indian country within the State of Louisiana
NMR100000	The State of New Mexico, except Indian country
NMR10000I	Indian country within the State of New Mexico, except Navajo Reservation Lands that are covered under Arizona permit AZR10000I and Ute Mountain Reservation Lands that are covered under Colorado permit COR10000I.
OKR10000I	Indian country within the State of Oklahoma
OKR10000F	Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09).
TXR10000F	Discharges in the State of Texas that are not under the authority of the Texas Commission on Environmental Quality (formerly TNRCC), including activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline.
TXR10000I	Indian country within the State of Texas.

7. EPA Region 7: IA, KS, MO, NE (except see Region 8 for Pine Ridge Reservation Lands)

US EPA, Region 07
NPDES Stormwater Program
901 N 5th St
Kansas City, KS 66101

The States of Iowa, Kansas, and Nebraska are the NPDES Permitting Authority for the majority of discharges within their respective states. The State of Missouri is the NPDES Permitting Authority for all discharges within its state.

Permit No.	Areas of coverage/where EPA is Permitting Authority
IAR10000I	Indian country within the State of Iowa
KSR10000I	Indian country within the State of Kansas
NER10000I	Indian country within the State of Nebraska, except Pine Ridge Reservation lands (see Region 8)

8. EPA Region 8: CO, MT, ND, SD, WY, UT (except see Region 9 for Goshute Reservation and Navajo Reservation Lands), the Ute Mountain Reservation in NM, and the Pine Ridge Reservation in NE.

US EPA, Region 08
NPDES Stormwater Program
999 18th St, Suite 300
(EPR-EP)
Denver, CO 80202-2466

The States of Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of coverage/where EPA is Permitting Authority
COR10000F	Federal Facilities in the State of Colorado, except those located on Indian country
COR10000I	Indian country within the State of Colorado, as well as the portion of the Ute Mountain Reservation located in New Mexico
MTR10000I	Indian country within the State of Montana
NDR10000I	Indian country within the State of North Dakota, as well as that portion of the Standing Rock Reservation located in South Dakota (except for the portion of the lands within the former boundaries of the Lake Traverse Reservation which is covered under South Dakota permit SDR10000I listed below)
SDR10000I	Indian country within the State of South Dakota, as well as the portion of the Pine Ridge Reservation located in Nebraska and the portion of the lands within the former boundaries of the Lake

	Traverse Reservation located in North Dakota (except for the Standing Rock Reservation which is covered under North Dakota permit NDR100001 listed above)
UTR100001	Indian country within the State of Utah, except Goshute and Navajo Reservation lands (see Region 9)
WYR100001	Indian country within the State of Wyoming

9. EPA Region 9: CA, HI, NV, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Goshute Reservation in UT and NV, the Navajo Reservation in UT, NM, and AZ, the Duck Valley Reservation in ID, and the Fort McDermitt Reservation in OR.

US EPA, Region 09
NPDES Stormwater Program
75 Hawthorne St
San Francisco, CA 94105-3901

The States of Arizona, California and Nevada are the NPDES Permitting Authority for the majority of discharges within their respective states. The State of Hawaii is the NPDES Permitting Authority for all discharges within its state.

Permit No.	Areas of coverage/where EPA is Permitting Authority
ASR100000	The Island of American Samoa
AZR100001	Indian country within the State of Arizona, as well as Navajo Reservation lands in New Mexico and Utah
CAR100001	Indian country within the State of California
GUR100000	The Island of Guam
JAR100000	Johnston Atoll
MWR100000	Midway Island and Wake Island
MPR100000	Commonwealth of the Northern Mariana Islands
NVR100001	Indian country within the State of Nevada, as well as the Duck Valley Reservation in Idaho, the Fort McDermitt Reservation in Oregon and the Goshute Reservation in Utah

10. EPA Region 10: AK, WA, ID (except see Region 9 for Duck Valley Reservation Lands), and OR (except see Region 9 for Fort McDermitt Reservation).

US EPA, Region 10
NPDES Stormwater Program
1200 6th Ave (OW-130)
Seattle, WA 98101-1128
Phone: (206) 553-6650

The States of Oregon and Washington are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of coverage/where EPA is Permitting Authority
AKR100000	The State of Alaska, except Indian country
AKR10000I	Indian country within the state of Alaska
IDR100000	The State of Idaho, except Indian country
IDR10000I	Indian country within the State of Idaho, except Duck Valley Reservation lands (see Region 9)
ORR10000I	Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9)
WAR10000F	Federal Facilities in the State of Washington, except those located on Indian country
WAR10000I	Indian country within the State of Washington

Appendix C - Endangered Species Act Review Procedures

You must meet at least one of the six criteria in Part 1.3.C.6 to be eligible for coverage under this permit. You must follow the procedures in this Appendix to assess the potential effects of stormwater discharges and stormwater discharge-related activities on listed species and their critical habitat. When evaluating these potential effects, operators must evaluate the entire project area.

For purposes of this Appendix, the term "project area" is inclusive of the term "Action Area." Action area is defined in 50 CFR §402.02 as all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action.

This includes areas beyond the footprint of the construction area that may be affected by stormwater discharges and stormwater discharge related activities. "Project area" is defined in Appendix A.

(Operators who are eligible and able to certify eligibility under Criterion B, C, D, or F of Part 1.3.C.6 because of a previously issued ESA section 10 permit, a previously completed ESA section 7 consultation, or because the operator's activities were already addressed in another operator's certification of eligibility may proceed directly to Step Four.)

Step One: Determine if Listed Threatened or Endangered Species are Present On or Near Your Project Area

You must determine, to the best of your knowledge, whether listed species are located on or near your project area. To make this determination, you should:

- Determine if listed species are in your county or township. The local offices of the U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), and State or Tribal Heritage Centers often maintain lists of federally listed endangered or threatened species on their internet sites. Visit http://www.epa.gov/npdes/stormwater/cgp to find the appropriate site for your state or check with your local office. In most cases, these lists allow you to determine if there are listed species in your county or township.
- If there are listed species in your county or township, check to see if critical habitat has been designated and if that area overlaps or is near your project area.
- Contact your local FWS, NMFS, or State or Tribal Heritage Center to determine if the listed species could be found on or near your project area and if any critical habitat areas have been designated that overlap or are near your project area. Critical habitat areas maybe designated independently from the listed species for your county, so even if there are no listed species in your county or township, you must still contact one of the agencies mentioned above to determine if there are any critical habitat areas on or near your project area.

You can also find critical habitat designations and associated requirements at 50 CFR Parts 17 and 226. http://www.access.gpo.gov.

- If there are no listed species in your county or township, no critical habitat areas on or near your project area, or if your local FWS, NMFS, or State or Tribal Heritage Center indicates that listed species are not a concern in your part of the county or township, you may check box A on the Notice of Intent Form.
- If there are listed species and if your local FWS, NMFS, or State or Tribal Heritage Center indicates that these species could exist on or near your project area, you will need to do one or more of the following:
  - Conduct visual inspections: This method may be particularly suitable for construction sites that are smaller in size or located in non-natural settings such as highly urbanized areas or industrial parks where there is little or no natural habitat, or for construction activities that discharge directly into municipal stormwater collection systems.
  - Conduct a formal biological survey. In some cases, particularly for larger construction sites with extensive stormwater discharges, biological surveys may be an appropriate way to assess whether species are located on or near the project area and whether there are likely adverse effects to such species. Biological surveys are frequently performed by environmental consulting firms. A biological survey may in some cases be useful in conjunction with Steps Two, Three, or Four of these instructions.
  - Conduct an environmental assessment under the National Environmental Policy Act (NEPA). Such reviews may indicate if listed species are in proximity to the project area. Coverage under the CGP does not trigger such a review because the CGP does not regulate new sources (that is, dischargers subject to New Source Performance Standards under section 306 of the Clean Water Act), and is thus statutorily exempted from NEPA. See CWA section 511(c). However, some construction activities might require review under NEPA for other reasons such as federal funding or other federal involvement in the project.
  - If listed threatened or endangered species or critical habitat are present in the project area, you must look at impacts to species and/or habitat when following Steps Two through Four. Note that many but not all measures imposed to protect listed species under these steps will also protect critical habitat. Thus, meeting the eligibility requirements of this CGP may require measures to protect critical habitat that are separate from those to protect listed species.

Step Two: Determine if the Construction Activity's Stormwater Discharges or Stormwater Discharge- Related Activities Are Likely to Adversely Affect Listed Threatened or Endangered Species or Designated Critical Habitat

To receive CGP coverage, you must assess whether your stormwater discharges or stormwater discharge related activities is likely to adversely affect listed threatened or endangered species or designated critical habitat that are present on or near your project area.

Potential adverse effects from stormwater discharges and stormwater discharge-related activities include:

- *Hydrological.* Stormwater discharges may cause siltation, sedimentation or induce other changes in receiving waters such as temperature, salinity or pH. These effects will vary with the amount of stormwater discharged and the volume and condition of the receiving water. Where a stormwater discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely. Construction activity itself may also alter drainage patterns on a site where construction occurs that can impact listed species or critical habitat.
- *Habitat.* Excavation, site development, grading, and other surface disturbance activities from construction activities, including the installation or placement of stormwater BMPs, may adversely affect listed species or their habitat. Stormwater may drain or inundate listed species habitat.
- *Toxicity.* In some cases, pollutants in stormwater may have toxic effects on listed species.

The scope of effects to consider will vary with each site. If you are having difficulty determining whether your project is likely to adversely affect listed species or critical habitat, or one of the Services has already raised concerns to you, you must contact the appropriate office of the FWS, NMFS or Natural Heritage Center for assistance. If adverse effects are not likely, then you may check box E on the NOI form and apply for coverage under the CGP. If the discharge may adversely effect listed species or critical habitat, you must follow Step Three.

Step Three: Determine if Measures Can Be Implemented to Avoid Adverse Effects
If you make a preliminary determination that adverse effects are likely to occur, you can still receive coverage under Criterion E of Part 1.3.C.6 of the CGP if appropriate measures are undertaken to avoid or eliminate the likelihood of adverse effects prior to applying for CGP coverage. These measures may involve relatively simple changes to construction activities such as re-routing a stormwater discharge to bypass an area where species are located, relocating BMPs, or by changing the "footprint" of the construction activity. You should contact the FWS and/or NMFS to see what appropriate measures might be suitable to avoid or eliminate the likelihood of adverse impacts to listed species and/or critical habitat. (See 50 CFR §402.13(b)). This can entail the initiation of informal consultation with the FWS and/or NMFS (described in more detail in Step Four).

If you adopt measures to avoid or eliminate adverse affects, you must continue to abide by those measures for the duration of the construction project and coverage under the CGP. These measures must be described in the SWPPP and are enforceable CGP conditions and/or conditions for meeting the eligibility criteria in Part 1.3. If appropriate measures to avoid the likelihood of adverse effects are not available, you must follow Step Four.

