Terra Contracting, LLC

"Exceptional Environmental Services"

Brookhaven Science Associates, LLC
Brookhaven National Laboratory – Contract 169473
Peconic River Supplemental Sediment Removal
Completion Report

FINAL

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A. EXECUTIVE SUMMARY

This Completion Report has been prepared to document the activities performed in the successful remediation of mercury contaminated sediments under the Brookhaven National Laboratory (BNL) Peconic River Supplemental Sediment Removal project for Areas PR-WC-06, Sediment Trap (Upstream of HQ) and PR-SS-15. Approximately 800 cu. yds. (1,134 tons) of mercury contaminated sediment and sediment trap stone were excavated, dried, loaded into gondola rail cars along with the sediment drying pad stone, and transported to Allied Waste Niagara Falls Landfill in Niagara Falls, NY for disposal. The excavation activities commenced in November of 2010 and were completed in February 2011.

This project was performed as a supplement to the BNL Peconic River Remediation Phases 1 and 2 performed in 2004 and 2005 due to the presence of mercury concentrations in excess of cleanup goals during post remediation surface water and sediment sampling. During the project, supplemental sample analyses for PCB's and radionuclides via gamma spectroscopy were performed to confirm all concentrations were below levels of concern.

The supplemental sediment removal cleanup objective for BNL onsite property was for an average mercury concentration after remediation of less than 1.0 mg/kg with no levels of mercury in the remediated area equal to or exceeding 2.0 mg/kg. This objective was met with an average mercury concentration of 0.33 mg/kg and a maximum of 1.2 mg/kg at onsite remediation location PR-WC-06, and an average of 0.17 mg/kg with a maximum of 0.26 mg/kg at the sediment trap.

The cleanup objective for offsite portions of the river on Suffolk County property was for an average concentration after remediation of less than 0.75 mg/kg with a maximum less than 2.0 mg/kg. This objective was met; the maximum concentration for location PR-SS-15 was 0.67 mg/kg and an average of 0.14 mg/kg throughout the excavated area. Although PR-SS-15 spans both on and off-site locations, since the maximum concentration over the entire area met the offsite criteria, the data was not further broken down into on and offsite values.

The site restoration activities, including wetland revegetation and invasive species removal are scheduled to be initiated in July 2011.

B. Introduction

B.1 Purpose

The purpose of this Completion Report is to document the activities performed during the implementation of the Peconic River Supplemental Sediment Removal project under Brookhaven National Laboratory (BNL) Contract 169473. These activities were performed in the fall and winter of 2010/2011 under the supervision of Brookhaven Science Associates, LLC (BSA) and included the excavation, drying, transportation and disposal of mercury contaminated sediments from three distinct areas of the river. Removal of the sediment trap was also performed as part of this work. Revegetation/restoration of the excavated areas will be performed in the summer 2011.

B.2 Historical Background of Facility

Brookhaven National Laboratory (BNL) located in Upton, New York, is owned by the United States Department of Energy (USDOE) and operated by BSA. The U.S. Army used the site, formerly known as Camp Upton, during World Wars I and II and as a Civilian Conservation Corps (CCC) Camp between the two wars. In 1947, the facility was transferred to the Atomic Energy Commission (AEC), the Energy Research and Development Administration (ERDA) in 1975 and integrated into the Department of Energy (DOE) in 1977. The facility was established as a multi-discipline scientific research center with emphasis on programs that require large-scale research tools, such as nuclear reactors, particle accelerators, and physical, biomedical, and environmental laboratories. Inadvertent historical releases of contaminants and past waste disposal practices resulted in the introduction of contaminants to the BNL Sewage Treatment Plant (STP) and subsequent deposition into upstream sections of the Peconic River.

In 1980, BNL was placed on the New York State Department of Environmental Conservation (NYSDEC) list of Inactive Hazardous Waste Disposal Sites. In 1989, it was included on the U.S. Environmental Protection Agency's (EPA) National Priorities List. BNL has a total of 31 areas of concern (AOCs) grouped into seven distinct Operable Units (OUs) which are illustrated on Figure 1. Work performed under this contract was confined to select sections of the Peconic River within OU V located in the east quadrant of the BNL property, Figure 2.

The Peconic River site has been characterized in several investigations including but not limited to the Operable Unit V Remedial Investigation Report (IT Corporation, 1998) and the Plutonium Contamination Characterization and Radiological Dose and Risk Assessment Report (IT Corporation, 2000). A supplemental sediment sampling program was conducted (September-October, 2001) to provide additional information on the distribution of contaminants on and off BNL property. Those investigations indicated that several sections of the river onsite between the BNL

STP and the eastern BNL property boundary and offsite in the adjacent Suffolk County parkland contained sediment with elevated concentrations of metals (particularly mercury and/or PCBs) (Envirocon, 2005).

In 2004/05 mercury contaminated sediment was removed from segments of the Peconic River affected by the release of mercury from the Brookhaven National Laboratory STP (Envirocon, Inc., 2005). Between 2006 and 2010, routine post cleanup monitoring of surface water, sediment, and fish was performed to help determine the effectiveness of the cleanup. This monitoring identified three section of the river where mercury contaminated sediment remained above the site specific cleanup levels.

B.3 **Site Description**

BNL encompasses approximately 5,300 acres of land located near the eastern end of Long Island, New York. The Peconic River flows between BNL and the town of Riverhead, approximately 15 miles east (downstream) of BNL, where it enters Flanders Bay and ultimately the Atlantic Ocean. The river is a slow moving meandering river with a total elevation change of approximately 36 feet between BNL and Riverhead. The river base flow is derived from groundwater. The river can exhibit periods of no flow on BNL property to several million cubic feet during high water table periods resulting from significant precipitation events. During remediation activities performed in the fall and winter of 2010/2011 the river initially exhibited no flow through the work areas with water depth less than one foot throughout all of the excavation areas. As the remediation progressed, water depth in the river increased due to significant winter precipitation.

B.4 **Site Cleanup Criteria**

Mercury is the contaminant of concern for this supplemental remediation project. Prior to excavation, the highest concentration of mercury reported in the excavation zones was reported to be 22.3 mg/kg (ppm) at PR-WC-06, 11.1 ppm at the sediment trap area, and 36.8 ppm at PR-SS-15. The results of the post-excavation confirmatory sampling and analysis for total mercury were utilized to determine if the cleanup goals have been achieved. The offsite cleanup objectives for this supplemental sediment removal are that the average mercury concentration in the sediment outside the Laboratory property limits will be less than 0.75 ppm, with a goal that all mercury concentrations in the remediated areas are less than 2 ppm following the excavation. The onsite cleanup objectives for this supplemental sediment removal action are that the average mercury concentration in the sediment within the Laboratory property limits will be less than 1.0 ppm, with a goal that all mercury concentrations in the remediated areas are less than 2 ppm following excavation. In addition, 10% of the samples were analyzed for radionuclides via gamma spectroscopy, and total PCB's, and the data evaluated.

The Final Plan for Optimization of the Peconic River Remedy was issued to the regulators in October 2010. In December 2010, the contractor-prepared Peconic Project Plans for the sediment remediation were also distributed to the regulators.

B.5 **Peconic River Flora and Fauna**

Existing flora in the excavation zones were in a state of dormancy during the excavation of contaminated sediments. Flora that was present inside the excavation zones were removed and disposed of with the contaminated sediment. Although tree damage was minimized, several trees were removed as safety precautions and to facilitate the removal of contaminated sediment intertwined in the root systems during excavation activities.

Due to the low water levels in the river and the changing seasons at the time of excavation, no fauna (fish or turtles) were observed that required temporary relocation.

C. Remediation Activities

General

The remediation activities associated with the supplemental cleanup of mercury contaminated sediments in the Peconic River consisted of sediment located at three distinct areas inside and adjacent to the BNL property boundary, as well as stone from the Sediment Trap. These areas and the quantities of sediment to be excavated have been identified by BSA as areas PR-WC-06 (9,470 sq. ft., 351 cu. yds.), the Sediment Trap (upstream of HQ) (40 cu. yds. of rock and 36 cu. yds. of sediment) and PR-SS-15 (5,280 sq. ft., 196 cu. yds.) presented as Figures 3, 4, 5 and 6 respectively. The footprint from which sediment was excavated from all of the areas was approximately 16,000 sq. ft. including additional sediment excavated outside the original Sediment Trap footprint as requested by BSA.

The remediation was performed by Terra Contracting, LLC, from Kalamazoo, Michigan under contract with BSA. Generally, sediment was excavated a maximum of twelve inches or to the sediment/sand interface. The excavated material (approximately 650 cu. yds.) was transported to an on-site processing area, where it was further dried, if necessary, prior to off-site transport to the Allied Waste Niagara Falls Landfill Facility (aka Pine Ave. Landfill), Subtitle D Disposal Facility (Disposal Facility) for disposal. The excavated areas will be revegetated with borrowed and imported vegetation in accordance with the scope of work in the summer 2011. Terra's subcontractor, JFNew will perform the revegetation scope.

The remediation activities included the following tasks:

- Existing haul roads were improved and protected with high-density polyethylene (HDPE) truck mats where stipulated by BSA for heavy equipment access to the remediation areas. These mats were laid over existing vegetation on the haul roads to encourage vegetative regrowth.

- A temporary dam was installed across the Peconic River up-stream of all of the remediation areas. A bypass pumping system was installed to pump the water from the river upstream of the dam and outside the remediation areas, allowing those areas to be dewatered.

- Temporary water control measures, including well point dewatering systems and self-priming Godwin dewatering pumps were used to manage water that infiltrated, via groundwater intrusion, into the excavation areas.

- Sediments were excavated to reach the following cleanup goals:

- Areas on BNL property (PR-WC-06, the Sediment Trap, and a majority of PR-SS-15) – average concentrations of mercury were confirmed by sampling and laboratory analysis to average less than 1.0 ppm and met the goal that all concentrations in the remediated areas were below 2.0 ppm.

- Areas on Suffolk County property (a portion of PR-SS-15) - average concentrations of mercury were confirmed by sampling and laboratory analysis to average less than 0.75 ppm and met the goal that all concentrations in the remediated area were below 1.0 ppm.

- Sediment Trap – the Sediment Trap rock was removed as contaminated material to allow sampling by BSA personnel of the underlying sediment. Results of BSA sampling confirmed that sediment below the rock had elevated mercury concentrations and had to be removed. Terra excavated the sediment below the rock and additional sediment in the river and along both banks as directed by BSA. The stone/rip rap which comprised the Sediment Trap was disposed of with the other excavated sediment. The average concentrations of mercury were confirmed by sampling and laboratory analysis to average less than 1.0 ppm and met the goal that all concentrations in the remediated areas were below 2.0 ppm.

- Confirmation sampling and laboratory analysis was performed to ensure the remediation cleanup goals were met.

- Excavated sediment was transported to an on-site processing pad, where the material was dried, then solidified as necessary by mixing with an admixture (ZapZorb) until it passed the Paint Filter Test – a requirement for disposal at the Disposal Facility.

- The material was loaded into zippered poly lined rail gondolas and transported via rail to the Disposal Facility for disposal.

The wetlands will be re-vegetated as described in the Revegetation Plan in the summer of 2011. The revegetation work will be documented in the Annual Peconic River Monitoring Report.

The following sections provide a description of the means and methods Terra used to complete the work.

C.1 **Health and Safety**

All Terra operations were conducted safely by adhering to the Loss Prevention System (LPS) program. Prior to the initiation of field activities, Terra prepared two Health and Safety Plans (HASPs). The first HASP was the Terra site specific Health and Safety Plan. This plan identified the specific duties to be performed on the jobsite and the hazards that could be expected to be

encountered during the execution of the project. The plan also identified general hazards that may be encountered on the jobsite as well as emergency contact information and locations of emergency treatment centers.

Terra also modified a BNL site specific HASP. This HASP also contained the hazards expected to be encountered on the jobsite and steps to be taken when executing specific tasks throughout the duration of the project. The BNL HASP also contained BNL specific information pertaining to emergency policies and procedures in place at BNL.

Each of these HASPs was presented to BSA for review and approval before any field work was performed.

Terra's safety program included daily safety meetings. These meetings were held a minimum of twice each day – the first at the beginning of the work day and the second following the mid-day break. Terra utilized BNL's Daily Tailgate Safety Form to document these meetings.

All field work was performed in Level D PPE which included hardhats, protective vests, safety glasses and steel-toed shoes. Workers upgraded personal protective equipment where and when required as directed by the Site Safety Officer (SSO). These upgrades included Tyvek suits, air purifying respirators, dust masks, rubber boots and gloves.

C.2 **Work Areas**

The Peconic River Supplemental Removal project was divided into three sections, PR-WC-06, the sediment trap, and PR-SS-15. PR-WC-06 is located between the STP and stream gauging station HQ. This area was subdivided into two sections separated by an area of "clean" sediment. The northern section consisted of 6,310 sq. ft. of contaminated sediment to be removed. The southern section consisted of 3,160 sq. ft. of contaminated sediment to be removed.

The sediment trap is located immediately upstream of HQ and was used to trap and contain any sediment that flowed from upstream during the 2004 and 2010 remediation. The sediment trap consisted of approximately 40 cu. yds. of rip rap stone to be removed and handled as contaminated with mercury. Upon removal of the stone, BSA personnel sampled the underlying sediment to determine to what extent, if any, mercury contamination was present. The results revealed additional contaminated sediment outside the original limits of the sediment trap stone as well as on the river banks. The data and the proposed cleanup area was presented to the regulators during the January 20, 2011 IAG teleconference. The regulators concurred with the cleanup area. Terra was asked by BSA to remove the sediment from these areas in addition to the sediment below the stone.

PR-SS-15 is located several hundred feet downstream of HQ and consisted of 5,280 sq. ft. of contaminated sediment to be excavated.

C.3 **Haul Road Mats**

Areas PR-WC-06 and PR-SS-15 required the installation and use of interlocking HDPE composite haul road truck mats. Each mat was 14 feet wide by 8 feet long. The mats were installed on existing vegetated dirt paths leading from access roads to the work areas. The mats were placed and pegged together to provide a stable platform for equipment and vehicles to travel on while protecting the existing vegetation below.

C.4 **Water Management – River Bed**

C.4.1 General

Terra's water management approach included the installation of one up-stream hydraulic barrier to isolate the excavation areas from river flow, the installation of a bypass pumping system to redirect the river flow around the excavation areas, and the dewatering of the excavation areas to allow for the removal of impacted sediments "in-the-dry".

At the time of the excavation activities, the river depth was less than one-foot in ponded areas and restricted to several inches in channels. A majority of the riverbed sediment was above water. The majority of the river water regime was dictated by the elevation of the groundwater in the area. As such, there was no substantial flow throughout any of the excavation zones. No water was observed flowing through the HQ gauging station during the entire remediation effort. Based on this observation, only one temporary dam was installed upstream of PR-WC-06 to control the minimal flow of water occurring in the channels during the excavation activities.

C.4.2 Hydraulic Barrier

Terra utilized a water-filled cofferdam – Aqua Barrier™ – to isolate the excavation areas, thereby allowing bypass pumping of the river and dewatering activities. The Aqua Barrier™ system is comprised of three polyethylene tubes – two 'inner' tubes installed within an outer 'master' tube. When filled with water, counter friction between the 'inner' and 'master' tubes result in a stable, non-rolling wall of contained water. The system deployed consisted of one section of 18 ft. wide x 8 ft. high x 100 ft. long barrier. The filled bladder system conformed to the underlying ground surface, providing an effective seal with minimal upstream infiltration. During excavation activities since the elevation of the water in the river was less than one foot, the dam was only filled with approximately 4 feet of water.

Prior to the deployment of the Aqua Barrier™, Terra installed the by pass pumping system and placed it in operation.

C.4.3 Bypass Pumping System

A bypass pumping system was installed upstream of PR-WC-06 and the Aqua Barrier™ where dictated by site conditions to divert river water around the excavation zones. Terra's bypass

pumping system consisted of a primary pump, a back-up pump, and a 1,300 foot, 12-inch diameter HDPE bypass discharge pipe.

Two pumping sumps were installed in the river bottom to reduce the potential for the pump suction to scour into the river bottom. Each sump consisted of a poly container into which the suction hose was inserted. The chambers were solid on the bottom, with an open top. They were installed in a vertical position allowing the water to enter the pumping chamber through the open top.

Suction hose was run from the pumping sumps to the pumping pad. The hose ends inserted into the sumps were equipped with a perforated screen. The screened ends were inserted into the pumping chamber and the other end was connected directly to the dewatering pump.

The discharge pipe was installed east-west through the wooded area between the pumping pad and discharge point located downstream of the PR-SS-15 excavation zone. The discharge point was protected by underlain nonwoven geotextile to reduce the potential for the discharge water to erode the river bank. The end of the discharge line was also fitted with a 25 micron wetland bag used to collect residual sediment that was pumped through the discharge system.

C.4.4 Dewatering Activities

Because the river water level had dropped significantly since the initial site walk in July 2010, Terra's intent was that the excavation sites be dewatered as much as possible so the impacted sediments could be removed "in-the-dry". The overall dewatering activities consisted of two phases – the initial dewatering of the water impounded behind the Aqua Barrier™ system and the secondary dewatering, which kept the excavation areas dry during the sediment removal activities.

Terra installed and operated a vacuum wellpoint dewatering system to dewater the actual excavation areas. The wellpoints were installed to a depth of 15 feet below the riverbed and spaced every six-feet along the excavation perimeter outside the excavation zones. The exact number of wellpoints at each excavation area was determined in the field based on the configuration of the excavation dimensions. The system was monitored to maintain the water table at the desired elevation during excavation. Water discharged from the wellpoint dewatering pump was discharged into the river bypass system. As directed by NYSDEC Region 1 Division of Water, Terra was not required to secure a Long Island Well Permit from the NYDEC prior to commencing wellpoint pumping activities since the work was performed under the CERCLA process. However, Terra did submit a Permit Equivalency application to the NYSDEC in October 2010.

Achieving and maintaining a depressed groundwater table within the excavation area was important in determining when the required depth was achieved in the excavation – one foot or the underlying sediment/sand interface – as well as allowing the confirmatory sampling effort to be

accomplished more accurately. Terra continually monitored the effectiveness of the wellpoint dewatering system and made adjustments as necessary. The wellpoint system was installed at the remediation area prior to excavation and removed and moved to the next remediation area following excavation. This procedure was used for each location remediated on this project.

C.5 **Site Survey**

Prior to commencing with the excavation of the sediments, BSA's Surveyor, Municipal Land Survey, PC surveyed in and marked the horizontal limits of the excavation zones with stakes and flagging. In addition, the BSA surveyor and Terra's surveyor, Mercator Land Surveying, L.L.C., each surveyed the horizontal and vertical limits of each excavation area. Once excavated, each area was again surveyed to determine the final limits of the excavation and the quantity of sediment removed. The surveys were to be used to quantify the amount of sediment removed from each area. These survey results were compared against the original contract amounts of sediment to be removed.

The statement of work quantities were used as a basis for the amount of material removed with the exception of the additional Sediment Trap sediment requested to be removed. Truckload quantities were used by Terra to estimate the additional quantity (approximately 60 cu. yds.) of sediment removed from this area. A review of the quantity of sediment/rock loaded into the railcars for disposal seems to verify that the statement of work quantities were in fact excavated during the execution of this contract.

During excavation activities, Terra personnel monitored the depth of the excavations using a Topcon GR3 GPS unit (calibrated to the site) to ensure excavation did not proceed greater than one foot in depth.

C.5.1 Sediment Excavation

Sediment excavation activities commenced at PR-WC-06. Contaminated sediments were originally planned to be excavated with Terra's Sed-Vac™ system. However, the absence of anticipated river water rendered this method undesirable for this project. Following an effort to use the Sed-Vac on a portion of the PR-WC-06 area, Terra requested that the excavation method be changed to allow for conventional excavation with conventional excavation equipment. BSA agreed with the stipulation that the Work Plan be modified to reflect this change in methodology, and the regulators were also informed of the change.

Several trees (dead and alive) had to be removed from the excavation zones before excavation could be conducted safely. The trees were cut down by Terra personnel and staged on the river bank. Upon completion of excavation activities, the trees were chipped and the chips were spread through the forested areas.

C.5.2 PR-WC-06

Conventional excavation consisted of excavating sediment with a track excavator with the excavation of contaminated sediments performed at two distinct locations at PR-WC-06 identified as area 1 and area 2 (Figures 8 and 9). In order to keep the excavation zone intact and the tracks of the excavator clean, the excavator tracked into the contaminated zone on composite truck mats. Excavated sediment was stockpiled at one corner of the excavation zone where it was subsequently loaded into lined dump trucks for transport to the sediment drying pad. Terra used a combination of poly-lined roll-off boxes and subcontracted (Rodota) dump trucks (poly-lined) to transport the sediment from this site to the sediment drying pad. Once at the sediment drying pad, plastic sheeting was laid out in the pad for the trucks to back over. The plastic sheeting was draped over the back tires to prevent contact with the sediment as it was being dumped. A total of 26 loads (approximately 351 cu. yds.) of sediment were excavated from PR-WC-06.

C.5.3 Sediment Trap

Excavation of the sediment trap consisted of the removal of the stone rip rap comprising the trap and the underlying and surrounding sediment. The stone rip rap was excavated and placed in lined dump trucks and transported to the sediment drying pad for staging. Two truckloads (103,400 pounds, approximately 49 cu. yds. [calculated from the dimensions of the truck minus the dimension of the stone in the truck when loaded]) of stone were excavated from the sediment trap.

Subsequent to the removal of the rip rap, BSA personnel collected sediment samples from under and around the former trap. The samples were analyzed to determine if the sediment beneath the stone was impacted with mercury. Results of the analysis confirmed that the sediment under the former trap was impacted with mercury as well as the sediment outside the original footprint of the sediment trap. The data and the proposed cleanup area was presented to the regulators during the January 20, 2011 IAG teleconference. The regulators concurred with the cleanup area. As a result, BSA requested that Terra excavate up to one foot of sediment from the newly defined Sediment Trap impact zone (Figure 7). A total of 4 loads of sediment (approximately 60 cu. yds.) were excavated from the sediment trap area and transported in poly-lined dump trucks to the sediment drying pad for processing. Patchogue Equipment and Truck Rental possessed the required NYSDEC Part 364 Waste Transporter Permit for transport along North Street.

C.5.4 PR-SS-15

Excavation in PR-SS-15 was performed consistent with procedures outlined above. However, due to the severity of the winter weather approximately six inches of ice had formed on top of the sediment. Since the underside of this ice was in contact with the contaminated sediment, the ice was treated as contaminated. As such, the ice was excavated first and placed in poly-lined roll-off boxes and transported to the sediment drying pad for melting and subsequent disposal of the water. The melted ice was pumped through a Rosedale filter into a frac tank for subsequent

testing and disposal, and the sediment was placed in the sediment drying pad. Five loads of ice were removed from this area before any sediment was excavated.

A total of nine loads (approximately 196 cu. yds.) of sediment were excavated and loaded into poly-lined dump trucks for transport to the sediment drying pad. Terra subcontracted Patchogue Equipment and Truck Rental to supply trucks with drivers who transported the sediment from PR-SS-15 area to the sediment pad for processing. The truck rental company possessed the required NYSDEC Part 364 Waste Transporter Permit for transport along North Street.

C.5.5 Confirmation Sampling

Each of the excavation zones were subdivided into 500 square-foot sections. This is a denser sampling grid than the confirmatory sampling performed in 2004/2005 of 700 square-foot sections. One post excavation confirmation sediment sample was collected from each section for quantitative chemical analysis for mercury. Generally, the samples were collected from the surface to a depth of 6 inches using virgin polycarbonate tubes or cleaned stainless steel scoops. Where the ground was frozen, the stainless steel scoops were used. All of the samples were placed in laboratory provided containers, labeled with a unique identifier and placed in coolers with ice. A chain of custody was prepared for tracking the samples from time of collection through analysis. The coolers were secured with chain of custody seals and taped shut. The coolers were transported to a FedEx shipping location for overnight delivery to Test America in Saint Louis, MO. Analysis requested consisted of mercury, with 10% of the samples also being analyzed for PCB's and radionuclides, via gamma spectroscopy. One duplicate sample was also collected for 10% of the samples for mercury analysis. Analysis for mercury was requested on a 24 hour rush turnaround as were those samples analyzed for PCB's. Ten day turnaround was requested for samples analyzed for radionuclides. Figures 8, 9, 10 and 11 illustrate the sampling locations from each excavation zone. Tables 1, 2 and 3 present the results of the laboratory analysis for each area. The laboratory analytical data sheets are available in the BSA project files.

A total of 22 sediment samples were collected from PR-WC-06 including two duplicate samples and two samples for PCB's and radionuclides.

Twelve samples were collected from PR-SS-15 including one duplicate and one PCB and radionuclide sample.

A total of six samples were collected from the extended Sediment Trap area including one duplicate and one PCB and radionuclide sample.

Results of the confirmation sampling confirm that all sampling areas meet the cleanup criteria established for this project. Average and maximum mercury concentrations for each area are presented in Table 4.

C.5.6 Air Sampling

Air samples were collected from each of the excavation areas and the sediment drying pad while sediments were being excavated, processed and/or loaded into the gondola railcars. The samples were collected on filter media attached to sampling pumps mounted in the breathing zone while sediment moving operations were being performed. The filter media was collected at the end of each work day and processed for shipping to the laboratory for analysis. A chain of custody was prepared for tracking each sample from time of collection through analysis. The samples were place in laboratory provided containers and placed in a cooler for shipment. Terra personnel transported the coolers to FedEx for overnight shipment to the Test America Phoenix, AZ laboratory for quantitative analysis for lead, silver, copper, mercury, and total and respirable dust. The laboratory reported that all filter media contained less than the reporting limit for all analytes tested (Table 5). The laboratory analytical data sheets are available in the BSA project files.

C.5.7 Sediment Dewatering/Drying Pad

A lined sediment drying pad was constructed consisting of two 50 foot X 50 foot cells – a 'wet' cell used to receive the wet sediment from the river to process it so it met the paint filter test and a 'dry' cell to stage the solidified mixture prior to transport to the landfill. Due to the success of the wellpoint dewatering effort at each excavation area, a majority of the sediment transported to the sediment drying pad was dry enough to not require the addition of absorbent. Sediment exhibiting free water at the time of railcar loading was first mixed with Zapzorb of sufficient quantity to absorb all of the free water. Zapzorb was only added directly to the sediment when loading activities were in progress and wet sediment was observed at the bottom of the pile.

The overall footprint of the pad was graded to drain to one corner, where a sump was installed to collect water. One-foot high berms were constructed around the perimeter of the pad. A 40-mil Linear Low Density Polyethylene (LLDPE) liner was placed on the soil creating the pad and protecting the perimeter berm. An on-woven geotextile was placed on top of the LLDPE liner, followed by a 12-inch thick layer of drainage stone. The stone was provided by Tilcon-NJ from their Riverdale Quarry. The stone consisted of virgin gneiss and limestone mined from the quarry. A copy of a generic Riverdale Quarry Material Certification is presented in Appendix A. The sump included a localized area depressed enough to allow for the installation of a small pumping chamber into which a small sump pump was located. The pump was used to pump water collected in the sump through a filtration system complete with two 50 mircon filter bags and ultimately into an adjacent frac tank.

C.5.8 Waste Characterization Sampling

Composite samples were collected from each excavation area staged separately at the sediment drying pad and submitted to the laboratory for waste characterization analysis including complete TCLP, complete radiological, PCBs, reactive cyanide and sulfide, pH, percent moisture, and paint

filter testing. Each sample was placed in laboratory provided containers. The containers were labeled with a unique identifier and other pertinent information. A chain of custody was prepared tracking the sample from collection through analysis. A total of eight samples (one per railcar containing river sediment) were collected and submitted for analysis. A summary of the analytical results are presented in Table 8. The laboratory analytical data sheets are available in the BSA project files. All samples passed the laboratory Paint Filter test. In addition, Terra personnel monitored the sediment in the pad for signs of free water and performed additional paint filter testing as warranted to ensure that the sediment continued to pass the test.

Table 9 documents the closeout of this project in regards to the existing DOE Authorized Release and the actual low level radiological content of the waste. The concentrations of radionuclides identified in the waste confirmation samples were well within the guidelines established in cooperation with NYSDEC and within the volume and radio activity limits authorized by the USDOE. The approximately 800 cu. yds. of material disposed of contained about 0.003 curies of radioactivity.

C.5.9 Railcar Loading

Gondola railcars were utilized to transport the contaminated sediment to the landfill. Environmental Rail Solutions provided a total of 11 gondola railcars to transport the sediment to the landfill for disposal. Each railcar was inspected for debris and condition prior to loading. All of the cars were in good condition with no perforations or dents noted. Several of the railcars did require brake pads to be changed. A New York and Atlantic Railroad technician changed a total of seven brake pads.

Environmental Rail Solutions also provided felt liners and zippered poly liners for each car. Terra personnel installed the felt liner on the bottom of each railcar followed by the poly liner. The liner was opened and draped over the side of the car. Approximately 10 gallons of Zapzorb was spread in the bottom of each poly liner prior to waste loading. Between February 15th through 18th, Terra personnel utilized a front end loader with a built in scale to load the railcars. The scale was calibrated with an object of known weight (concrete Jersey barrier weighed on the BNL truck scale). The calibration was checked daily with the barrier to ensure weights were accurate. Each railcar was loaded with approximately 100 tons of sediment/stone. Terra and BNL Waste Management personnel tracked the weight of each bucket on paper. The Terra railcar weights tracking sheets are presented in Appendix B. In addition, the scale on the loader was equipped with a feature that accumulates the weight of all loads until reset. The total weight for each car was entered by BNL personnel on a Non-hazardous Waste Manifest (one per railcar). A copy of each Non-hazardous Waste Manifest is included in Appendix C. Once loaded, additional Zapzorb was spread on top of each load in the event water separated from the sediment during transit. The zipper on the liner was closed and straps were used across the top to further secure the liner. Terra loaded a total of 1,042 tons of excavated sediment, stone and sediment pad rock into the railcars. The landfill reported a total of 1,134 tons of material from BNL was offloaded. A copy of

the landfill weight tickets is presented in Appendix D. Table 6 presents the weights for each railcar after loading as recorded by Terra and BNL Waste Management personnel.

C.5.10 Waste Disposal

On February 27, 2011 the New York and Atlantic Railroad picked up the 11 railcars from BNL for transport to the Allied Waste Niagara Falls Landfill in Niagara Falls, New York. The railcars were offloaded on or about March 9, 2011. As previously stated Allied Waste reported a total of 1,134 tons of material (~800 cu. yds.) was offloaded and disposed at their Allied Waste Niagara Falls, New York landfill. BNL personnel forwarded the completed Non-hazardous Waste Manifests to the landfill. This waste contained approximately 0.003 curies of radioactivity.

C.5.11 Frac Tank Water Disposal

A representative sample of the water in the frac tank was collected for quantitative chemical analysis for BNL SPDES permit parameters presented in Table 7. The sample was placed in laboratory supplied containers and shipped in a cooler with ice via FedEx for overnight delivery to Test America in Saint Louis for analysis. A chain of custody was prepared tracking the sample from time of collection through analysis. The analytical results were presented to and approved by BSA to dispose the water at the BNL STP. On February 24 th and 25th, 11,162 gallons of water from the frac tank was transported by Eastern Environmental Solutions to the STP holdup ponds for disposal. A copy of the BSA Liquid Effluent Evaluation Form is presented in Appendix E. A summary table of the analytical data is provided in Table 10.

C.6 Demobilization

Subsequent to loading of the rail cars, on February 18, 2011 Terra personnel regraded the sediment pad area using a skid steer and the trackhoe. The soil used to create the berms was used to fill in the drainage basins. Stone used to create an access path for the rail loading and to repair the access path to Area PR-WC-06 were left intact. All Terra equipment was loaded onto flatbed and other trailers and transported back to the Terra office. Rental equipment was picked up by Terra vendors within the next several days with the exception of the frac tank (picked up on or about March 10th).

C.7 Site Restoration

C.7.1 General

Terra subcontracted JFNew to perform the river restoration activities. JFNew is a premier wetlands contractor and has extensive wetlands construction/restoration experience across the United States. The site restoration activities, including wetland revegetation and invasive species removal are scheduled to be initiated in July 2011.

C.7.2 Planting Substrate

Following verification that the excavated areas met the ROD cleanup goals and after the post-excavation survey was completed, Terra coordinated with BSA to locate and verify the source of the required planting substrate material from previously remediated areas of the Peconic River. Since the borrow areas had been previously sampled, additional sampling and analysis was not required to ensure that the material met the ROD cleanup goals for mercury. In February 2011, Terra then relocated planting substrate material from adjacent areas into the disturbed areas. Subsequent to placement of substrate material, the existing adjacent soil was systematically rough-graded to remove localized low spots and uneven areas in all disturbed areas within 15 feet of the excavation limits.

In July 2011, JFNew will begin to re-vegetate the excavated areas in accordance with Section 02900 of the Peconic River Supplemental Sediment Removal Statement of Work, the Re-Vegetation Plan, and the NYSDEC Equivalency Permit.

C.7.3 Re-Vegetation

Re-Vegetation will consist of the transplantation of a maximum of six trees at PR-WC-06 and the other areas from the adjacent forested area, division of and planting of existing riverbank plants such as tussock sedge and seeding with annual grasses in accordance with the Statement of Work. The seeded areas will be protected with biodegradable matting to prevent washout of the newly planted seed. JFNew will provide personnel, equipment and materials to re-vegetate the excavated portions of the river, and remove invasive species as necessary. The re-vegetation work will be documented in the Annual Peconic River Monitoring Report.

D. Performance Standards and Construction Quality Control

All work performed on the Peconic River Supplemental Sediment Removal project was completed in general conformance with the plans prepared and provided to BSA. These plans include the:

- Work Plan
- Sampling and Analysis Plan
- Transportation Plan
- Waste Management Plan
- Quality Control Plan
- Revegetation Plan
- Terra Health and Safety Plan
- BNL Health and Safety Plan

Changes to these plans were made in the field as dictated by either changed or changing conditions. These changes were conveyed to and approved by BSA personnel.

Based on the collection and laboratory analysis of 36 post-excavation confirmation samples, the results of this project successfully remediated mercury contaminated sediment to an average of less than 1 ppm (0.25 ppm) at Area PR-WC-06 and the Sediment Trap onsite and 0.75 ppm (0.14 ppm) offsite. The maximum concentrations reported by the laboratory were 1.2 ppm onsite and 0.67 ppm offsite.

The concentrations of radionuclides identified in the waste confirmation samples were well within the guidelines established in cooperation with NYSDEC and within the volume and radioactivity limits authorized by the USDOE. See Table 9 for radiological analytical data comparison to the authorized limits.

A total of 11 railcars were loaded with 1,034 tons (including sediment pad stone) of mercury contaminated sediment and stone from three distinct areas of the Peconic River and the sediment drying pad were transported to the Allied Waste Niagara Falls Landfill in Niagara Fall, New York for ultimate disposal by landfilling.

Bypassing the river allowed Terra to excavate contaminated sediments in the dry preventing the migration of sediments via water movement downstream while excavating. In addition, this allowed for the transport and loading of the sediments without any appreciable spillage. Any spillage noted was immediately picked up by Terra personnel with shovels and properly disposed.

E. Project Schedule

The Peconic River Supplemental Sediment Removal project was completed over a span of eight months with additional restoration work still to be performed. River water levels are currently dropping compared to the elevated levels in the spring 2011. Lower river water levels are conducive to the successful performance of re-vegetation efforts. The revegetation portion of the project will be performed in the summer 2011 resulting in a project duration of approximately 12 months.

Terra's original project schedule was approximately three months behind due to the rerouting of access routes on the BNL site and the unusual weather conditions encountered in the winter of 2010/2011. Record snowfall was encountered in the region resulting in impassible roads and unanticipated working conditions in the field including several feet of snow cover on land and up to eight inches of ice cover in the river.

F. Lessons Learned

The following is a summary of the lessons learned during the implementation of this project and can be used in the future on other similar sediment removal projects.

Excavation

The elevation of the water in the river was substantially higher during the site visit of July 2010 making for an ideal situation for the use of the Sed-vac™ technology to excavate the contaminated sediment. Since the river water level was at or below the top of the sediment during the time of excavation, the Sed-vac™ technology was no longer the preferred method for excavation of the sediment. As a result, the decision was made to dewater the sediment in situ as much as possible by installing and utilizing the well point system thereby reducing the possibility of the contaminated sediment being inadvertently spread outside the contaminated zone through dripping, sloshing, etc.

Material Handling/Rigging

Nine truck mats, each weighing approximately 1,500 pounds each, were loaded and stacked by Terra onto the rails of a roll-off truck for transport from one job location to another. The load was secured with two straps rated at 3,333 pounds each. As the truck was exiting I-495 onto the William Floyd Parkway, the truck mats came off the truck and onto the highway and the median. There were fortunately no injuries. Terra made the proper notifications to BSA and the police, and quickly but safely removed the mats from the highway. There were several factors that contributed to this incident such as insufficient strapping, strap failure, and improper vehicle used for transport. Corrective actions that resulted from this incident included preparation of a root cause analysis, development of a job specific hazard analysis for the

task, inventory of on-site rigging equipment with inspection dates, and attendance at an on-site refresher rigging class.

G. Community Involvement

The regulators, the Community Advisory Council, and the Brookhaven Executive Roundtable were kept informed of the cleanup progress via updates and presentations.

H. Summary of Project Costs

The total cost (including BSA overhead) to perform the Peconic River supplemental sediment removal was approximately $2,180K. The cost breakdown is summarized below:

Planning, Engineering, and Oversight:	$490K
River Diversion Setup and Dewatering:	$635K
Sediment Excavation and Processing:	$600K
Waste Transportation and Disposal:	$160K
Restoration:	$295K
Total:	$2,180K (including BSA overhead)

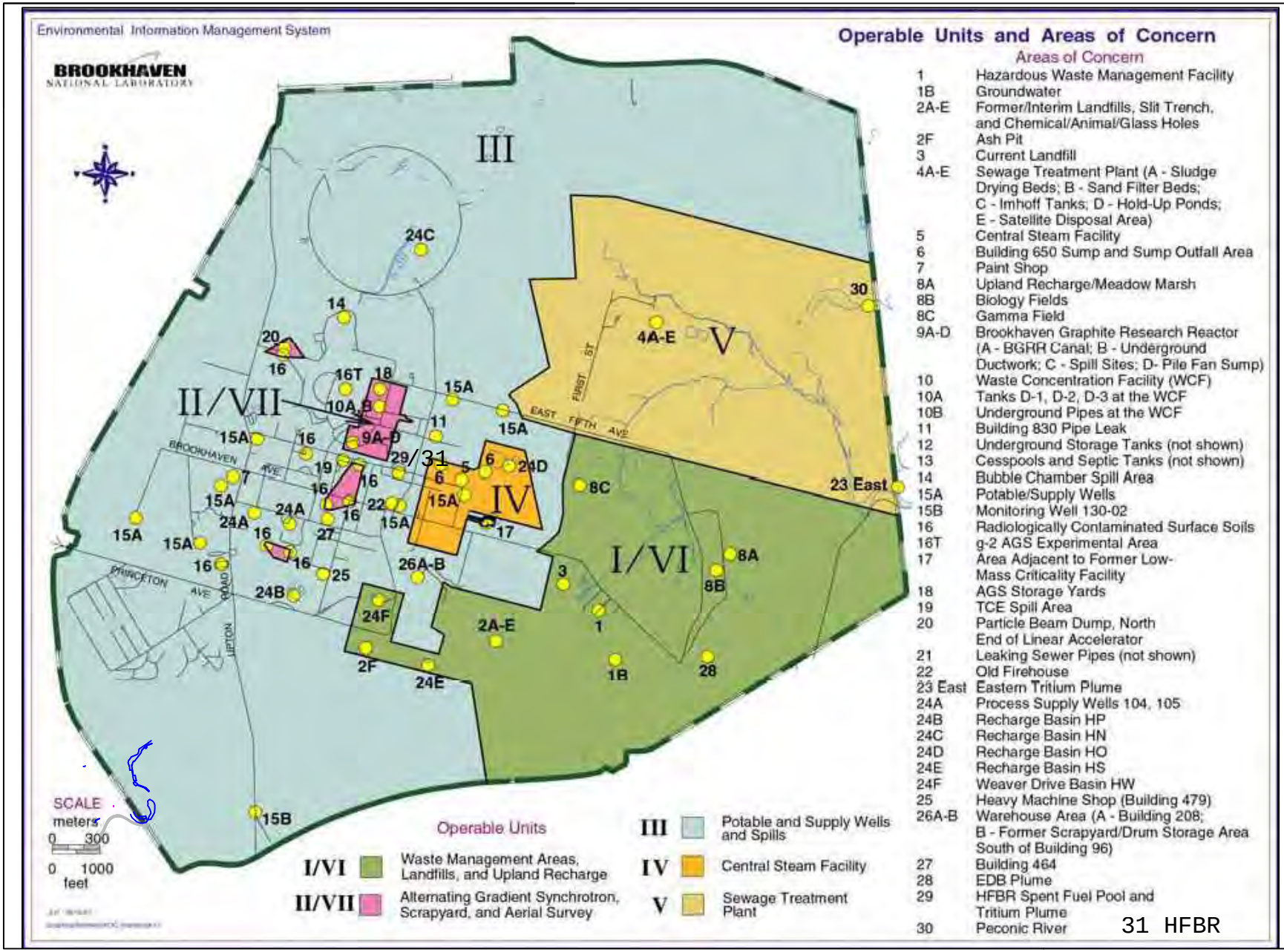
All activities were performed in general conformance with the BNL Peconic River Supplemental Sediment Removal Statement of Work at a direct cost from Terra Contracting of approximately $1,400K (not including BSA overhead) or $400K over budget. The project cost overruns were directly attributed to the required rerouting of traffic resulting in substantial time delays to the subject project. In addition, these time delays extended the project into the winter months which coupled with the unusually cold and snowy weather were not planned for.

I. PROTECTIVENESS

The removal of contaminated sediment in the Peconic River further minimized the risk of exposure and ensures that the remedy continues to provide adequate protection of human health and the environment.

Figures

T:\CIVL3D PROJECTS\2010\210654 TERRA CONTRACTING\DWG\2011-03-22 CONFIRMATION FIGURES\FIG 1_OPERABLE UNITS 2011-03-21.DWG – RLS – Mar, 22 2011 – 04:23pm – Prein&Newhof



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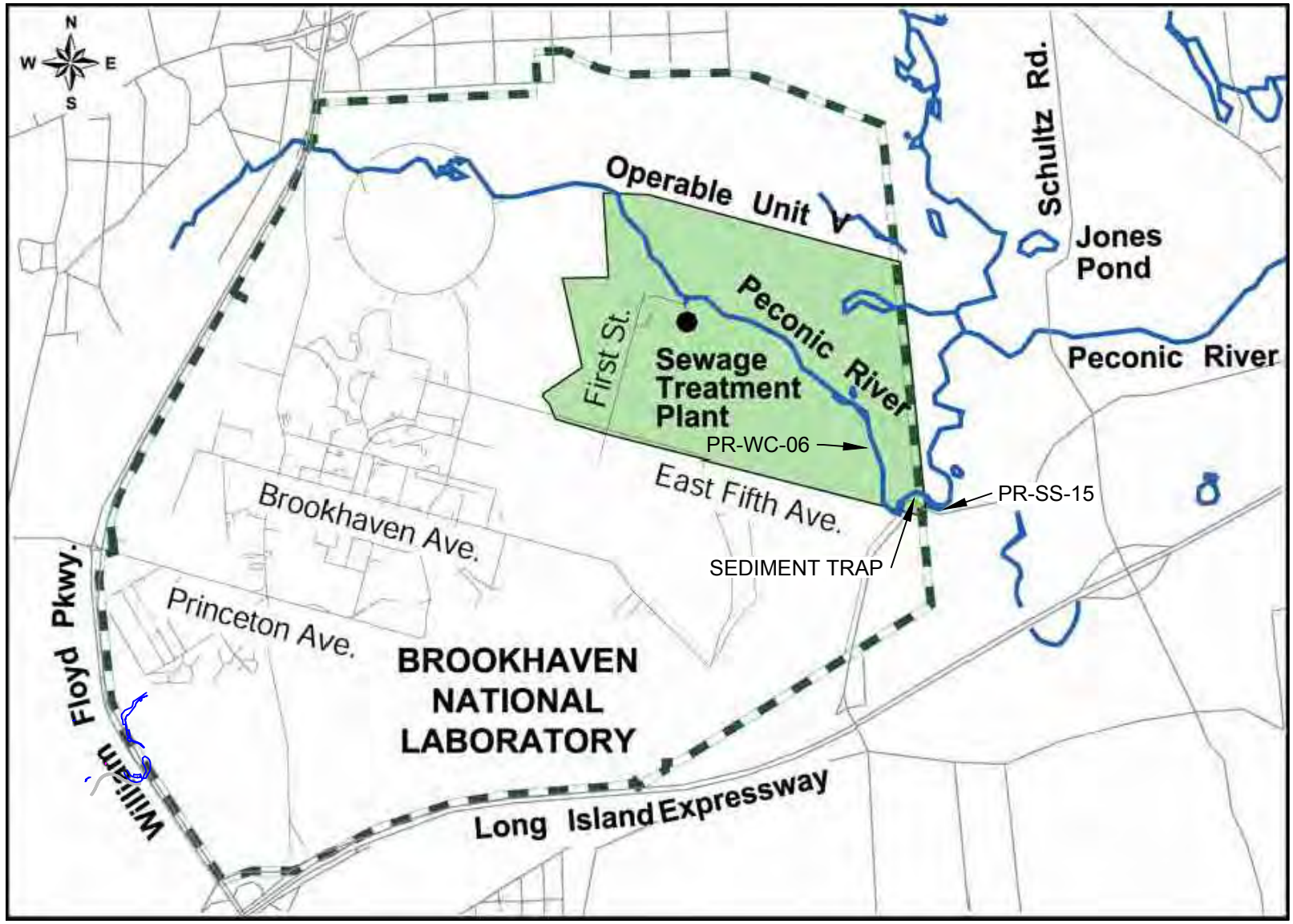
OPERABLE UNITS AND AREAS OF CONCERN

MERCURY SAMPLING PECONIC RIVER

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
RLS	–	3/22/11	–
CHKD:	APPD:	REV.:	NOTES:
– –	–		–

FIGURE NO.: 1



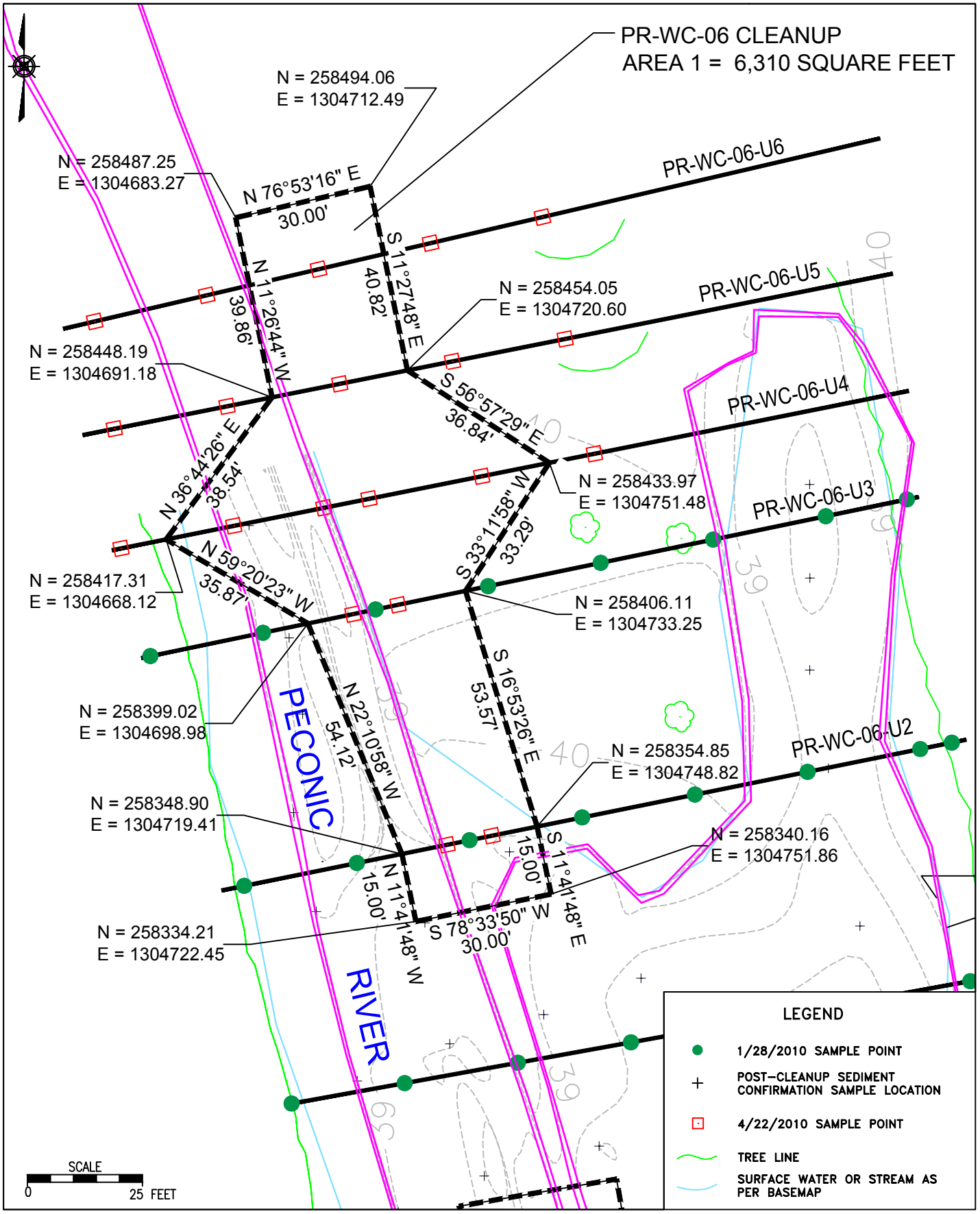
Terra

TITLE:

OPERABLE UNIT V

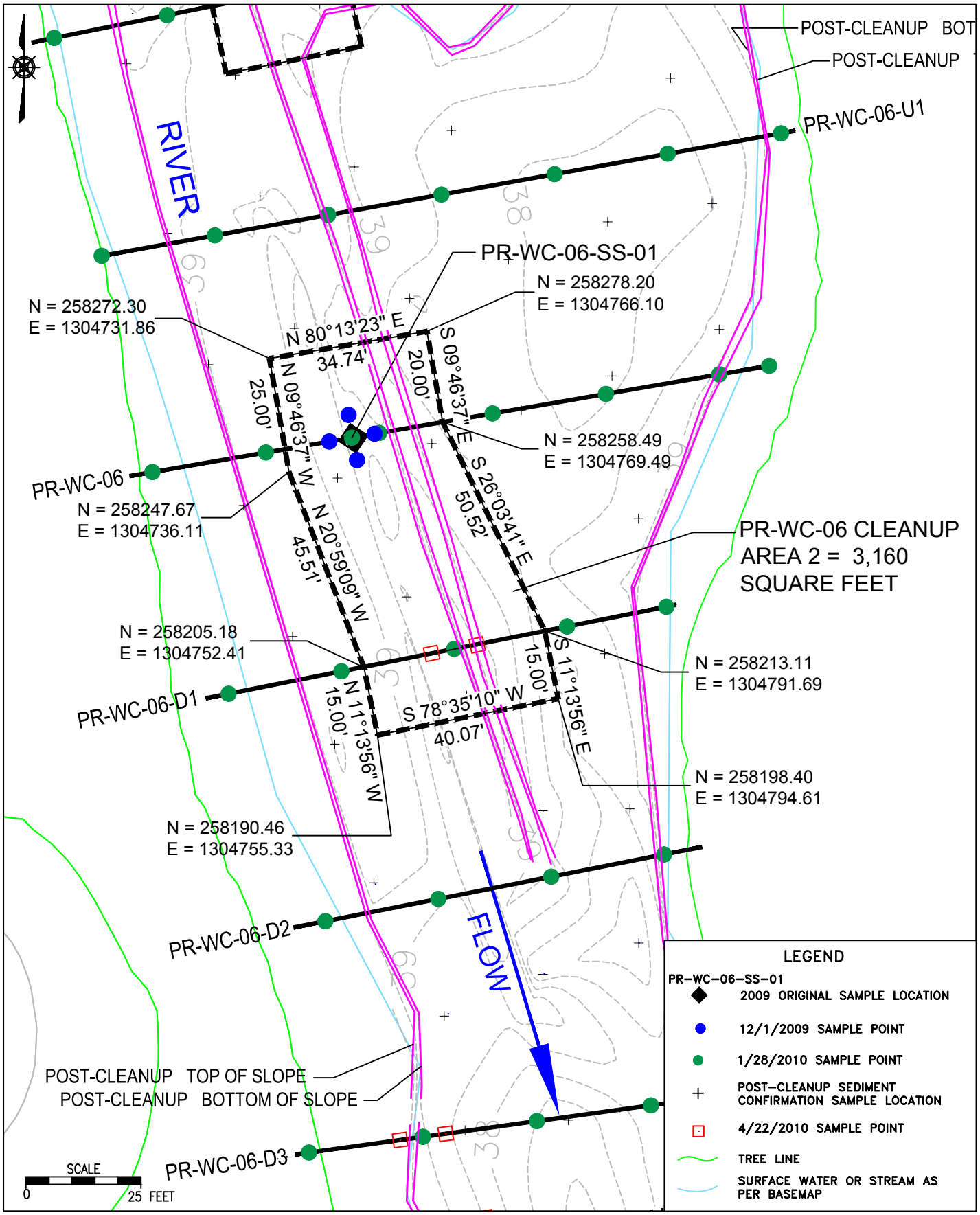
MERCURY SAMPLING PECONIC RIVER

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
RLS	–	3/22/11	–
CHKD:	APPD:	REV.:	NOTES:
– –	–		–
FIGURE NO.:			
2			



T:\CIVILSD PROJECTS\2010\2100654 TERRA CONTRACTING\DWG\2011-03-22 CONFIRMATION FIGURES\Fig 3_PR-WC-06_AREA_BEARINGS_DIST_AREA_1_2011-03-22.DWG - RLS - Mar, 22 2011 - 04:27pm - PrehnkNewhof

TITLE:				
PR-WC-06 – 2010 CLEANUP AREA 1 MERCURY SAMPLING PECONIC RIVER	DWN: AJZ	VT:HZ.: –	DATE: 06/24/10	PROJECT NO.: –
	CHKD: WM	APPD: –	REV.: –	NOTES: –
	FIGURE NO.: 3			



I:\CIVIL3D PROJECTS\2010\2100654 TERRA CONTRACTING\DWG\2011-03-22 CONFIRMATION FIGURES\FIG 4_PR-WC-06_AREA_BEARINGS_DIST_AREA_2_2011-03-22.DWG - RLS - Mar, 22 2011 - 04:28pm - PrintsNewHof

Terra

TITLE:

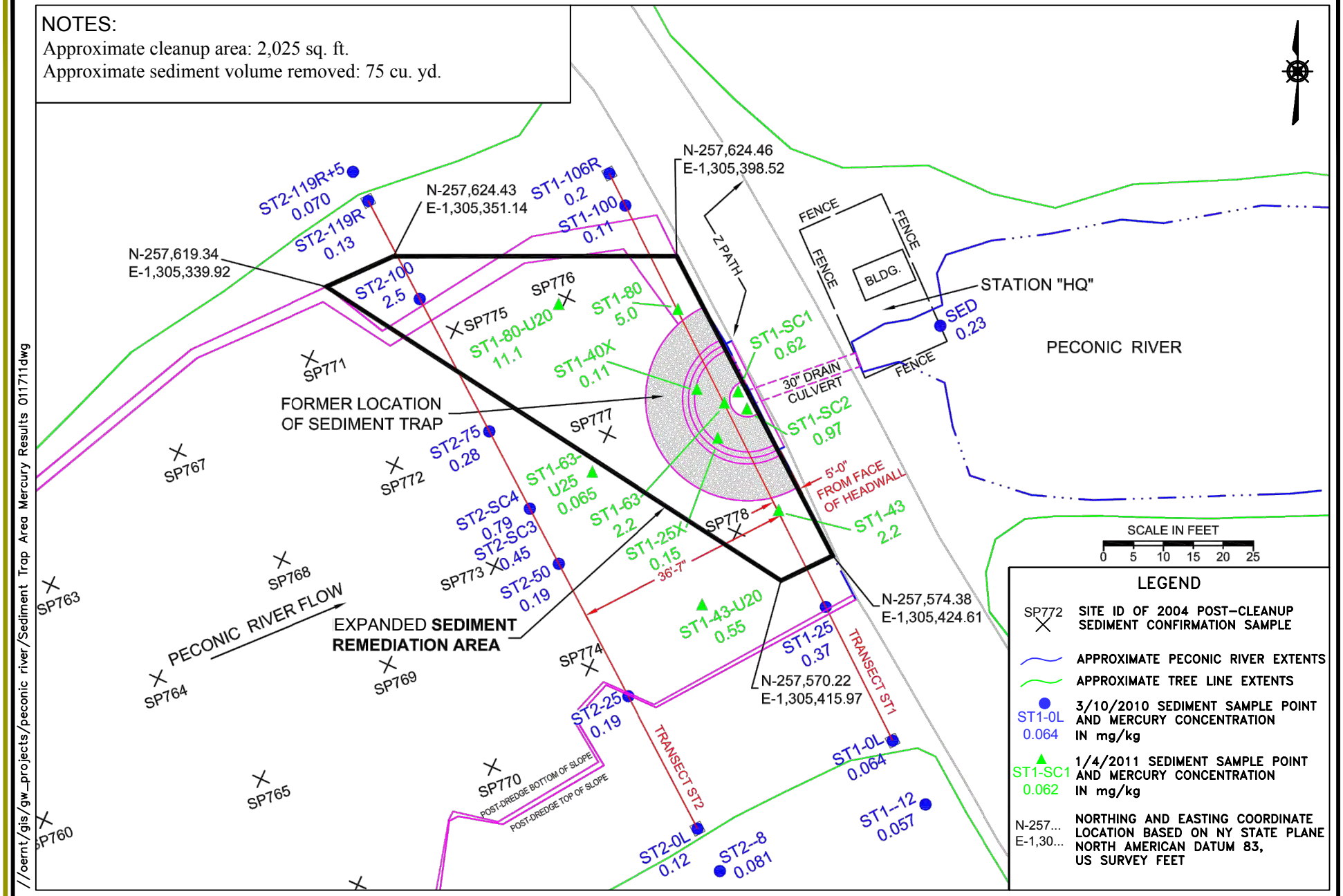
PR-WC-06 – 2010 CLEANUP AREA 2

MERCURY SAMPLING PECONIC RIVER

DWN:	VT:HZ.:	DATE:	PROJECT NO.:
RLS	–	3/22/11	–
CHKD:	APPD:	REV.:	NOTES:
SB	–	–	–

FIGURE NO.: 4

NOTES:
Approximate cleanup area: 2,025 sq. ft.
Approximate sediment volume removed: 75 cu. yd.



//oernt/gis/gw_projects/peconic river/Sediment Trap Area Mercury Results 011711dwg

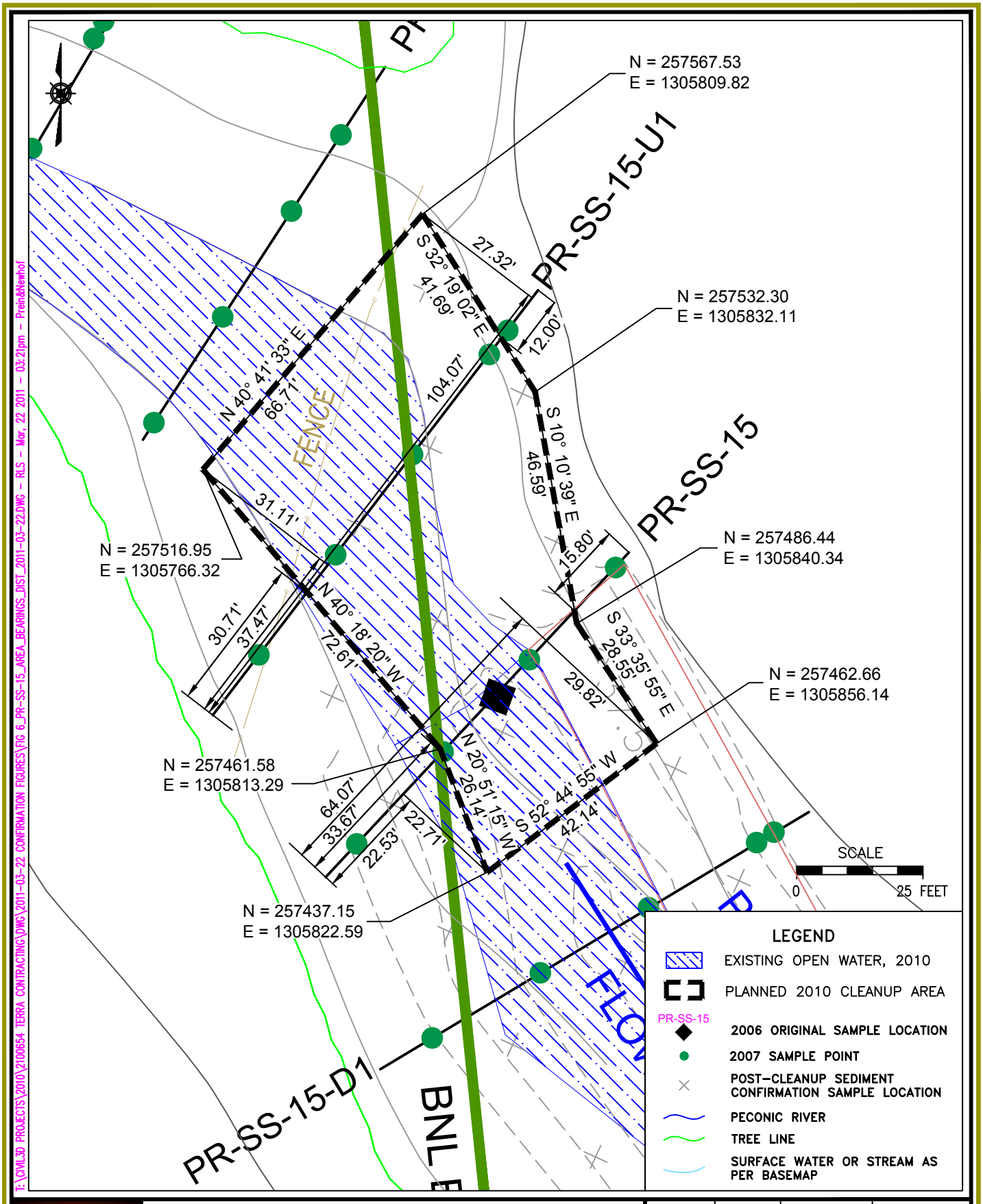
TITLE:

SEDIMENT TRAP REMEDIATION AREA

PECONIC RIVER

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
AJZ	–	1/17/11	–
CHKD:	APPD:	REV.:	NOTES:
WM	–		–

FIGURE NO.: 5



T:\CIVIL3D PROJECTS\2010\2100654 TERRA CONTRACTING\DWG\2011-03-22 CONFIRMATION FIGURES\FIG 6_PR-SS-15_AREA_BEARINGS_DIST_2011-03-22.DWG — RLS — Mar, 22 2011 — 03:21pm — Preinf&Newhof

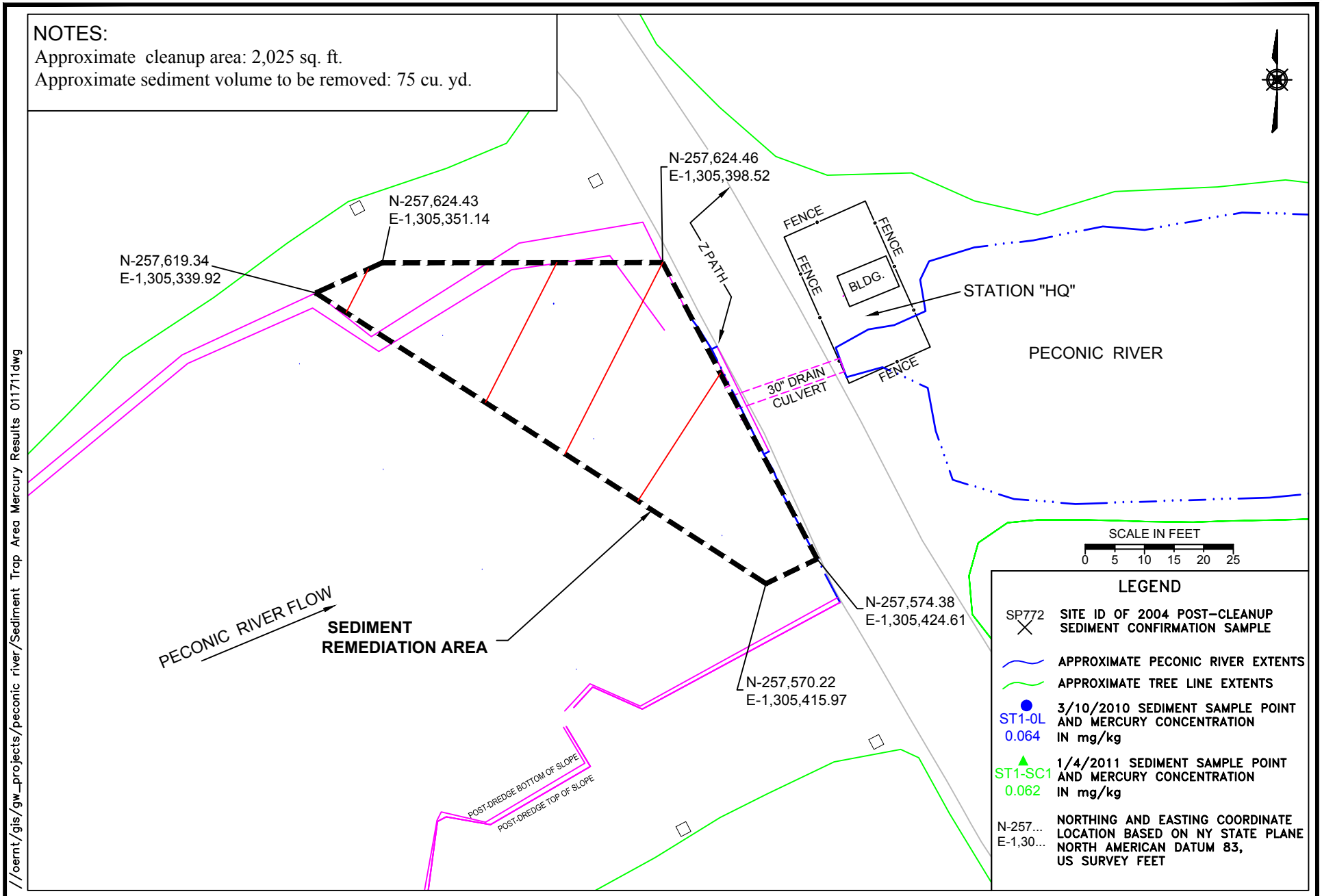
TITLE:

PR-SS-15 AREA – 2010 CLEANUP AREA
Bearings & Distances
MERCURY SAMPLING PECONIC RIVER

DWN:	VT:HZ.:	DATE:	PROJECT NO.:
RLS	–	3/22/11	–
CHKD:	APPD:	REV.:	NOTES:
SB	–	–	–

FIGURE NO.: 6

NOTES:
Approximate cleanup area: 2,025 sq. ft.
Approximate sediment volume to be removed: 75 cu. yd.