Step Four: Determine if the Eligibility Requirements of Criterion B, C, D, or F of Part 1.3.C.6 Can Be Met
Where adverse effects are likely, you must contact the FWS and/or NMFS. You may still be eligible for CGP coverage if any likely adverse effects can be addressed through meeting Criterion B, C, D, or F of Part 1.3.C.6 of the CGP. These criteria are as follows:

1. *An ESA Section 7 Consultation Is Performed for Your Activity (See Criterion B or C of Part 1.3.C.6 of the CGP).*

Formal or informal ESA section 7 consultation is performed with the FWS and/or NMFS that addresses the effects of your stormwater discharges and stormwater discharge-related activities on federally-listed and threatened species and designated critical habitat. FWS and/or NMFS may request that consultation take place if any actions are identified that may affect listed species or critical habitat. In order to be eligible for coverage under this permit, consultation must result in a "no jeopardy opinion" or a written concurrence by the Service(s) on a finding that your stormwater discharge(s) and stormwater discharge-related activities are not likely to adversely affect listed species or critical habitat (For more information on consultation, see 50 CFR §402). If you receive a "jeopardy opinion," you may continue to work with the FWS and/or NMFS and your permitting authority to modify your project so that it will not jeopardize listed species or designated critical habitat.

Most consultations are accomplished through informal consultation. By the terms of this CGP, EPA has automatically designated operators as non-federal representatives for the purpose of conducting informal consultations. See Part 1.3.C.6 and 50 CFR §402.08 and §402.13. When conducting informal ESA section 7 consultation as a non-federal representative, you must follow the procedures found in 50 CFR Part 402 of the ESA regulations. You must notify FWS and/or NMFS of your intention and agreement to conduct consultation as a non-federal representative.

Consultation may occur in the context of another federal action at the construction site (e.g., where ESA section 7 consultation was performed for issuance of a wetlands dredge and fill permit for the project or where a NEPA review is performed for the project that incorporates a section 7 consultation). Any terms and conditions developed through consultations to protect listed species and critical habitat must be incorporated into the SWPPP. As noted above, operators may, if they wish, initiate consultation with the Services at Step Four.

Whether ESA section 7 consultation must be performed with either the FWS, NMFS or both Services depends on the listed species that may be affected by the operator's activity. In general, NMFS has jurisdiction over marine, estuaries, and anadromous species. Operators should also be aware that while formal section 7 consultation provides protection from incidental takings liability, informal consultation does not.

2. *An Incidental Taking Permit Under Section 10 of the ESA is Issued for the Operators Activity (See Criterion D of Part 1.3.C.6 of the CGP).*

Your construction activities are authorized through the issuance of a permit under section 10 of the ESA and that authorization addresses the effects of your stormwater discharge(s) and stormwater discharge-related activities on federally-listed species and designated critical habitat. You must follow FWS and/or NMFS procedures when applying for an ESA Section 10 permit (see 50 CFR §17.22(b)(1) for FWS and §222.22

for NMFS). Application instructions for section 10 permits for FWS and NMFS can be obtained by accessing the FWS and NMFS websites (http://www.fws.gov and http://www.nmfs.noaa.gov) or by contacting the appropriate FWS and NMFS regional office.

3. *You are Covered Under the Eligibility Certification of Another Operator for the Project Area (See Criterion F of Part 1.3.C.6 of the CGP).*

Your stormwater discharges and stormwater discharge-related activities were already addressed in another operator's certification of eligibility under Criteria A through E of Part 1.3.C.6 which also included your project area. For example, a general contractor or developer may have completed and filed an NOI for the entire project area with the necessary Endangered Species Act certifications (criteria A-E), subcontractors may then rely upon that certification and must comply with any conditions resulting from that process. By certifying eligibility under Criterion F of Part 1.3.C.6, you agree to comply with any measures or controls upon which the other operator's certification under Criterion B, C, or D of Part 1.3.C.6 was based. Certification under Criterion F of Part 1.3.C.6 is discussed in more detail in the Fact Sheet that accompanies this permit.

You must comply with any terms and conditions imposed under the eligibility requirements of Criterion A through F to ensure that your stormwater discharges and stormwater discharge-related activities are protective of listed species and/or critical habitat. Such terms and conditions must be incorporated in the project's SWPPP. If the eligibility requirements of Part 1.3.C.6 cannot be met, then you are not eligible for coverage under the CGP. In these instances, you may consider applying to EPA for an individual permit.

Appendix D - Small Construction Waivers and Instructions

These waivers are only available to stormwater discharges associated with small construction activities (i.e., 1-5 acres). As the operator of a small construction activity, you may be able to qualify for a waiver in lieu of needing to obtain coverage under this general permit based on: (A) a low rainfall erosivity factor, (B) a TMDL analysis, or (C) an equivalent analysis that determines allocations for small construction sites are not needed. Each operator, otherwise needing permit coverage, must notify EPA of its intention for a waiver. It is the responsibility of those individuals wishing to obtain a waiver from coverage under this general permit to submit a complete and accurate waiver certification as described below. Where the operator changes or another is added during the construction project, the new operator must also submit a waiver certification to be waived.

A. Rainfall Erosivity Waiver

Under this scenario the small construction project's rainfall erosivity factor calculation ("R" in the Revised Universal Soil Loss Equation) is less than 5 during the period of construction activity. The operator must certify to the EPA that construction activity will occur only when the rainfall erosivity factor is less than 5. The period of construction activity begins at initial earth disturbance and ends with final stabilization. Where vegetation will be used for final stabilization, the date of installation of a stabilization practice that will provide interim non-vegetative stabilization can be used for the end of the construction period, provided the operator commits (as a condition of waiver eligibility) to periodically inspect and properly maintain the area until the criteria for final stabilization as defined in the construction general permit have been met. If use of this interim stabilization eligibility condition was relied on to qualify for the waiver, signature on the waiver with its certification statement constitutes acceptance of and commitment to complete the final stabilization process. The operator must submit a waiver certification to EPA prior to commencing construction activities.

Note: The rainfall erosivity factor "R" is determined in accordance with Chapter 2 of Agriculture Handbook Number 703, Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE), pages 21–64, dated January 1997; United States Department of Agriculture (USDA), Agricultural Research Service.

EPA has developed an online rainfall erosivity calculator to help small construction sites determine potential eligibility for the rainfall erosivity waiver.You can access the calculator from EPA's website at: www.epa.gov/npdes/stormwater/lew. The R factor can easily be calculated by using the construction site latitude/longitude or address and estimated start and end dates of construction. This calculator may also be useful in determining the time periods during which construction activity could be waived from permit coverage. You may find that moving your construction activity by a few weeks or expediting site stabilization will allow you to qualify for the waiver. Use this online calculator or the Construction Rainfall Erosivity Waiver Fact Sheet

(www.epa.gov/npdes/pubs/fact3-1.pdf) to assist in determining the R Factor for your small construction site.

If you are the operator of the construction activity and eligible for a waiver based on low erosivity potential, you may submit a rainfall erosivity waiver electronically via EPA's eNOI system (www.epa.gov/npdes/eNOI) or provide the following information on the waiver certification form in order to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operators;
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The rainfall erosivity factor calculation that applies to the active construction phase at your project site; and
5. A statement, signed and dated by an authorized representative as provided in Appendix G, Subsection 11, that certifies that the construction activity will take place during a period when the value of the rainfall erosivity factor is less than five.

You can access the waiver certification form from EPA's website at: (http://www.epa.gov/npdes/pubs/construction_waiver_form.pdf). Paper copies of the form must be sent to one of the addresses listed in Part D of this section.

Note: If the R factor is 5 or greater, you cannot apply for the rainfall erosivity waiver, and must apply for permit coverage as per Subpart 2.1 of the construction general permit, unless you qualify for the Water Quality Waiver as described below.

If your small construction project continues beyond the projected completion date given on the waiver certification, you must recalculate the rainfall erosivity factor for the new project duration. If the R factor is below five (5), you must update all applicable information on the waiver certification and retain a copy of the revised waiver as part of the site SWPPP. The new waiver certification must be submitted prior to the projected completion date listed on the original waiver form to assure your exemption from permitting requirements is uninterrupted. If the new R factor is five (5) or above, you must submit an NOI as per Part 2.

B. TMDL Waiver

This waiver is available if EPA has established or approved a TMDL that addresses the pollutant(s) of concern and has determined that controls on stormwater discharges from small construction activity are not needed to protect water quality. The pollutant(s) of concern include sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. Information on TMDLs that have been established or approved by EPA is available from EPA online at http://www.epa.gov/owow/tmdl/ and from state and tribal water quality agencies.

If you are the operator of the construction activity and eligible for a waiver based on compliance with an EPA established or approved TMDL, you must provide the following information on the Waiver Certification form in order to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The name of the water body(s) that would be receiving stormwater discharges from your construction project;
5. The name and approval date of the TMDL;
6. A statement, signed and dated by an authorized representative as provided in Appendix G, Subsection 11, that certifies that the construction activity will take place and that the stormwater discharges will occur, within the drainage area addressed by the TMDL.

C. Equivalent Analysis Waiver

This waiver is available for non-impaired waters only. The operator can develop an equivalent analysis that determines allocations for his small construction site for the pollutant(s) of concern or determines that such allocations are not needed to protect water quality. This waiver requires a small construction operator to develop an equivalent analysis based on existing in-stream concentrations, expected growth in pollutant concentrations from all sources, and a margin of safety.

If you are a construction operator who wants to use this waiver, you must develop your equivalent analysis and provide the following information to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The name of the water bodies that would be receiving stormwater discharges from your construction project;
5. Your equivalent analysis;
6. A statement, signed and dated by an authorized representative as provided in Appendix G, Subsection 11, that certifies that the construction activity will take place and that the stormwater discharges will occur, within the drainage area addressed by the equivalent analysis.

D. Waiver Deadlines and Submissions

1. Waiver certifications must be submitted prior to commencement of construction activities.
2. If you submit a TMDL or equivalent analysis waiver request, you are not waived until EPA approves your request. As such, you may not commence construction activities until receipt of approval from EPA.
3. Late Notifications: Operators are not prohibited from submitting waiver certifications after initiating clearing, grading, excavation activities, or other construction activities. The Agency reserves the right to take enforcement for any unpermitted discharges that occur between the time construction commenced and waiver authorization is granted.

Submittal of a waiver certification is an optional alternative to obtaining permit coverage for discharges of stormwater associated with small construction activity, provided you qualify for the waiver. Any discharge of stormwater associated with small construction activity not covered by either a permit or a waiver may be considered an unpermitted discharge under the Clean Water Act. As mentioned above, EPA reserves the right to take enforcement for any unpermitted discharges that occur between the time construction commenced and either discharge authorization is granted or a complete and accurate waiver certification is submitted. EPA may notify any operator covered by a waiver that they must apply for a permit. EPA may notify any operator who has been in non-compliance with a waiver that they may no longer use the waiver for future projects. Any member of the public may petition EPA to take action under this provision by submitting written notice along with supporting justification.

Complete and accurate Rainfall Erosivity waiver certifications not otherwise submitted electronically via EPA's eNOI system (www.epa.gov/npdes/eNOI) must be sent to one of the following addresses:

Regular U.S. Mail Delivery
EPA Stormwater Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Overnight/Express Mail Delivery
EPA Stormwater Notice Processing Center
Room 7420
U.S. EPA
1201Constitution Avenue, NW
Washington, DC 20004

Complete and accurate TMDL or equivalent analysis waiver requests must be sent to the applicable EPA Region office specified in Appendix B.

Appendix E - Notice of Intent Form and Instructions

From the effective date of this permit, operators are to use the Notice of Intent Form contained in this Appendix to obtain permit coverage.

This Form Replaces Form 3510-9 (8-98)
Refer to the Following Pages for Instructions

Form Approved OMB Nos. 2040-0188 and 2040-0211

NPDES FORM

EPA

United States Environmental Protection Agency
Washington, DC 20460

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

Submission of this Notice of Intent (NOI) constitutes notice that the party identified in Section II of this form requests authorization to discharge pursuant to the NPDES Construction General Permit (CGP) permit number identified in Section I of this form. Submission of this NOI also constitutes notice that the party identified in Section II of this form meets the eligibility requirements of the CGP for the project identified in Section III of this form. Permit coverage is required prior to commencement of construction activity until you are eligible to terminate coverage as detailed in the CGP. To obtain authorization, you must submit a complete and accurate NOI form. Refer to the instructions at the end of this form.

I. Permit Number

II. Operator Information

Name

IRS Employer Identification Number (EIN) –

Mailing Address:

Street

City State Zip Code -

Phone - - Fax (optional) - -

E-mail

III. Project/Site Information

Project/Site Name

Project Street/Location

City State Zip Code -

County or similar government subdivision.

Latitude/Longitude (Use one of three possible formats, and specify method)

Latitude 1 __ __ ' __ __ __ N (degrees, minutes, seconds)
2 __ __ ' __ __ __ N (degrees, minutes, decimal)
3 __ __ __ __ __ __ ' N (degrees decimal)

Longitude 1 __ __ __ ' __ __ __ W (degrees, minutes, seconds)
2 __ __ __ ' __ __ __ W (degrees, minutes, decimal)
3 __ __ __ __ __ __ ' W (degrees decimal)

Method ☐ U S G S topographic map ☐ EPA web site ☐ GPS ☐ Other

If you used a U S G S topographic map what was the scale? _____

Project located in Indian Country? ☐ YES ☐ NO

If yes, name of reservation, or if not part of a reservation, put "Not Applicable" _____

Estimated Project Start Date / / (Month Day Year)

Estimated Project Completion Date / / (Month Day Year)

Estimated Area to be Disturbed (to the nearest quarter acre) .

IV. SWPPP Information

Has the SWPPP been prepared in advance of filing this NOI? ☐ YES ☐ NO

Location of SWPP for Viewing ☐ Address in Section II ☐ Address in Section III ☐ Other
If other

SWPPP Street

City State Zip Code -

SWPPP Contact Information (if different than that in Section II)

Name

Phone - - Fax (optional) - -

E-mail

V. Discharge Information

Identify the name(s) of waterbodies to which you discharge _____

_____

Is this discharge consistent with the assumptions and requirements of applicable EPA approved or established TMDL(s)? ☐ YES ☐ NO

VI. Endangered Species Protection

Under which criterion of the permit have you satisfied your ESA eligibility obligations?

☐ A ☐ B ☐ C ☐ D ☐ E ☐ F

If you select criterion F, provide permit tracking number of operator under which you are certifying eligibility

VII. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations

Print Name

Title

Signature _____ Date

E-mail _____

NOI Preparer (Complete if NOI was prepared by someone other than the certifier)

Prepared by

Organization

Phone - - Ext E-mail: _____

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

NPDES Form Date | This Form Replaces Form 3510-9 (8/98) | Form Approved OMB Nos. 2040-0188 and 2040-0211

Who Must File an NOI Form
Under the provisions of the Clean Water Act, as amended (33 U.S.C. 1251 et. seq.; the Act), federal law prohibits storm water discharges from certain construction activities to waters of the U.S. unless that discharge is covered under a National Pollutant Discharge Elimination System (NPDES) Permit. Operator(s) of construction sites where one or more acres are disturbed, smaller sites that are part of a larger common plan of development or sale where there is a cumulative disturbance of at least one acre, or any other site specifically designated by the Director, must submit an NOI to obtain coverage under an NPDES general permit. Each person, firm, public organization, or any other entity that meets either of the following criteria must file this form: (1) they have operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or (2) they have day-to-day operational control of those activities at the project necessary to ensure compliance with SWPPP requirements or other permit conditions. If you have questions about whether you need an NPDES storm water permit, or if you need information to determine whether EPA or your state agency is the permitting authority, refer to *www.epa.gov/npdes/stormwater/cgp* or telephone the Storm Water Notice Processing Center at (866) 352-7755.

Where to File NOI Form
See the applicable CGP for information on where to send your completed NOI form.

Completing the Form
Obtain and read a copy of the appropriate EPA Storm Water Construction General Permit for your area. To complete this form, type or print uppercase letters, in the appropriate areas only. Please place each character between the marks (abbreviate if necessary to stay within the number of characters allowed for each item). Use one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions on this form, refer to *www.epa.gov/npdes/stormwater/cgp* or telephone the Storm Water Notice Processing Center at (866) 352-7755. Please submit original document with signature in ink . do not send a photocopied signature.

Section I. Permit Number
Provide the number of the permit under which you are applying for coverage (see Appendix B of the general permit for the list of eligible permit numbers).

Section II. Operator Information
Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application. An operator of a project is a legal entity that controls at least a portion of site operations and is not necessarily the site manager. Provide the employer identification number (EIN from the Internal Revenue Service; IRS), also commonly referred to as your taxpayer ID. If the applicant does not have an EIN enter "NA" in the space provided. Also provide the operator's mailing address, telephone number, fax number (optional) and e-mail address (to be notified via e-mail of NOI approval when available). Correspondence for the NOI will be sent to this address.

Section III. Project/Site Information
Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for permit coverage to be granted.

The applicant must also provide the latitude and longitude of the facility either in degrees, minutes, seconds; degrees, minutes, decimal; or decimal format. The latitude and longitude of your facility can be determined in several different ways, including through the use of global positioning system (GPS) receivers, U.S. Geological Survey (U.S.G.S.) topographic or quadrangle maps, and EPA's web-based siting tools, among others. Refer to *www.epa.gov/npdes/stormwater/cgp* for further guidance on the use of these methodologies. For consistency, EPA requests that measurements be taken from the approximate center of the construction site. Applicants must specify which method they used to determine latitude and longitude. If a U.S.G.S. topographic map is used, applicants are required to specify the scale of the map used.

Indicate whether the project is in Indian country, and if so, provide the name of the Reservation. If the project is in Indian Country Lands that are not part of a Reservation, indicate "not applicable" in the space provided.

Enter the estimated construction start and completion dates using four digits for the year (i.e., 05/27/1998). Enter the estimated area to be disturbed including but not limited to: grubbing, excavation, grading, and utilities and infrastructure installation. Indicate to the nearest quarter acre. Note: 1 acre = 43,560 sq. ft

Section IV. SWPPP Information
Indicate whether or not the SWPPP was prepared in advance of filing the NOI form. Check the appropriate box for the location where the SWPPP may be viewed. Provide the name, fax number (optional), and e-mail address of the contact person if different than that listed in Section II of the NOI form.

Section V. Discharge Information
Enter the name(s) of receiving waterbodies to which the project's storm water will discharge. These should be the first bodies of water that the discharge will reach. (Note: If you discharge to more than one waterbody, please indicate all such waters in the space provided and attach a separate sheet if necessary.) For example, if the discharge leaves your

site and travels through a roadside swale or a storm sewer and then enters a stream that flows to a river, the stream would be the receiving waterbody. Waters of the U.S. include lakes, streams, creeks, rivers, wetlands, impoundments, estuaries, bays, oceans, and other surface bodies of water within the confines of the U.S. and U.S. coastal waters. Waters of the U.S. do not include man-made structures created solely for the purpose of wastewater treatment. U.S. Geological Survey topographical maps may be used to make this determination. If the map does not provide a name, use a format such as "unnamed tributary to Cross Creek". If you discharge into a municipal separate storm sewer system (MS4), you must identify the waterbody into which that portion of the storm sewer discharges. That information should be readily available from the operator of the MS4.

Indicate whether your storm water discharges from construction activities will be consistent with the assumptions and requirements of applicable EPA approved or established TMDL(s). To answer this question, refer to *www.epa.gov/npdes/stormwater/cgp* for state- and regional-specific TMDL information related to the construction general permit. You may also have to contact your EPA regional office or state agency. If there are no applicable TMDLs or no related requirements, please check the "yes" box in the NOI form.

Section VI. Endangered Species Information

Indicate for which criterion (i.e., A, B, C, D, E, or F) of the permit the applicant is eligible with regard to protection of federally listed endangered and threatened species, and designated critical habitat. See Part 1.3.C.6 and Appendix C of the permit. If you select criterion F, provide the permit tracking number of the operator under which you are certifying eligibility. The permit tracking number is the number assigned to the operator by the Storm Water Notice Processing Center after EPA acceptance of a complete NOI.

Section VII. Certification Information

All applications, including NOIs, must be signed as follows: *For a corporation:* By a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

Include the name, title, and email address of the person signing the form and the date of signing. An unsigned or undated NOI form will not be considered eligible for permit coverage. If the NOI was prepared by someone other than the certifier (for example, if the NOI was prepared by the facility SWPPP contact or a consultant for the certifier's signature), include the name, organization, phone number and email address of the NOI preparer.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 3.7 hours. This estimate includes time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch 2136, U.S. Environmental Protection, Agency, 1200 Pennsylvania Avenue, NW, Washington, D.C. 20460. Include the OMB control number on any correspondence. Do not send the completed form to this address.

Visit this website for mailing instructions:
www.epa.gov/npdes/stormwater/mail

Visit this website for instructions on how to submit electronically:
www.epa.gov/npdes/stormwater/enoi

Appendix F - Notice of Termination Form and Instructions

From the effective date of this permit, operators are to use the Notice of Termination Form contained in this Appendix to terminate permit coverage.

This Form Replaces Form 3517-7 (8-98)
Refer to the Following Page for Instructions

Form Approved OMB Nos. 2040-0086 and 2040-0211

NPDES FORM

EPA

United States Environmental Protection Agency
Washington, DC 20460

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Stormwater Discharges Associated with Construction Activity

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge stormwater associated with construction activity under the NPDES program from the site identified in Section III of this form. All necessary information must be included on this form. Refer to the instructions at the end of this form.