//oernt/gis/gw_projects/peconic river/Sediment Trap Area Mercury Results 011711dwg

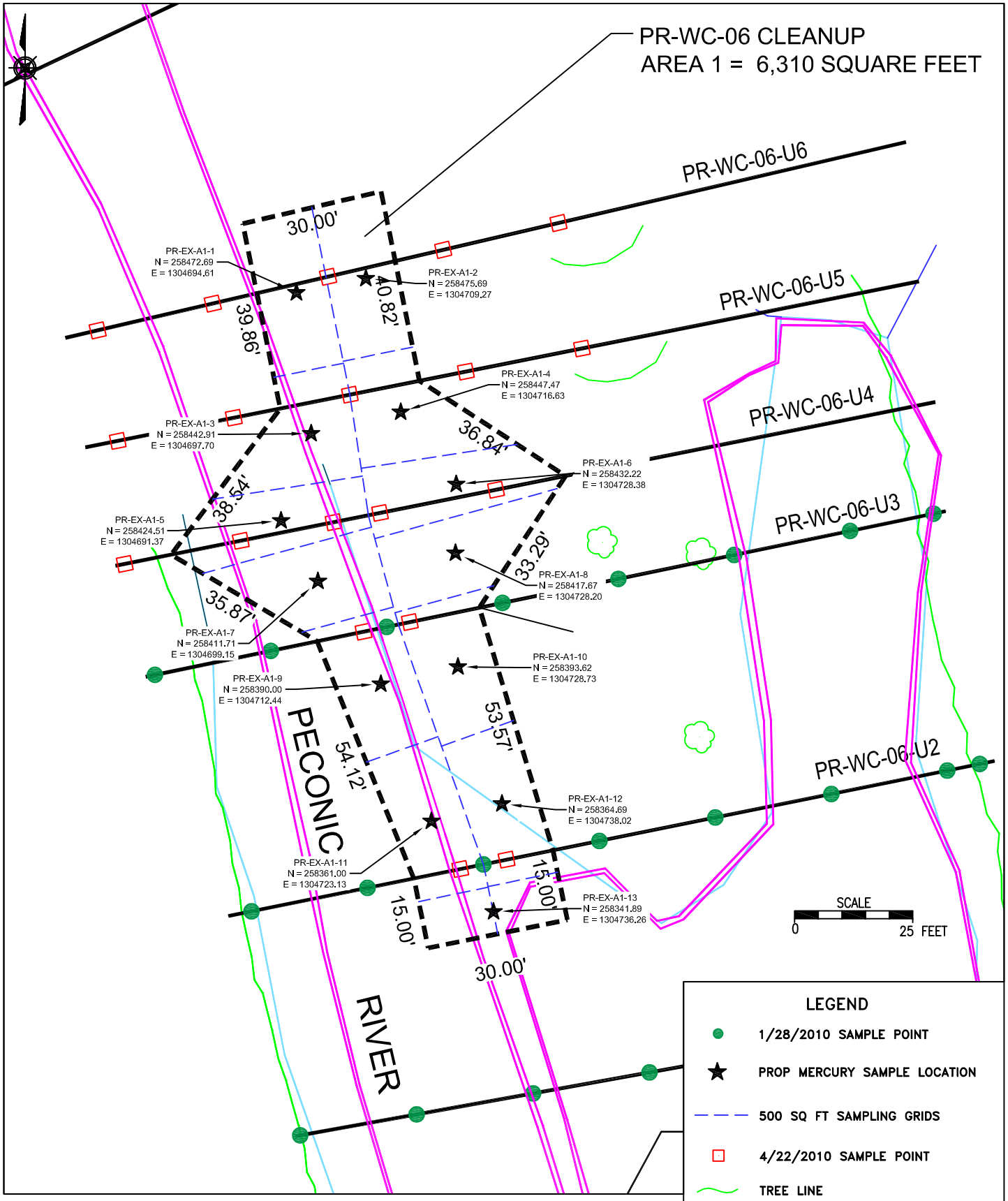
TITLE:

SEDIMENT TRAP
EXPANDED EXCAVATION LIMITS

PECONIC RIVER

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
AJZ	–	1/17/11	–
CHKD:	APPD:	REV.:	NOTES:
WM	–		–

FIGURE NO.: 7



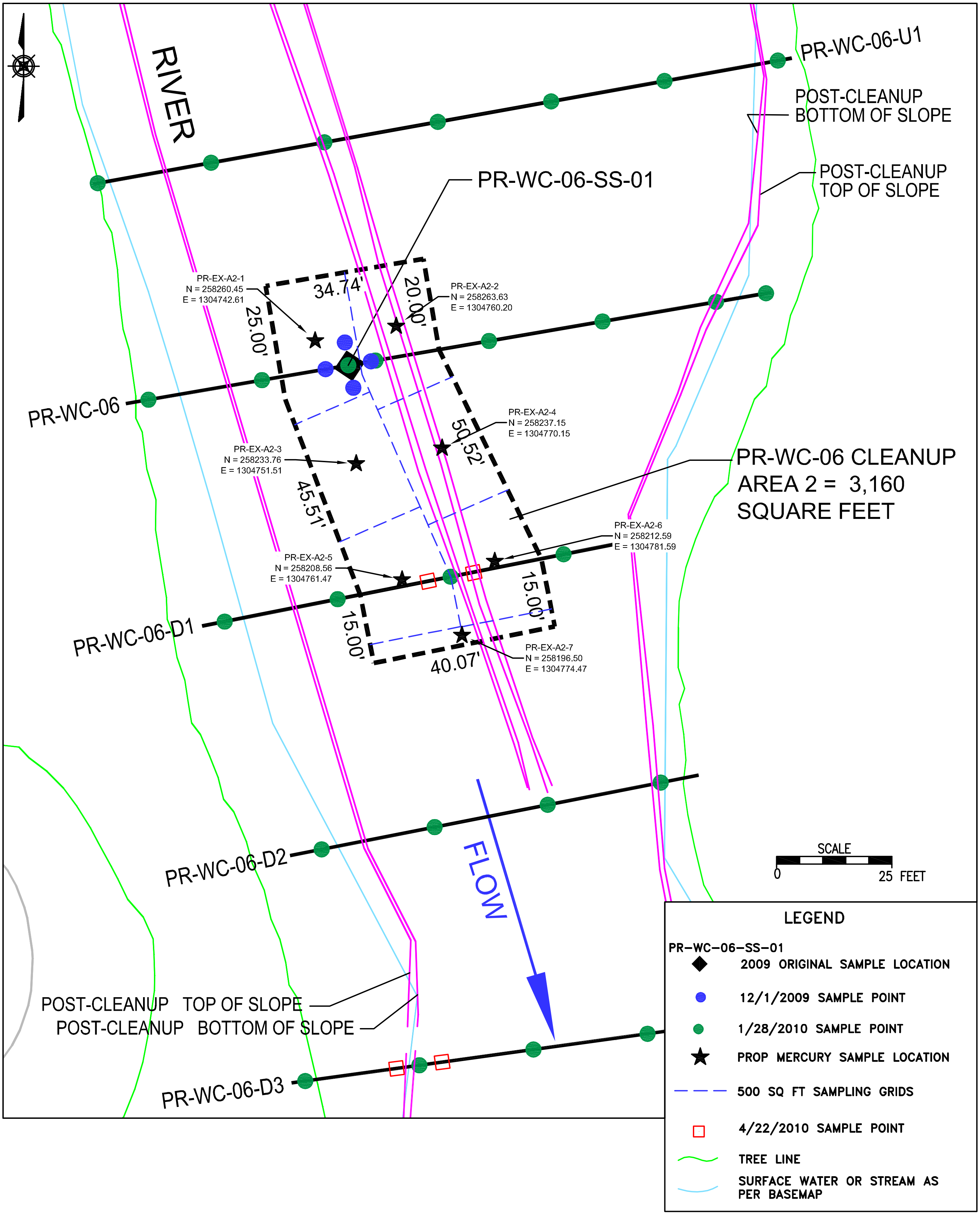
T:\CIVIL3D PROJECTS\2010\2100654 TERRA CONTRACTING\DWG\2011-03-22 CONFIRMATION FIGURES\Fig 8_PR-WC-06_CONFIRMATION SAMPLE LOCATIONS AREA 1 2011-03-21.DWG - RLS - Mar, 22 2011 - 03:24pm - PrintMeHof

TITLE:

PR-WC-06 - 2010 CLEANUP AREA 1

CONFIRMATION SAMPLING LOCATIONS

DWN:	VT:HZ.:	DATE:	PROJECT NO.:
RLS	–	03/22/11	1584
CHKD:	APPD:	REV.:	NOTES:
SB	–	--	–
FIGURE NO.:			
8			



Terra

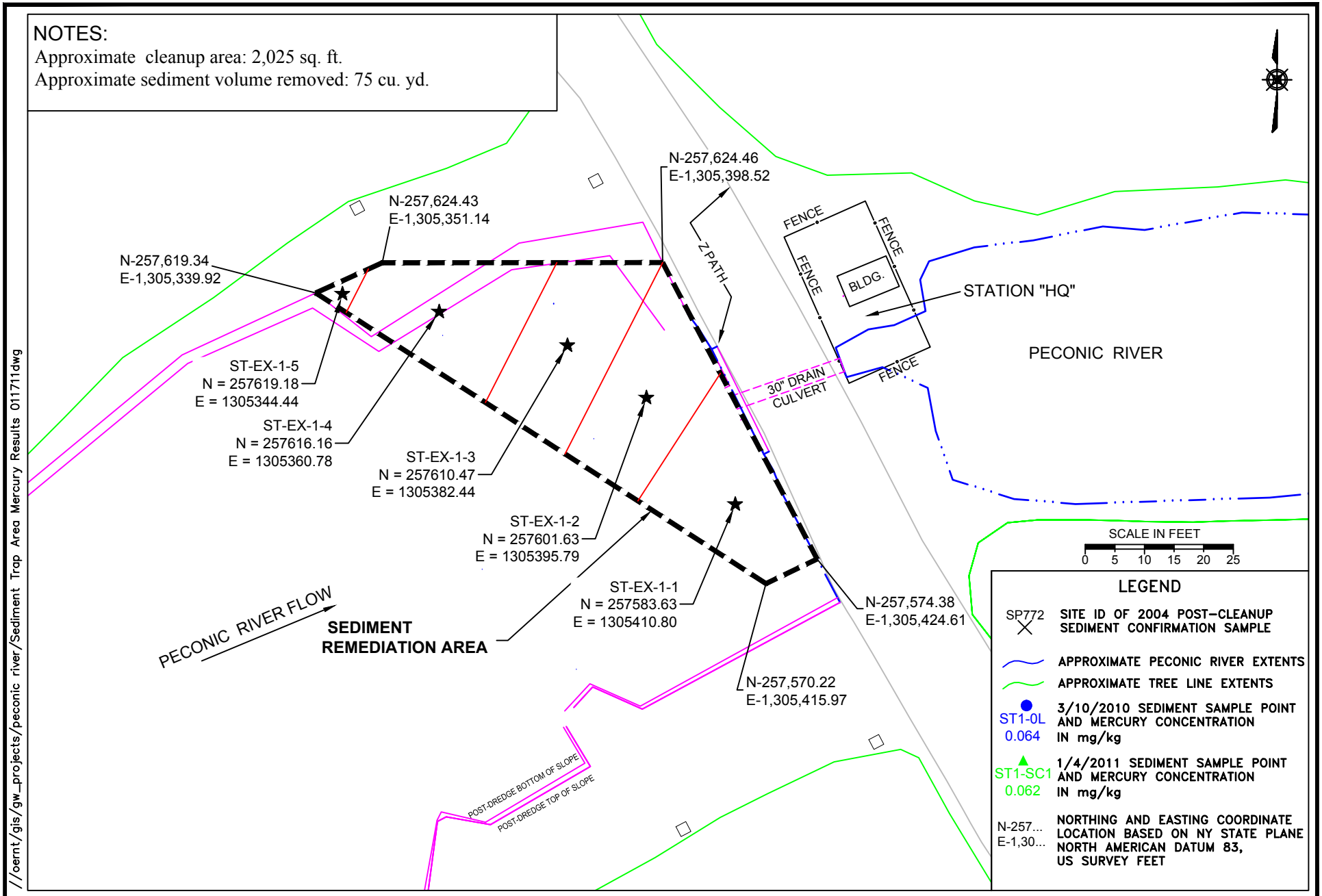
TITLE:

PR-WC-06 – 2010
CLEANUP AREA 2

CONFIRMATION SAMPLING LOCATIONS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
DRG	–	06/24/10	1584
CHKD: WM	APPD: –	REV.: 10/15/10	NOTES: –
FIGURE NO.: 9			

NOTES:
Approximate cleanup area: 2,025 sq. ft.
Approximate sediment volume removed: 75 cu. yd.



//oernt/gis/gw_projects/peconic river/Sediment Trap Area Mercury Results 011711dwg

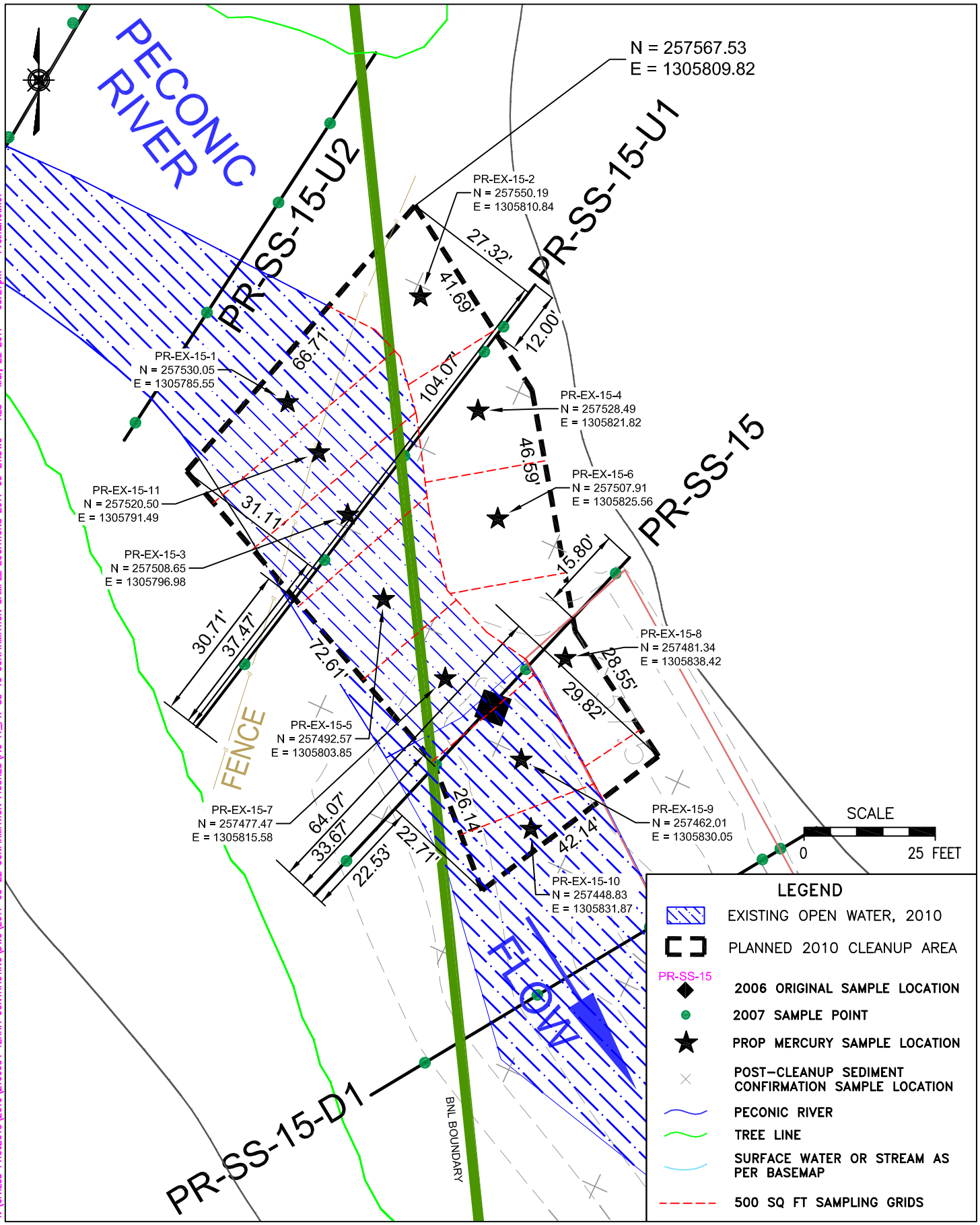
TITLE:

SEDIMENT TRAP SAMPLING LOCATIONS

PECONIC RIVER

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
AJZ	–	1/17/11	–
CHKD:	APPD:	REV.:	NOTES:
WM	–		–

FIGURE NO.: 10



T:\CIVIL3D PROJECTS\2010\2100654 TERRA CONTRACTING\DWG\2011-03-22 CONFIRMATION FIGURES\FIG 11_PR-SS-15 CONFIRMATION SAMPLE LOCATIONS 2011-03-21.DWG - RLS - Mar, 22 2011 - 03:27pm - Prein&Newhof

Terra

TITLE:

PR-SS-15 AREA - 2010 CLEANUP AREA

CONFIRMATION SAMPLING LOCATIONS

DWN:	VT:HZ.:	DATE:	PROJECT NO.:
RLS	-	3/22/11	1584
CHKD:	APPD:	REV.:	NOTES:
SB	-	3/22/11	-
FIGURE NO.:		11	

Tables

Table 1
Peconic River PR-WC-06
Post-Excavation
Sediment Sample Results

Lab ID	31213-01	31213-02	31213-03	31213-04	31213-05	31213-06	31213-07	31213-08	31213-09	31213-10	31213-11	31213-12
Sample ID	PR-EX A1-01	PR-EX A1-02	PR-EX A1-03	PR-EX A1-04	PR-EX A1-05	PR-EX A1-06	PR-EX A1-07	PR-EX A1-08	PR-EX A1-09	PR-EX A1-10	PR-EX A1-11	PR-EX A1-12
Analyte												
Mercury Units(mg/kg)	0.18	0.26	0.98	0.065	0.11	0.62	1.2	0.061	0.67	0.096	0.5	0.044
PCB Units (ug,kg)												
Aroclor 1016	40	40	47	40	41	43	45	40	44	43	50	42
Aroclor 1221	40	40	47	40	41	43	45	40	44	43	50	42
Aroclor 1232	40	40	47	40	41	43	45	40	44	43	50	42
Aroclor 1242	40	40	47	40	41	43	45	40	44	43	50	42
Aroclor 1248	40	40	47	40	41	43	45	40	44	43	50	42
Aroclor 1254	40	40	47	40	41	43	15	40	17	43	50	42
Aroclor 1260	40	40	47	40	41	43	45	40	44	43	50	42
Gamma Units (pCi/g)												
Actinium 228				0.67								
Bismuth 212				0.73								
Bismuth 214				0.46								
Cesium 137				0.384								
Lead 212				0.47								
Lead 214				0.47								
Potassium 40				4.2								
Thallium 208				0.178								

Note: PCB results are less than reporting limits.
Blank cells indicate no analysis requested.

Table 1
Peconic River PR-WC-06
Post-Excavation
Sediment Sample Results

Lab ID	31213-13	31213-BD	31212-01	31212-02	31212-03	31212-04	31212-05	31212-06	31212-07	31212-BD	Average
Sample ID	PR-EX A1-13	PR-EX A1-BD	PR-EX A2-01	PR-EX A2-02	PR-EX A2-03	PR-EX A2-04	PR-EX A2-05	PR-EX A2-06	PR-EX A2-07	PR-EX A2-BD	
Analyte											
Mercury Units(mg/kg)	0.21	0.18	0.18	0.32	0.3	0.14	0.38	0.2	0.084	0.23	0.32
PCB Units (ug,kg)											
Aroclor 1016	43		42	43	44	43	49	41	42		
Aroclor 1221	43		42	43	44	43	49	41	42		
Aroclor 1232	43		42	43	44	43	49	41	42		
Aroclor 1242	43		42	43	44	43	49	41	42		
Aroclor 1248	43		42	43	44	43	49	41	42		
Aroclor 1254	43		42	12	44	43	49	41	42		
Aroclor 1260	43		42	43	44	43	49	41	42		
Gamma Units pCi/g)											
Actinium 228						0.67					
Bismuth 212						0.73					
Bismuth 214						0.46					
Cesium 137						0.384					
Lead 212						0.47					
Lead 214						0.47					
Potassium 40						4.2					
Thallium 208						0.178					

Note: PCB results are less than reporting limits.
Blank cells indicate no analysis requested.

Table 2
Peconic River Sediment Trap
Post-Excavation
Sediment Sample Results

Lab ID	31243-01	31243-02	31243-03	31243-04	31243-05	31243-06	Average
Sample ID	ST-PX-1	ST-PX-2	ST-PX-3	ST-PX-4	ST-PX-5	BD	
Analyte							
Mercury Units(mg/kg)	0.16	0.16	0.26	0.16	0.11	0.25	0.18
PCB Units (ug,kg)							
Aroclor 1016			40				
Aroclor 1221			40				
Aroclor 1232			40				
Aroclor 1242			40				
Aroclor 1248			40				
Aroclor 1254			40				
Aroclor 1260			40				
Gamma Units (pCi/g)							
Actinium 228			0.47				
Bismuth 212							
Bismuth 214							
Cesium 137			0.237				
Lead 212			0.41				
Lead 214			0.44				
Potassium 40			3.17				
Thallium 208			0.183				

Table 3
Peconic River PR-SS-15
Post-Excavation
Sediment Sample Results

Lab ID	31221-003	31221-004	31221-005	31221-006	31221-007	31221-008	31221-009	31221-010	31221-011	31221-012	31221-013	31221-014	Average
Sample ID	PR-EX 15-01	PR-EX 15-02	PR-EX 15-03	PR-EX 15-04	PR-EX 15-05	PR-EX 15-06	PR-EX 15-07	PR-EX 15-08	PR-EX 15-09	PR-EX 15-10	PR-EX 15-11	PR-EX 15-12	
Analyte												BD	
Mercury Units(mg/kg)	0.23	0.36	0.033	0.057	0.029	0.67	0.05	0.045	0.031	0.055	0.04	0.044	0.137
PCB Units (ug,kg)													
Aroclor 1016									42				
Aroclor 1221									42				
Aroclor 1232									42				
Aroclor 1242									42				
Aroclor 1248									42				
Aroclor 1254									42				
Aroclor 1260									42				
Gamma Units (pCi/g)													
Actinium 228									0.73				
Bismuth 212									0.76				
Bismuth 214									0.46				
Cesium 137									0.369				
Lead 212									0.52				
Lead 214									0.387				
Potassium 40									4.54				
Thallium 208									0.227				

Table 4
Peconic River
Post Excavation Mercury Concentrations in Sediment (mg/kg)

Area	Average	Maximum
PR-WC-06	0.33	1.2
PR-SS-15	0.14	0.67
Sediment Trap	0.17	0.26

Table 5
Peconic River
Excavation
Air Monitoring Results

			Results (mg/cubic m)						
Sample ID	Collection Date	Notes	Mercury	Copper	Lead	Silver	Respirable Particulates	Total Particulates	
Pad 3	12/15/2010	Staging Pad					<.788		
Pad 1	12/15/2010	Staging Pad		0.000233	0.0000901	<.000067			
Pad 2	12/15/2010	Staging Pad	<.000358						
Pad 4	12/15/2010	Staging Pad						<.871	
R1	12/15/2010	Site 6 Removal Area 1		<.000114	<.0000572	<.0000572			
R2	12/15/2010	Site 6 Removal Area 1					<.268		
R3	12/15/2010	Site 6 Removal Area 1	<.000497						
R4	12/15/2010	Site 6 Removal Area 1						<.839	
FB1	12/15/2010	Field Blank							
FB3	12/15/2010	Field Blank							
Pad 5	12/17/2010	Staging Pad		0.000242	0.000124	<.0000726			
Pad 6	12/17/2010	Staging Pad	See analystical report, Case narrative, Notes						
Pad 7	12/17/2010	Staging Pad	<.000328						
Pad 8	12/17/2010	Staging Pad						<.871	
R5	12/17/2010	Site 6 Removal Area 2		<.00014	<.0000699	<.0000699			
R6	12/17/2010	Site 6 Removal Area 2	<.000455						
R7	12/17/2010	Site 6 Removal Area 2					<.281		
R8	12/17/2010	Site 6 Removal Area 2						<.839	
FB2	12/17/2010	Field Blank							
Media Blanks	12/17/2010	3 count							
FB4	12/17/2010	Field Blank							
R9	1/10/2011	Site 15 Removal Area					<.281		
R10	1/10/2011	Site 15 Removal Area	<.000328						
R11	1/10/2011	Site 15 Removal Area						<.839	
R12	1/10/2011	Site 15 Removal Area		<.00014	<.0000699	<.0000699			
Pad 9	1/10/2011	Staging Pad	<.000455						
Pad 10	1/10/2011	Staging Pad					<.281		
Pad 11	1/10/2011	Staging Pad		<.000145	<.0000726	<.0000726			
Pad 12	1/10/2011	Staging Pad						<.871	

Table 6.

Peconic River

Railcar Weights

Non-hazardous Manifest #	Railcar #	Weight (tons)
0390018	TILX520194	91.20
0390019	TILX520193	87.25
0390020	TILX520214	97.70
0390021	TILX520172	94.90
0390022	TILX520186	96.20
0390023	TILX520208	95.40
0390024	TILX520184	91.40
0390025	TILX520198	95.30
0390026	TILX520167	97.3
0390027	TILX520232	96.15
0390028	TILX520171	99.35

Table 7.

Water Sample (SPDES Permit) Parameters

Description	***Method***	***Matrix***	***Number of samples***	***BNL STP SPDES Limits***
Total Metals (Cu, Fe, Pb, Ni, Ag, Zn)	SW6010	Water	2 (filtered and unfiltered)	(0.15, 0.37, 0.019, 0.11, 0.015, 0.1) mg/l respectively
Total Mercury	SW7470	Water	1	0.2ug/L
5-Day BOD	EPA 405.1	Water	1	5mg/L
TSS	EPA 160.2	Water	1	20mg/L
Settleable Solids			1	0.1ml/L
Ammonia	EPA 350.1	Water	1	1.5mg/L
Total Nitrogen	EPA 351.1	Water	1	10mg/L
Total Phosphorus	EPA365.1	Water	1	NA
Cyanide	EPA 335.2	Water	1	100ug/L
pH	EPA 150.1	Water	1	5.8-9.0
VOCs (1,1,1 trichloroethane, toluene, methylene chloride, 2-butanone)	EPA 624	Water	1	5, 5, 5, 50 respectively (ug/L)
PCB's	EPA 608	Water	1	NA
Sr-90	EPA 905	Water	1	Background
Cs-137	EPA 901	Water	1	Background
Tritium	EPA 906	Water	1	5,000pCi/L
All Other Radionuclides	HASL 300	Water	1	<MDL

Table 8
BNL Peconic River Sediment Remediation
2011 Waste Confirmation Data (non-radiological) (3/10/11)

Site ID: Area 6 - 31219-001 SDP-WC1

Chemical Name	Sample Date	Value	Detlim	Units	Qual
1,1,1-Trichloroethane	1/6/2011	50	50	UG/L	U
1,1,2,2-Tetrachloroethane	1/6/2011	50	50	UG/L	U
1,1,2-Trichloroethane	1/6/2011	50	50	UG/L	U
1,1-Dichloroethane	1/6/2011	50	50	UG/L	U
1,1-Dichloroethylene	1/6/2011	50	50	UG/L	U
1,2-Dichloroethane	1/6/2011	50	50	UG/L	U
1,2-Dichloropropane	1/6/2011	50	50	UG/L	U
2,4,5-Trichlorophenol	1/6/2011	50	50	UG/L	U
2,4,6-Trichlorophenol	1/6/2011	50	50	UG/L	U
2,4-D	1/6/2011	40	40	UG/L	U
2,4-Dinitrotoluene	1/6/2011	50	50	UG/L	U
2-Hexanone	1/6/2011	200	200	UG/L	U
Acetone	1/6/2011	200	200	UG/L	U
Aroclor 1016	1/6/2011	46	46	UG/KG	U
Aroclor 1221	1/6/2011	46	46	UG/KG	U
Aroclor 1232	1/6/2011	46	46	UG/KG	U
Aroclor 1242	1/6/2011	46	46	UG/KG	U
Aroclor 1248	1/6/2011	46	46	UG/KG	U
Aroclor 1254	1/6/2011	46	46	UG/KG	U
Aroclor 1260	1/6/2011	46	46	UG/KG	U
Arsenic	1/6/2011	500	500	UG/L	U
Barium	1/6/2011	241	125	UG/L	
Benzene	1/6/2011	50	50	UG/L	U
Bromodichloromethane	1/6/2011	50	50	UG/L	U
Bromoform	1/6/2011	50	50	UG/L	U
Cadmium	1/6/2011	2.4	12.5	UG/L	B
Carbon disulfide	1/6/2011	50	50	UG/L	U
Carbon tetrachloride	1/6/2011	50	50	UG/L	U
Chlordane	1/6/2011	5	5	UG/L	U
Chlorobenzene	1/6/2011	50	50	UG/L	U
Chloroethane	1/6/2011	50	50	UG/L	U
Chloroform	1/6/2011	50	50	UG/L	U
Chromium	1/6/2011	25	25	UG/L	U
cis-1,3-Dichloropropene	1/6/2011	50	50	UG/L	U
Dibromochloromethane	1/6/2011	50	50	UG/L	U
Endrin	1/6/2011	0.5	0.5	UG/L	U
Ethylbenzene	1/6/2011	50	50	UG/L	U
Heptachlor	1/6/2011	0.5	0.5	UG/L	U
Heptachlor epoxide	1/6/2011	0.5	0.5	UG/L	U
Hexachlorobenzene	1/6/2011	50	50	UG/L	U
Hexachlorobutadiene	1/6/2011	50	50	UG/L	U
Hexachloroethane	1/6/2011	50	50	UG/L	U
Hydrogen ion	1/6/2011	5.6	0.1	PH UNITS	
Lead	1/6/2011	4.6	250	UG/L	B
Lindane	1/6/2011	0.5	0.5	UG/L	U
m,p-Cresol	1/6/2011	100	100	UG/L	U
m-Dichlorobenzene	1/6/2011	50	50	UG/L	U

Table 8
BNL Peconic River Sediment Remediation
2011 Waste Confirmation Data (non-radiological) (3/10/11)

Chemical Name	Sample Date	Value	Detlim	Units	Qual
Mercury	1/6/2011	24.4	1	UG/L	J
Methoxychlor	1/6/2011	1	1	UG/L	U
Methyl bromide	1/6/2011	50	50	UG/L	U
Methyl chloride	1/6/2011	50	50	UG/L	U
Methyl ethyl ketone	1/6/2011	50	50	UG/L	U
Methyl isobutyl ketone (MIBK)	1/6/2011	200	200	UG/L	U
Methylene chloride	1/6/2011	18	50	UG/L	J B
Nitrobenzene	1/6/2011	50	50	UG/L	U
o-Cresol	1/6/2011	50	50	UG/L	U
o-Dichlorobenzene	1/6/2011	50	50	UG/L	U
p-Dichlorobenzene	1/6/2011	50	50	UG/L	U
Paint Filter	1/6/2011	Pass		NU	
PCP	1/6/2011	250	250	UG/L	U
Percent moisture	1/6/2011	28.3	0.1	%WET	
Pyridine	1/6/2011	100	100	UG/L	U
Reactive Cyanide	1/6/2011	7.00E-05	0.35	MG/KG	B
Reactive Sulfide	1/6/2011	31	31	MG/KG	U
Selenium	1/6/2011	13	500	UG/L	B J
Silver	1/6/2011	25	25	UG/L	U
Silvex	1/6/2011	10	10	UG/L	U
Styrene	1/6/2011	50	50	UG/L	U
Tetrachloroethylene	1/6/2011	50	50	UG/L	U
Toluene	1/6/2011	50	50	UG/L	U
Toxaphene	1/6/2011	20	20	UG/L	U
trans-1,3-Dichloropropene	1/6/2011	50	50	UG/L	U
Trichloroethylene	1/6/2011	50	50	UG/L	U
Vinyl chloride	1/6/2011	100	100	UG/L	U
Xylene (total)	1/6/2011	50	50	UG/L	U