I. Permit Information

NPDES Stormwater General Permit Tracking Number: ☐☐☐☐☐☐☐☐☐

Reason for Termination (Check only one)

- ☐ Final stabilization has been achieved on all portions of the site for which you are responsible
- ☐ Another operator has assumed control, according to Appendix G. Section 11 C of the CGP, over all areas of the site that have not been finally stabilized
- ☐ Coverage under an alternative NPDES permit has been obtained
- ☐ For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner

II. Operator Information

Name

IRS Employer Identification Number (EIN) ☐☐ - ☐☐☐☐☐☐☐

Mailing Address:

Street

City State Zip Code -

Phone - - Fax (optional) - -

E-mail

III. Project/Site Information

Project/Site Name

Project Street/Location

City State Zip Code -

County or similar government subdivision

IV. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name _____

Print Title _____

Email _____

Signature _____

Date _____

Instructions for Completing EPA Form 3510-13

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Stormwater Discharges Associated with Construction Activity

NPDES Form | This Form Replaces Form 3517-7 (8-98) | Form Approved OMB Nos 2040-0086 and 2040-0211

Who May File an NOT Form
Permittees who are presently covered under the EPA-issued National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity may submit an NOT form when final stabilization has been achieved on all portions of the site for which you are responsible; another operator has assumed control in accordance with Appendix G, Section 11.C of the General Permit over all areas of the site that have not been finally stabilized, coverage under an alternative NPDES permit has been obtained, or for residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

"Final stabilization" means that all soil disturbing activities at the site have been completed and that a uniform perennial vegetative cover with a density of at least 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed. See "final stabilization" definition in Appendix A of the Construction General Permit for further guidance where background native vegetation covers less than 100 percent of the ground, in arid or semi-arid areas, for individual lots in residential construction, and for construction projects on land used for agricultural purposes

Completing the Form
Type or print, using uppercase letters, in the appropriate areas only Please place each character between the marks Abbreviate if necessary to stay within the number of characters allowed for each item Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response If you have any questions about this form, refer to *www.epa.gov/npdes/stormwater/cgp* or telephone the Stormwater Notice Processing Center at (866) 352-7755 Please submit original document with signature in ink - do not send a photocopied signature

Section I. Permit Number
Enter the existing NPDES Stormwater General Permit Tracking Number assigned to the project by EPA's Stormwater Notice Processing Center If you do not know the permit tracking number, refer to *www.epa.gov/npdes/stormwater/cgp* or contact the Stormwater Notice Processing Center at (866) 352-7755

Indicate your reason for submitting this Notice of Termination by checking the appropriate box Check only one:

Final stabilization has been achieved on all portions of the site for which you are responsible

Another operator has assumed control according to Appendix G, Section 11 C over all areas of the site that have not been finally stabilized

Coverage under an alternative NPDES permit has been obtained

For residential construction only, if temporary stabilization has been completed and the residence has been transferred to the homeowner

Section II. Operator Information
Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application and is covered by the permit tracking number identified in Section I The operator of the project is the legal entity that controls the site operation, rather than the site manager. Provide the employer identification number (EIN from the Internal Revenue Service: IRS) If the applicant does not have an EIN enter "NA" in the space provided Enter the complete mailing address, telephone number, and email address of the operator. Optional enter the fax number of the operator

Section III. Project/Site Information
Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g. Intersection of State Highways 61 and 34) Complete site information must be provided for termination of permit coverage to be valid

Section IV. Certification Information
All applications, including NOIs, must be signed as follows
For a corporation: By a responsible corporate officer For the purpose of this Part, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements, and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively, or

For a municipality, state, federal, or other public agency By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e g , Regional Administrator of EPA)

Include the name, title, and email address of the person signing the form and the date of signing An unsigned or undated NOT form will not be considered valid termination of permit coverage

Paperwork Reduction Act Notice
Public reporting burden for this application is estimated to average 0 5 hours per notice, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, 2136, U S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460. Include the OMB number on any correspondence Do not send the completed form to this address

Visit this website for mailing instruction
www epa.gov/npdes/stormwater/mail

Visit this website for instructions on how to submit electronically
www epa gov/npdes/stormwater/enoi

Appendix G - Standard Permit Conditions

STANDARD PERMIT CONDITIONS

1. Duty To Comply

You must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

A. You must comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

B. The Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. §2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. §3701 note) (currently $27,500 per day for each violation).

   The Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than 2 years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

C. Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Pursuant to 40 CFR Part 19 and the Act, administrative penalties for Class I violations are not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. §2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. §3701 note) (currently $11,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $27,500). Pursuant to 40 CFR Part 19 and the Act, penalties for Class II violations are not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. §2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. §3701 note) (currently $11,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $137,500).

2. Duty to Reapply

If you wish to continue an activity regulated by this permit after the expiration date of this permit, you must apply for and obtain a new permit.

3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for you in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to Mitigate

You must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Proper Operation and Maintenance

You must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by you to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by you only when the operation is necessary to achieve compliance with the conditions of this permit.

6. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. Your filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

7. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privileges.

8. Duty to Provide Information

You must furnish to EPA, within a reasonable time, any information which EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. You must also furnish to EPA upon request, copies of records required to be kept by this permit.

9. Inspection and Entry

You must allow EPA, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

A. Enter upon your premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

D. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

10. Monitoring and Records

A. Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity.

B. You must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of EPA at any time.

C. Records of monitoring information must include:
   1. The date, exact place, and time of sampling or measurements;
   2. The individual(s) who performed the sampling or measurements;
   3. The date(s) analyses were performed
   4. The individual(s) who performed the analyses;
   5. The analytical techniques or methods used; and
   6. The results of such analyses.

D. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

E. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

11. Signatory Requirements

A. All applications, including NOIs, must be signed as follows:
   1. For a corporation: By a responsible corporate officer. For the purpose of this Part, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any

other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

2. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or
3. For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

B. All reports required by this permit, including SWPPPs, must be signed by a person described in Appendix G, Subsection 11.A above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
   1. The authorization is made in writing by a person described in Appendix G, Subsection 11.A;
   2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
   3. The signed and dated written authorization is included in the SWPPP. A copy must be submitted to EPA, if requested.

C. Changes to Authorization. If an authorization under Part 2.1 is no longer accurate because a different operator has responsibility for the overall operation of the construction site, a new NOI satisfying the requirements of Part 2.1 must be submitted to EPA prior to or together with any reports, information, or applications to be signed by an authorized representative. The change in authorization must be submitted within the time frame specified in Part 2.4, and sent to the address specified in Part 2.2.

D. Any person signing documents required under the terms of this permit must include the following certification:
   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons

directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

E. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

12. Reporting Requirements

A. Planned changes. You must give notice to EPA as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
   1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b); or
   2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR §122.42(a)(1).

B. Anticipated noncompliance. You must give advance notice to EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

C. Transfers. This permit is not transferable to any person except after notice to EPA. EPA may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (See 40 CFR §122.61; in some cases, modification or revocation and reissuance is mandatory.)

D. Monitoring reports. Monitoring results must be reported at the intervals specified elsewhere in this permit.
   1. Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by EPA for reporting results of monitoring of sludge use or disposal practices.
   2. If you monitor any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by EPA.
   3. Calculations for all limitations which require averaging of measurements must use an arithmetic mean.

E. Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.

F. Twenty-four hour reporting.

1. You must report any noncompliance which may endanger health or the environment. Any information must be provided orally within 24 hours from the time you become aware of the circumstances. A written submission must also be provided within five days of the time you become aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
2. The following shall be included as information which must be reported within 24 hours under this paragraph.
   a. Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR §122.41(g).)
   b. Any upset which exceeds any effluent limitation in the permit
   c. Violation of a maximum daily discharge limitation for any of the pollutants listed by EPA in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)

13. EPA may waive the written report on a case-by-case basis for reports under Appendix G, Subsection 12.F.2 if the oral report has been received within 24 hours.

G. Other noncompliance. You must report all instances of noncompliance not reported under Appendix G, Subsections 12.D, 12.E, and 12.F, at the time monitoring reports are submitted. The reports must contain the information listed in Appendix G, Subsection 12.F.

H. Other information. Where you become aware that you failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Permitting Authority, you must promptly submit such facts or information.

13. Bypass

A. Definitions.
   1. Bypass means the intentional diversion of waste streams from any portion of a treatment facility
   2. Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

B. Bypass not exceeding limitations. You may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Appendix G, Subsections 13.C and 13.D.

C. Notice–
   1. Anticipated bypass. If you know in advance of the need for a bypass, you must submit prior notice, if possible at least ten days before the date of the bypass.
   2. Unanticipated bypass. You must submit notice of an unanticipated bypass as required in Appendix G, Subsection 12.F (24-hour notice).

D. Prohibition of bypass.
   1. Bypass is prohibited, and EPA may take enforcement action against you for bypass, unless:
      a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
      b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
      c. You submitted notices as required under Appendix G, Subsection 13.C.
   2. EPA may approve an anticipated bypass, after considering its adverse effects, if EPA determines that it will meet the three conditions listed above in Appendix G, Subsection 13.D.1.

14. Upset

A. Definition. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond your reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

B. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Appendix G, Subsection 14.C are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

C. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
   1. An upset occurred and that you can identify the cause(s) of the upset;
   2. The permitted facility was at the time being properly operated; and
   3. You submitted notice of the upset as required in Appendix G, Subsection 12.F.2.b(24 hour notice).
   4. You complied with any remedial measures required under Appendix G, Section 4.

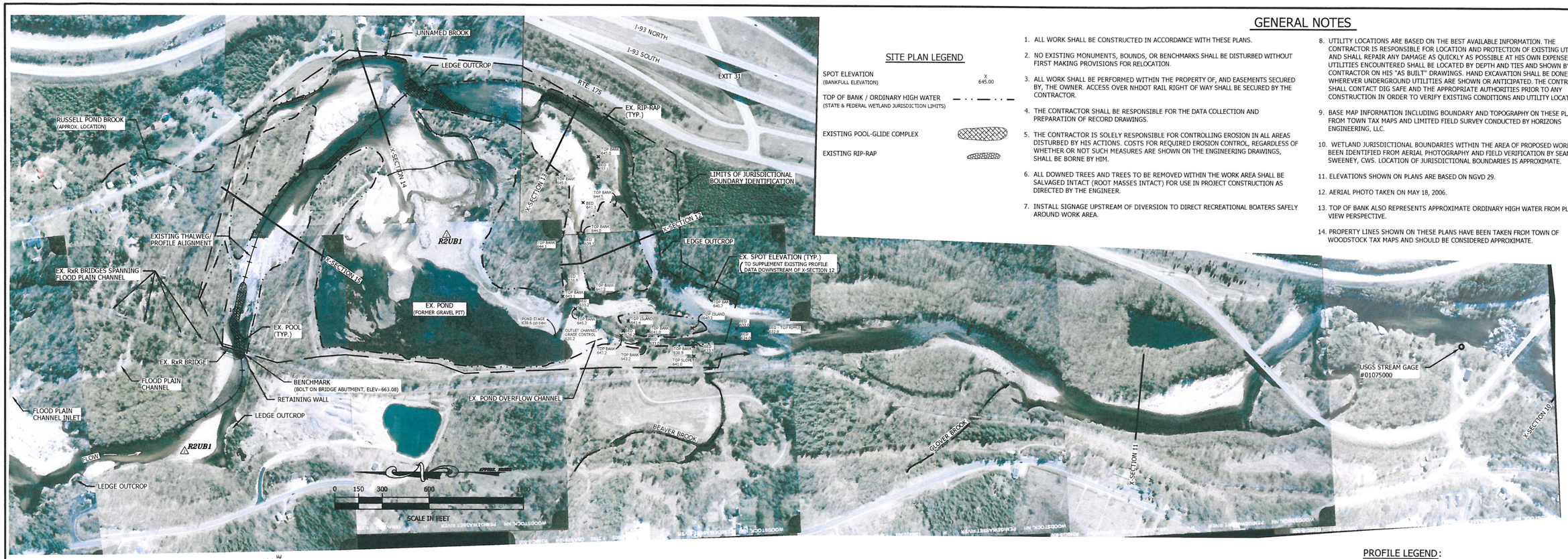
D. Burden of proof. In any enforcement proceeding, you, as the one seeking to establish the occurrence of an upset, has the burden of proof.