Site ID: Area 6 - 31219-002 SDP-WC2

Chemical Name	Sample Date	Value	Detlim	Units	Qual
1,1,1-Trichloroethane	1/6/2011	50	50	UG/L	U
1,1,2,2-Tetrachloroethane	1/6/2011	50	50	UG/L	U
1,1,2-Trichloroethane	1/6/2011	50	50	UG/L	U
1,1-Dichloroethane	1/6/2011	50	50	UG/L	U
1,1-Dichloroethylene	1/6/2011	50	50	UG/L	U
1,2-Dichloroethane	1/6/2011	50	50	UG/L	U
1,2-Dichloropropane	1/6/2011	50	50	UG/L	U
2,4,5-Trichlorophenol	1/6/2011	50	50	UG/L	U
2,4,6-Trichlorophenol	1/6/2011	50	50	UG/L	U
2,4-D	1/6/2011	40	40	UG/L	U
2,4-Dinitrotoluene	1/6/2011	50	50	UG/L	U
2-Hexanone	1/6/2011	200	200	UG/L	U
Acetone	1/6/2011	200	200	UG/L	U
Aroclor 1016	1/6/2011	50	50	UG/KG	U
Aroclor 1221	1/6/2011	50	50	UG/KG	U
Aroclor 1232	1/6/2011	50	50	UG/KG	U
Aroclor 1242	1/6/2011	50	50	UG/KG	U
Aroclor 1248	1/6/2011	50	50	UG/KG	U

Table 8
BNL Peconic River Sediment Remediation
2011 Waste Confirmation Data (non-radiological) (3/10/11)

Chemical Name	Sample Date	Value	Detlim	Units	Qual
Aroclor 1254	1/6/2011	50	50	UG/KG	U
Aroclor 1260	1/6/2011	50	50	UG/KG	U
Arsenic	1/6/2011	500	500	UG/L	U
Barium	1/6/2011	262	125	UG/L	
Benzene	1/6/2011	50	50	UG/L	U
Bromodichloromethane	1/6/2011	50	50	UG/L	U
Bromoform	1/6/2011	50	50	UG/L	U
Cadmium	1/6/2011	3.2	12.5	UG/L	B
Carbon disulfide	1/6/2011	50	50	UG/L	U
Carbon tetrachloride	1/6/2011	50	50	UG/L	U
Chlordane	1/6/2011	5	5	UG/L	U
Chlorobenzene	1/6/2011	50	50	UG/L	U
Chloroethane	1/6/2011	50	50	UG/L	U
Chloroform	1/6/2011	50	50	UG/L	U
Chromium	1/6/2011	25	25	UG/L	U
cis-1,3-Dichloropropene	1/6/2011	50	50	UG/L	U
Dibromochloromethane	1/6/2011	50	50	UG/L	U
Endrin	1/6/2011	0.5	0.5	UG/L	U
Ethylbenzene	1/6/2011	50	50	UG/L	U
Heptachlor	1/6/2011	0.5	0.5	UG/L	U
Heptachlor epoxide	1/6/2011	0.5	0.5	UG/L	U
Hexachlorobenzene	1/6/2011	50	50	UG/L	U
Hexachlorobutadiene	1/6/2011	50	50	UG/L	U
Hexachloroethane	1/6/2011	50	50	UG/L	U
Hydrogen ion	1/6/2011	5.6	0.1	PH UNITS	
Lead	1/6/2011	9.8	250	UG/L	B
Lindane	1/6/2011	0.5	0.5	UG/L	U
m,p-Cresol	1/6/2011	100	100	UG/L	U
m-Dichlorobenzene	1/6/2011	50	50	UG/L	U
Mercury	1/6/2011	23.6	1	UG/L	J
Methoxychlor	1/6/2011	1	1	UG/L	U
Methyl bromide	1/6/2011	50	50	UG/L	U
Methyl chloride	1/6/2011	50	50	UG/L	U
Methyl ethyl ketone	1/6/2011	50	50	UG/L	U
Methyl isobutyl ketone (MIBK)	1/6/2011	200	200	UG/L	U
Methylene chloride	1/6/2011	21	50	UG/L	J B
Nitrobenzene	1/6/2011	50	50	UG/L	U
o-Cresol	1/6/2011	50	50	UG/L	U
o-Dichlorobenzene	1/6/2011	50	50	UG/L	U
p-Dichlorobenzene	1/6/2011	50	50	UG/L	U
Paint Filter	1/6/2011	Pass		NU	
PCP	1/6/2011	250	250	UG/L	U
Percent moisture	1/6/2011	34.6	0.1	%WET	
Pyridine	1/6/2011	100	100	UG/L	U
Reactive Cyanide	1/6/2011	0.38	0.38	MG/KG	U
Reactive Sulfide	1/6/2011	34	34	MG/KG	U
Selenium	1/6/2011	12.3	500	UG/L	B J
Silver	1/6/2011	25	25	UG/L	U
Silvex	1/6/2011	10	10	UG/L	U

Table 8
BNL Peconic River Sediment Remediation
2011 Waste Confirmation Data (non-radiological) (3/10/11)

Chemical Name	Sample Date	Value	Detlim	Units	Qual
Styrene	1/6/2011	50	50	UG/L	U
Tetrachloroethylene	1/6/2011	50	50	UG/L	U
Toluene	1/6/2011	50	50	UG/L	U
Toxaphene	1/6/2011	20	20	UG/L	U
trans-1,3-Dichloropropene	1/6/2011	50	50	UG/L	U
Trichloroethylene	1/6/2011	50	50	UG/L	U
Vinyl chloride	1/6/2011	100	100	UG/L	U
Xylene (total)	1/6/2011	50	50	UG/L	U
Site ID: Area 6 - 31219-003 SDP-WC3					
Chemical Name	**Sample Date**	**Value**	**Detlim**	**Units**	**Qual**
1,1,1-Trichloroethane	1/6/2011	50	50	UG/L	U
1,1,2,2-Tetrachloroethane	1/6/2011	50	50	UG/L	U
1,1,2-Trichloroethane	1/6/2011	50	50	UG/L	U
1,1-Dichloroethane	1/6/2011	50	50	UG/L	U
1,1-Dichloroethylene	1/6/2011	50	50	UG/L	U
1,2-Dichloroethane	1/6/2011	50	50	UG/L	U
1,2-Dichloropropane	1/6/2011	50	50	UG/L	U
2,4,5-Trichlorophenol	1/6/2011	50	50	UG/L	U
2,4,6-Trichlorophenol	1/6/2011	50	50	UG/L	U
2,4-D	1/6/2011	40	40	UG/L	U
2,4-Dinitrotoluene	1/6/2011	50	50	UG/L	U
2-Hexanone	1/6/2011	200	200	UG/L	U
Acetone	1/6/2011	200	200	UG/L	U
Aroclor 1016	1/6/2011	47	47	UG/KG	U
Aroclor 1221	1/6/2011	47	47	UG/KG	U
Aroclor 1232	1/6/2011	47	47	UG/KG	U
Aroclor 1242	1/6/2011	47	47	UG/KG	U
Aroclor 1248	1/6/2011	47	47	UG/KG	U
Aroclor 1254	1/6/2011	47	47	UG/KG	U
Aroclor 1260	1/6/2011	47	47	UG/KG	U
Arsenic	1/6/2011	500	500	UG/L	U
Barium	1/6/2011	232	125	UG/L	
Benzene	1/6/2011	50	50	UG/L	U
Bromodichloromethane	1/6/2011	50	50	UG/L	U
Bromoform	1/6/2011	50	50	UG/L	U
Cadmium	1/6/2011	3.4	12.5	UG/L	B
Carbon disulfide	1/6/2011	50	50	UG/L	U
Carbon tetrachloride	1/6/2011	50	50	UG/L	U
Chlordane	1/6/2011	5	5	UG/L	U
Chlorobenzene	1/6/2011	50	50	UG/L	U
Chloroethane	1/6/2011	50	50	UG/L	U
Chloroform	1/6/2011	50	50	UG/L	U
Chromium	1/6/2011	25	25	UG/L	U
cis-1,3-Dichloropropene	1/6/2011	50	50	UG/L	U
Dibromochloromethane	1/6/2011	50	50	UG/L	U
Endrin	1/6/2011	0.5	0.5	UG/L	U
Ethylbenzene	1/6/2011	50	50	UG/L	U
Heptachlor	1/6/2011	0.5	0.5	UG/L	U

Table 8
BNL Peconic River Sediment Remediation
2011 Waste Confirmation Data (non-radiological) (3/10/11)

Chemical Name	Sample Date	Value	Detlim	Units	Qual
Heptachlor epoxide	1/6/2011	0.5	0.5	UG/L	U
Hexachlorobenzene	1/6/2011	50	50	UG/L	U
Hexachlorobutadiene	1/6/2011	50	50	UG/L	U
Hexachloroethane	1/6/2011	50	50	UG/L	U
Hydrogen ion	1/6/2011	6.4	0.1	PH UNITS	
Lead	1/6/2011	10.6	250	UG/L	B
Lindane	1/6/2011	0.5	0.5	UG/L	U
m,p-Cresol	1/6/2011	100	100	UG/L	U
m-Dichlorobenzene	1/6/2011	50	50	UG/L	U
Mercury	1/6/2011	23.4	1	UG/L	J
Methoxychlor	1/6/2011	1	1	UG/L	U
Methyl bromide	1/6/2011	50	50	UG/L	U
Methyl chloride	1/6/2011	50	50	UG/L	U
Methyl ethyl ketone	1/6/2011	50	50	UG/L	U
Methyl isobutyl ketone (MIBK)	1/6/2011	200	200	UG/L	U
Methylene chloride	1/6/2011	17	50	UG/L	J B
Nitrobenzene	1/6/2011	50	50	UG/L	U
o-Cresol	1/6/2011	50	50	UG/L	U
o-Dichlorobenzene	1/6/2011	50	50	UG/L	U
p-Dichlorobenzene	1/6/2011	50	50	UG/L	U
Paint Filter	1/6/2011	Pass		NU	
PCP	1/6/2011	250	250	UG/L	U
Percent moisture	1/6/2011	29.6	0.1	%WET	
Pyridine	1/6/2011	100	100	UG/L	U
Reactive Cyanide	1/6/2011	0.011	0.36	MG/KG	B
Reactive Sulfide	1/6/2011	31.5	31.5	MG/KG	U
Selenium	1/6/2011	9.5	500	UG/L	B J
Silver	1/6/2011	25	25	UG/L	U
Silvex	1/6/2011	10	10	UG/L	U
Styrene	1/6/2011	50	50	UG/L	U
Tetrachloroethylene	1/6/2011	50	50	UG/L	U
Toluene	1/6/2011	50	50	UG/L	U
Toxaphene	1/6/2011	20	20	UG/L	U
trans-1,3-Dichloropropene	1/6/2011	50	50	UG/L	U
Trichloroethylene	1/6/2011	50	50	UG/L	U
Vinyl chloride	1/6/2011	100	100	UG/L	U
Xylene (total)	1/6/2011	50	50	UG/L	U

Site ID: Arae 6 - 31219-004 SDP-WC4

Chemical Name	Sample Date	Value	Detlim	Units	Qual
1,1,1-Trichloroethane	1/6/2011	50	50	UG/L	U
1,1,2,2-Tetrachloroethane	1/6/2011	50	50	UG/L	U
1,1,2-Trichloroethane	1/6/2011	50	50	UG/L	U
1,1-Dichloroethane	1/6/2011	50	50	UG/L	U
1,1-Dichloroethylene	1/6/2011	50	50	UG/L	U
1,2-Dichloroethane	1/6/2011	50	50	UG/L	U
1,2-Dichloropropane	1/6/2011	50	50	UG/L	U
2,4,5-Trichlorophenol	1/6/2011	50	50	UG/L	U
2,4,6-Trichlorophenol	1/6/2011	50	50	UG/L	U

Table 8
BNL Peconic River Sediment Remediation
2011 Waste Confirmation Data (non-radiological) (3/10/11)

Chemical Name	Sample Date	Value	Detlim	Units	Qual
2,4-D	1/6/2011	40	40	UG/L	U
2,4-Dinitrotoluene	1/6/2011	50	50	UG/L	U
2-Hexanone	1/6/2011	200	200	UG/L	U
Acetone	1/6/2011	200	200	UG/L	U
Aroclor 1016	1/6/2011	49	49	UG/KG	U
Aroclor 1221	1/6/2011	49	49	UG/KG	U
Aroclor 1232	1/6/2011	49	49	UG/KG	U
Aroclor 1242	1/6/2011	49	49	UG/KG	U
Aroclor 1248	1/6/2011	49	49	UG/KG	U
Aroclor 1254	1/6/2011	49	49	UG/KG	U
Aroclor 1260	1/6/2011	49	49	UG/KG	U
Arsenic	1/6/2011	500	500	UG/L	U
Barium	1/6/2011	200	125	UG/L	
Benzene	1/6/2011	50	50	UG/L	U
Bromodichloromethane	1/6/2011	50	50	UG/L	U
Bromoform	1/6/2011	50	50	UG/L	U
Cadmium	1/6/2011	12.5	12.5	UG/L	U
Carbon disulfide	1/6/2011	50	50	UG/L	U
Carbon tetrachloride	1/6/2011	50	50	UG/L	U
Chlordane	1/6/2011	5	5	UG/L	U
Chlorobenzene	1/6/2011	50	50	UG/L	U
Chloroethane	1/6/2011	50	50	UG/L	U
Chloroform	1/6/2011	50	50	UG/L	U
Chromium	1/6/2011	25	25	UG/L	U
cis-1,3-Dichloropropene	1/6/2011	50	50	UG/L	U
Dibromochloromethane	1/6/2011	50	50	UG/L	U
Endrin	1/6/2011	0.5	0.5	UG/L	U
Ethylbenzene	1/6/2011	50	50	UG/L	U
Heptachlor	1/6/2011	0.5	0.5	UG/L	U
Heptachlor epoxide	1/6/2011	0.5	0.5	UG/L	U
Hexachlorobenzene	1/6/2011	50	50	UG/L	U
Hexachlorobutadiene	1/6/2011	50	50	UG/L	U
Hexachloroethane	1/6/2011	50	50	UG/L	U
Hydrogen ion	1/6/2011	5.6	0.1	PH UNITS	
Lead	1/6/2011	7.4	250	UG/L	B
Lindane	1/6/2011	0.5	0.5	UG/L	U
m,p-Cresol	1/6/2011	100	100	UG/L	U
m-Dichlorobenzene	1/6/2011	50	50	UG/L	U
Mercury	1/6/2011	23	1	UG/L	J
Methoxychlor	1/6/2011	1	1	UG/L	U
Methyl bromide	1/6/2011	50	50	UG/L	U
Methyl chloride	1/6/2011	50	50	UG/L	U
Methyl ethyl ketone	1/6/2011	50	50	UG/L	U
Methyl isobutyl ketone (MIBK)	1/6/2011	200	200	UG/L	U
Methylene chloride	1/6/2011	18	50	UG/L	J B
Nitrobenzene	1/6/2011	50	50	UG/L	U
o-Cresol	1/6/2011	50	50	UG/L	U
o-Dichlorobenzene	1/6/2011	50	50	UG/L	U
p-Dichlorobenzene	1/6/2011	50	50	UG/L	U

Table 8
BNL Peconic River Sediment Remediation
2011 Waste Confirmation Data (non-radiological) (3/10/11)

Chemical Name	Sample Date	Value	Detlim	Units	Qual
Paint Filter	1/6/2011	Pass		NU	
PCP	1/6/2011	250	250	UG/L	U
Percent moisture	1/6/2011	32.6	0.1	%WET	
Pyridine	1/6/2011	100	100	UG/L	U
Reactive Cyanide	1/6/2011	0.014	0.37	MG/KG	B
Reactive Sulfide	1/6/2011	33	33	MG/KG	U
Selenium	1/6/2011	6.7	500	UG/L	B J
Silver	1/6/2011	25	25	UG/L	U
Silvex	1/6/2011	10	10	UG/L	U
Styrene	1/6/2011	50	50	UG/L	U
Tetrachloroethylene	1/6/2011	50	50	UG/L	U
Toluene	1/6/2011	50	50	UG/L	U
Toxaphene	1/6/2011	20	20	UG/L	U
trans-1,3-Dichloropropene	1/6/2011	50	50	UG/L	U
Trichloroethylene	1/6/2011	50	50	UG/L	U
Vinyl chloride	1/6/2011	100	100	UG/L	U
Xylene (total)	1/6/2011	50	50	UG/L	U

Site ID: Area 6 - 31219-005 SDP-WC5

Chemical Name	Sample Date	Value	Detlim	Units	Qual
1,1,1-Trichloroethane	1/6/2011	50	50	UG/L	U
1,1,2,2-Tetrachloroethane	1/6/2011	50	50	UG/L	U
1,1,2-Trichloroethane	1/6/2011	50	50	UG/L	U
1,1-Dichloroethane	1/6/2011	50	50	UG/L	U
1,1-Dichloroethylene	1/6/2011	50	50	UG/L	U
1,2-Dichloroethane	1/6/2011	50	50	UG/L	U
1,2-Dichloropropane	1/6/2011	50	50	UG/L	U
2,4,5-Trichlorophenol	1/6/2011	50	50	UG/L	U
2,4,6-Trichlorophenol	1/6/2011	50	50	UG/L	U
2,4-D	1/6/2011	40	40	UG/L	U
2,4-Dinitrotoluene	1/6/2011	50	50	UG/L	U
2-Hexanone	1/6/2011	200	200	UG/L	U
Acetone	1/6/2011	200	200	UG/L	U
Aroclor 1016	1/6/2011	46	46	UG/KG	U
Aroclor 1221	1/6/2011	46	46	UG/KG	U
Aroclor 1232	1/6/2011	46	46	UG/KG	U
Aroclor 1242	1/6/2011	46	46	UG/KG	U
Aroclor 1248	1/6/2011	46	46	UG/KG	U
Aroclor 1254	1/6/2011	46	46	UG/KG	U
Aroclor 1260	1/6/2011	46	46	UG/KG	U
Arsenic	1/6/2011	500	500	UG/L	U
Barium	1/6/2011	193	125	UG/L	
Benzene	1/6/2011	50	50	UG/L	U
Bromodichloromethane	1/6/2011	50	50	UG/L	U
Bromoform	1/6/2011	50	50	UG/L	U
Cadmium	1/6/2011	12.5	12.5	UG/L	U
Carbon disulfide	1/6/2011	50	50	UG/L	U
Carbon tetrachloride	1/6/2011	50	50	UG/L	U
Chlordane	1/6/2011	5	5	UG/L	U

Table 8
BNL Peconic River Sediment Remediation
2011 Waste Confirmation Data (non-radiological) (3/10/11)

Chemical Name	Sample Date	Value	Detlim	Units	Qual
Chlorobenzene	1/6/2011	50	50	UG/L	U
Chloroethane	1/6/2011	50	50	UG/L	U
Chloroform	1/6/2011	50	50	UG/L	U
Chromium	1/6/2011	25	25	UG/L	U
cis-1,3-Dichloropropene	1/6/2011	50	50	UG/L	U
Dibromochloromethane	1/6/2011	50	50	UG/L	U
Endrin	1/6/2011	0.5	0.5	UG/L	U
Ethylbenzene	1/6/2011	50	50	UG/L	U
Heptachlor	1/6/2011	0.5	0.5	UG/L	U
Heptachlor epoxide	1/6/2011	0.5	0.5	UG/L	U
Hexachlorobenzene	1/6/2011	50	50	UG/L	U
Hexachlorobutadiene	1/6/2011	50	50	UG/L	U
Hexachloroethane	1/6/2011	50	50	UG/L	U
Hydrogen ion	1/6/2011	5.7	0.1	PH UNITS	
Lead	1/6/2011	7.6	250	UG/L	B
Lindane	1/6/2011	0.5	0.5	UG/L	U
m,p-Cresol	1/6/2011	100	100	UG/L	U
m-Dichlorobenzene	1/6/2011	50	50	UG/L	U
Mercury	1/6/2011	25	1	UG/L	J
Methoxychlor	1/6/2011	1	1	UG/L	U
Methyl bromide	1/6/2011	50	50	UG/L	U
Methyl chloride	1/6/2011	50	50	UG/L	U
Methyl ethyl ketone	1/6/2011	50	50	UG/L	U
Methyl isobutyl ketone (MIBK)	1/6/2011	200	200	UG/L	U
Methylene chloride	1/6/2011	19	50	UG/L	J B
Nitrobenzene	1/6/2011	50	50	UG/L	U
o-Cresol	1/6/2011	50	50	UG/L	U
o-Dichlorobenzene	1/6/2011	50	50	UG/L	U
p-Dichlorobenzene	1/6/2011	50	50	UG/L	U
Paint Filter	1/6/2011	Pass		NU	
PCP	1/6/2011	250	250	UG/L	U
Percent moisture	1/6/2011	28.3	0.1	%WET	
Pyridine	1/6/2011	100	100	UG/L	U
Reactive Cyanide	1/6/2011	0.0071	0.35	MG/KG	B
Reactive Sulfide	1/6/2011	31	31	MG/KG	U
Selenium	1/6/2011	500	500	UG/L	U
Silver	1/6/2011	25	25	UG/L	U
Silvex	1/6/2011	10	10	UG/L	U
Styrene	1/6/2011	50	50	UG/L	U
Tetrachloroethylene	1/6/2011	50	50	UG/L	U
Toluene	1/6/2011	50	50	UG/L	U
Toxaphene	1/6/2011	20	20	UG/L	U
trans-1,3-Dichloropropene	1/6/2011	50	50	UG/L	U
Trichloroethylene	1/6/2011	50	50	UG/L	U
Vinyl chloride	1/6/2011	100	100	UG/L	U
Xylene (total)	1/6/2011	50	50	UG/L	U
Site ID: Arae 15 - 31221-001 SDP-WC6					
Chemical Name	**Sample Date**	**Value**	**Detlim**	**Units**	**Qual**

Table 8
BNL Peconic River Sediment Remediation
2011 Waste Confirmation Data (non-radiological) (3/10/11)

Chemical Name	Sample Date	Value	Detlim	Units	Qual
1,1,1-Trichloroethane	1/10/2011	50	50	UG/L	U
1,1,2,2-Tetrachloroethane	1/10/2011	50	50	UG/L	U
1,1,2-Trichloroethane	1/10/2011	50	50	UG/L	U
1,1-Dichloroethane	1/10/2011	50	50	UG/L	U
1,1-Dichloroethylene	1/10/2011	50	50	UG/L	U
1,2-Dichloroethane	1/10/2011	50	50	UG/L	U
1,2-Dichloropropane	1/10/2011	50	50	UG/L	U
2,4,5-Trichlorophenol	1/10/2011	50	50	UG/L	U
2,4,6-Trichlorophenol	1/10/2011	50	50	UG/L	U
2,4-D	1/10/2011	40	40	UG/L	U
2,4-Dinitrotoluene	1/10/2011	50	50	UG/L	U
2-Hexanone	1/10/2011	200	200	UG/L	U
Acetone	1/10/2011	200	200	UG/L	U
Aroclor 1016	1/10/2011	54	54	UG/KG	U
Aroclor 1221	1/10/2011	54	54	UG/KG	U
Aroclor 1232	1/10/2011	54	54	UG/KG	U
Aroclor 1242	1/10/2011	54	54	UG/KG	U
Aroclor 1248	1/10/2011	54	54	UG/KG	U
Aroclor 1254	1/10/2011	54	54	UG/KG	U
Aroclor 1260	1/10/2011	54	54	UG/KG	U
Arsenic	1/10/2011	500	500	UG/L	U
Barium	1/10/2011	351	125	UG/L	J
Benzene	1/10/2011	50	50	UG/L	U
Bromodichloromethane	1/10/2011	50	50	UG/L	U
Bromoform	1/10/2011	50	50	UG/L	U
Cadmium	1/10/2011	5.6	12.5	UG/L	B
Carbon disulfide	1/10/2011	50	50	UG/L	U
Carbon tetrachloride	1/10/2011	50	50	UG/L	U
Chlordane	1/10/2011	5	5	UG/L	U
Chlorobenzene	1/10/2011	50	50	UG/L	U
Chloroethane	1/10/2011	50	50	UG/L	U
Chloroform	1/10/2011	50	50	UG/L	U
Chromium	1/10/2011	8	25	UG/L	B
cis-1,3-Dichloropropene	1/10/2011	50	50	UG/L	U
Dibromochloromethane	1/10/2011	50	50	UG/L	U
Endrin	1/10/2011	0.5	0.5	UG/L	U
Ethylbenzene	1/10/2011	50	50	UG/L	U
Heptachlor	1/10/2011	0.5	0.5	UG/L	U
Heptachlor epoxide	1/10/2011	0.5	0.5	UG/L	U
Hexachlorobenzene	1/10/2011	50	50	UG/L	U
Hexachlorobutadiene	1/10/2011	50	50	UG/L	U
Hexachloroethane	1/10/2011	50	50	UG/L	U
Hydrogen ion	1/10/2011	5	0.1	PH UNITS	
Lead	1/10/2011	219	250	UG/L	B J
Lindane	1/10/2011	0.5	0.5	UG/L	U
m,p-Cresol	1/10/2011	100	100	UG/L	U
m-Dichlorobenzene	1/10/2011	50	50	UG/L	U
Mercury	1/10/2011	0.22	1	UG/L	B J
Methoxychlor	1/10/2011	1	1	UG/L	U

Table 8
BNL Peconic River Sediment Remediation
2011 Waste Confirmation Data (non-radiological) (3/10/11)

Chemical Name	Sample Date	Value	Detlim	Units	Qual
Methyl bromide	1/10/2011	50	50	UG/L	U
Methyl chloride	1/10/2011	50	50	UG/L	U
Methyl ethyl ketone	1/10/2011	50	50	UG/L	U
Methyl isobutyl ketone (MIBK)	1/10/2011	200	200	UG/L	U
Methylene chloride	1/10/2011	20	50	UG/L	J B
Nitrobenzene	1/10/2011	50	50	UG/L	U
o-Cresol	1/10/2011	50	50	UG/L	U
o-Dichlorobenzene	1/10/2011	50	50	UG/L	U
p-Dichlorobenzene	1/10/2011	50	50	UG/L	U
Paint Filter	1/10/2011	Pass		NU	
PCP	1/10/2011	250	250	UG/L	U
Percent moisture	1/10/2011	39.1	0.1	%WET	
Pyridine	1/10/2011	100	100	UG/L	U
Reactive Cyanide	1/10/2011	0.023	0.41	MG/KG	B
Reactive Sulfide	1/10/2011	36.4	36.4	MG/KG	U
Selenium	1/10/2011	500	500	UG/L	U
Silver	1/10/2011	25	25	UG/L	U
Silvex	1/10/2011	10	10	UG/L	U
Styrene	1/10/2011	50	50	UG/L	U
Tetrachloroethylene	1/10/2011	50	50	UG/L	U
Toluene	1/10/2011	19	50	UG/L	J B
Toxaphene	1/10/2011	20	20	UG/L	U
trans-1,3-Dichloropropene	1/10/2011	50	50	UG/L	U
Trichloroethylene	1/10/2011	50	50	UG/L	U
Vinyl chloride	1/10/2011	100	100	UG/L	U
Xylene (total)	1/10/2011	50	50	UG/L	U

Site ID: Area 15 - 31221-002 SDP-WC7

Chemical Name	Sample Date	Value	Detlim	Units	Qual
1,1,1-Trichloroethane	1/10/2011	9.8	50	UG/L	J
1,1,2,2-Tetrachloroethane	1/10/2011	50	50	UG/L	U
1,1,2-Trichloroethane	1/10/2011	50	50	UG/L	U
1,1-Dichloroethane	1/10/2011	50	50	UG/L	U
1,1-Dichloroethylene	1/10/2011	50	50	UG/L	U
1,2-Dichloroethane	1/10/2011	50	50	UG/L	U
1,2-Dichloropropane	1/10/2011	50	50	UG/L	U
2,4,5-Trichlorophenol	1/10/2011	50	50	UG/L	U
2,4,6-Trichlorophenol	1/10/2011	50	50	UG/L	U
2,4-D	1/10/2011	40	40	UG/L	U
2,4-Dinitrotoluene	1/10/2011	50	50	UG/L	U
2-Hexanone	1/10/2011	200	200	UG/L	U
Acetone	1/10/2011	200	200	UG/L	U
Aroclor 1016	1/10/2011	55	55	UG/KG	U
Aroclor 1221	1/10/2011	55	55	UG/KG	U
Aroclor 1232	1/10/2011	55	55	UG/KG	U
Aroclor 1242	1/10/2011	55	55	UG/KG	U
Aroclor 1248	1/10/2011	55	55	UG/KG	U
Aroclor 1254	1/10/2011	55	55	UG/KG	U
Aroclor 1260	1/10/2011	55	55	UG/KG	U

Table 8
BNL Peconic River Sediment Remediation
2011 Waste Confirmation Data (non-radiological) (3/10/11)

Chemical Name	Sample Date	Value	Detlim	Units	Qual
Arsenic	1/10/2011	500	500	UG/L	U
Barium	1/10/2011	155	125	UG/L	J
Benzene	1/10/2011	50	50	UG/L	U
Bromodichloromethane	1/10/2011	50	50	UG/L	U
Bromoform	1/10/2011	50	50	UG/L	U
Cadmium	1/10/2011	3.3	12.5	UG/L	B
Carbon disulfide	1/10/2011	50	50	UG/L	U
Carbon tetrachloride	1/10/2011	15	50	UG/L	J
Chlordane	1/10/2011	5	5	UG/L	U
Chlorobenzene	1/10/2011	50	50	UG/L	U
Chloroethane	1/10/2011	50	50	UG/L	U
Chloroform	1/10/2011	50	50	UG/L	U
Chromium	1/10/2011	25	25	UG/L	U
cis-1,3-Dichloropropene	1/10/2011	50	50	UG/L	U
Dibromochloromethane	1/10/2011	50	50	UG/L	U
Endrin	1/10/2011	0.5	0.5	UG/L	U
Ethylbenzene	1/10/2011	6.8	50	UG/L	J
Heptachlor	1/10/2011	0.5	0.5	UG/L	U
Heptachlor epoxide	1/10/2011	0.5	0.5	UG/L	U
Hexachlorobenzene	1/10/2011	50	50	UG/L	U
Hexachlorobutadiene	1/10/2011	50	50	UG/L	U
Hexachloroethane	1/10/2011	50	50	UG/L	U
Hydrogen ion	1/10/2011	5.2	0.1	PH UNITS	
Lead	1/10/2011	15	250	UG/L	B J
Lindane	1/10/2011	0.5	0.5	UG/L	U
m,p-Cresol	1/10/2011	100	100	UG/L	U
m-Dichlorobenzene	1/10/2011	50	50	UG/L	U
Mercury	1/10/2011	0.37	1	UG/L	B J
Methoxychlor	1/10/2011	1	1	UG/L	U
Methyl bromide	1/10/2011	50	50	UG/L	U
Methyl chloride	1/10/2011	50	50	UG/L	U
Methyl ethyl ketone	1/10/2011	50	50	UG/L	U
Methyl isobutyl ketone (MIBK)	1/10/2011	200	200	UG/L	U
Methylene chloride	1/10/2011	24	50	UG/L	J B
Nitrobenzene	1/10/2011	50	50	UG/L	U
o-Cresol	1/10/2011	50	50	UG/L	U
o-Dichlorobenzene	1/10/2011	50	50	UG/L	U
p-Dichlorobenzene	1/10/2011	50	50	UG/L	U
Paint Filter	1/10/2011	Pass		NU	
PCP	1/10/2011	250	250	UG/L	U
Percent moisture	1/10/2011	40.3	0.1	%WET	
Pyridine	1/10/2011	100	100	UG/L	U
Reactive Cyanide	1/10/2011	0.031	0.42	MG/KG	B
Reactive Sulfide	1/10/2011	37.2	37.2	MG/KG	U
Selenium	1/10/2011	8.5	500	UG/L	B
Silver	1/10/2011	25	25	UG/L	U
Silvex	1/10/2011	10	10	UG/L	U
Styrene	1/10/2011	50	50	UG/L	U
Tetrachloroethylene	1/10/2011	45	50	UG/L	J

Table 8
BNL Peconic River Sediment Remediation
2011 Waste Confirmation Data (non-radiological) (3/10/11)

Chemical Name	Sample Date	Value	Detlim	Units	Qual
Toluene	1/10/2011	220	50	UG/L	B
Toxaphene	1/10/2011	20	20	UG/L	U
trans-1,3-Dichloropropene	1/10/2011	50	50	UG/L	U
Trichloroethylene	1/10/2011	12	50	UG/L	J
Vinyl chloride	1/10/2011	100	100	UG/L	U
Xylene (total)	1/10/2011	28	50	UG/L	J B

Site ID: Sediment Trap Sediment - 31242-001 WC-8

Chemical Name	Sample Date	Value	Detlim	Units	Qual
1,1-Dichloroethylene	1/20/2011	50	50	UG/L	U
1,2-Dichloroethane	1/20/2011	50	50	UG/L	U
2,4,5-Trichlorophenol	1/20/2011	50	50	UG/L	U
2,4,6-Trichlorophenol	1/20/2011	50	50	UG/L	U
2,4-D	1/20/2011	40	40	UG/L	U
2,4-Dinitrotoluene	1/20/2011	50	50	UG/L	U
Aroclor 1016	1/20/2011	45	45	UG/KG	U
Aroclor 1221	1/20/2011	45	45	UG/KG	U
Aroclor 1232	1/20/2011	45	45	UG/KG	U
Aroclor 1242	1/20/2011	45	45	UG/KG	U
Aroclor 1248	1/20/2011	45	45	UG/KG	U
Aroclor 1254	1/20/2011	45	45	UG/KG	U
Aroclor 1260	1/20/2011	45	45	UG/KG	U
Arsenic	1/20/2011	500	500	UG/L	U
Barium	1/20/2011	176	125	UG/L	
Benzene	1/20/2011	50	50	UG/L	U
Cadmium	1/20/2011	3.1	12.5	UG/L	B
Carbon tetrachloride	1/20/2011	50	50	UG/L	U
Chlordane	1/20/2011	5	5	UG/L	U
Chlorobenzene	1/20/2011	50	50	UG/L	U
Chloroform	1/20/2011	50	50	UG/L	U
Chromium	1/20/2011	25	25	UG/L	U
Endrin	1/20/2011	0.5	0.5	UG/L	U
Heptachlor	1/20/2011	0.5	0.5	UG/L	U
Heptachlor epoxide	1/20/2011	0.5	0.5	UG/L	U
Hexachlorobenzene	1/20/2011	50	50	UG/L	U
Hexachlorobutadiene	1/20/2011	50	50	UG/L	U
Hexachloroethane	1/20/2011	50	50	UG/L	U
Hydrogen ion	1/20/2011	5.9	0.1	PH UNITS	
Lead	1/20/2011	5	250	UG/L	B
Lindane	1/20/2011	0.5	0.5	UG/L	U
m,p-Cresol	1/20/2011	100	100	UG/L	U
Mercury	1/20/2011	1	1	UG/L	U
Methoxychlor	1/20/2011	1	1	UG/L	U
Methyl ethyl ketone	1/20/2011	50	50	UG/L	U
Nitrobenzene	1/20/2011	50	50	UG/L	U
o-Cresol	1/20/2011	50	50	UG/L	U
p-Dichlorobenzene	1/20/2011	50	50	UG/L	U
Paint Filter	1/20/2011	Pass		NU	
PCP	1/20/2011	250	250	UG/L	U

Table 8
BNL Peconic River Sediment Remediation
2011 Waste Confirmation Data (non-radiological) (3/10/11)

Chemical Name	Sample Date	Value	Detlim	Units	Qual
Percent moisture	1/20/2011	26.4	0.1	%WET	
Pyridine	1/20/2011	100	100	UG/L	U
Reactive Cyanide	1/20/2011	0.018	0.34	MG/KG	B J
Reactive Sulfide	1/20/2011	30.2	30.2	MG/KG	U
Selenium	1/20/2011	500	500	UG/L	U
Silver	1/20/2011	25	25	UG/L	U
Silvex	1/20/2011	10	10	UG/L	U
Tetrachloroethylene	1/20/2011	50	50	UG/L	U
Toxaphene	1/20/2011	20	20	UG/L	U
Trichloroethylene	1/20/2011	50	50	UG/L	U
Vinyl chloride	1/20/2011	100	100	UG/L	U

U = Not detected
J = For metals - means method blank contamination. The associated method blank contains the analyte at a reportable level.
J = For volatile organic compounds - means estimated value
B = For metals - means estimated value
B = For volatile organic compounds - means method blank contamination. The associated method blank contains the analyte at a reportable level.