PLEASE ATTACH COMPLETED NOTICE OF INTENT HERE

Appendix G

Existing Site Plan & Channel Profile

R:\06195 Trout Unlimited - Pemi River P & C\DWGS\FINAL\06195_AOT.dwg, 2-EXISTING PLAN & PROF, 4/2/2009 1:52:03 PM, kphilbrick



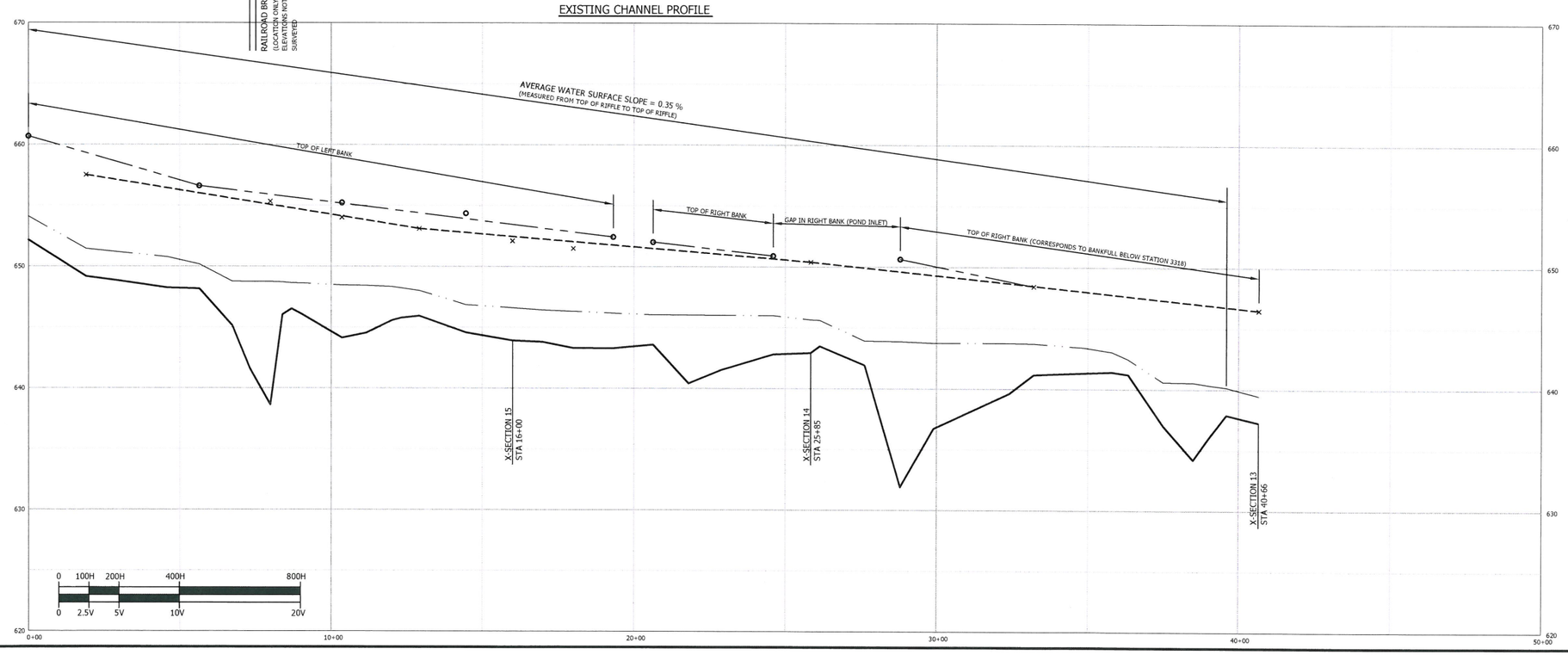
SITE PLAN LEGEND

- SPOT ELEVATION (BANKFULL ELEVATION) — X 645.00
- TOP OF BANK / ORDINARY HIGH WATER (STATE & FEDERAL WETLAND JURISDICTION LIMITS)
- EXISTING POOL-GLIDE COMPLEX
- EXISTING RIP-RAP

GENERAL NOTES

1. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE PLANS.
2. NO EXISTING MONUMENTS, BOUNDS, OR BENCHMARKS SHALL BE DISTURBED WITHOUT FIRST MAKING PROVISIONS FOR RELOCATION.
3. ALL WORK SHALL BE PERFORMED WITHIN THE PROPERTY OF, AND EASEMENTS SECURED BY, THE OWNER. ACCESS OVER NHDOT RAIL RIGHT OF WAY SHALL BE SECURED BY THE CONTRACTOR.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DATA COLLECTION AND PREPARATION OF RECORD DRAWINGS.
5. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONTROLLING EROSION IN ALL AREAS DISTURBED BY HIS ACTIONS. COSTS FOR REQUIRED EROSION CONTROL, REGARDLESS OF WHETHER OR NOT SUCH MEASURES ARE SHOWN ON THE ENGINEERING DRAWINGS, SHALL BE BORNE BY HIM.
6. ALL DOWNED TREES AND TREES TO BE REMOVED WITHIN THE WORK AREA SHALL BE SALVAGED INTACT (ROOT MASSES INTACT) FOR USE IN PROJECT CONSTRUCTION AS DIRECTED BY THE ENGINEER.
7. INSTALL SIGNAGE UPSTREAM OF DIVERSION TO DIRECT RECREATIONAL BOATERS SAFELY AROUND WORK AREA.
8. UTILITY LOCATIONS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR LOCATION AND PROTECTION OF EXISTING UTILITIES AND SHALL REPAIR ANY DAMAGE AS QUICKLY AS POSSIBLE AT HIS OWN EXPENSE. ALL UTILITIES ENCOUNTERED SHALL BE LOCATED BY DEPTH AND TIES AND SHOWN BY THE CONTRACTOR ON HIS "AS BUILT" DRAWINGS. HAND EXCAVATION SHALL BE DONE WHEREVER UNDERGROUND UTILITIES ARE SHOWN OR ANTICIPATED. THE CONTRACTOR SHALL CONTACT DIG SAFE AND THE APPROPRIATE AUTHORITIES PRIOR TO ANY CONSTRUCTION IN ORDER TO VERIFY EXISTING CONDITIONS AND UTILITY LOCATIONS.
9. BASE MAP INFORMATION INCLUDING BOUNDARY AND TOPOGRAPHY ON THESE PLANS IS FROM TOWN TAX MAPS AND LIMITED FIELD SURVEY CONDUCTED BY HORIZONS ENGINEERING, LLC.
10. WETLAND JURISDICTIONAL BOUNDARIES WITHIN THE AREA OF PROPOSED WORK HAVE BEEN IDENTIFIED FROM AERIAL PHOTOGRAPHY AND FIELD VERIFICATION BY SEAN SWEENEY, CWS. LOCATION OF JURISDICTIONAL BOUNDARIES IS APPROXIMATE.
11. ELEVATIONS SHOWN ON PLANS ARE BASED ON NGVD 29.
12. AERIAL PHOTO TAKEN ON MAY 18, 2006.
13. TOP OF BANK ALSO REPRESENTS APPROXIMATE ORDINARY HIGH WATER FROM PLAN VIEW PERSPECTIVE.
14. PROPERTY LINES SHOWN ON THESE PLANS HAVE BEEN TAKEN FROM TOWN OF WOODSTOCK TAX MAPS AND SHOULD BE CONSIDERED APPROXIMATE.

EXISTING CHANNEL PROFILE



PROFILE LEGEND:

- THALWEG (DEEPEST PORTION OF CHANNEL BED)
- WATER SURFACE (9/14-15/04, Q ~ 360 CFS)
- BANKFULL
- BANKFULL INDICATOR SURVEY POINT
- TOP OF BANK
- TOP OF BANK SURVEY POINT

horizons Engineering LLC
34 School Street
Littleton, NH 03561
Phone 603.444.4111 - Fax 603.444.1343

PEMIGEWASSET CHAPTER TROUT UNLIMITED

PEMIGEWASSET RIVER RESTORATION PROJECT

WOODSTOCK, NH

EXISTING SITE PLAN AND CHANNEL PROFILE

NO.	DATE	REVISION DESCRIPTION	ENG	DWG
1	1/21/09	SITE PLAN REVISIONS	TBP	JFM
2	3/2009	REVISIONS IN RESPONSE TO NHDES COMMENT LETTER	TBP	KRP

DATE: JAN 2009	PROJECT #: 04131/06195
ENGIN'D BY: TBP	DRAWN BY: SPS/JFM
CHECK'D BY: SPS	ARCHIVE #: H-4065

SHEET 2 OF 10

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Appendix H

Project Fact Sheet and Information Guide & Media Documentation

Project Fact Sheet and Information Guide

Pemigewasset River Restoration Project
Woodstock, NH

As many of you are probably aware the Pemigewasset Chapter of Trout Unlimited's project for the restoration of a portion of the Pemigewasset River in Woodstock is beginning this week. Over the course of the past 6 years much has been done to evaluate the river and its instability problems, develop designs, meet with abutters, and prepare permit applications. Throughout the process we have gained valuable input and insight from you; those who live on the river and observe it on a daily basis.

As we enter the construction phase of the project, we wanted to take an opportunity to thank you for your contributions in making the project a success and let you know a little more about the work that will take place in and along the river to implement all of the planning and design work that has taken place.

Project Goals:
This restoration project is intended to lessen bank erosion and improve fisheries habitat by reconstructing the river's cross section and profile to that which has been found on other parts of the river to provide a stable condition. It is important to understand that the project will not eliminate erosion completely as some erosion is natural and part of channel evolution. Nor will the project eliminate or change the likelihood of flooding. It will take time to meet the aforementioned goals and the project is intended to provide conditions that are conducive to the long-term process of achieving the stated goals.