Table 9
BNL Peconic River Sediment Remediation
2011 Waste Confirmation Radiological Data/Curie Content (3/21/11)

Sample ID	Rail Car #	Weight (lbs.)	Radionuclide	Criteria (WAC) (pCi/g)	Concentration (pCi/g)	Error (pCi/g)	MDC (pCi/g)	Curies
Area 06								
31219-001	TILX520193	174,500	Co-60	2.00	ND	0.910	0.09	
			Cs-137	10.00	1.22	0.20	0.11	9.60E-05
			Am-241	3.00	ND	0.14	0.24	
			Pu-238	1.00	0.145	0.078	0.049	1.15E-05
			Pu-239/240	1.00	ND	0.035	0.042	
			Sr-90	5.00	ND	0.13	0.23	
31219-002	TILX520194	182,200	Co-60	2.00	ND	0.0083	0.031	
			Cs-137	10.00	1.47	0.16	0.04	1.22E-04
			Am-241	3.00	ND	0.30	0.52	
			Pu-238	1.00	0.19	0.10	0.11	1.57E-05
			Pu-239/240	1.00	0.081	0.064	0.065	6.69E-06
			Sr-90	5.00	ND	0.13	0.21	
31219-003	TILX520214	195,400	Co-60	2.00	ND	0.87	0.09	
			Cs-137	10.00	1.29	0.19	0.07	1.14E-04
			Am-241	3.00	ND	0.70	0.24	
			Pu-238	1.00	0.12	0.08	0.072	1.06E-05
			Pu-239/240	1.00	0.064	0.054	0.047	5.67E-06
			Sr-90	5.00	ND	0.12	0.21	
31219-004	TILX520172	189,800	Co-60	2.00	ND	0.060	0.11	
			Cs-137	10.00	1.61	0.20	0.07	1.39E-04
			Am-241	3.00	ND	0.13	0.21	
			Pu-238	1.00	ND	0.092	0.11	
			Pu-239/240	1.00	ND	0.047	0.093	
			Sr-90	5.00	ND	0.13	0.22	
31219-005	TILX520186	192,400	Co-60	2.00	ND	0.049	0.088	
			Cs-137	10.00	1.47	0.21	0.18	1.28E-04
			Am-241	3.00	ND	0.11	0.19	
			Pu-238	1.00	ND	0.055	0.077	
			Pu-239/240	1.00	ND	0.036	0.069	
			Sr-90	5.00	ND	0.14	0.23	
Area 15								
31221-001	TILX520184	182,800	Co-60	2.00	ND	1.1	0.1	
			Cs-137	10.00	1.9	0.28	0.12	1.58E-04
			Am-241	3.00	ND	0.27	0.25	
			Pu-238	1.00	ND	0.051	0.1	
			Pu-239/240	1.00	ND	0.058	0.094	
			Sr-90	5.00	ND	0.12	0.21	
31221-002	TILX520167	194,600	Co-60	2.00	ND	1.2	0.1	
			Cs-137	10.00	2.44	0.32	0.12	2.15E-04
			Am-241	3.00	ND	0.14	0.24	
			Pu-238	1.00	ND	0.059	0.097	
			Pu-239/240	1.00	ND	0.036	0.062	
			Sr-90	5.00	ND	0.15	0.22	
Sediment Trap Sediment								
31242-001	TILX520208	190,800	Co-60	2.00	ND	0.008	0.028	
			Cs-137	10.00	0.79	0.12	0.07	6.84E-05
			Am-241	3.00	ND	0.270	0.46	
			Pu-238	1.00	ND	0.063	0.092	
			Pu-239/240	1.00	ND	0.060	0.092	
			Sr-90	5.00	ND	0.14	0.24	
Sediment Trap Stone/ Drying Pad Stone								
Field boulders in a pile in snow	TILX520198	190,600	Cs137 Bi212 Pb214 Ac228		Qualified background levels per ISOCS operator		Qualified per ISOCS operator, not quantified	
Drying Pad Stone								
ISCOS in lab	TILX520232	192,300	K40		7.84			6.84E-04
			Pb212		0.46			4.01E-05
			Bi214		0.78			6.80E-05
			Ra226		2.05			1.79E-04
Drying Pad Stone								
ISCOS in lab	TILX520171	198,700	K40		7.84			7.07E-04
			Pb212		0.46			4.25E-05
			Bi214		0.78			7.03E-05
			Ra226		2.05			1.85E-04
Total Pounds		**2,084,100**		**1,042 tons**	**802 cy**			
Total Curies								**3.07E-03 or 0.00307**

Table 10
Frac Tank Analytical Waste Data

Site ID : FT021011

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual	Matrix
1,1,1-Trichloroethane	2/10/2011	1	1	0	UG/L	U	W
624 TVOC	2/10/2011	0	0	0	UG/L		W
Americium-241	2/10/2011	-6	22	13	PCI/L	U	W
Ammonia (as N)	2/10/2011	3530	50	0	UG/L	J	W
Aroclor 1016	2/10/2011	1	1	0	UG/L	U	W
Aroclor 1221	2/10/2011	1	1	0	UG/L	U	W
Aroclor 1232	2/10/2011	1	1	0	UG/L	U	W
Aroclor 1242	2/10/2011	1	1	0	UG/L	U	W
Aroclor 1248	2/10/2011	1	1	0	UG/L	U	W
Aroclor 1254	2/10/2011	1	1	0	UG/L	U	W
Aroclor 1260	2/10/2011	1	1	0	UG/L	U	W
BOD	2/10/2011	40.3	2	0	MG/L		W
Cesium-137	2/10/2011	-1.2	13	7.1	PCI/L	U	W
Co-60	2/10/2011	-1	12	6.5	PCI/L	U	W
Copper	2/10/2011	20	25	0	UG/L	B	W
Cyanide	2/10/2011	5.6	10	0	UG/L	B	W
Hydrogen ion	2/10/2011	6.8	0.1	0	PH		W
Iron	2/10/2011	932	100	0	UG/L		W
Lead	2/10/2011	7.4	100	0	UG/L	B	W
Mercury	2/10/2011	0.47	0.2	0	UG/L		W
Methyl ethyl ketone	2/10/2011	5	5	0	UG/L	U	W
Methylene chloride	2/10/2011	1	1	0	UG/L	U	W
Nickel	2/10/2011	40	40	0	UG/L	U	W
Organic Nitrogen	2/10/2011	1.9	0.55	0	MG/L		W
Phosphorus	2/10/2011	310	100	0	UG/L		W
Settleable Solids	2/10/2011	0.1	0.1	0	ML/L/HR	U	W
Silver	2/10/2011	10	10	0	UG/L	U	W
Strontium-90	2/10/2011	0.13	0.74	0.43	PCI/L	U	W
Toluene	2/10/2011	1	1	0	UG/L	U	W
Total Kjeldahl Nitrogen	2/10/2011	5.5	1	0	MG/L		W
Tritium	2/10/2011	-30	340	200	PCI/L	U	W
TSS	2/10/2011	37	4	0	MG/L		W
Zinc	2/10/2011	87.4	20	0	UG/L		W

Site ID : FT021011A (Filtered Sample)

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual	Matrix
Copper	2/10/2011	20	25	0	UG/L	B	W
Iron	2/10/2011	990	100	0	UG/L		W
Lead	2/10/2011	7.4	10	0	UG/L	B	W
Mercury	2/10/2011	0.2	0.2	0	UG/L	U	W

Table 10

Frac Tank Analytical Waste Data

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual	Matrix
Nickel	2/10/2011	40	40	0	UG/L	U	W
Silver	2/10/2011	10	10	0	UG/L	U	W
Zinc	2/10/2011	73.6	20	0	UG/L		W

U = Not detected

J = Method blank contamination

B = For metals - means estimated value

Appendix A

Tilcon Generic Material Certification

TILCON-NY Riverdale Quarry

Fax 973-989-0178

125 HAMBURG TURNPIKE • RIVERDALE, N.J. • 973-366-7741

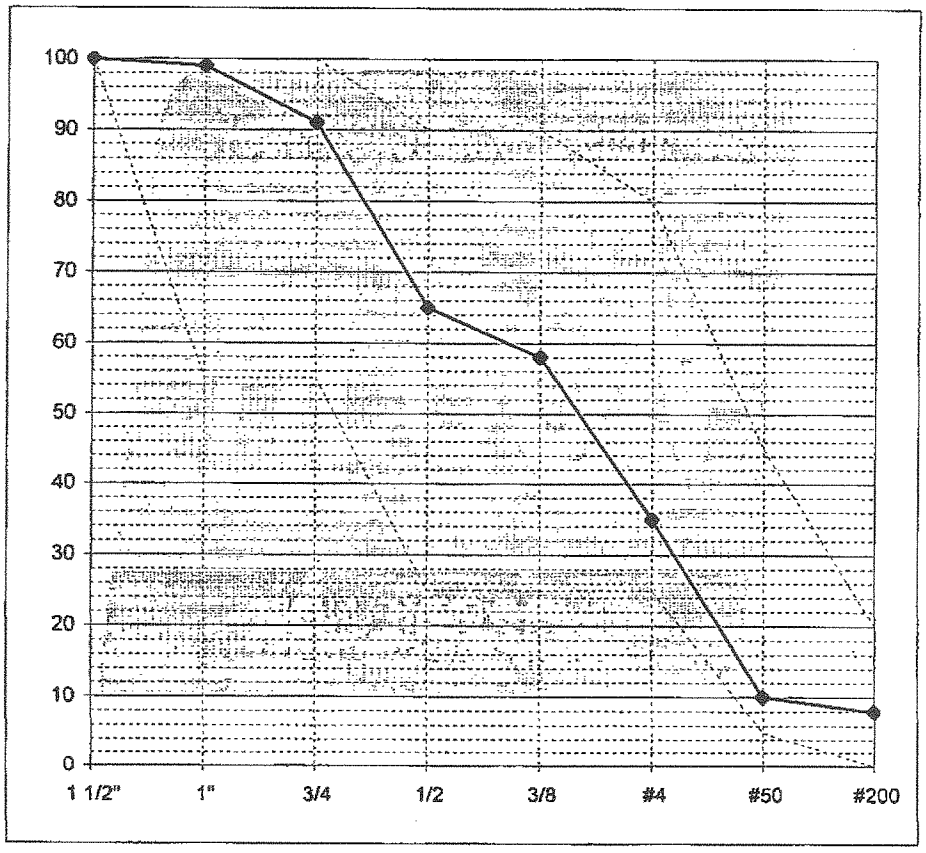
Typical Gradation Quarry Process

Project
Klimko Riverdale, NJ

Contractor
Aim Tank

Sp. Gr	2.84
Loose	101
Rodded	120

	Typical	Prod. Target	
	% Pass	Low	High
1 1/2"	100	100	100
1"	99	55	100
3/4	91	55	100
1/2	65	25	90
3/8	58	25	90
#4	35	25	80
#50	10	5	45
#200	8		20



Tilcon-NJ confirms that the Quarry Process available at Riverdale Quarry conforms to the quality requirements of section 901 of ***The New Jersey Department of* Transportation *Standard Specifications for Road and Bridge Construction.*** It is defined as virgin Gneiss mined at Riverdale Quarry, 125 Hamburg Turnpike, Block 13-Lots 25-29 Borough of Riverdale, Morris County.The material is identified on the job with Tilcon NJ delivery tickets.

The unit weights and voids are for process control and should be verified by the contractor before use.

Appendix B

Terra Railcar Weight Tracking Sheets

Area 6 Sediment

2-15-11

2~~6~~3000 - LTWT

Car # 520193

Bucket #	Weight Ton
1.	3.9
2.	4.4
3.	4.2
4.	3.15
5.	4.30
6.	3.45
7.	3.40
8.	3.95
9.	3.75
10.	3.55
11.	3.55
12.	4.10
13.	4.35
14.	4.~~60~~
15.	4.45
16.	3.66
17.	3.70
18.	3.70
19	3.60
20	3.30
21	3.60
22	3.30
23	3.20

Total

87.30

Car # 520194

Bucket	Weight Ton
1	3.5
2	3.85
3	3.70
4	3.20
5	3.40
6	3.95
7	3.65
8.	3.00
9.	3.65
10	3.90
11.	4.05
12.	4.85
13.	3.55
14	3.80
15	3.90
16	3.85
17	3.80
18	3.75
19	4.30
20	3.85
21	4.00
22	3.45
23	4.05
24	4.10

Total

91.20

Car # 520214

#	weight
1.	3.95
2.	4.05
3.	4.25
4.	3.40
5.	3.65
6.	3.60
7.	3.40
8.	4.65
9.	4.55
10.	3.75
11.	4.65
12.	4.45
13.	4.35
14.	4.60
15.	4.20
16.	3.70
17.	4.50
18.	5.00
19	4.20
20	4.35
21.	5.00
22.	4.80
23.	4.75

Total
97.70

Car # 520172

#	weight
1.	4.45
2.	5.20
3.	4.70
4.	5.15
5.	4.95
6.	4.80
7.	4.85
8.	4.35
9.	4.75
10.	4.30
11.	4.15
12.	4.45
13.	4.95
14.	6.00
15.	4.80
16.	4.85
17.	4.95
18.	4.25
19.	4.30
20.	4.35

Total
94.5

2-16-11

Car # 520186

#	Weight
1.	3.6
2.	3.45
3.	3.80
4.	2.50
5.	3.95
6.	3.80
7.	3.50
8.	3.40
9.	3.45
10.	3.60
11.	3.50
12.	3.75
13.	3.85
14.	3.50
15.	3.50
16.	3.50
17.	3.40
18.	3.65
19.	3.65
20.	2.55
21.	.80
22.	.75

AREA 6

70.9

River Bypass bags

Loaded on rear of car

Total 72.50

Car # 520208

#	Weight
1.	2.25
2.	2.25
3.	3.55
4.	2.95
5.	2.50
6.	2.90
7.	3.05
8.	2.90
9.	3.20
10.	2.95
11.	3.40
12.	3.10
13.	3.10
14.	3.65
15.	3.00
16.	3.25
17.	3.00
18.	3.05
19.	2.75
20.	3.25

Sed. Trap

41.75

Area 15

Total 60.00

Car # 520184

#	weight	
1.	3.95	↑
2.	4.35	
3.	4.25	
4.	3.95	Area 15
5.	4.10	↓
6.	4.25	
7.	4.10	
8.	4.10	
9.	4.45	
10.	4.15	
11.	4.40	
12.	4.00	
13.	3.90	
14.	4.70	
15.	3.90	
16.	4.10	
17.	4.05	
18.	3.80	
19.	4.40	
20.	4.25	
21.	4.20	
22.	4.05	

Total
91.30

Car # 520198

#	weight	
1.	4.30	↑
2.	4.45	Area 15
3.	4.00	↓
4.	4.25	
5.	4.45	
6.	4.35	25.80
7.	5.50	↑
8.	5.60	sed trap stone
9.	5.45	
10.	5.50	↓
11.	5.45	
12.	5.40	Total 38.30
13.	5.40	
14.	4.90	↑
15.	4.30	
16.	4.75	Area 15
17.	4.10	↓
18.	4.30	
19.	4.20	
~~20~~	~~4.55~~	31.2

Total
95.25

2-17-11

Car # 520167

#	weight	
1	4.0	↑ Area 15
2	4.45	
3	4.35	
4	3.85	
5	4.15	
6	4.40	Loaded on 1ST 3/4 of car
7	4.05	
8	4.25	
9	5.00	
10	4.10	
11	3.70	
12	4.20	
13	4.10	
14	4.75	
15	4.35	↓ 63.65
16	4.80	↑ sed. trap stone
17	4.65	
18	5.25	Loaded on rear
19	4.95	↓
20	5.25	↑ Drying Pad stone
21	3.15	
22	5.55	↓ Loaded on top

Total 97.25

Car # 520232

#	Weight	
1.	5.45	↑ Drying pad stone ? Liner
2.	5.70	
3.	5.60	
4.	5.80	
5.	5.15	
6.	5.00	
7.	4.60	
8.	5.90	
9.	5.25	
10.	6.40	
11.	6.65	
12.	6.00	
13.	6.00	
14.	6.15	
15.	5.10	
16.	5.30	
17.	6.10	↓

Total 96.10

2-18-11

Car # 520171

#	Weight
1.	6.60
2.	5.90
3.	0.25
4.	6.05
5.	5.65
6.	5.15
7.	6.35
8.	5.80
9.	6.30
10.	6.60
11.	6.40
12.	5.50
13	6.30
14.	6.25
15.	5.40
16.	5.45
17.	6.50
18.	2.95

Drying Pad stone & Liner

99.45

over limit by 800 LBS called BNL they said it was ok

Added to Car # 520208

Start at 60.00 tons

1.	6.10
2.	6.45
3	6.70
4	5.30
5	3.55
6	4.05

Drying Pad stone & Liner

35.40 tons
+60.00
total 95.40

Added to Car # 520186

Start at 72.50

1.	5.45
2.	5.75
3.	5.55
4.	4.60
5.	2.40

Drying Pad stone & Liner

Total 72.50
23.70
96.20

Appendix C

Uniform Non-Hazardous Waste Manifests

TILX520214

98.46

2

ALLIED WASTE

NON-HAZARDOUS WASTE MANIFEST

0390020

1. Generator's US EPA ID Number	Manifest Document Number	2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address
BROOKHAVEN NATIONAL LABORATORY
BUILDING 860
UPTON NY 11973
4. Phone ( ) (631) 344-5724

5. Generating Location (if different)
BROOKHAVEN NATIONAL LABORATORY
[illegible]
UPTON NY 11973
6. Phone ( )

7. Transporter #1 Company Name	8. US EPA ID Number	9. Transporter #1's Phone
CSX RAILROAD		[illegible]
10. Transporter #2 Company Name	11. US EPA ID Number	12. Transporter #2's Phone
13. Designated T/S/D Facility Name and Site Address NIAGARA RECYCLING INC 58TH STREET & NIAGARA FALLS BLVD NIAGARA FALLS NY 14304	14. US EPA ID Number	15. Facility's Phone (716) 285-3344

16. Waste Shipping Name and Description	17. Allied Waste Approval # and Exp. Date	18. Containers No.	18. Containers Type	19. Total Quantity	20. Unit Wt/Vol
a. RIVER DREDGE SEDIMENT	4215 11 1242	1	HG	97.70	T
b.					
c.					
d.					

21. Additional Descriptions for Materials Listed Above

22. Special Handling Instructions and Additional Information
Rail Car #520214
TILX

23. **GENERATOR'S CERTIFICATION:** I certify the materials described on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
Leo Palumbo	[signature]	02	27	11

TRANSPORTER

24. **Transporter #1:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

25. **Transporter #2:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

T/S/D FACILITY

26. Discrepancy Indication Space

27. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest (except as noted in Item 19)

Printed/Typed Name	Signature	Month	Day	Year
Pam Scott	Pam Scott	03	09	11

ORIGINAL - RETURN TO GENERATOR

REV 08/09

AW-F15

TILX520172

94.27

ALLIED WASTE

NON-HAZARDOUS WASTE MANIFEST

0390021

1. Generator's US EPA ID Number	Manifest Document Number	2. Page 1 of
		1

GENERATOR

3. Generator's Name and Mailing Address	5. Generating Location (if different)
BROOKHAVEN NATIONAL LABORATORY BUILDING 860 UPTON NY 11973	BROOKHAVEN NATIONAL LABORATORY PECONIC RIVER DREDGE PROJECT UPTON NY 11973
4. Phone ( ) (631) 344-5724	6. Phone ( )

7. Transporter #1 Company Name	8. US EPA ID Number	9. Transporter #1's Phone
CSX RAILROAD		(302) 994-0952
10. Transporter #2 Company Name	11. US EPA ID Number	12. Transporter #2's Phone
13. Designated T/S/D Facility Name and Site Address NIAGARA RECYCLING INC. 58TH STREET & NIAGARA FALLS BLVD NIAGARA FALLS NY 14304	14. US EPA ID Number	15. Facility's Phone (716) 283-3344

16. Waste Shipping Name and Description	17. Allied Waste Approval # and Exp. Date	18. Containers No.	18. Containers Type	19. Total Quantity	20. Unit Wt/Vol
a. RIVER DREDGE SEDIMENT	4215 11 1242	1	HG	94.90	T
b.					
c.					
d.					

21. Additional Descriptions for Materials Listed Above
Rail Car # TILX 520172

22. Special Handling Instructions and Additional Information

23. **GENERATOR'S CERTIFICATION:** I certify the materials described on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
Leo Palumbo		02	27	11

TRANSPORTER

24. **Transporter #1:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

25. **Transporter #2:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

T/S/D FACILITY

26. Discrepancy Indication Space

27. **Facility Owner or Operator:** Certification of receipt of waste materials covered by this manifest (except as noted in Item 19)

Printed/Typed Name	Signature	Month	Day	Year
Pam Scott	Pam Scott	03	09	11

ORIGINAL - RETURN TO GENERATOR

REV 03/09 AW 515

TILX520167 104.81 6

ALLIED WASTE

NON-HAZARDOUS WASTE MANIFEST 0390026

1. Generator's US EPA ID Number	Manifest Document Number	2. Page 1 of 1
3. Generator's Name and Mailing Address BROOKHAVEN NATIONAL LABORATORY BUILDING 860 UPTON NY 11973 4. Phone ( ) (631) 344-5721	5. Generating Location (if different) BROOKHAVEN NATIONAL LABORATORY PECONIC RIVER DREDGE PROJECT UPTON NY 11973 6. Phone ( )	
7. Transporter #1 Company Name CSX RAILROAD	8. US EPA ID Number	9. Transporter #1's Phone 904 [illegible]
10. Transporter #2 Company Name	11. US EPA ID Number	12. Transporter #2's Phone
13. Designated T/S/D Facility Name and Site Address NIAGARA RECYCLING INC 56TH STREET & NIAGARA FALLS BLVD NIAGARA FALLS, NY 14304	14. US EPA ID Number	15. Facility's Phone (716) 285-3344

16. Waste Shipping Name and Description	17. Allied Waste Approval # and Exp. Date	18. Containers No.	Type	19. Total Quantity	20. Unit Wt/Vol
a. RIVER DREDGE SEDIMENT	421511 1242	1	HG	97.3	T
b.					
c.					
d.					

GENERATOR

21. Additional Descriptions for Materials Listed Above

Railcar # TILX 520167

22. Special Handling Instructions and Additional Information

23. **GENERATOR'S CERTIFICATION:** I certify the materials described on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
Leo Palumbo	[signature]	02	27	11

TRANSPORTER

24. **Transporter #1:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

25. **Transporter #2:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

T/S/D FACILITY

26. Discrepancy Indication Space

27. **Facility Owner or Operator:** Certification of receipt of waste materials covered by this manifest (except as noted in Item 19)

Printed/Typed Name	Signature	Month	Day	Year
Pam Scott	Pam Scott	3	9	11

ORIGINAL - RETURN TO GENERATOR

REV 08/09 AW-F15

TILX 520184

99.2

5

ALLIED WASTE

NON-HAZARDOUS WASTE MANIFEST

0390024

1. Generator's US EPA ID Number	Manifest Document Number	2. Page 1 of
		1

GENERATOR

3. Generator's Name and Mailing Address	5. Generating Location (if different)
BROOKHAVEN NATIONAL LABORATORY BUILDING 660 UPTON NY 11973	BROOKHAVEN NATIONAL LABORATORY SECOND RIVER DREDGE PROJECT UPTON NY 11973
4. Phone ( ) (631) 344-5724	6. Phone ( )

7. Transporter #1 Company Name	8. US EPA ID Number	9. Transporter #1's Phone
CSX RAILROAD		(904) 981-0854
10. Transporter #2 Company Name	11. US EPA ID Number	12. Transporter #2's Phone

13. Designated T/S/D Facility Name and Site Address	14. US EPA ID Number	15. Facility's Phone
NIAGARA RECYCLING INC 58TH STREET & NIAGARA FALLS BLVD NIAGARA FALLS, NY 14304		(716) 285-3344

16. Waste Shipping Name and Description	17. Allied Waste Approval # and Exp. Date	18. Containers No.	18. Containers Type	19. Total Quantity	20. Unit Wt/Vol
a. RIVER DREDGE SEDIMENT	4215 11 1242	1	46	91.40	T
b.					
c.					
d.					

21. Additional Descriptions for Materials Listed Above

Rail Car # TILX520184

22. Special Handling Instructions and Additional Information

23. **GENERATOR'S CERTIFICATION:** I certify the materials described on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
Leo Palumbo	Leo Palumbo	02	07	11

TRANSPORTER

24. **Transporter #1:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

25. **Transporter #2:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

T/S/D FACILITY

26. Discrepancy Indication Space

27 **Facility Owner or Operator:** Certification of receipt of waste materials covered by this manifest (except as noted in Item 19)

Printed/Typed Name	Signature	Month	Day	Year
Pam Scott	Pam Scott	3	9	11

ORIGINAL - RETURN TO GENERATOR

TILX520186

123.61

A

ALLIED WASTE

NON-HAZARDOUS WASTE MANIFEST

0390022

1. Generator's US EPA ID Number	Manifest Document Number	2. Page 1 of 1

3. Generator's Name and Mailing Address	5. Generating Location (If different)
BROOKHAVEN NATIONAL LABORATORY BUILDING 860 UPTON NY 11973	BROOKHAVEN NATIONAL LABORATORY PECONIC RIVER DREDGE PROJECT UPTON NY 11973
4. Phone ( ) (631) 344-5724	6. Phone ( )

7. Transporter #1 Company Name	8. US EPA ID Number	9. Transporter #1's Phone
CSX RAILROAD		(904) 366-0966
10. Transporter #2 Company Name	11. US EPA ID Number	12. Transporter #2's Phone
13. Designated T/S/D Facility Name and Site Address	14. US EPA ID Number	15. Facility's Phone
NIAGARA RECYCLING INC 56TH STREET & NIAGARA FALLS BLVD NIAGARA FALLS NY 14304		(716) 285-3344

16. Waste Shipping Name and Description	17. Allied Waste Approval # and Exp. Date	18. Containers No.	Type	19. Total Quantity	20. Unit Wt/Vol
a. RIVER DREDGE SEDIMENT	4215 11 1242	1	HG	96.20	T
b.					
c.					
d.					

21. Additional Descriptions for Materials Listed Above

Rail car # TILX 520 ~~203~~ 186

22. Special Handling Instructions and Additional Information

GENERATOR

23. **GENERATOR'S CERTIFICATION:** I certify the materials described on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
Leo Palumbo	[signature]	02	27	11

TRANSPORTER

24. **Transporter #1:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

25. **Transporter #2:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

T/S/D FACILITY

26. Discrepancy Indication Space

27. **Facility Owner or Operator:** Certification of receipt of waste materials covered by this manifest (except as noted in Item 19)

Printed/Typed Name	Signature	Month	Day	Year
Pam Scott	Pam Scott	3	9	11

ORIGINAL - RETURN TO GENERATOR

REV 08/00

TILX520208

122.58

3

ALLIED WASTE

NON-HAZARDOUS WASTE MANIFEST

0390023

1. Generator's US EPA ID Number	Manifest Document Number	2. Page 1 of
		1

GENERATOR

3. Generator's Name and Mailing Address
BROOKHAVEN NATIONAL LABORATORY
BUILDING 860
UPTON NY 11973
4. Phone ( ) (631) 344-5724

5. Generating Location (if different)
BROOKHAVEN NATIONAL LABORATORY
SCENIC RIVER DREDGE PROJECT
UPTON NY 11973
6. Phone ( )

7. Transporter #1 Company Name	8. US EPA ID Number	9. Transporter #1's Phone
CSX RAILROAD		(877) 958-0952
10. Transporter #2 Company Name	**11. US EPA ID Number**	**12. Transporter #2's Phone**

13. Designated T/S/D Facility Name and Site Address	14. US EPA ID Number	15. Facility's Phone
NIAGARA RECYCLING INC 56TH STREET & NIAGARA FALLS BLVD NIAGARA FALLS, NY 14304		(716) 285-3344

16. Waste Shipping Name and Description	17. Allied Waste Approval # and Exp. Date	18. Containers No.	18. Containers Type	19. Total Quantity	20. Unit Wt/Vol
a. RIVER DREDGE SEDIMENT	4215 11 1242	1	HG	95.40	T
b.					
c.					
d.					

21. Additional Descriptions for Materials Listed Above
Rail Car # TILX520284208

22. Special Handling Instructions and Additional Information

23. **GENERATOR'S CERTIFICATION:** I certify the materials described on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
Leo Palumbo	Leo Palumbo	02	27	11

TRANSPORTER

24. **Transporter #1:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

25. **Transporter #2:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

T/S/D FACILITY

26. Discrepancy Indication Space

27. **Facility Owner or Operator:** Certification of receipt of waste materials covered by this manifest (except as noted in Item 19)

Printed/Typed Name	Signature	Month	Day	Year
Pam Scott	Pam Scott	03	09	11

ORIGINAL - RETURN TO GENERATOR

REV 08/09

AW-F15

TILX520232

102.87

1

ALLIED WASTE

NON-HAZARDOUS WASTE MANIFEST

0390027

1. Generator's US EPA ID Number	Manifest Document Number	2. Page 1 of
		1

GENERATOR

3. Generator's Name and Mailing Address	5. Generating Location (if different)
BROOKHAVEN NATIONAL LABORATORY [illegible] [illegible]	[illegible]
4. Phone ( ) [illegible]	6. Phone ( )

7. Transporter #1 Company Name	8. US EPA ID Number	9. Transporter #1's Phone
[illegible]		[illegible]
10. Transporter #2 Company Name	**11. US EPA ID Number**	**12. Transporter #2's Phone**

13. Designated T/S/D Facility Name and Site Address	14. US EPA ID Number	15. Facility's Phone
[illegible] 56TH STREET & NIAGARA FALLS BLVD. NIAGARA FALLS NY 14304		[illegible]

	16. Waste Shipping Name and Description	17. Allied Waste Approval # and Exp. Date	18. Containers No.	18. Containers Type	19. Total Quantity	20. Unit Wt/Vol
a.	RIVER DREDGE SEDIMENT	4215 11 1242	1	HG	96.15	T
b.						
c.						
d.						

21. Additional Descriptions for Materials Listed Above

Rail Car # TILX520232

22. Special Handling Instructions and Additional Information

TRANSPORTER

23. **GENERATOR'S CERTIFICATION:** I certify the materials described on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
Leo Palumbo	Leo Palumbo	02	27	11

24. Transporter #1: Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

25. Transporter #2: Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

T/S/D FACILITY

26. Discrepancy Indication Space

27. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest (except as noted in item 19)

Printed/Typed Name	Signature	Month	Day	Year
Pam Scott	Pam Scott	03	09	11

ORIGINAL - RETURN TO GENERATOR

ALLIED WASTE

NON-HAZARDOUS WASTE MANIFEST

0390028

GENERATOR

1. Generator's US EPA ID Number	Manifest Document Number	2. Page 1 of 1

3. Generator's Name and Mailing Address	5. Generating Location (If different)
BROOKHAVEN NATIONAL LABORATORY BUILDING [illegible] UPTON NY 11973	BROOKHAVEN NATIONAL LABORATORY PECONIC RIVER DREDGE [illegible] UPTON NY 11973
4. Phone ( ) (631) 344 5724	6. Phone ( )

7. Transporter #1 Company Name	8. US EPA ID Number	9. Transporter #1's Phone
CSX RAILROAD		(904) [illegible]
10. Transporter #2 Company Name	**11. US EPA ID Number**	**12. Transporter #2's Phone**
13. Designated T/S/D Facility Name and Site Address	**14. US EPA ID Number**	**15. Facility's Phone**
NIAGARA RECYCLING INC 56TH STREET & NIAGARA FALLS BLVD. NIAGARA FALLS NY 14304		(716) 285 3344

16. Waste Shipping Name and Description	17. Allied Waste Approval # and Exp. Date	18. Containers No.	18. Containers Type	19. Total Quantity	20. Unit Wt/Vol
a. RIVER DREDGE SEDIMENT	4215 11 1242	1	HG	97.35	T
b.					
c.					
d.					