General Description of Work
Although there is no formal construction phasing, it is anticipated that work will begin on the western side of the project with and finish on the eastern side of the project near Rte. 175. Work will occur during lower water conditions, and water will be diverted around the work area during the construction of the lower portion of the river work and during the reconstruction of the floodplain at the current area where the river enters the Chase's pond. Most of the construction equipment will be staged on, and gain access to, work areas from the Chase property. A small portion of the work may be constructed by gaining access through the Cawley property off of Rte 175.

Contractor
The construction of the project was put out to bid in mid July and as a result of the bids that were submitted the contractor was selected to construct the project is Alvin J. Coleman and Sons, Inc of Conway, NH. Coleman's superintendent for the project is Mr. Rodney Glaze who can be reached at 447-5926.

Schedule
Work is tentatively slated to begin on September 1 and barring any high flows is anticipated to take a total of six to eight weeks to construct.

If you have any questions or concerns during construction contact the Superintendent at 447-5836 or Tyler Phillips, Project Manager at 444-4111.

Area News

Construction beginning on Pemigewasset River restoration project

WOODSTOCK--The Pemigewasset Chapter of Trout Unlimited (TU) has started construction of the largest and most involved river restoration project it has undertaken to date.

The $500,000-plus project will restore approximately 2,000 feet of the Pemigewasset River in Woodstock, west of Exit 31 off Interstate 93. This area of the river is listed as impaired by the N.H. Department of Environmental Services (DES) for failure to maintain its designated use of aquatic life use support. On-going bank erosion, widening of the river channel, formation of multiple channels, and subsequent degradation of the cold-water fisheries habitat characterize this reach of the Pemigewasset River.

By reconfiguring the impaired river channel to a more natural width, depth and curvature, the project will stabilize and restore the river channel, reduce bank erosion and land loss, enhance fish habitat and restore a former 30-acre pond.

Preparation of the restoration plan was funded under a DES Watershed Restoration Grant awarded to the chapter in 2003. Funding for the construction phase was provided in part by a Watershed Restoration Grant from DES with Clean Water Act Section 319 funds from the U.S. Environmental Protection Agency. Errol and Kelly Chase, the N.H. State Conservation Committee Moose Plate Program, Davis Conservation Foundation, N.H. Fish & Game License Holder's Habitat Fund and Pemigewasset Chapter TU provided additional funding.

Todd Baldwin, ex-officio chapter president, was the key leader in spearheading this project for the chapter and is the Director of Construction. The Chapter worked closely with many people and organizations, but most importantly, Errol and Kelly Chase and the numerous abutters to the restoration area. Baldwin said, "Although is has taken a long time to bring this restoration project to construction, it has been most gratifying, in this day and age, to have so many entities and people work together to make this win-win project happen."

The cooperative effort to bring this project to implementation was begun in 2002. The engineering, hydrology and permitting was carried out by Tyler Phillips of Horizons Engineering, LLC, of Littleton and Sean Sweeney, of Headwaters Hydrology, PLLC.

The Chapter is pleased to award the construction contract to Alvin J. Coleman & Son, Conway.

The Pemigewasset Chapter of Trout Unlimited would like to take this opportunity to thank all those who have made this restoration project possible and to also thank those who will help us from here on to complete this project and become River Stewards to maintain and protect this most beautiful area.

Construction beginning on Pemi River restoration project

Local Trout Unlimited chapter tackling effort in Woodstock

WOODSTOCK — The Pemigewasset Chapter of Trout Unlimited has started construction of the largest and most involved river restoration project it has undertaken to date.

The $500,000-plus project will restore approximately 2,000 feet of the Pemigewasset River in Woodstock, west of Exit 31 off I-93. This area of the river is listed as impaired by the NH Department of Environmental Services (DES) for failure to maintain its designated use of aquatic life use support. This reach of the Pemigewasset River is characterized by on-going bank erosion, widening of the river channel, formation of multi-

SEE PEMI, PAGE A13

Pemi

FROM PAGE A2

ple channels, and subsequent degradation of the cold water fisheries habitat.

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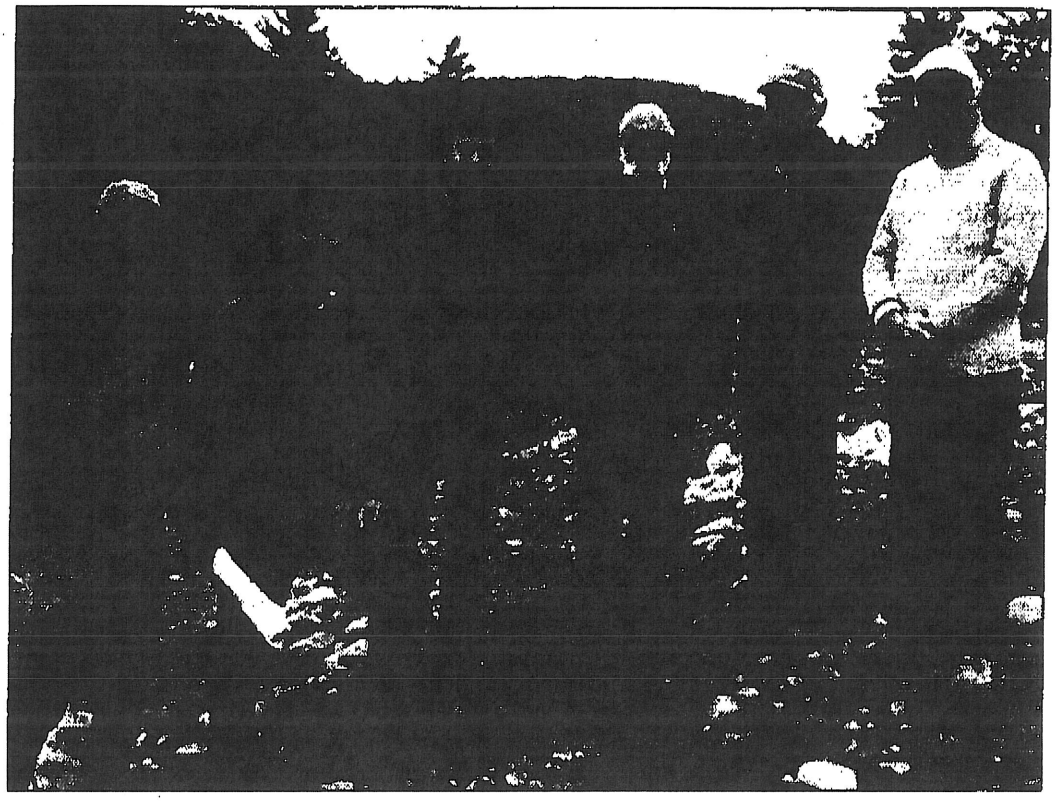
The Pemigewasset Chapter of Trout Unlimited would like to take this opportunity to thank all those who have made this restoration project possible, and to also thank those who will help us from here on to complete this project and become River Stewards to maintain and protect this most beautiful area.

Trout Unlimited moving forward with Pemi River project

THORNTON — The Pemigewasset Chapter of Trout Unlimited was funded for a restoration grant to stabilize the Pemi River, reduce land erosion, enhance in stream and off channel fish habitat and restoration of a spring fed pond.

Funding sources and partners for this project include Todd Baldwin, Pemi Chapter of Trout Unlimited, NH Dept. Of Environmental Services, NH Fish and Game, NH State Conservation Committee, Davis Conservation Foundation, Errol and Kelly Chase, Horizons Engineering, and many volunteers.

Councilor Ray Burton made an official visit to the project and stated, "This is a partnership of several key federal and state resources coming together to restore the upper Pemi River Valley for public fishing and enjoyment by all. Everyone involved is to be commended!"



COURTESY PHOTO

Pictured (L-R): Sean Sweeney, Sweeney Engineering; Tyler Phillips, Horizon Engineering; Steve Landry, NH DES Project Manager; Todd Baldwin, Trout Unlimited; AJ Coleman, Construction Manager; and Councilor Burton.

THE COURIER

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120TH YEAR, 43RD ISSUE

LITTLETON, N.H., WEDNESDAY, OCTOBER 28, 2009

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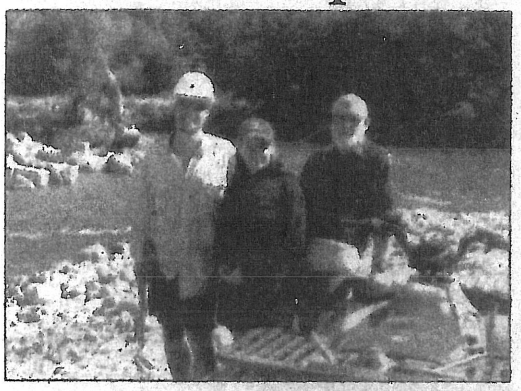
Largest river restoration project reaches completion



ART MCGRATH/THE COURIER

Tyler Philips, of Horizon Engineering, landowner Kelly Chase, and Todd Baldwin, of Trout Unlimited, at a the site of a river restoration project in Woodstock.

By ART McGRATH
amcgrath@salmonpress.com

WOODSTOCK—The largest river restoration of its kind in New Hampshire is just being completed, with 2,900 feet of the Pemigewasset River restored to its original course and banks restored to their previous condition.

Most of the project was on an 80-acre lot belonging to Errol and Kelly Chase, both of whom were thrilled to support the project, according to Kelly.

Todd Baldwin, of the Pemigewasset Chapter of Trout Unlimited, took the lead on this project six years ago and was thrilled to see it come to fruition.

"This is exciting for me, I could watch them move every spoonful of earth," Baldwin said recently, while watching equipment belonging to Coleman Construction, of Conway, move huge rocks in the river to channel the water.

Tyler Philips, of Horizons Engineering, who oversaw the work on the site, said the purpose of the huge rocks and the walls they were building along the banks was to "train the water" so that it would naturally flow along a certain route.

"It took many years for this problem to develop and it's going to need some help for it to follow the new channel," Philips said.

The 2,900 foot stretch of river had to be restored because in the mid-1990s the river breached its bank and created a new river bed through what had been a 30-acre pond on the Chases' property, Baldwin said. Much wildlife habitat was lost, including prime fishing ground, he said. Just in the past year over three acres of land had been lost to the new path of the river.

The pond had been created when Interstate 93 was built and gravel was taken out to build the interstate. Water filled in the gravel pit, creating a large pond, Baldwin said.

After Trout Unlimited became involved, Baldwin said Horizons Engineering was contracted to do a feasibility study on the proposed project to redesign the river channel and then contacted the New Hampshire Department of Environmental Services,

SEE RIVER, PAGE A10

RIVER

ART MCGRATH/THE COURIER

Heavy equipment from Coleman Construction, of Conway, moving large rocks in the riverbed of the Pemigewasset River during a recently completed river restoration project.

(CONTINUED FROM PAGE A1)

which was quite enthusiastic about the proposal.

The cost of the project is over $600,000, Baldwin said. About $200,000 of that is the value of the material being taken right from the property, including stone, gravel, plants and trees, which are being transplanted from elsewhere on the property.

The Chases are donating all the material, which is helping considerably with the cost, Baldwin said. The remaining $400,000 came from grants. The largest grant came from the state to the tune of $317,000, which was the largest grant to a non-profit in the state, Baldwin said.

Philips said the project was also the largest river restoration of its kind in the state. Usually river restorations involve temporary fixes such as installing plastic mesh called riprap to hold up banks, or just fixing small sections of bank. Nothing of this size had been tried in New Hampshire before, he said.

The key to this project was figuring out what the problem was to begin with that caused the river to breach its bank, Philips said. The problem was the river was too broad in the area where it breached and sediment built up raising the bed, so that in large floods it easily broke its bank, which it did one too many times, he said. By making the river narrower and deeper in that area sediment does not have a chance to build up and is carried downstream, he said.

Over 90,000 cubic yards of material were moved for this project, Baldwin said.

Section B

Thursday,

December 10, 2009

The Record Enterprise

Fins & Feathers

PEMI RIVER RESTORATION

Raymond Kucharski
Contributor

The Pemigewasset Chapter of Trout Unlimited recently completed the largest and most involved project the chapter has undertaken to date; the restoration of approximately 2200 feet of the Pemigewasset River in Woodstock, NH, west of Exit 31 off I-93. This long term process of raising funds, working with engineers for design and permitting, and all the intricacies of things that have to happen to make a project of this size possible has been over six years in the making. The winning bidder, Alvin J. Coleman & Son completed the construction work in 47 working days with some BIG equipment.

Todd Baldwin, former Pemigewasset Chapter President was the Project Director, and Tyler Phillips, of Horizons Engineering, managing the design & engineering of the river restoration project.

This reach of the Pemigewasset River was characterized by ongoing bank erosion which has led to channel widening, formation of multiple channels, and degradation of cold water fisheries habitat. Additionally, a former 30-acre pond, located on the west side of the river, was affected by a significant flood in the mid-1900's that caused the river to breach its banks and flow through the pond.

The primary focus of this project included stabilizing the channel and banks, plus returning the river along this reach to a state of equilibrium. The bank full mean depth was increased by eliminating the existing multiple or braided channel pattern that existed by constructing a single thread channel with proper cross-sectional area. Rock vanes and log vanes were installed in conjunction with extensive revegetation. Existing side channels were filled to in-

SEE FINS & FEATHERS, PAGE B8

Fins & Feathers

FROM PAGE B1

crease depth. Ultimately, this reach of the Pemigewasset River will reach a state of equilibrium where the river has enough energy to transport sediment, maintain appropriate channel dimensions, and remain stable during flood events.

This was truly a total grassroots accomplishment. Pemigewasset TU, Campton NH, would like to thank the partners that made this extraordinary restoration and enhancement project possible; NH Department of Environmental Services NH State Conservation Committee, Moose Plate Funds, NH Fish & Game License Habitat Fund, Davis Conservation Foundation, the Chase Family, Horizons Engineering and especially all the volunteer for the many hours and effort they put into this project.

This Pemigewasset River restoration project links so well to the existing goals and objectives that Trout Unlimited has set forth. Pemigewasset Chapter of TU and the participating partners and volunteers will see to it that their project will be well monitored, maintained and looked after with pride.

Appendix I

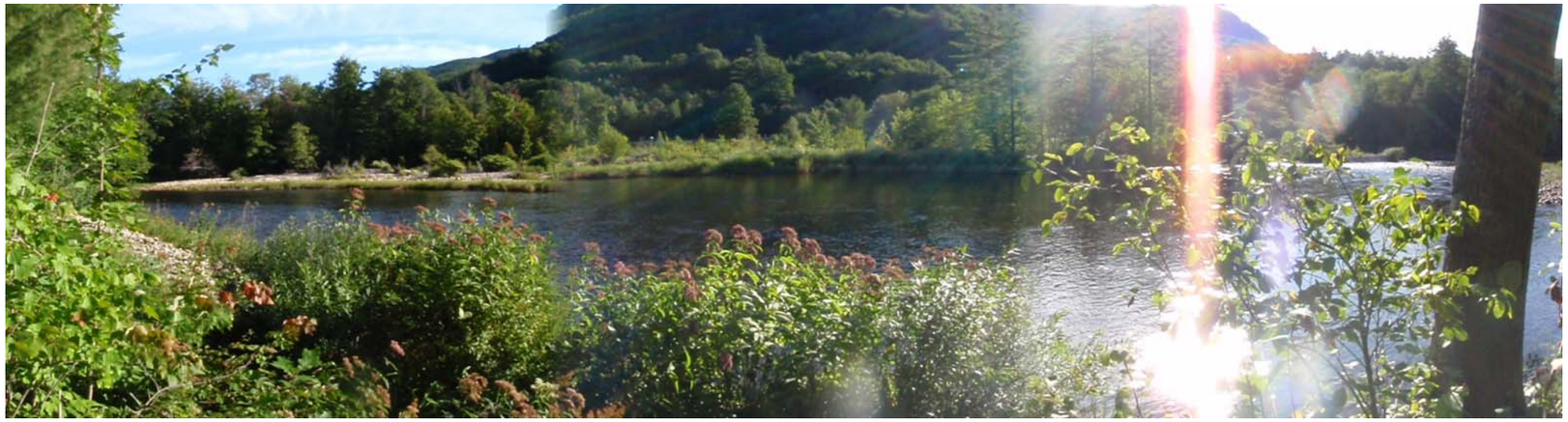
Pre and Post Construction Photographs

PEMIGEWASSET RIVER RESTORATION PROJECT

Pre-construction & Post-construction photographs

Pre-construction photograph looking southeast across area where river bank was breached and portion of river enters the man-made pond. Water in foreground is leaving the mainstem of the Pemigewasset river (far left side of photo) and flowing to the right, towards the pond

Post-construction photograph of same area. Material was excavated from the pond and used to recreate a new river bank (not seen at left) and broad floodplain. Saplings and shrubs are all transplants salvaged from onsite.



Pre-construction photograph from same photo point as pictures above, but looking east across mainstem of river at peninsula that is to be moved further east.

Post-construction photograph looking east across new area of floodplain that was re-created resulting in an easterly shift of the main stem channel location. The peninsula has been moved further east as well and the new left bank is just visible as a light band that appears beyond the transplanted shrubs.

Pre-construction photograph taken from Crossection 14 looking west (left photo) and west-northwest (right photo) across the peninsula with the area that the river has breached though its banks and enters the pond shown at the far left of the left-hand photo.

Post-construction photograph taken from Crossection 14 looking with same west and west-northwest perspectives. New peninsula is in foreground with new main stem channel beyond. The newly created right bank that is part of the re-constructed floodplain at the former pond inlet is visible in the upper left hand side of the left photo

Pre-construction photos taken from Crossection 15 looking, from left to right: upstream/northwest, across channel/north-northeast, and downstream/east-southeast.

Post-construction photos taken from Crossection 15 with same perspective as photo set above

Pre-construction photo of upper limits of project area viewed from rail trestle looking downstream/southeast. Note right bank point bar that is visible beyond the mid channel bar.

Post-construction photo of same area showing new left bank and the removal of a substantial portion of the right bank point bar.

Appendix J

Photographic Depiction of Work Areas Plan

PHOTO #17

PHOTO #18

PHOTO #19

PHOTO #20

PHOTO #21

PHOTO #22

PHOTO #23

PHOTO #24

PHOTO #25

PHOTO #26

PHOTO #27

PHOTO #28

PHOTO #29

PHOTO #30

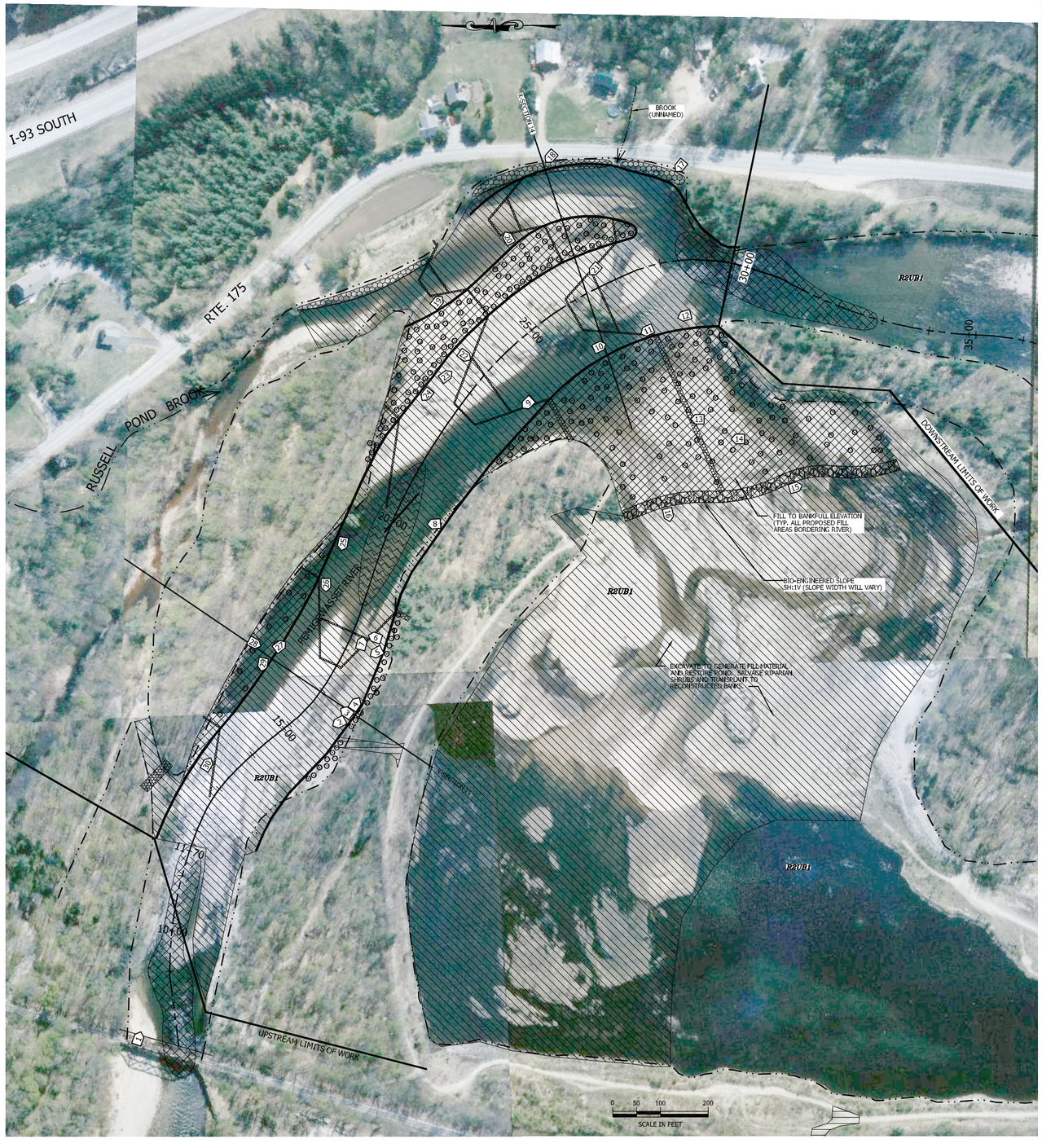


PHOTO #1

PHOTO #2

PHOTO #3

PHOTO #4

PHOTO #5

PHOTO #6

PHOTO #7

PHOTO #8

PHOTO #9

PHOTO #10

PHOTO #11

PHOTO #12

PHOTO #13

PHOTO #14

PHOTO #15

PHOTO #16

LEGEND

- PROPOSED TOP OF BANK (BANKFULL ELEVATION)
- PROPOSED THALWEG (PROFILE ALIGNMENT)
- PROPOSED DREDGE & FILL
- PROPOSED BANK FULL FILL
- PROPOSED ROCK VANE
- PROPERTY LINE
- PROPOSED ROCK CROSS VANE
- PROPOSED POOL-GLIDE COMPLEX
- EXISTING POOL-GLIDE COMPLEX (NO MODIFICATIONS)
- PROPOSED SHRUB/SAPLING TRANSPLANTS (SCHEMATIC ONLY - NOT FOR QUANTITIES)
- PROPOSED FLOODPLAIN GRADE CONTROL STRUCTURE
- EXISTING RIP-RAP