21. Additional Descriptions for Materials Listed Above

Rail Car # TILX 520171

22. Special Handling Instructions and Additional Information

23. **GENERATOR'S CERTIFICATION:** I certify the materials described on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
Leo Palumbo	[signature]	02	27	11

TRANSPORTER

24. **Transporter #1:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

25. **Transporter #2:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

T/S/D FACILITY

26. Discrepancy Indication Space

27. **Facility Owner or Operator:** Certification of receipt of waste materials covered by this manifest (except as noted in Item 19)

Printed/Typed Name	Signature	Month	Day	Year
	[signature]	3	9	11

ORIGINAL - RETURN TO GENERATOR

ALLIED WASTE

NON-HAZARDOUS WASTE MANIFEST

0390025

1. Generator's US EPA ID Number	Manifest Document Number	2. Page 1 of
		1

GENERATOR

3. Generator's Name and Mailing Address
BROOKHAVEN NATIONAL LABORATORY
BUILDING 810
UPTON NY 11973
4. Phone ( ) (631) 344-5724

5. Generating Location (if different)
BROOKHAVEN NATIONAL LABORATORY
PECONIC RIVER DREDGE PROJECT
UPTON NY 11973
6. Phone ( )

7. Transporter #1 Company Name	8. US EPA ID Number	9. Transporter #1's Phone
CSX RAILROAD		(302) 994-0952
10. Transporter #2 Company Name	**11. US EPA ID Number**	**12. Transporter #2's Phone**

13. Designated T/S/D Facility Name and Site Address	14. US EPA ID Number	15. Facility's Phone
NIAGARA RECYCLING INC 58TH STREET & NIAGARA FALLS BLVD NIAGARA FALLS, NY 14304		(716) 285-3344

16. Waste Shipping Name and Description	17. Allied Waste Approval # and Exp. Date	18. Containers No.	18. Containers Type	19. Total Quantity	20. Unit Wt/Vol
a. RIVER DREDGE SEDIMENT	4215 11 1242	1	HG	95.30	T
b.					
c.					
d.					

21. Additional Descriptions for Materials Listed Above
Rail car # TILX520198

22. Special Handling Instructions and Additional Information

23. **GENERATOR'S CERTIFICATION:** I certify the materials described on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
Leo Palumbo	Leo Palumbo	02	27	11

TRANSPORTER

24. **Transporter #1:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

25. **Transporter #2:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

T/S/D FACILITY

26. Discrepancy Indication Space

27. **Facility Owner or Operator:** Certification of receipt of waste materials covered by this manifest (except as noted in Item 19)

Printed/Typed Name	Signature	Month	Day	Year
		3	9	11

ORIGINAL - RETURN TO GENERATOR

REV 08/09

AW-F15

ALLIED WASTE

NON-HAZARDOUS WASTE MANIFEST

0390018

1. Generator's US EPA ID Number	Manifest Document Number	2. Page 1 of
		1

GENERATOR

3. Generator's Name and Mailing Address
BROOKHAVEN NATIONAL LABORATORY
BUILDING 660
UPTON NY 11973
4. Phone ( ) (631) 344-5724

5. Generating Location (if different)
BROOKHAVEN NATIONAL LABORATORY
PECONIC RIVER DREDGE PROJECT
UPTON NY 11973
6. Phone ( )

7. Transporter #1 Company Name	8. US EPA ID Number	9. Transporter #1's Phone
CSX RAILROAD		(302) 994-2852
10. Transporter #2 Company Name	**11. US EPA ID Number**	**12. Transporter #2's Phone**
13. Designated T/S/D Facility Name and Site Address	**14. US EPA ID Number**	**15. Facility's Phone**
NIAGARA RECYCLING INC 56TH STREET & NIAGARA FALLS BLVD NIAGARA FALLS NY 14304		(716) 285-3348

16. Waste Shipping Name and Description	17. Allied Waste Approval # and Exp. Date	18. Containers No.	18. Containers Type	19. Total Quantity	20. Unit Wt/Vol
a. RIVER DREDGE SEDIMENT	4215 11 1242	1	HG	91.20	Tons
b.					
c.					
d.					

21. Additional Descriptions for Materials Listed Above
Rail Car # TILX 520194

22. Special Handling Instructions and Additional Information

23. **GENERATOR'S CERTIFICATION:** I certify the materials described on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
Leo Palumbo	Leo Palumbo	02	27	11

TRANSPORTER

24. **Transporter #1:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

25. **Transporter #2:** Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

T/S/D FACILITY

26. Discrepancy Indication Space

27. **Facility Owner or Operator:** Certification of receipt of waste materials covered by this manifest (except as noted in Item 19)

Printed/Typed Name	Signature	Month	Day	Year
		3	8	11

ORIGINAL - RETURN TO GENERATOR

ALLIED WASTE

NON-HAZARDOUS WASTE MANIFEST

0390019

1. Generator's US EPA ID Number	Manifest Document Number	2. Page 1 of
		1

GENERATOR

3. Generator's Name and Mailing Address
BROOKHAVEN NATIONAL LABORATORY
BUILDING 860
UPTON NY 11973
4. Phone ( ) (631) 344-5724

5. Generating Location (if different)
BROOKHAVEN NATIONAL LABORATORY
PECONIC RIVER DREDGE PROJECT
UPTON NY 11973
6. Phone ( )

TRANSPORTER

7. Transporter #1 Company Name	8. US EPA ID Number	9. Transporter #1's Phone
CSX RAILROAD		(302) 984-0957
10. Transporter #2 Company Name	11. US EPA ID Number	12. Transporter #2's Phone

T/S/D FACILITY

13. Designated T/S/D Facility Name and Site Address	14. US EPA ID Number	15. Facility's Phone
NIAGARA RECYCLING INC 56TH STREET & NIAGARA FALLS BLVD NIAGARA FALLS NY 14304		(716) 285-3344

16. Waste Shipping Name and Description	17 Allied Waste Approval # and Exp. Date	18. Containers No.	18. Containers Type	19. Total Quantity	20. Unit Wt/Vol
a. RIVER DREDGE SEDIMENT	4215 11 1242	1	HG	87.25	T
b.					
c.					
d.					

21. Additional Descriptions for Materials Listed Above

22. Special Handling Instructions and Additional Information
Railcar # TILX520193

23. GENERATOR'S CERTIFICATION: I certify the materials described on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Printed/Typed Name: Leo Palumbo
Signature: [signature]
Month: 12 Day: 27 Year: 11

24. Transporter #1: Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month: Day: Year:

25. Transporter #2: Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month: Day: Year:

26. Discrepancy Indication Space

27. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest (except as noted in Item 19)
Printed/Typed Name:
Signature: [signature]
Month: 3 Day: 8 Year: 11

ORIGINAL - RETURN TO GENERATOR

REV 08/09

AW-F16

Appendix D

Landfill Railcar Weight Tracking Sheets

Niagara Falls Landfill
56th Street and Niagara Falls Boulevard
Niagara Falls, New York 14303-0344
(716) 285-3345

Special Waste Test / Inspection Log - 2011

GENERATOR: BROOKHAVEN | **APPROVAL CODE:** 4215111242 | **VIA RAILROAD**

DESCRIPTION: RIVER DREDGE SEDIMENTS

DATE	MANIFEST	INSPECTION		AW	TICKET	NUMBER		CAN NUMBER	STATUS		TONS
3/08	0390018	OK		422046 422042 422038 422045 422040				TILX520194			90.78
↓	0390019	OK		422053 422052 422051 422049 422047				TILX520193			86.00
								Total:			176.78

9140096

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422047	

WEIGHMASTER: AS00067 ALBERT S

DATE IN	TIME IN
8 March 2011	3:09 pm

DATE OUT	TIME OUT
8 March 2011	3:18 pm

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390019	Inbound -NY-SUFFOLK

01 Gross Weight 65,040.00 lb
Tare Weight 24,700.00 lb
Net Weight 40,340.00 lb

CAN#TILX520193
BROOKHAVEN NATIONAL LABS

20.17	TN	SW-CONT SOIL					
1.00	LD	ENVIRONMENTAL FEE					
1.00	LD	FUEL RECOVERY FEE					

HAVE A NICE DAY
)

REPUBLIC SERVICES

REV 11/09

SIGNATURE Jeff

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

RS-F04

9140098

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422049	

WEIGHMASTER: AS00067 ALBERT S

DATE IN	TIME IN
8 March 2011	3:13 pm

DATE OUT	TIME OUT
8 March 2011	3:26 pm

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390019	Inbound -NY-SUFFOLK

01 Gross Weight 74,020.00 lb
Tare Weight 26,800.00 lb
Net Weight 47,220.00 lb

CAN#TILX520193
BROOKHAVEN NATIONAL LABS

23.61 TN

23.61	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

HAVE A NICE DAY

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

REPUBLIC SERVICES

REV 11/09

SIGNATURE Tom

RS-F04

9140100

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
58	422051	

WEIGHMASTER: AS00067 ALBERT S

DATE IN	TIME IN
8 March 2011	3:20 pm

DATE OUT	TIME OUT
8 March 2011	3:36 pm

VEHICLE	ROLL OFF
4713	

REFERENCE	ORIGIN
0390019	Inbound -NY-SUFFOLK

01 Gross Weight 69,040.00 lb
Tare Weight 26,900.00 lb
Net Weight 42,140.00 lb

CAN#TILX520193
BROOKHAVEN NATIONAL LABS

21.07	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Willy

RS-F04

9140101

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422052	

WEIGHMASTER: AS00067 ALBERT S

DATE IN	TIME IN
8 March 2011	3:24 pm

DATE OUT	TIME OUT
8 March 2011	3:40 pm

VEHICLE	ROLL OFF
5553	

REFERENCE	ORIGIN
0390019	Inbound -NY-SUFFOLK

01 Gross Weight 55,940.00 lb
Tare Weight 25,380.00 lb
Net Weight 30,560.00 lb

15.28 TN

CAN#TILX520193
BROOKHAVEN NATIONAL LABS

15.28	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Chris

RS-F04

9140102

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422053	

WEIGHTMASTER: A900067 ALBERT S

DATE IN	TIME IN
8 March 2011	3:42 pm

DATE OUT	TIME OUT
8 March 2011	3:54 pm

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390019	Inbound -NY-SUFFOLK

01 Gross Weight 36,560.00 lb
Tare Weight 24,820.00 lb
Net Weight 11,740.00 lb
5.87 TN

CAN#TILX520193
BROOKHAVEN NATIONAL LABS

5.87	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Jeff

RS-F04

Iodice, Kathy

From: Hanson, David
Sent: Friday, March 04, 2011 11:13 AM
To: Iodice, Kathy
Subject: FW: Railcar shipment

We are good to go on these. Make sure we check each car for originals. They may be in an affixed enclosure like on a truck trailer. If not, then we use the copies you have.

From: Palumbo, Leo [mailto:lpalumbo@bnl.gov]
Sent: Friday, March 04, 2011 11:09 AM
To: Hanson, David
Subject: Re: Railcar shipment

If the originals aren't with the railcars, please use the copies that were e-mailed.

From: Hanson, David <DHanson@republicservices.com>
To: Palumbo, Leo
Cc: Iodice, Kathy <KIodice@republicservices.com>
Sent: Fri Mar 04 10:46:11 2011
Subject: RE: Railcar shipment

Leo, It is up to you to make sure we get the originals. I advise you to contact the rail road and make sure these originals get to us. However, if it is acceptable to you that we use copies, we can use what you sent us on e-mail. Please advise.

From: Palumbo, Leo [mailto:lpalumbo@bnl.gov]
Sent: Friday, March 04, 2011 10:27 AM
To: Hanson, David
Subject: RE: Railcar shipment

The train conductor was given the originals.

From: Hanson, David [mailto:DHanson@republicservices.com]
Sent: Friday, March 04, 2011 5:46 AM
To: Palumbo, Leo
Subject: RE: Railcar shipment

Not hear yet. We are still looking for the original manifests! Any word on that?

From: Palumbo, Leo [mailto:lpalumbo@bnl.gov]
Sent: Thursday, March 03, 2011 2:57 PM
To: Hanson, David
Subject: RE: Railcar shipment

Hey Dave.

Did our railcars get there yet?

From: Hanson, David [mailto:DHanson@republicservices.com]
Sent: Monday, February 28, 2011 1:31 PM
To: Palumbo, Leo
Cc: Iodice, Kathy
Subject: RE: Railcar shipment

Leo, This is good. We will be looking for the originals. Please make sure ERS gets them to us. Thanks.

From: Palumbo, Leo [mailto:lpalumbo@bnl.gov]
Sent: Monday, February 28, 2011 1:20 PM
To: Hanson, David
Subject: RE: Railcar shipment

Here are the manifests. I sent Environmental Rail Solutions signed copies and the conductor was given copies also.

From: Hanson, David [mailto:DHanson@republicservices.com]
Sent: Monday, February 28, 2011 12:58 PM
To: Palumbo, Leo
Cc: Iodice, Kathy
Subject: RE: Railcar shipment

Leo, Are you sending manifests?

From: Palumbo, Leo [mailto:lpalumbo@bnl.gov]
Sent: Monday, February 28, 2011 11:10 AM
To: Hanson, David
Subject: Railcar shipment

Dave,

I'm not sure what notifications need to be made, so I just thought I'd let you know that the 11 railcars of Peconic River sediment left Brookhaven yesterday.

Léo Palumbo
Hazardous Waste Program Manager
Brookhaven National Laboratory
Building 860
(631)344-5724

9140087

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
SB	422038	

WEIGHMASTER: AS00067 ALBERT S

DATE IN	TIME IN
8 March 2011	2:20 pm

DATE OUT	TIME OUT
8 March 2011	2:32 pm

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390018	Inbound -NY-SUFFOLK

01 Gross Weight 62,080.00 lb
Tare Weight 24,680.00 lb
Net Weight 37,400.00 lb

CAN#TILX520194
BROOKHAVEN NATIONAL LABS

18.70 TN

18.70	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Jeff

RS-F

9140089

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422040	

WEIGHMASTER: AS00067 ALBERT S

DATE IN	TIME IN
8 March 2011	2:23 pm

DATE OUT	TIME OUT
8 March 2011	2:35 pm

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390018	Inbound -NY-SUFFOLK

01 Gross Weight 68,900.00 lb
Tare Weight 27,040.00 lb
Net Weight 41,860.00 lb

CAN#TILX520194
BROOKHAVEN NATIONAL LABS

		DESCRIPTION	DATE			
20.93	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

SIGNATURE Tom

RS-F

REV 11/09

9140091

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422042	

WEIGHMASTER: AS00067 ALBERT S

DATE IN	TIME IN
8 March 2011	2:31 pm

DATE OUT	TIME OUT
8 March 2011	2:47 pm

VEHICLE	ROLL OFF
5553	

REFERENCE	ORIGIN
0390018	Inbound -NY-SUFFOLK

01 Gross Weight 65,680.00 lb
Tare Weight 25,360.00 lb
Net Weight 40,320.00 lb

CAN#TILX520194
BROOKHAVEN NATIONAL LABS

20.16	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

SIGNATURE Chris

REV 11/09

RS-F0

9140094

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422045	

WEIGHMASTER: AS00067 ALBERT S

DATE IN	TIME IN
8 March 2011	2:46 pm

DATE OUT	TIME OUT
8 March 2011	2:56 pm

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390018	Inbound -NY-SUFFOLK

01 Gross Weight 73,600.00 lb
Tare Weight 27,020.00 lb
Net Weight 46,580.00 lb

CAN#TILX520194
BROOKHAVEN NATIONAL LABS

23.29 TN
23.29	TN	SW-CONT SOIL
1.00	LD	ENVIRONMENTAL FEE
1.00	LD	FUEL RECOVERY FEE

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

SIGNATURE TOM

REV 11/09

RS-F04

9140095

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422046	

WEIGHTMASTER: AS00067 ALBERT S

DATE IN	TIME IN
8 March 2011	3:04 pm

DATE OUT	TIME OUT
8 March 2011	3:15 pm

VEHICLE	ROLL OFF
5553	

REFERENCE	ORIGIN
0390018	Inbound -NY-SUFFOLK

01 Gross Weight 40,800.00 lb
Tare Weight 25,400.00 lb
Net Weight 15,400.00 lb

CAN#TILX520194
BROOKHAVEN NATIONAL LABS

7.70	TN	SW-CONT SOIL
1.00	LD	ENVIRONMENTAL FEE
1.00	LD	FUEL RECOVERY FEE

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

SIGNATURE CH 15

REV 11/09

RS-F04

Iodice, Kathy

From: Hanson, David
Sent: Friday, March 04, 2011 11:13 AM
To: Iodice, Kathy
Subject: FW: Railcar shipment

We are good to go on these. Make sure we check each car for originals. They may be in an affixed enclosure like on a truck trailer. If not, then we use the copies you have.

From: Palumbo, Leo [mailto:lpalumbo@bnl.gov]
Sent: Friday, March 04, 2011 11:09 AM
To: Hanson, David
Subject: Re: Railcar shipment

If the originals aren't with the railcars, please use the copies that were e-mailed.

From: Hanson, David <DHanson@republicservices.com>
To: Palumbo, Leo
Cc: Iodice, Kathy <KIodice@republicservices.com>
Sent: Fri Mar 04 10:46:11 2011
Subject: RE: Railcar shipment

Leo, It is up to you to make sure we get the originals. I advise you to contact the rail road and make sure these originals get to us. However, if it is acceptable to you that we use copies, we can use what you sent us on e-mail. Please advise.

From: Palumbo, Leo [mailto:lpalumbo@bnl.gov]
Sent: Friday, March 04, 2011 10:27 AM
To: Hanson, David
Subject: RE: Railcar shipment

The train conductor was given the originals.

From: Hanson, David [mailto:DHanson@republicservices.com]
Sent: Friday, March 04, 2011 5:46 AM
To: Palumbo, Leo
Subject: RE: Railcar shipment

Not hear yet. We are still looking for the original manifests! Any word on that?

From: Palumbo, Leo [mailto:lpalumbo@bnl.gov]
Sent: Thursday, March 03, 2011 2:57 PM
To: Hanson, David
Subject: RE: Railcar shipment

Hey Dave,

Did our railcars get there yet?

From: Hanson, David [mailto:DHanson@republicservices.com]
Sent: Monday, February 28, 2011 1:31 PM
To: Palumbo, Leo
Cc: Iodice, Kathy
Subject: RE: Railcar shipment

Leo, This is good. We will be looking for the originals. Please make sure ERS gets them to us. Thanks.

From: Palumbo, Leo [mailto:lpalumbo@bnl.gov]
Sent: Monday, February 28, 2011 1:20 PM
To: Hanson, David
Subject: RE: Railcar shipment

Here are the manifests. I sent Environmental Rail Solutions signed copies and the conductor was given copies also

---

From: Hanson, David [mailto:DHanson@republicservices.com]
Sent: Monday, February 28, 2011 12:58 PM
To: Palumbo, Leo
Cc: Iodice, Kathy
Subject: RE: Railcar shipment

Leo, Are you sending manifests?

From: Palumbo, Leo [mailto:lpalumbo@bnl.gov]
Sent: Monday, February 28, 2011 11:10 AM
To: Hanson, David
Subject: Railcar shipment

Dave,

I'm not sure what notifications need to be made, so I just thought I'd let you know that the 11 railcars of Peconic River sediment left Brookhaven yesterday.

Léo Palumbo
Hazardous Waste Program Manager
Brookhaven National Laboratory
Building 860
(631)344-5724

Niagara Falls Landfill
56th Street and Niagara Falls Boulevard
Niagara Falls, New York 14303-0344
(716) 285-3345

Special Waste Test / Inspection Log - 2011

GENERATOR: BROOKHAVEN | **APPROVAL CODE:** 4215111242 | **VIA RAILROAD**

DESCRIPTION: RIVER DREDGE SEDIMENTS

DATE	MANIFEST	INSPECTION	AW TICKET NUMBER	STATUS CAN NUMBER	STATUS TONS
3/09	0390021	OK	422066 422067 422068 422069 422071	TILX520172	94.27
	0390020	OK	422073 422076 422078 422079 422081	TILX520214	98.46
	0390023	OK	422082 422086 422087 422092 422094 422097	TILX520208	122.58
	0390022	OK	422098 422099 422101 422100 422105 422106 422113	TILX520186	123.61
	0390024	OK	422119 422122 422125 422126 422130	TILX520184	99.2
	0390026	OK	422135 422137 422140 422143 422145	TILX520167	104.81
	0390027	OK	422146 422149 422151 422164	TILX520232	102.87
	0390028	OK	422179 422173 422168 422175 422170	TILX520171	106.93
↓	0390025	OK	422189 422188 422184 422180 422200	TILX520198	104.72
				Total:	957.45

Iodice, Kathy

From: Hanson, David
Sent: Friday, March 04, 2011 11:13 AM
To: Iodice, Kathy
Subject: FW: Railcar shipment

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Subject: Re: Railcar shipment

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Cc: Iodice, Kathy <KIodice@republicservices.com>
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To: Hanson, David
Subject: RE: Railcar shipment

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To: Hanson, David
Subject: Railcar shipment

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Leo Palumbo
Hazardous Waste Program Manager
Brookhaven National Laboratory
Building 860
(631)344-5724

9140249

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422200	

WEIGHTMASTER: AS00067 ALBERT S

DATE IN	TIME IN
9 March 2011	2:34 pm

DATE OUT	TIME OUT
9 March 2011	4:05 pm

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390025	Inbound -NY-SUFFOLK

01 Gross Weight 58,300.00 lb
Tare Weight 25,320.00 lb
Net Weight 32,980.00 lb

CAN#TILX520198
BROOKHAVEN NATIONAL LABS

16.49	TN	SW-CONT SOIL					
1.00	LD	ENVIRONMENTAL FEE					
1.00	LD	FUEL RECOVERY FEE					

HAVE A NICE DAY

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

REPUBLIC SERVICES

REV 11/09

SIGNATURE

RS-F04

9140238

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422189	

WEIGHMASTER: AS00067 ALBERT S

DATE IN	TIME IN
9 March 2011	1:59 pm

DATE OUT	TIME OUT
9 March 2011	2:37 pm

VEHICLE	ROLL OFF
5553	

REFERENCE	ORIGIN
0390025	Inbound -NY-SUFFOLK

01 Gross Weight 67,820.00 lb
Tare Weight 25,580.00 lb
Net Weight 42,240.00 lb

CAN#TILX520198
BROOKHAVEN NATIONAL LABS

21.12	TN	SW-CONT SOIL					
1.00	LD	ENVIRONMENTAL FEE					
1.00	LD	FUEL RECOVERY FEE					

HAVE A NICE DAY

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

REPUBLIC SERVICES

REV 11/09

SIGNATURE IVAN

RS-F04

9140237

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422188	

WEIGHTMASTER: AS00067 ALBERT S

DATE IN	TIME IN
9 March 2011	2:05 pm

DATE OUT	TIME OUT
9 March 2011	2:31 pm

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390025	Inbound -NY-SUFFOLK

01 Gross Weight 74,480.00 lb
Tare Weight 27,180.00 lb
Net Weight 47,300.00 lb

CAN#TILX520198
BROOKHAVEN NATIONAL LABS

23.65	TN	SW-CONT SOIL					
1.00	LD	ENVIRONMENTAL FEE					
1.00	LD	FUEL RECOVERY FEE					

HAVE A NICE DAY

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

REPUBLIC SERVICES

REV 11/09

SIGNATURE TOM

RS-F04

9140233

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422184	

WEIGHMASTER: AS00067 ALBERT S

DATE IN	TIME IN
9 March 2011	1:45 pm

DATE OUT	TIME OUT
9 March 2011	2:02 pm

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390025	Inbound -NY-SUFFOLK

01 Gross Weight 65,480.00 lb
Tare Weight 25,280.00 lb
Net Weight 40,200.00 lb

CAN# TILX520198
BROOKHAVEN NATIONAL LABS

20.10 TN

20.10	TN	SW-CONT SOIL
1.00	LD	ENVIRONMENTAL FEE
1.00	LD	FUEL RECOVERY FEE

HAVE A NICE DAY

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

REPUBLIC SERVICES

REV 11/09

SIGNATURE Jeff

RS-F04

9140229

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422180	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	1:40 pm

DATE OUT	TIME OUT
9 March 2011	1:51 pm

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390025	Inbound -NY-SUFFOLK

01 Gross Weight 73,640.00 lb
Tare Weight 26,920.00 lb
Net Weight 46,720.00 lb

CAN# TILX520198
BROOKHAVEN NATIONAL LABS

23.36	TN	SW-CONT SOIL					
1.00	LD	ENVIRONMENTAL FEE					
1.00	LD	FUEL RECOVERY FEE					

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Tom

RS-F04

9140217

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5767 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
58	422168	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	12:55 pm

DATE OUT	TIME OUT
9 March 2011	1:06 pm

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390028	Inbound -NY-SUFFOLK

01 Gross Weight 66,800.00 lb
Tare Weight 24,880.00 lb
Net Weight 41,920.00 lb

CAN# TILX520171
BROOKHAVEN NATIONAL LABS

20.96	TN	SW-CONT SOIL					
1.00	LD	ENVIRONMENTAL FEE					
1.00	LD	FUEL RECOVERY FEE					

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Jeff

RS-F04

9140219

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422170	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	1:02 pm

DATE OUT	TIME OUT
9 March 2011	1:13 pm

VEHICLE	ROLL OFF
5553	

REFERENCE	ORIGIN
0390028	Inbound -NY-SUFFOLK

01 Gross Weight 67,760.00 lb
Tare Weight 25,560.00 lb
Net Weight 42,200.00 lb

21.10 TN

CAN# TILX520171
BROOKHAVEN NATIONAL LABS

21.10	TN	SW-CONT SOIL
1.00	LD	ENVIRONMENTAL FEE
1.00	LD	FUEL RECOVERY FEE

HAVE A NICE DAY

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

REPUBLIC SERVICES

REV 11/09

SIGNATURE Ivan

RS-F04

9140222

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422173	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	1:07 pm

DATE OUT	TIME OUT
9 March 2011	1:18 pm

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390028	Inbound -NY-SUFFOLK

01 Gross Weight 71,260.00 lb
Tare Weight 26,980.00 lb
Net Weight 44,280.00 lb

22.14 TN

CAN# TILX520171
BROOKHAVEN NATIONAL LABS

22.14	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE TDM

RS-F04

9140224

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
SB	422175	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	1:14 pm

DATE OUT	TIME OUT
9 March 2011	1:24 pm

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390028	Inbound -NY-SUFFOLK

01 Gross Weight 66,020.00 lb
Tare Weight 24,900.00 lb
Net Weight 41,120.00 lb

CAN# TILX520171
BROOKHAVEN NATIONAL LABS

20.56	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

HAVE A NICE DAY

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

REPUBLIC SERVICES

REV 11/09

SIGNATURE Jeff

RS-F04

9140228

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422179	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	1:36 pm

DATE OUT	TIME OUT
9 March 2011	1:50 pm

VEHICLE	ROLL OFF
5553	

REFERENCE	ORIGIN
0390028	Inbound -NY-SUFFOLK

01 Gross Weight 70,020.00 lb
Tare Weight 25,680.00 lb
Net Weight 44,340.00 lb

CAN# TILX520171
BROOKHAVEN NATIONAL LABS

22.17	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Ivan

RS-F04

9140213

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203688
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422164	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	12:43 pm

DATE OUT	TIME OUT
9 March 2011	12:56 pm

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390027	Inbound -NY-SUFFOLK

01 Gross Weight 88,500.00 lb
Tare Weight 26,980.00 lb
Net Weight 61,520.00 lb

CAN# TILX520232
BROOKHAVEN NATIONAL LABS

30.76	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE TOM

RS-F04

9140200

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422151	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	11:53 am

DATE OUT	TIME OUT
9 March 2011	12:04 pm

VEHICLE	ROLL OFF
5553	

REFERENCE	ORIGIN
0390027	Inbound -NY-SUFFOLK

01 Gross Weight 66,520.00 lb
Tare Weight 25,520.00 lb
Net Weight 41,000.00 lb

20.50 TN

CAN# TILX520232
BROOKHAVEN NATIONAL LABS

20.50	TN	SW-CONT SOIL					
1.00	LD	ENVIRONMENTAL FEE					
1.00	LD	FUEL RECOVERY FEE					

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Ivan

RB-F04

9140198

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422149	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	11:45 am

DATE OUT	TIME OUT
9 March 2011	1:59 am

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390027	Inbound -NY-SUFFOLK

01 Gross Weight 74,860.00 lb
Tare Weight 24,820.00 lb
Net Weight 50,040.00 lb

CAN# TILX520232
BROOKHAVEN NATIONAL LABS

25.02 TN

25.02	TN	SW-CONT SOIL
1.00	LD	ENVIRONMENTAL FEE
1.00	LD	FUEL RECOVERY FEE

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Jeff

RS-F04

9140195

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422146	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	11:39 am

DATE OUT	TIME OUT
9 March 2011	11:51 am

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390027	Inbound -NY-SUFFOLK

01 Gross Weight 80,160.00 lb
Tare Weight 26,980.00 lb
Net Weight 53,180.00 lb

CAN#TILX520232
BROOKHAVEN NATIONAL LABS

26.59	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE BM

RS-F04

9140141

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422092	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	8:13 am

DATE OUT	TIME OUT
9 March 2011	8:55 am

VEHICLE	ROLL OFF
4713	

REFERENCE	ORIGIN
0390023	Inbound -NY-SUFFOLK

01 Gross Weight 69,760.00 lb
Tare Weight 26,860.00 lb
Net Weight 42,900.00 lb

CAN# TILX520208
BROOKHAVEN NATIONAL LABS

21.45	TN	SW-CONT SOIL					
1.00	LD	ENVIRONMENTAL FEE					
1.00	LD	FUEL RECOVERY FEE					

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Wally

RS-F04

9140131

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422082	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	8:17 am

DATE OUT	TIME OUT
9 March 2011	8:27 am

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390023	Inbound -NY-SUFFOLK

01 Gross Weight 70,260.00 lb
Tare Weight 24,840.00 lb
Net Weight 45,420.00 lb

CAN# TILX520208
BROOKHAVEN NATIONAL LABS

22.71	TN	SW-CONT SOIL					
1.00	LD	ENVIRONMENTAL FEE					
1.00	LD	FUEL RECOVERY FEE					

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Jeff

RS-F04

9140135

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
58	422086	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	8:26 am

DATE OUT	TIME OUT
9 March 2011	8:38 am

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390023	Inbound -NY-SUFFOLK

01 Gross Weight 80,520.00 lb
Tare Weight 26,760.00 lb
Net Weight 53,760.00 lb

CAN# TILX520208
BROOKHAVEN NATIONAL LABS

26.88	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

HAVE A NICE DAY

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

REPUBLIC SERVICES

REV 11/09

SIGNATURE TDM

RS-F04

9140136

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
SB	422087	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	8:34 am

DATE OUT	TIME OUT
9 March 2011	8:45 am

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390023	Inbound -NY-SUFFOLK

01 Gross Weight 63,420.00 lb
Tare Weight 24,820.00 lb
Net Weight 38,600.00 lb

CAN# TILX520208
BROOKHAVEN NATIONAL LABS

19.30	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Jeff

RS-F04

9140143

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422094	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	8:44 am

DATE OUT	TIME OUT
9 March 2011	9:00 am

VEHICLE	ROLL OFF
5553	

REFERENCE	ORIGIN
0390023	Inbound -NY-SUFFOLK

01 Gross Weight 59,280.00 lb
Tare Weight 25,380.00 lb
Net Weight 33,900.00 lb

CAN# TILX520208
BROOKHAVEN NATIONAL LABS

16.95 TN

16.95	TN	SW-CONT SOIL
1.00	LD	ENVIRONMENTAL FEE
1.00	LD	FUEL RECOVERY FEE

HAVE A NICE DAY

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

REPUBLIC SERVICES

REV 11/09

SIGNATURE Ivan

RS-F04

9140146

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422097	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	8:54 am

DATE OUT	TIME OUT
9 March 2011	9:07 am

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390023	Inbound -NY-SUFFOLK

01 Gross Weight 57,440.00 lb
Tare Weight 26,860.00 lb
Net Weight 30,580.00 lb

CAN# TILX520208
BROOKHAVEN NATIONAL LABS

15.29	TN	SW-CONT SOIL					
1.00	LD	ENVIRONMENTAL FEE					
1.00	LD	FUEL RECOVERY FEE					

HAVE A NICE DAY

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

REPUBLIC SERVICES

REV 11/09

SIGNATURE DM

RS-F04

9140147

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422098	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	8:59 am

DATE OUT	TIME OUT
9 March 2011	9:13 am

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390022	Inbound -NY-SUFFOLK

01 Gross Weight 58,040.00 lb
Tare Weight 24,740.00 lb
Net Weight 33,300.00 lb

CAN# TILX520186
BROOKHAVEN NATIONAL LABS

16.65 TN

16.65	TN	SW-CONT SOIL					
1.00	LD	ENVIRONMENTAL FEE					
1.00	LD	FUEL RECOVERY FEE					

HAVE A NICE DAY

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

REPUBLIC SERVICES

REV 11/09

SIGNATURE Jeff

RS-F04

9140148

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422099	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	9:03 am

DATE OUT	TIME OUT
9 March 2011	9:20 am

VEHICLE	ROLL OFF
4713	

REFERENCE	ORIGIN
0390022	Inbound -NY-SUFFOLK

01 Gross Weight 67,100.00 lb
Tare Weight 26,920.00 lb
Net Weight 40,180.00 lb

20.09 TN

CAN# TILX520186
BROOKHAVEN NATIONAL LABS

20.09	TN	SW-CONT SOIL					
1.00	LD	ENVIRONMENTAL FEE					
1.00	LD	FUEL RECOVERY FEE					

HAVE A NICE DAY

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

REPUBLIC SERVICES

REV. 11/09

SIGNATURE Wally

RS-F04

9140149

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422100	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	9:08 am

DATE OUT	TIME OUT
9 March 2011	9:27 am

VEHICLE	ROLL OFF
5553	

REFERENCE	ORIGIN
0390022	Inbound -NY-SUFFOLK

01 Gross Weight 66,740.00 lb
Tare Weight 25,400.00 lb
Net Weight 41,340.00 lb

CAN# TILX520186
BROOKHAVEN NATIONAL LABS

20.67 TN

20.67	TN	SW-CONT SOIL					
1.00	LD	ENVIRONMENTAL FEE					
1.00	LD	FUEL RECOVERY FEE					

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Ivan

RS-FD4

9140150

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422101	

WEIGHTMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	9:14 am

DATE OUT	TIME OUT
9 March 2011	9:28 am

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390022	Inbound -NY-SUFFOLK

01 Gross Weight 67,160.00 lb
Tare Weight 26,760.00 lb
Net Weight 40,400.00 lb

CAN# TILX520196
BROOKHAVEN NATIONAL LABS

20.20 TN

20.20	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

HAVE A NICE DAY

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

REPUBLIC SERVICES

REV 11/09

SIGNATURE TDM

RS-F04

9140154

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422105	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	9:20 am

DATE OUT	TIME OUT
9 March 2011	9:36 am

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390022	Inbound -NY-SUFFOLK

01 Gross Weight 59,080.00 lb
Tare Weight 24,980.00 lb
Net Weight 34,100.00 lb

CAN# TILX520186
BROOKHAVEN NATIONAL LABS

17.05 TN

17.05	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Jeff

RS-F04

9140155

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203889
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
58	422106	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	9:29 am

DATE OUT	TIME OUT
9 March 2011	9:43 am

VEHICLE	ROLL OFF
4713	

REFERENCE	ORIGIN
0390022	Inbound -NY-SUFFOLK

01 Gross Weight 61,840.00 lb
Tare Weight 27,300.00 lb
Net Weight 34,540.00 lb

CAN# TILX520186
BROOKHAVEN NATIONAL LABS

12.27 TN

17.27	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Wally

RS-F04

9140162

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
58	422113	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	9:40 am

DATE OUT	TIME OUT
9 March 2011	10:18 am

VEHICLE	ROLL OFF
5553	

REFERENCE	ORIGIN
0390022	Inbound -NY-SUFFOLK

01 Gross Weight 48,800.00 lb
Tare Weight 25,440.00 lb
Net Weight 23,360.00 lb

CAN# TILX520186
BROOKHAVEN NATIONAL LABS

11.68 TN

11.68	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Ivan

RS-F04

9140179

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203886
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422130	

WEIGHMASTER: PJ80000 PAM S

DATE IN	TIME IN
9 March 2011	10:42 am

DATE OUT	TIME OUT
9 March 2011	10:52 am

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390024	Inbound -NY-SUFFOLK

01 Gross Weight 62,060.00 lb
Tare Weight 26,920.00 lb
Net Weight 35,140.00 lb

CAN# TILX520184
BROOKHAVEN NATIONAL LABS

17.57 TN

17.57	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE PAM

RS-F04

9140175

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203868
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422126	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	10:27 am

DATE OUT	TIME OUT
9 March 2011	10:39 am

VEHICLE	ROLL OFF
5553	

REFERENCE	ORIGIN
0390024	Inbound ~NY~SUFFOLK

01 Gross Weight 64,520.00 lb
Tare Weight 25,460.00 lb
Net Weight 39,060.00 lb

CAN# TILX520184
BROOKHAVEN NATIONAL LABS

19.53	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Ivan

RS-F04

9140174

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
58	422125	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	10:22 am

DATE OUT	TIME OUT
9 March 2011	10:35 am

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390024	Inbound -NY-SUFFOLK

01 Gross Weight 67,660.00 lb
Tare Weight 24,960.00 lb
Net Weight 42,700.00 lb

CAN# TILXS20184
BROOKHAVEN NATIONAL LABS

21.35 TN

21.35	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Jeff

R6-F04

9140171

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6361

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
58	422122	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	10:17 am

DATE OUT	TIME OUT
9 March 2011	10:30 am

VEHICLE	ROLL OFF
4713	

REFERENCE	ORIGIN
0390024	Inbound -NY-SUFFOLK

01 Gross Weight 64,380.00 lb
Tare Weight 27,300.00 lb
Net Weight 37,080.00 lb

CAN# TILX520184
BROOKHAVEN NATIONAL LABS

18.50 TN

18.54	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Wally

RS-F04

9140168

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422119	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	10:13 am

DATE OUT	TIME OUT
9 March 2011	10:26 am

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390024	Inbound --NY-SUFFOLK

01 Gross Weight 71,240.00 lb
Tare Weight 26,820.00 lb
Net Weight 44,420.00 lb

22.21 TN

CAN# TILX520184
BROOKHAVEN NATIONAL LABS

22.21	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE TDM

RS-F04

9140184

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203688
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422135	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	10:55 am

DATE OUT	TIME OUT
9 March 2011	11:09 am

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390026	Inbound -NY-SUFFOLK

01 Gross Weight 75,220.00 lb
Tare Weight 24,880.00 lb
Net Weight 50,340.00 lb

CAN# TILX520167
BROOKHAVEN NATIONAL LABS

25.17 TN

		Description				
25.17	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Jeff

RS-F04

9140186

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6391

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422137	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	11:01 am

DATE OUT	TIME OUT
9 March 2011	11:15 am

VEHICLE	ROLL OFF
5553	

REFERENCE	ORIGIN
0390026	Inbound -NY-SUFFOLK

01 Gross Weight 68,960.00 lb
Tare Weight 25,480.00 lb
Net Weight 43,480.00 lb

21.74 TN

CAN#TILX520167
BROOKHAVEN NATIONAL LABS

21.74	TN	SW-CONT SOIL
1.00	LD	ENVIRONMENTAL FEE
1.00	LD	FUEL RECOVERY FEE

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

SIGNATURE Ivan

REV 11/09

RS-F04

S140189

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
56	422140	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	11:11 am

DATE OUT	TIME OUT
9 March 2011	11:22 am

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390026	Inbound -NY-SUFFOLK

01 Gross Weight 78,440.00 lb
Tare Weight 26,900.00 lb
Net Weight 51,540.00 lb

CAN#TILX520167
BROOKHAVEN NATIONAL LABS

25.77	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Tom

RS-F04

9140192

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422143	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	11:19 am

DATE OUT	TIME OUT
9 March 2011	11:31 am

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390026	Inbound -NY-SUFFOLK

01 Gross Weight 66,240.00 lb
Tare Weight 24,820.00 lb
Net Weight 41,420.00 lb

CAN#TILX520167
BROOKHAVEN NATIONAL LABS

20.71 TN

20.71	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Jeff

RS-F04

9140194

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
58	422145	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	11:34 am

DATE OUT	TIME OUT
9 March 2011	11:44 am

VEHICLE	ROLL OFF
5559	

REFERENCE	ORIGIN
0390026	Inbound -NY-SUFFOLK

01 Gross Weight 48,340.00 lb
Tare Weight 25,500.00 lb
Net Weight 22,840.00 lb

CAN#TILX520167
BROOKHAVEN NATIONAL LABS

11.42	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

SIGNATURE Ivan

REV 11/09

RS-F0

S140117

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
58	422068	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	7:13 am

DATE OUT	TIME OUT
9 March 2011	7:25 am

VEHICLE	ROLL OFF
4713	

REFERENCE	ORIGIN
0390021	Inbound --NY-SUFFOLK

01 Gross Weight 65,140.00 lb
Tare Weight 26,900.00 lb
Net Weight 38,240.00 lb

CAN# TILX520172
BROOKHAVEN NATIONAL LABS

19.12 TN

19.12	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Wally

RS-F0

9140118

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422069	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	7:20 am

DATE OUT	TIME OUT
9 March 2011	7:32 am

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390021	Inbound -NY-SUFFOLK

01 Gross Weight 67,720.00 lb
Tare Weight 25,000.00 lb
Net Weight 42,720.00 lb

CAN# TILX520172
BROOKHAVEN NATIONAL LABS

21.36 TN

21.36	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

SIGNATURE Jeff

REV 11/09

RS-F04

9140120

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422071	

WEIGHMASTER: PJ90000 PAM S

DATE IN	TIME IN
9 March 2011	7:35 am

DATE OUT	TIME OUT
9 March 2011	7:47 am

VEHICLE	ROLL OFF
5553	

REFERENCE	ORIGIN
0390021	Inbound -NY-SUFFOLK

01 Gross Weight 44,640.00 lb
Tare Weight 25,340.00 lb
Net Weight 19,300.00 lb

CAN# TILX520172
BROOKHAVEN NATIONAL LABS

9.65 TN

9.65	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Ivan

RS-F04

9140115

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
58	422066	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	7:04 am

DATE OUT	TIME OUT
9 March 2011	7:18 am

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390021	Inbound -NY-SUFFOLK

00 Gross Weight 77,300.00 lb
Tare Weight 26,900.00 lb
Net Weight 50,400.00 lb

CAN# TILX520172
BROOKHAVEN NATIONAL LABS

25.20	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Tom

RS-Fo

9140116

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422067	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	7:07 am

DATE OUT	TIME OUT
9 March 2011	7:20 am

VEHICLE	ROLL OFF
5553	

REFERENCE	ORIGIN
0390021	Inbound -NY-SUFFOLK

01 Gross Weight 63,280.00 lb
Tare Weight 25,400.00 lb
Net Weight 37,880.00 lb

CAN# TILX520172
BROOKHAVEN NATIONAL LABS

18.94	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Ivan

RS-F0

9140122

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422073	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	7:40 am

DATE OUT	TIME OUT
9 March 2011	7:51 am

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390020	Inbound -NY-SUFFOLK

01 Gross Weight 73,760.00 lb
Tare Weight 26,900.00 lb
Net Weight 46,860.00 lb

CAN# TILX520214
BROOKHAVEN NATIONAL LABS

23.43	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

SIGNATURE Tom

REV 11/09

RS-F04

9140125

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
58	422076	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	7:46 am

DATE OUT	TIME OUT
9 March 2011	7:58 am

VEHICLE	ROLL OFF
4713	

REFERENCE	ORIGIN
0390020	Inbound -NY-SUFFOLK

01 Gross Weight 62,860.00 lb
Tare Weight 26,920.00 lb
Net Weight 35,940.00 lb
17.97 TN

CAN# TILX520214
BROOKHAVEN NATIONAL LABS

17.97	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Wally

RS-F04

9140127

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422078	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	7:52 am

DATE OUT	TIME OUT
9 March 2011	8:02 am

VEHICLE	ROLL OFF
1376	

REFERENCE	ORIGIN
0390020	Inbound -NY-SUFFOLK

01 Gross Weight 67,700.00 lb
Tare Weight 24,940.00 lb
Net Weight 42,760.00 lb

CAN# TILX520214
BROOKHAVEN NATIONAL LABS

21.38	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Jeff

RS-F04

9140128

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
5B	422079	

WEIGHMASTER: PJS0000 PAM S

DATE IN	TIME IN
9 March 2011	7:57 am

DATE OUT	TIME OUT
9 March 2011	8:06 am

VEHICLE	ROLL OFF
5553	

REFERENCE	ORIGIN
0390020	Inbound -NY-SUFFOLK

01 Gross Weight 61,880.00 lb
Tare Weight 25,400.00 lb
Net Weight 36,480.00 lb

CAN# TILX520214
BROOKHAVEN NATIONAL LABS

18.24	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE Ivan

RS-F04

9140130

NIAGARA FALLS LANDFILL
56th Street & Niagara Falls Blvd
Niagara Falls, NY 14304 (716)282-6381

203888
TERRA CONTRACTING LLC
5787 STADIUM DRIVE
KALAMAZOO, MI 49009
Contract: 4215111242

SITE	TICKET	GRID
58	422081	

WEIGHMASTER: PJS0000 RAM 5

DATE IN	TIME IN
9 March 2011	8:09 am

DATE OUT	TIME OUT
9 March 2011	8:17 am

VEHICLE	ROLL OFF
5945	

REFERENCE	ORIGIN
0390020	Inbound -NY-SUFFOLK

01 Gross Weight 61,660.00 lb
Tare Weight 26,780.00 lb
Net Weight 34,880.00 lb

CAN# TILX520214
BROOKHAVEN NATIONAL LABS

17.44 TN

17.44	TN	SW-CONT SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

HAVE A NICE DAY

REPUBLIC SERVICES

REV 11/09

SIGNATURE TDM

RS-F04

Appendix E

Liquid Effluent Evaluation Form

Liquid Effluent Evaluation Form

This form is designed to serve as guide for evaluating the acceptability of wastewater discharges to the BNL Sanitary Sewage Treatment Plant or other permitted point source discharge. Without the explicit approval of the New York State Department of Environmental Conservation, discharges to a non-permitted point source or direct discharge of waste to the ground is strictly prohibited. Your Environmental Compliance Representative (ECR) can assist in the completion of this form, after which, it may be submitted to the Environmental Subject Matter Expert for review.

1. Describe the wastewater and the process generating this wastewater. Include any chemical additive.

The wastewater was generated as part of the Peconic River remediation project. It was identified as a waste stream in the Peconic Work Plan with the STP as a potential disposal pathway. The excavated river sediment was transported to the sediment drying pads located at the corner of E. Princeton Ave. and the rail spur. The impermeable pads collected any water generated from the sediment while it was drying. The water is periodically pumped from a sump through a bag filter and then to the adjacent double walled 18,000 gal. Frac Tank. The Peconic contractor, Terra Contracting, LLC will dispose of the wastewater at the STP, if approved by the BSA Environmental Compliance Group.

Building: **Peconic River** Room: **NA**

Dept. Code: **ES** ECR's Name: **Kathy Schwager**

2. Indicate total volume of liquid or flow rate: **~ 10K -11K** gallon(s) or _____ gallon/day

3. Have radiological and chemical analyses been performed? If yes, indicate COC#	**Yes**	**No**
31248 (see attached data package)	**X**	

4. If not, are historical analyses available for this waste stream?	**Yes**	**No**
If chemical analyses or radiological analyses are not available, wastewater may not be discharged until such analyses are performed.		

5. Indicate pH: **6.8**

Note: Must be between 6.0 and 9.0 SU for discharge to the BNL Sewage Treatment Plant (STP).

6. Discharge is: _____ **Continuous** _____ **Intermittent or** **X** **One time release**

For continuous or intermittent releases: If compounds are identified that are not already included in the BNL STP SPDES permit monitoring requirements, a SPDES permit modification may be required.

The wastewater stream identified above has been reviewed for compliance with the Laboratory SPDES permit and administrative requirements and has been:	_____ Approved (Unconditionally) __X__ Approved (Conditionally) _____ Disapproved

Conditional Discharge Requirements: Please make arrangements with STP Operators to discharge wastewater to one of the temporary holdup ponds.

Discharger certifies conditions have been met:

Signature _____ Date: _____

Note: Please send signed form back to reviewer once conditions have been met

Reason: Although the total iron results from this waste stream are not that high, we have been having issues with higher than normal effluent iron concentrations at the STP. To avoid any further disruptions to the plant and potential SPDES permit violations, we are requesting that the wastewater be temporarily pumped to one of the holdup ponds. This will allow time for us to get a better handle on the iron issues at the STP.

The following monitoring requirements are applicable to this waste stream:

Analytical Parameters:

Monitoring Frequency: _____ Per _____

Outfall Designation: _____

Person Reviewing Discharge: Jason D. Remien

Date: 2/24/11

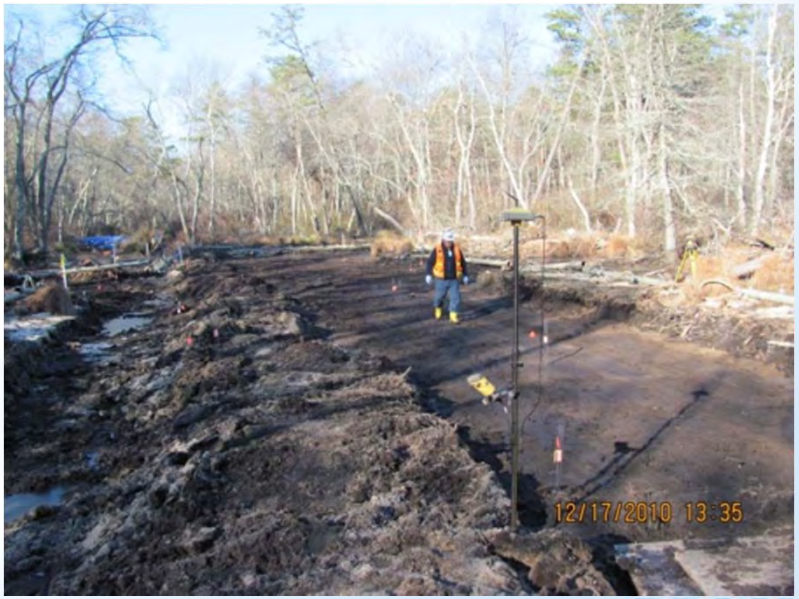
Distribution:
B. Lee
W. Chaloupka
R. Izzo
K. Schwager
B. Howe
J. Remien

Appendix F

Project Photos

Positioning Mats and Aqua-Dam

Area WC-06 - Sediment Removal, Drying and Sampling



Area SS-15 - Sediment Removal

Sediment Trap Removal

Waste Loading/Disposal

Appendix G

Wetland Restoration Summary

Wetland Restoration Summary

Brookhaven National Laboratory – Contract 169473
Peconic River Supplemental Sediment Removal
Suffolk County, New York

December 9, 2011

Prepared for:

Brookhaven Science Associates, LLC
Building 462
Upton, NY 11973-5000

Prepared by:

Cardno JFNew

3901 Industrial Boulevard
Indianapolis, Indiana 46254
317-388-1982

Wetland Restoration Summary
Brookhaven National Laboratory – Contract 169473
Peconic River Supplemental Sediment Removal
Suffolk County, New York

TABLE OF CONTENTS

Wetland Restoration Summary
Brookhaven National Laboratory – Contract 169473
Peconic River Supplemental Sediment Removal
Suffolk County, New York

1.0 INTRODUCTION

1.1 Cardno JFNew was contracted to implement portions of section 02900 of the Peconic River Supplemental Sediment Removal Statement of Work, the Re-Vegetation Plan, and the NYSDEC Equivalency Permit. The activities Cardno JFNew was responsible for within the context of section 02900 were; the procurement and installation of a temporary seed mix, approved by Brookhaven National Laboratory (BNL), to help curtail competition from invasive species; the procurement and installation of 100% biodegradable erosion control fabric; the transplanting of native herbaceous wetland vegetation; and the transplanting of six trees and shrubs to replace trees lost during the sediment removal phase of the project. Four areas **(Table 1) (Figure 1)**, totaling 16,775 square feet (sf), were included in the restoration activities. These areas are detailed separately in successive pages.

Table 1: Restoration Areas

Name	Square Feet
PR-WC-06 1 **(6-1)**	6,310
PR-WC-06 2 **(6-2)**	3,160
PR-SS-15 **(15)**	5,280
Sediment Trap **(ST)**	2,025

1.2 Cardno JFNew first visited the site on January 19th, 2011, during sediment removal. While Cardno JFNew was on site, the sediment removal was suspended because of recent heavy snowfall. Much of sites PR-WC-06 1 (6-1) **(Photo 1)**, PR-WC-06 2 (6-2) **(Photo 2)**, and PR-SS-15 (15) **(Photo 3)** were covered in heavy snow and ice pack. The Sediment Trap Area (ST) was being actively dewatered **(Photo 4)**. After assessing the site conditions, Cardno JFNew worked with BNL to amend the temporary seed mix to be used in the restoration activities. The Equivalency Permit was subsequently modified in July 2011 to include the new seed mix. On July 18th, 2011, the restoration activities commenced in Area 6-2 and on July 21st, 2011, the restoration activities concluded with Area ST.

1.3 On September 23rd, 2011 Cardno JFNew returned to the site and monitored the success of the restoration activities to determine whether supplemental planting of the four areas was necessary based upon an Equivalency Permit specified minimum percent cover of 65% for low marsh sections of the wetland restoration area. The high marsh sections of the river were not impacted. A total of nine sampling plots were established across all four sediment removal areas. Discussions of the results from each of the four sediment removal areas are detailed in successive pages of this report. **Tables 10 thru 22** depict species and quantities observed, as well as percent survival and percent cover, within each sampling plot.

1.4 The purpose of the project was to remediate for the contamination of portions of the Peconic River, as a result of the discharge of wastewater containing chemical and radiological contaminants by the Brookhaven National Laboratory into the local Sewage Treatment Plant. The goals of the project were as follows:

- Reduce site-related contaminants (e.g. mercury) in sediment to levels protective of human health.
- Reduce or mitigate, to the extent practicable, existing and potential adverse ecological effects of the contaminants in the Peconic River.
- Prevent, or reduce to the extent practicable, the migration of contaminants off the BNL facility to areas where the risk may be unacceptable.

Remediation consisted of removing contaminated sediments from the river channel and adjacent marshes, then re-grading to the contour grades required as part of the marsh excavation. Finally the remediated areas were re-vegetated by re-seeding with a mixture of annual and perennial grass species, and transplanting of native wetland species from areas immediately adjacent to the remediation sites.

A combination of annual and perennial wetland vegetation native to Suffolk County, in addition to fast growing but temporary non-native species, was specified in the NYSDEC Equivalency Permit and the Re-Vegetation Plan and utilized in the restoration activities. By using a variety of species either present in previous years monitoring assessments or proven in similar restoration activities, the sediment removal areas should meet and exceed the criteria set forth in the NYSDEC Equivalency Permit.

The monitoring and maintenance period for assessing the establishment began in April 2011 and will extend through September 2012. Cardno JFNew performed the assessment of the first growing season during the September 2011 visit. It should be noted that only the low marsh and channel sections of the wetlands were impacted by remediation activities. The criteria set forth for the monitoring and the maintenance of the low marsh areas, and assessed by Cardno JFNew are as follows:

- 85 percent survival of the target density of installed plant material by the end of the second growing season (September 2012).

- Predominance of native vegetation within restored marsh areas.

- 65 percent cover provided by vegetation within the restored low marsh areas.

- Less than 10 percent cover in any one restoration area by invasive species such as *Phragmites* australis (Common Reed) and *Lythrum salicaria* (Purple Loosestrife.) *Phalaris arundinacea* (Reed-canary Grass) is not included and has been exempted from previous NYSDEC invasive species control requirements.

2.0 MATERIALS AND GENERAL METHODOLOGY

2.1 *Erosion Control*

One "bundle" of 25 erosion control blankets was delivered to BNL on July 15th, 2011. The erosion control blankets were North American Green SC-150BN **(Photo 5)**. Each roll was 80 square yards and consisted of 100% biodegradable netting on both sides of a medium-weight straw and coconut fiber blend. To secure the blanket in place, six inch, eleven gauge, steel staples were used at a spacing of six to eighteen inches on center based upon the stresses expected upon the blanketing material in that particular area. Blankets were installed starting with the channelized areas first, where applicable, and overlapped by a minimum of six inches in a successive pattern moving from the central blanket outwards and up the slope of the bank **(Photo 6)**. This shingling pattern of blankets allows surface water to flow over the installed blanket without having an avenue to flow under the blanket and undercut the sediment.

2.2 *Seed*

Between the preliminary site visit in January 2011 and the final acceptance of an amended wetland seed mix in July 2011, Cardno JFNew worked with BNL, local and state officials, and specialists at the Cardno JFNew Native Plant Nursery to amend the original specified wetland seed mix. The original seed mix **(Table 2)** included species that have been known to be aggressive when introduced to disturbed areas. Throughout the process it was desired by BNL to obtain a final seed mix whose species were native, wetland obligate, and all grass-like.

Table 2: Original Seed Mix

Scientific Name	Common Name	Quantity (OZ)
Agrostis alba	Redtop	168
Echinochloa crusgalli	Barnyard Grass	168
Lolium multiflorum	Annual Rye Grass	168

The final seed mix **(Table 3)** was accepted by Terra and BNL in July, 2011. This final seed mix contains both annual and perennial species, both native and introduced species, and both obligate and facultative species. Cardno JFNew believes that by including native perennial species that are present in other reaches of the Peconic River *(as noted in the 2006 Wetland Monitoring Report supplied to Cardno JFNew by BNL)* that the chances of a successful exclusionary nurse crop are higher than with a seed mix consisting of short lived annual species only. Over time the species included in the wetland seed mix should diminish in quantity due to changing moisture regimes, proliferation of transplanted species, and the inability of the annual species to effectively set seed.

Table 3: Final Seed Mix

Scientific Name	Common Name	Quantity(OZ)
Agrostis gigantea	Redtop	4.92
Elymus riparius	Riverbank Wild Rye	83.92
Elymus virginicus	Virginia Wild Rye	107.86
Leersia oryzoides	Rice Cut Grass	5.44
Panicum virgatum	Switch Grass	17.36

50% of the final seed mix was blended, and shipped in a sealed bag from the Cardno JFNew Native Plant Nursery **(Photo 7)**. The remaining seed was packaged separately, by species, in order to facilitate the encapsulation process described herein. Because of the need to broadcast the wetland seed in areas of standing water, Cardno JFNew utilized a product called SubmerSeed **(Photo 9)**. This product uses bentonite clay pellets, mixed with dry seed in a large tumbler, to adhere the seed to the clay. Embedded in the center of these pellets are small pieces of limestone. When broadcast over open water the seed embedded pellets sink to the substrate and then are held in place by the expanding clay and limestone while allowing time for the seed to germinate.

Prior to the installation of any blanket materials, seed was broadcast by hand on all disturbed soil in the sediment removal areas. In areas where any surface water was present, the pelletized SubmerSeed was utilized **(Photo 10)**. In areas where no surface water was present, the blended dry seed was used **(Photo 8)**.

2.3 *Transplants*

The original list of specified species for transplants **(Table 4)** was adhered to with the addition and subtraction of species based upon availability of transplant stock. Final tables of species transplanted are outlined for each section in successive portions of this report. Any amendments to the species being transplanted were made with BNL on site approval and made with survival of the transplants and successful re-vegetation of the sediment removal areas as the most important factors.

Table 4: Original Transplants

Scientific Name	Common Name
Carex cristatella	Crested Oval Sedge
Carex lurida	Bottlebrush Sedge
Carex stricta	Common Tussock Sedge
Eleocharis acicularis	Needle Spike Rush
Juncus effusus	Common Rush
Polygonum hydropiperoides	Swamp Smartweed
Potamogeton nodosus	Long-Leaved Pondweed
Sparganium americanum	American Bur Reed
Vallisneria americana	American Eelgrass

Because of the water depths experienced at all four sites, combined with the availability or non-availability of species, Cardno JFNew was limited to transplanting areas on the banks of the river fifteen feet outside the excavation limits where applicable and into any standing water areas to a depth of six to eight inches. None of the specified deep emergent species were present in any significant number at or adjacent to any restoration area to allow Cardno JFNew to re-vegetate any open water areas past a depth of six inches.

It should be noted that *Ceratophyllum demersum* (Coon's Tail), a Suffolk County native submersed aquatic plant, was present at all four sites, both inside and outside the sediment removal areas. This species is readily propagated by both seed and sprigs broken off by natural processes and has a very rapid spread rate. Because of these factors it was not actively transplanted as it had already established populations between the completion of the sediment removal process and the commencement of restoration activities.

It should also be noted that a *Polygonum* species was present in all 4 sites. This species was not actively transplanted as it was identified by a Cardno JFNew Botanist to be an annual species. The recommendation was made to BNL to leave these plants in place and allow them to set seed in the late summer.

All transplants that were used in the remediation were located in adjacent stretches of the Peconic River from the sediment removal areas and in areas with little to no pressure from known invasive species such as common reed and reed-canary grass **(Photo 11)**. In areas where any pressure from invasive species was observed adjacent to the transplant stock, all soil was washed from the roots of the transplants immediately after harvesting them as to prevent the transport of invasive seed. All transplants were installed on randomized four foot centers **(Photo 12)**. In areas where it was deemed necessary, the roots of the transplants were held in place with the same staples used to secure the erosion control blanket. The use of the staples is to prevent upheaval from freeze/thaw cycles and also aids in the prevention of uprooting by vegetative predation from numerous avian and mammalian species that actively browse on young, herbaceous, wetland vegetation.

3.0 AREA SPECIFIC RESTORATION

3.1 *PR-WC-06 1*

Area 6-1 **(Figure 2)** has a North/South oriented channel, the Peconic River, splitting the sediment removal area into eastern and western portions **(Photo 13)**. Seed and blanket were installed on both sides of this channel and into the channel to a depth of eighteen inches of inundation **(Photo 17)**. The headwaters of this channel also exhibited some minor disturbance and a lack of vegetation. As such, this area was also seeded and blanketed. The channel walls and bottom were inundated to a depth of approximately three feet **(Photo 21)**. However, an accurate depth of the water was not determined due to the highly organic soft substrate. This substrate was very rich and was a minimum of eight inches thick. Approximately one to two vertical feet of the channel were exposed between the top of the water and the top of bank. The channel was transplanted to a depth of five inches inundation with species listed in **Table 5**.

Table 5: Area 6-1 Herbaceous Transplants

Scientific Name	Common Name
Carex lurida	Bottlebrush Sedge
Carex stricta	Common Tussock Sedge
Juncus effuses	Common Rush
Sparganium americanum	American Bur Reed

The western portion had perennial, native species within the restoration area, some of which had been transplanted by BSA during the sediment removal and other volunteers that developed from native seeds within the sediment seed bank. Portions of this stock were used for harvest and transplant, while keeping adequate numbers of these existing stands undisturbed to allow them to both satisfy the required re-vegetation density and to further re-vegetate the area by natural processes. Soil characteristics in the western portion of Area 6-1 were saturated, having a heavily organic surface layer of up to three inches, and having underlying components of sandy muck. The western portion of Area 6-1 had a flat slope from the woodline to the river channel. At the top of the channel the slope sharply dropped off to the Peconic River. Seed and blanket were installed on the western portion of Area 6-1 in all disturbed areas that were not already exhibiting natural re-vegetation from native species. All western portion disturbed areas of Area 6-1 were transplanted with species listed in **Table 5**.

The eastern portion of Area 6-1 exhibited little to no naturally occurring re-vegetation. The soils in the eastern portion were saturated, having a heavily organic surface layer of up to six inches, and having underlying components of sandy muck. The eastern portion of Area 6-1 sloped gradually from the existing woodline down to a shallow depressional area. This shallow depressional area then sloped gently upwards to a berm caused by historical channelization that then sharply dropped off to the Peconic River channel. Seed and blanket were installed on the eastern portion of Area 6-1 in all disturbed areas. All disturbed areas in the eastern portion of Area 6-1 were transplanted with species listed in **Table 5** to a depth of five inches inundation with the exception of a deep water pool in the northeast corner of Area 6-1 which exhibited depths of up to twelve to eighteen inches. Six trees and shrubs, two of each species listed in **Table 6**, were installed on the top of the berm in the eastern portion of Area 6-1. These trees and shrubs were transplanted from adjacent areas of the Peconic River that exhibited similar light and water resources as the berm into which they were transplanted. Additionally, numerous deadfalls were present in the eastern portion of Area 6-1. These deadfalls were temporarily moved to allow blankets to be installed, then put back in place to preserve habitat.

In total, in all portions of Area 6-1, eight blankets were installed.

Table 6: Area 6-1 Tree and Shrub Transplants

Scientific Name	Common Name
Cephalanthus occidentalis	Buttonbush
Decodon verticillatus	Swamp Loosestrife
Quercus bicolor	Swamp White Oak

3.2 *PR-WC-06 2*

Area 6-2 **(Figure 3)** was almost completely inundated to a depth of up to two feet **(Photo 14)**. The substrate in Area 6-2 underlying the ope n water was very rich and had a minimum thickness of approximately eight inches. The open water in the sediment removal area in Area 6-2 had little to no flo w which allowed the s urface to be 100% covered with *Lemna minor*, (Common Duckweed), and *Wolffia spp.*, (Watermeal). Area 6-2 sloped gently from the existing woodline on the Western side to a depth of two feet to a sharp rise of an underwater ridge o n the western portion of the sediment removal area. This ridge then sharply dropped back down to a depth of two feet and appeared to continue within the Peconic River outside of the sediment removal area.

Under the direction of BNL, blanketing was utilized in the open water areas to reduce the levels of suspended solids pr esent in the water column associated with having such a rich, mucky substrate **(Photo 18)**. The blanketing extended from the eastern edge of the sediment remova l area to app roximately two horizont al feet up t he exposed bank on th e western e dge of the sediment removal area.