DATE: NOV 2009	PROJECT #: 04131/06195
ENGIN'D BY: SPS	DRAWN BY: JCD
CHECK'D BY: TBP	ARCHIVE #: H-4065

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PEMIGEWASSET CHAPTER TROUT UNLIMITED

PEMIGEWASSET RIVER RESTORATION PROJECT

WOODSTOCK, NEW HAMPSHIRE

PHOTOGRAPHIC DEPICTION OF WORK AREAS

horizons Engineering inc
34 School Street
Littleton, NH 03561
Phone 603.444.4111 - Fax 603.444.1343

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Appendix K

Pollutant Removal Estimates

Pemigewasset River Restoration Project

Pollutant Removal Estimates

Sediment

Estimating the performance of the project in preventing sediments from entering surface waters is a challenging undertaking for a number of reasons. The goals of the project include reducing unnatural riverbank erosion rates as well as protecting a nearby pond. Because rivers are dynamic systems where bank erosion can be influenced by many natural and man-made factors that occur outside and upstream of the project area, attributing bank erosion (or lack thereof) to river restoration work may fail to produce a true estimate of the project's performance. This is particularly true when one considers the spatial distribution and horizontal resolution of crossections and associated measurement techniques. An additional consideration is the relatively short time period of such measurements when compared to the much longer time period associated with channel/bank geomorphic response. While semi-quantitative assessments can be made of channel equilibrium based upon changes in crossectional area, bankfull width and depth at the crossections within and downstream of the project, quantification of erosional losses throughout the project reach through the use of crossectional data taken from such a short period of time and limited spatial distribution would unjustifiably stretch the utility of such measurements beyond their intended purpose.

Given that the time period for assessment of sediment load reductions is limited to available data (prior to construction) and a post-project assessment period that must have some endpoint, one must work within these limitations to find an approach for assessment that is not as sensitive to these time and resolution constraints. While not perfect, one approach is to compare the documented loss of large land areas to surface waters prior to the project with those that occur (or are averted) as a result of the project. Such data are available for the land area that was lost to the pond (and to some extent the river) in a major high water event in 1995. While this approach still relies on a number of imperfect assumption (for instance that future land loss to the pond as a result of the project will not occur) and focuses on only one element of the project (restoration of a stable floodplain at the former land loss area) reasonable data are available for making a quantifiable determination of reduced sediment contributions that resulted from the project. This of course ignores the effects of the project on bank erosion in other areas of the project (for reasons stated above), but if one is to assume that the visibly accelerated bank erosion that occurred in these other portions of the project will not be further accelerated as a result of the project, then one can ignore this potential project benefit in these other areas and arrive at a conservative estimate the overall projects influence on sediment contributions.

Given the aforementioned assumptions the following approach was taken to quantify sediment loading influences from the project. Comparison of scaled aerial photographs prior to the 1995 land loss event to scaled aerial photos taken in 2003 indicates that the area of forested floodplain that was eroded into the pond was approximately1.72 acres. The volume of the material lost to the pond was calculated by subtracting the land surface elevation in 2003 (derived from crossectional measurements) of this eroded floodplain area, from the elevation of the top surface of the intact floodplain in this area in 1995 (elevations of forested floodplain were assumed to match floodplain elevations of adjacent intact floodplain measured in 2003), and multiplying this resulting average 5 foot "thickness" of material by the 1.72 acre land area. This results in an estimated loss of 365,000 cubic feet (or 13,900 cubic yards) of material. Using a bulk density of 100 lbs per cubic feet yields a loss of 18,750 tons of material to the pond. While this floodplain material was largely lost in the 1995 event one cannot say that *this* figure is representative of yearly annual losses in subsequent years. In an effort to provide estimates of sediment contributions in annual units for reporting performance to EPA, the above calculated tonnage has been spread mathematically across the 8 years between the year of actual loss (1995) and year in which the data was available (2003). This results in an average annual loss of sediments of 2,344 tons (18,750tons/8 years).

Having developed a reasonable estimate of sediment losses to the pond given the available data and underlying assumptions one must then estimate the annual losses to the pond that occur after restoration work. Again, a number of assumptions must be made to arrive at such an estimate: first, that the construction of the project itself did not result in appreciable contributions of sediment to the pond; second that the project will not result in new land losses to the pond; and third that the project performance will persist indefinitely (or at least throughout the unspecified period the EPA intends the performance to projected). The first and second assumption are reasonably well mitigated or justified by the fact that a majority of the material that entered the pond during the 1995 event was removed from the pond and used in reconstructing the floodplain and further, that the reconstruction incorporated structural grade controls and revegetated floodplain surfaces with very flat surface that are intended to resist erosion and scour of such materials into the pond. The third assumption regarding indefinite performance longevity is likely inherent in all performance evaluations whether the evaluation is of a project that constructs a stormwater detention pond (where declines in performance over time due to maintenance diligence, or lack thereof, may be not be accounted for in performance estimates) or a river restoration project. In fact, it is not unreasonable to believe that as the vegetation that was transplanted in this project on the restored floodplain spreads, the floodplain surface will become more resistant to erosion and scour, indicating a greater confident in this assumption with each passing year as the project matures. With the acceptance of these assumptions the approach for performance evaluation is to compare the annual rate of loss of sediments to the pond against the loss of sediments to the pond that is averted due to the construction of this (floodplain restoration element of this) project.

This is calculated quite simply as:
average annual loss – post construction average annual loss

2,344 tons/year – 0 tons per year = **2,344 tons/year** average annual sediment removal rate

Phosphorus

Phosphorus concentrations of forested floodplain soils can be influenced by a number of factors including horizontal distance from the stream channel, soil strata sampled, and microtopographic differences that are driven by varying degrees of organic litter accumulation, decomposition and dissolution and transport by floodwaters. Stoeckel and Miller-Goodman. (2001), reported wide variations in phosphorus concentrations within distances of less than one meter across floodplains in South Carolina. Ross and Young (2009) found variations of over 1,300 mg/kg in floodplain soils in at one 22 hectare site in Vermont with the variance explained by differences in soil type and depth at which the samples were collected.

Because literature indicates such a great degree of variance in floodplain total phosphorus concentrations, the concentration of total phosphorus from a composite of 5 grab samples of sediments from within the pond (taken immediately adjacent to the area where material was removed as part of the project) appears to be a better predictor of the amount of total phosphorus that was removed as a result of the project. In summary, we have chosen to estimate the phosphorus removal rate for the project based upon a phosphorous concentration obtained from sampling efforts that, while not covered by the project's QAPP, did follow standard sampling protocols, and are spatially more relevant than literature values that may or may not have followed QAPP/SSPP standards for compositing samples to represent the full soil profile that was transported to the pond as a result of the 1995 storm event.

The concentration of phosphorus in soil samples is often dictated by the surface area of the soil particles with finer textured soils having a higher surface area per weight than larger cobble material. Laboratory analysis methods prevent the processing and analysis of total phosphorus from samples with large cobble, and yet material that is 1 inch and larger in diameter represents approximately 65% (by weight) of the material that was removed from the pond. The sample that was taken from the pond, and sent to the lab for analysis contained no particles 1 inch in diameter or larger and therefore if used to represent the total phosphorus concentration of the material that was removed from the pond could overestimate phosphorus removal rates attributable to the project. In an effort to conservatively estimate the removal rate of total phosphorus we have assumed that material 1 inch in diameter and larger contains no appreciable phosphorus and further, the concentration of the total phosphorus in the sample taken (100 mg/kg) has been adjusted/reduced by multiplying the laboratory result by the decimal percent of the portion of the material that the sample represents (0.35). This yields an adjusted concentration of total phosphorus removed from the pond of 35 mg/kg.

In developing a reporting rate to EPA of pounds of total phosphorus a year removed, where limited data exists, one must reconcile a difference between a performance rate for sediment deposition to the pond that was averted and the use of an adjusted phosphorus concentration from pond sediments that are representative of the material removed from the pond. The following approach has been used to estimate the pounds of phosphorus that will no longer enter the pond: convert the adjusted phosphorus rate to lbs per ton of sediment (0.07 lbs) and multiply this figure by the 2,344 tons of sediment averted per year.

While seemingly contrived, this approach is intended to acknowledge that there are a number of unknowns that cannot practicably be measured given available data. First, the sediments in the pond were actually removed from the pond bottom (where they were presumably more readily available to cause nutrient enrichment of surfaces water) and placed to form a landform (floodplain) that is more resistant to reduction/dissolution and re-introduction into the pond. Second, soil sampling of the native floodplain soils is (as previously discussed) unlikely to capture the true phosphorus concentration of the soils that were lost in the 1995 and sampling of the soils that were used to make up the new floodplain were unable to be collected due to a significant frost depth at the time this sampling effort was undertaken. Third, consistent with other efforts described above to avoid overestimating performance, sample collection of sediments that may have already had a portion of the phosphorus liberated to the water column by biochemical processes would tend to reflect what was actually removed rather as opposed to using concentrations from floodplain soils and assuming that no losses to the water column occurred during the years after transport to the pond. Given the foregoing the estimated annual rate of total phosphorus removed/averted due to project of **164 lbs/year** should be viewed as a low-end figure that may underestimate the actual performance of the project.

References:

Stoeckel, D.M., and M.S. Miller-Goodman. 2001. Seasonal nutrient dynamics of forested floodplain soils influenced by microtopography and depth. Soil Sci. Soc. Am. J. 65:922–931

Ross, D.S., and Young, E.O., Soil phosphorus landscape variability and soil mapping in a stream corridor of the Northern Lake Champlain watershed: FINAL REPORT 2009. USGS Progress Report- 2008VT35B