Transplants in Area 6-2 **(Table 7)** were install ed to depth s of up to fi ve inches o f inundation **(Photo 22)**. Because of the unavail ability of deep water aq uatic plants suitable for harvest, the transplants in Area 6-2 were limit ed to the northern, southern, an d eastern e dges of the sediment removal area.

Additionally, numerous deadfalls that were located adjacent to Area 6-2 were re-located to the middle of Area 6-2 to help secure the installed blanket and to provide habitat.

In total, six blankets were installed in Area 6-2

Table 7: Area 6-2 Herbaceous Transplants

Scientific Name	Common Name
Carex lurida	Bottlebrush Sedge
Carex stricta	Common Tussock Sedge
Juncus effusus	Common Rush
Sparganium americanum	American Bur Reed

3.3 *PR-SS-15*

Area 15 **(Figure 4)** was 50% inun dated to a depth of up to eighteen inches **(Photo 15)**. The substrate in Area 15 underlying the open water was very rich and had a minimum thickness of approximately eight inches. The open water in the sediment removal area in Area 1 5 had little to no flow which allowed the surface to be 100% covered with common duckweed and watermeal. Area 15 sloped gently from the e xisting woodline on bot h the Northeastern and Southwestern sides of t he sediment removal area to a flat bottom with a water de pth of up to eighteen inches. Exposed shelves on either side of th e Area 15 wetland restoration area exhibited soil characteristics typified as being very saturated, having a heavily organic soft surface layer of up to three inches thick, and having underlying components of sandy muck.

Under the direction of BNL, the blanketing was utilized in the open water areas to reduce the levels of suspended solids present in the water column associated with having such a rich, mucky substrate **(Photo 19)**. The blanketing extended from the open water middle section of Area 15 and up either side of the Peconic River to approximately two horizontal feet up the exposed bank on the Western edge of the sediment removal area.

Transplants in Area 15 **(Table 8)** were installed to depths of up to eight inches of inundation **(Photo 19)**. Adjacent to Area 15 was a small population of *Pontederia cordata*, (Pickerel Weed). This species is more acclimated to greater water depths than other species available for transplant so it was used in the deeper water portions of Area 15 **(Photo 27)**. However, natural populations were not great enough in number to completely transplant the deeper water portions of Area 15.

Area 15 is bisected on the northwest corner by the property line shared by BNL and Suffolk County. All transplants from the Suffolk County side of the property line were installed on Suffolk County property. Transplants from the BNL side of the property line were installed both on BNL and Suffolk County property.

In total, nine blankets were installed in Area 15.

Additionally, large populations of reed-canary grass were observed immediately adjacent to the Northeast side of Area 15 as well as both upstream and downstream of Area 15 on both banks, as well as within the channel, of the Peconic River. BSA will continue to monitor and evaluate invasive species in this and the other three restoration areas.

Table 8: Area 15 Herbaceous Transplants

Scientific Name	Common Name
Carex lurida	Bottlebrush Sedge
Carex stricta	Common Tussock Sedge
Eleocharis acicularis	Needle Spike Rush
Juncus effusus	Common Rush
Pontederia cordata	Pickerelweed

3.4 *Sediment Trap*

Area ST **(Figure 5)** was almost 100% inundated up to an undetermined depth **(Photo 16)**. Because of the nature of the sediment removal at Area ST, the slopes on either side of the Peconic River exhibited a flat slope from the existing northern and southern woodlines and dropped sharply to depths in excess of three to four feet of inundation **(Photo 20)**. Because of this, narrow sections of the sediment removal area had blanket and transplants **(Table 9)** installed **(Photo 24)**. The transplants were installed from the existing woodline on either side of the Peconic River to a depth of five inches inundation.

The open water in Area ST had little to no flow which allowed the surface to be 10 0% covered with common duckweed and watermeal.

In total, two blankets were installed in Area ST.

Table 9: Area ST Herbaceous Transplants

Scientific Name	Common Name
Carex lurida	Bottlebrush Sedge
Eleocharis acicularis	Needle Spike Rush
Scirpus cyperinus	Wool Grass
Sparganium americanum	American Bur Reed

4.0 POST INSTALLATION EVALUATION

4.1 *Evaluation Protocol*

On September 23rd, 2011 Cardno JFNew visited all four restoration areas with BNL to establish monitoring protocol and sampling plot sizes and locations. At the time of the inspection, nine sampling plots were established: three in PR-WC-06 1, one in PR-WC-06 2, two in PR-SS-15 and three at the Sediment Trap. The plots varied in size and dimensions according to their location within the remediation areas.

All sampling plots were demarcated with five foot, 0.75 inch, PVC posts. Each post was labeled with the specific sampling plot name. From each post a magnetic bearing was obtained to ensure 90 degree angles along the distance pre-determined by the size of the overall monitoring plot. These bearings and distances are listed below in the area specific results to enable sampling plots to be recreated for future analysis.

All live plants representing transplanted species observed in the sampling plots were counted and recorded by species. The restoration plan for the Peconic River restoration called for transplants of native plant material to be installed on four-foot centers. This equates to one transplant for every 16 square feet. The area in square feet of each sampling plot was divided by 16 to derive the number of plants one would expect to observe in the plot during the monitoring inspection, given 100% survival of the planted specimens. The actual number of planted specimens observed was compared to this number to derive the percent survival.

Percent coverage by native plants was determined by visual estimation within the sampling plots. Volunteer native species occurring in the sampling plots were noted, and included in the estimates for cover by native species.

Tables 10 thru 22 list only those species present in the monitoring plots that were actively planted. Full tables including both planted and volunteer species observed within each monitoring plot can be found in the appendices.

4.2 *PR-WC-06 1*

A total of three sampling plots (6-1-1, 6-1-2, and 6-1-3) were utilized in Area 6-1 **(Figure 6)**. Area 6-1 had a total monitoring plot area of 1,650 sf. The number of planted specimens observed in all three plots totaled 482 which resulted in a percent survival of planted species of 468% relative to the SPDES requirement of one plant per four linear feet (or one plant per sixteen sf) **(Photo 25)**. Portions of Area 6-1 were replanted even though the required survivability was achieved. Some areas of area 6-1 that were too deep to transplant in July 2011 **(Photo 17)** were at a more appropriate water depth during the August and September 2011 assessment **(Photo 21)** and were thusly transplanted. A number of *Sparganium americanum,* (American Bur-reed) were also transplanted to supplement the vegetation in these areas. Cumulative results for Area 6-1 are presented in **Table 13**.

Plot 6-1-1 is 10 ft. X 75 ft. and has a bearing of 250 degrees to the west and 160 degrees to the south from the northeast corner of the plot. The results from plot 6-1-1 are listed in **Table 10**.

Table 10: Plot 6-1-1

Species	Common Name	Quantity
Leersia oryzoides	**Rice cut-grass**	**37**
Carex stricta	**Tussock sedge**	**8**
Sparganium americanum	**American bur-reed**	**204**
[redacted]	**Total of Planted Species Observed**	**249**
	Total Plot Area of 6-1-1 (sf)	750
Number of expected planted species assuming 100% survival		47
Percent Survival (planted species)		**530**
Percent Cover (including volunteers)		**85**

Plot 6-1-2 is 10 ft. X 50 ft. and has a bearing of 270 degrees to the west and 180 degrees to the south from the northeast corner of the plot. The results from plot 6-1-2 are listed in **Table 11**.

Table 11: Plot 6-1-2

Species	Common Name	Quantity
Carex lurida	**Shallow sedge**	**1**
Carex stricta	**Tussock sedge**	**10**
Juncus effusus	**Soft rush**	**1**
Leersia oryzoides	**Rice cut-grass**	**18**
Sparganium americanum	**American bur-reed**	**142**
[redacted]	**Total of Planted Species Observed**	**172**
	Total Pot Area of 6-1-2 (sf)	500
Number of expected planted species assuming 100% survival		31
Percent Survival (planted species)		**555**
Percent Cover (including volunteers)		**70**

Plot 6-1-3 is 10 ft. X 40 ft. and has a bearing of 250 degrees to the west and 160 degrees to the south from the northeast corner of the plot. The results from plot 6-1-3 are listed in **Table 12**.

Table 12: Plot 6-1-3

Species	Common Name	Quantity
Carex stricta	**Tussock sedge**	**14**
Juncus effusus	**Soft rush**	**1**
Leersia oryzoides	**Rice cut-grass**	**45**
Sparganium americanum	**American bur-reed**	**1**
[redacted]	**Total of Planted Species Observed**	**61**
	Total Plot Area of 6-1-3 (sf)	400
Number of expected planted species assuming 100% survival		25
Percent Survival (planted species)		**244**
Percent Cover (including volunteers)		**55**

Table 13: Area 6-1 Cumulative Results

AREA 6-1	
Cumulative Total of Planted Species Observed	**482**
Cumulative Plot Size of Area 6-1 (sf)	**1650**
Cumulative Number of Expected Plants Assuming 100% Survival	**103**
Cumulative Percent Survival of Planted Specimens	**468**
Average Percent Cover by All Species	**70**

4.3 *PR-WC-06-2*

One sampling plot was utilized in Area 6-2 **(Figure 7)**. Area 6-2 had a total monitoring plot area of 720 sf. The number of planted specimens observed totaled 349 which resulted in a percent survival of planted species of 776% relative to the SPDES requirement of one plant per four linear feet (or one plant per sixteen sf) **(Photo 26)**. No replanting was performed at Area 6-2. Water levels had dropped to a more appropriate planting depth in August 2011 **(Photo 22)** but had risen back to July 2011 levels by the September assessment **(Photo 26)**. Therefore, these areas were not transplanted.

Plot 6-2 is 8 ft. X 90 ft. and has a bearing of 277 degrees to the west and 187 degrees to the south from the northeast corner of the plot. The results from plot 6-2 are listed in **Tables 14** and **15**.

Table 14: Plot 6-2

Species	Common Name	Quantity
Carex stricta	**Tussock sedge**	**14**
Juncus effusus	**Soft rush**	**3**
Leersia oryzoides	**Rice cut-grass**	**15**
Sparganium americanum	**American bur-reed**	**317**
	Total of Planted Species Observed	**349**
	Total Plot Area of 6-2 (sf)	720
Number of expected planted species assuming 100% survival		45
Percent Survival (planted species)		**776**
Percent Cover (including volunteers)		**80**

Table 15: Area 6-2 Cumulative Results

AREA 6-2	
Cumulative Total of Planted Species Observed	**349**
Cumulative Plot Size of Area 6-2 (sf)	**720**
Cumulative Number of Expected Plants Assuming 100% Survival	**45**
Cumulative Percent Survival of Planted Specimens	**776**
Average Percent Cover by All Species	**80**

4.4 *PR-SS-15*

A total of two sampling plots (15-1 and 15-2) were utilized in Area 15 **(Figure 8)**. Area 15 had a total monitoring plot area of 1,600 sf. The number of planted specimens observed totaled 935 which resulted in a percent survival of planted species of 935% relative to the SPDES requirement of one plant per four linear feet (or one plant per sixteen sf) **(Photo 27)**. No replanting was performed at Area 15. Although the pickerel weed that was planted in the deeper water portions of Area 15 were thriving, no stock was available in upstream or downstream portions of the Peconic River to allow for further transplanting. Cumulative results are presented in **Table 18**.

Plot 15-1 is 10 ft. X 60 ft. and has a bearing of 240 degrees to the west and 150 degrees to the south from the northeast corner of the plot. The results from plot 15-1 are listed in **Table 16**.

Table 16: Plot 15-1

Species	Common Name	Quantity
Eleocharis acicularis	**Least Spike rush**	**46**
Juncus effusus	**Soft rush**	**1**
Sparganium americanum	**American bur-reed**	**176**
	Total of Planted Species Observed	**223**
	Total Plot Area of 15-1 (sf)	600
Number of expected transplants assuming 100% survival		38
Percent Survival (planted species)		**587**
Percent Cover (including volunteers)		**80**

Plot 15-2 is 10 ft. X 100 ft. and has a bearing of 240 degrees to the west and 150 degrees to the south from the northeast corner of the plot. The results from plot 15-1 are listed in **Table 17**.

Table 17: Plot 15-2

Species	Common Name	Quantity
Eleocharis acicularis	**Least Spike rush**	**321**
Leersia oryzoides	**Rice cut-grass**	**20**
Sparganium americanum	**American bur-reed**	**371**
	Total of Planted Species Observed	**712**
	Total Plot Area of 15-2 (sf)	1000
Number of expected planted species assuming 100% survival		63
Percent Survival (planted species)		**1130**
Percent Cover (including volunteers)		**70**

Table 18: Area 15 Cumulative Results

AREA 15	
Cumulative Total of Planted Species Observed	**935**
Cumulative Plot Size of Area 15 (sf)	**1600**
Cumulative Number of Expected Plants Assuming 100% Survival	**100**
Cumulative Percent Survival of Planted Specimens	**935**
Average Percent Cover by All Species	**75**

4.5 *Sediment Trap*

A total of three sampling plots (ST-1, ST-2, and ST-3) were utilized in Area ST **(Figure 9)**. Area ST had a total monitoring plot area of 364 sf. The number of planted specimens observed totaled 13 which resulted in an average percent survival of planted species of 57% relative to the SPDES requirement of one plant per four linear feet (or one plant per sixteen sf) **(Photo 24)**. To account for the required survivability of 85%, transplants were dug upstream of Area ST and planted on four foot centers within the restoration areas **(Photo 28)**. As with the July 2011 plantings, because of the sharp elevation drop from the floodplain into open water within Area ST **(Photo 20)**, the area able to be transplanted was limited. Re-transplanting activities were limited to 4-5 inches inundation on the channel side of the sediment removal areas and continued to the existing woodlines **(Photo 28)**. Cumulative results are presented in **Table 22**.

Plot ST-1 is 8 feet X 15 ft. and has a bearing of 340 degrees to the north and 250 degrees to the west from the southeast corner of the plot. The results from plot ST-1 are listed in **Table 19**.

Table 19: Plot ST-1

Species	Common Name	Quantity
Sparganium americanum	**American bur-reed**	**3**
	Total of Planted Species Observed	**3**
	Total Plot area of ST-1 (sf)	120
Number of expected transplants assuming 100% survival		8
Percent Survival (planted species)		**38**
Percent Cover (including volunteers)		**60**

Plot ST-2 is 5 ft. X 20 ft. and has a bearing of 330 degrees to the north and 240 degrees to the west from the southeast corner of the plot. The results from plot ST-2 are listed in **Table 20**.

Table 20: Plot ST-2

Species	Common Name	Quantity
Juncus effusus	**Soft rush**	**8**
	Total of Planted Species Observed	**8**
	Total Plot Area of ST-2 (sf)	100
Number of expected transplants assuming 100% survival		6
Percent Survival (planted species)		**133**
Percent Cover (including volunteers)		**50**

Plot ST-3 is 12 ft. X 12 ft. and has a bearing of 350 degrees to the north and 260 degrees to the west from the southeast corner of the plot. The results from plot ST-3 are listed in **Table 21**.

Table 21: Plot ST-3

Species	Common Name	Quantity
Juncus effusus	**Soft rush**	**2**
	Total of Planted Species Observed	**2**
	Total Plot Area of ST-3 (sf)	144
Number of expected planted species assuming 100% survival		9
Percent Survival (planted species)		**22**
Percent Cover (including volunteers)		**40**

Table 22: Sediment Trap Cumulative Results

SEDIMENT TRAP	
Cumulative Total of Planted Species Observed	**13**
Cumulative Plot Size of Sediment Trap (sf)	**364**
Cumulative Number of Expected Plants Assuming 100% Survival	**23**
Cumulative Percent Survival of Planted Specimens	**57**
Average Percent Cover by All Species	**50**

4.6 *Conclusions*

At the time of the September 2011 monitoring inspections PR-WC-06 1 **(Table 13)**, PR-WC-06 2 **(Table 15)** and PR-SS-15 **(Table 18)** were meeting the herbaceous plants criteria established for the remediation sites. Percent survival of installed plant material was high due to the rapid establishment and spread of rhizomatous species such as American Bur Reed and Needle Spike Rush. Percent cover by native vegetation was enhanced by the presences of volunteer species such as Leafy-bract Beggars' Ticks (*Bidens comosa*), Sedges (*Cyperus* spp.), Dotted Smartweed (*Polygonum punctatum*), Slender St. John's-wort (*Hypericum mutilum*), Marsh St. John's-wort (*Triadenum virginicum*) and Red-root Spike Rush (*Eleocharis erythropoda*). Likely sources of these volunteers include presence in the seed-bank, recruitment from adjacent areas, or in some instances, the species may have been present in the planting areas as seedlings, but overlooked.

The Sediment Trap **(Table 22)** did not meet the equivalency permit criteria for survivability of transplants or percent cover. There is a narrow and sharp gradient between the wetland edge and adjacent forested areas. This may cause fairly rapid cycles of inundation and draw-down during and between storm events, which could suppress vegetation establishment. There are also fewer areas adjacent to the Sediment Trap with a dominance of wetland vegetation, which reduced the likelihood of recruitment by volunteer species. Soils in the area of the sediment trap are somewhat lower in organic matter content (muck), and higher in mineral content, especially sand, than in the other remediation areas, and thus they may be less well-suited to the establishment of the selected species. Cardno JFNew recommends BSA evaluate the Sediment Trap area percent cover again in the Spring/Summer of 2012 before developing a plan of remediation.

While no common reed was observed within the monitoring plots, it was observed adjacent to every area. Additionally, a large population of common reed was observed outside the cleanup area along both sides of Z path from which it has spread in the eastern edge of the Sediment Trap. This will be evaluated and controlled by BSA. No purple loosestrife was observed in any of the remediation areas.

5.0 REFERENCES

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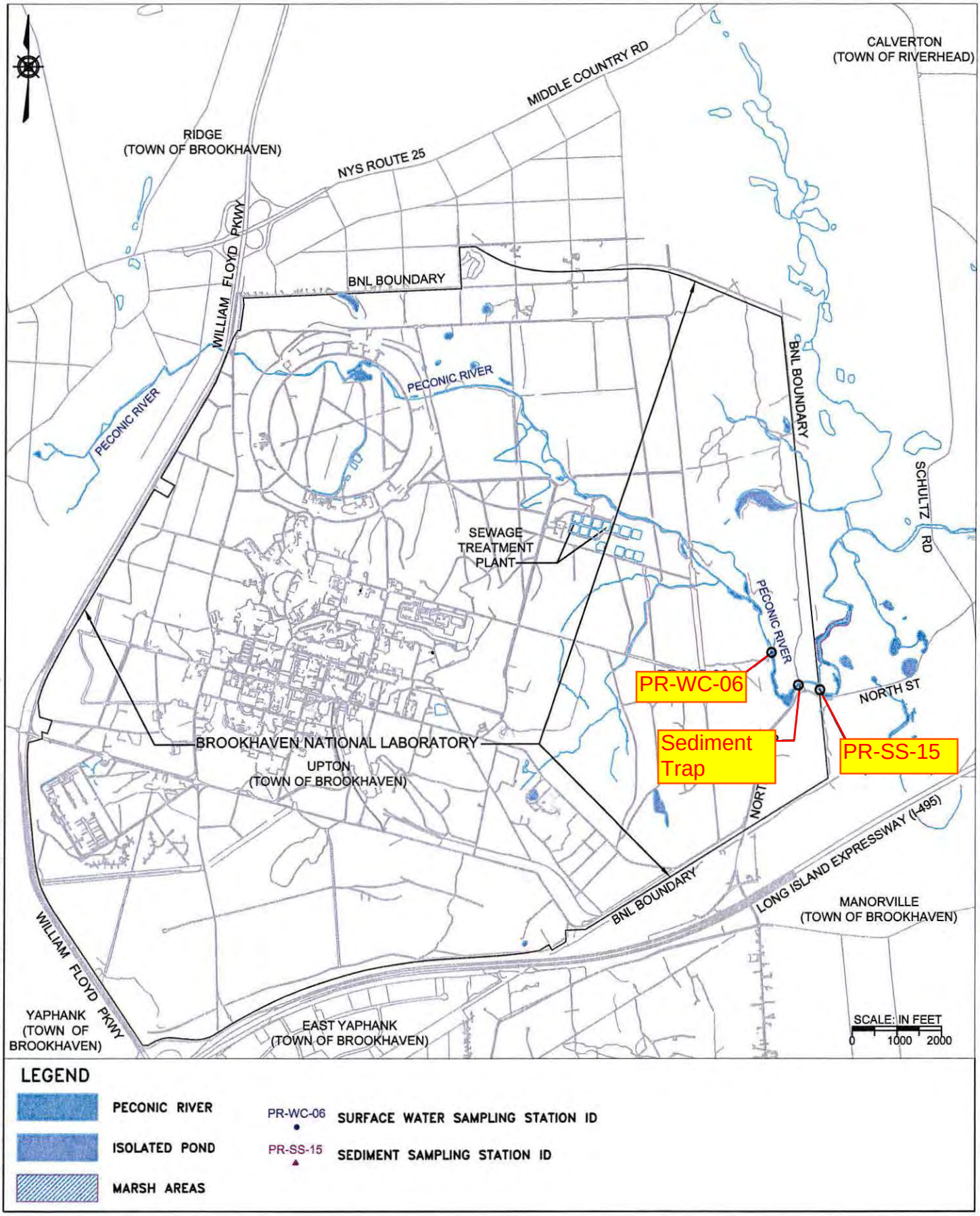
FIGURES

WETLAND RESTORATION SUMMARY
BROOKHAVEN NATIONAL LABORATORY – CONTRACT 169473
PECONIC RIVER SUPPLEMENTAL SEDIMENT REMOVAL
SUFFOLK COUNTY, NEW YORK



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BROOKHAVEN NATIONAL LABORATORY

ENVIRONWENTAL PROTECTION DIVISION

Cardno JFNew

TITLE:

SEDIMENT TRAP AND SUPPLEMENTAL REMOVAL LOCATIONS

MERCURY SAMPLING PECONIC RIVER

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
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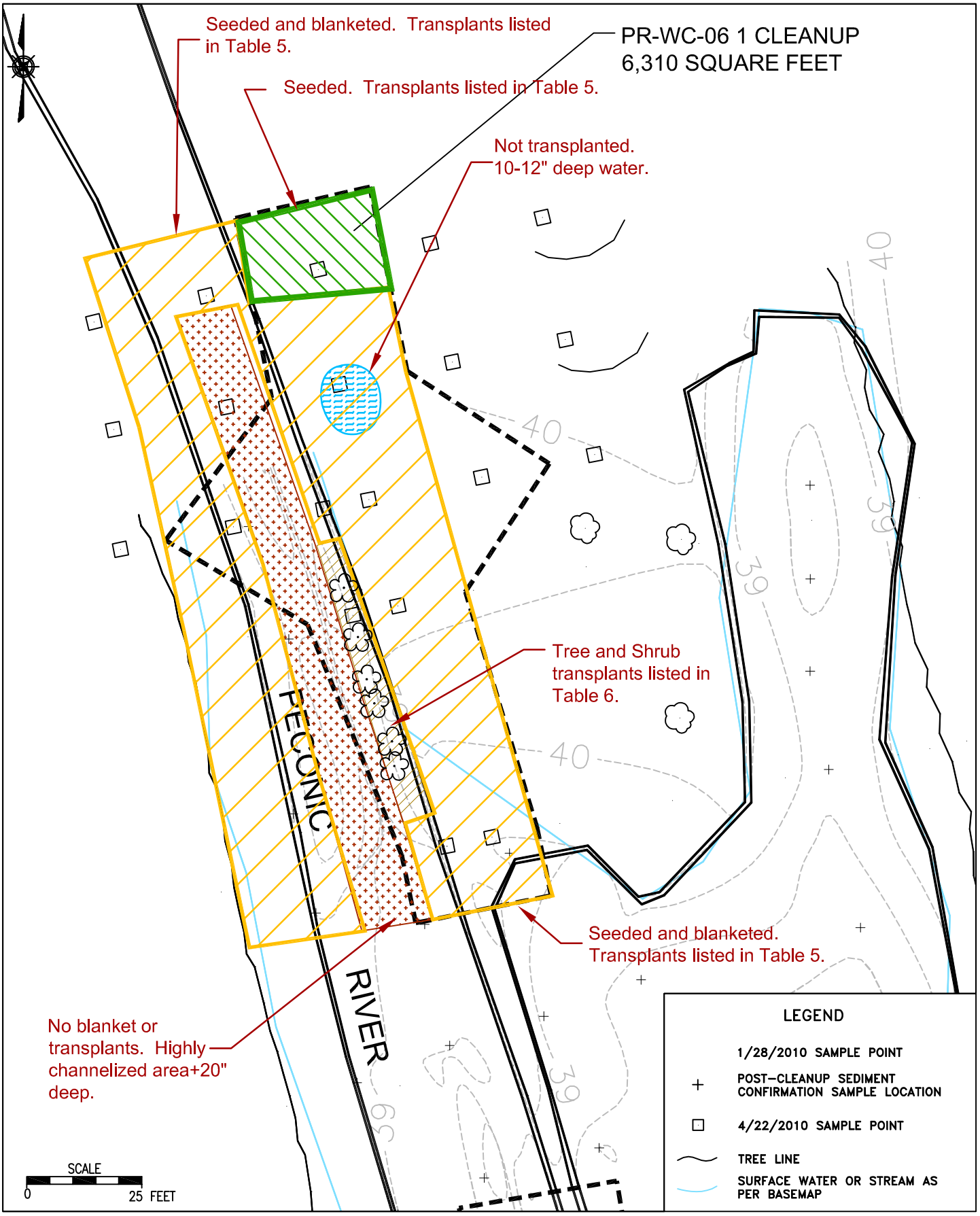

BROOKHAVEN NATIONAL LABORATORY
ENVIRONMENTAL PROTECTION DIVISION
Cardno JFNew

TITLE:

PR-WC-06 1
Restoration Revegetation 2011

MERCURY SAMPLING PECONIC RIVER

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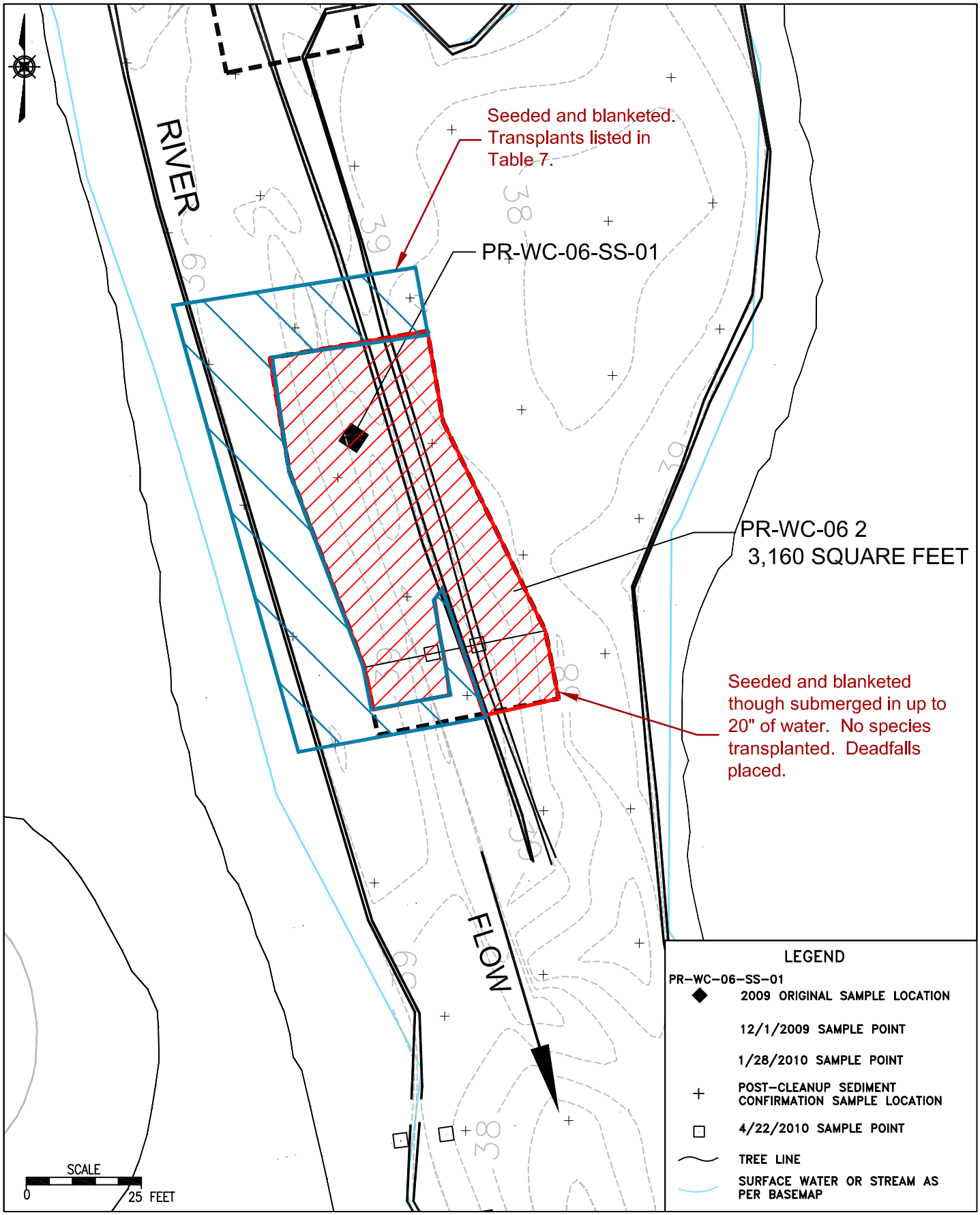

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ENVIRONMENTAL PROTECTION DIVISION
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TITLE:

PR-WC-06 2
Restoration Revegetation 2011

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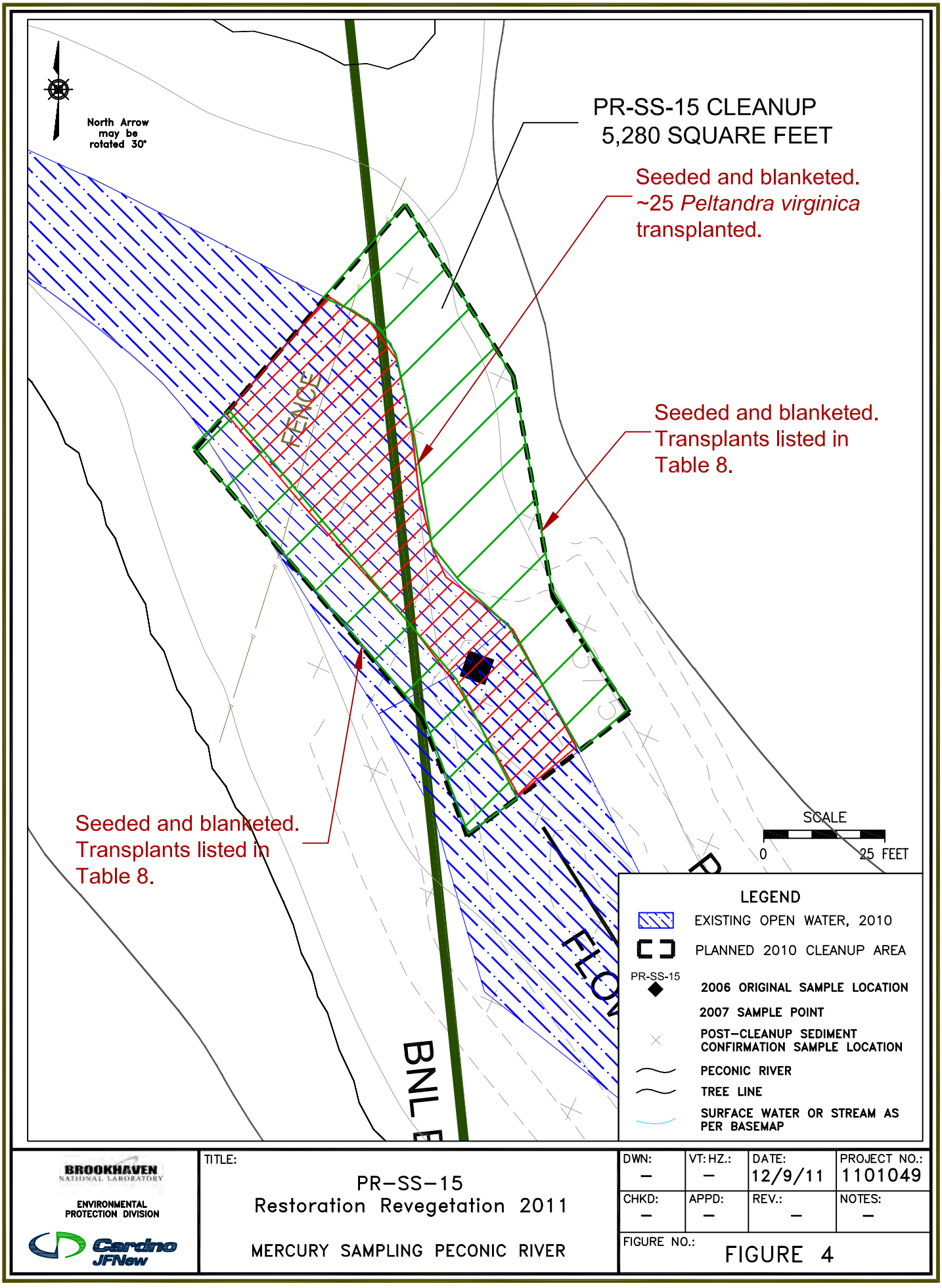

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ENVIRONMENTAL PROTECTION DIVISION
Cardno JFNew

TITLE:

PR-SS-15
Restoration Revegetation 2011

MERCURY SAMPLING PECONIC RIVER

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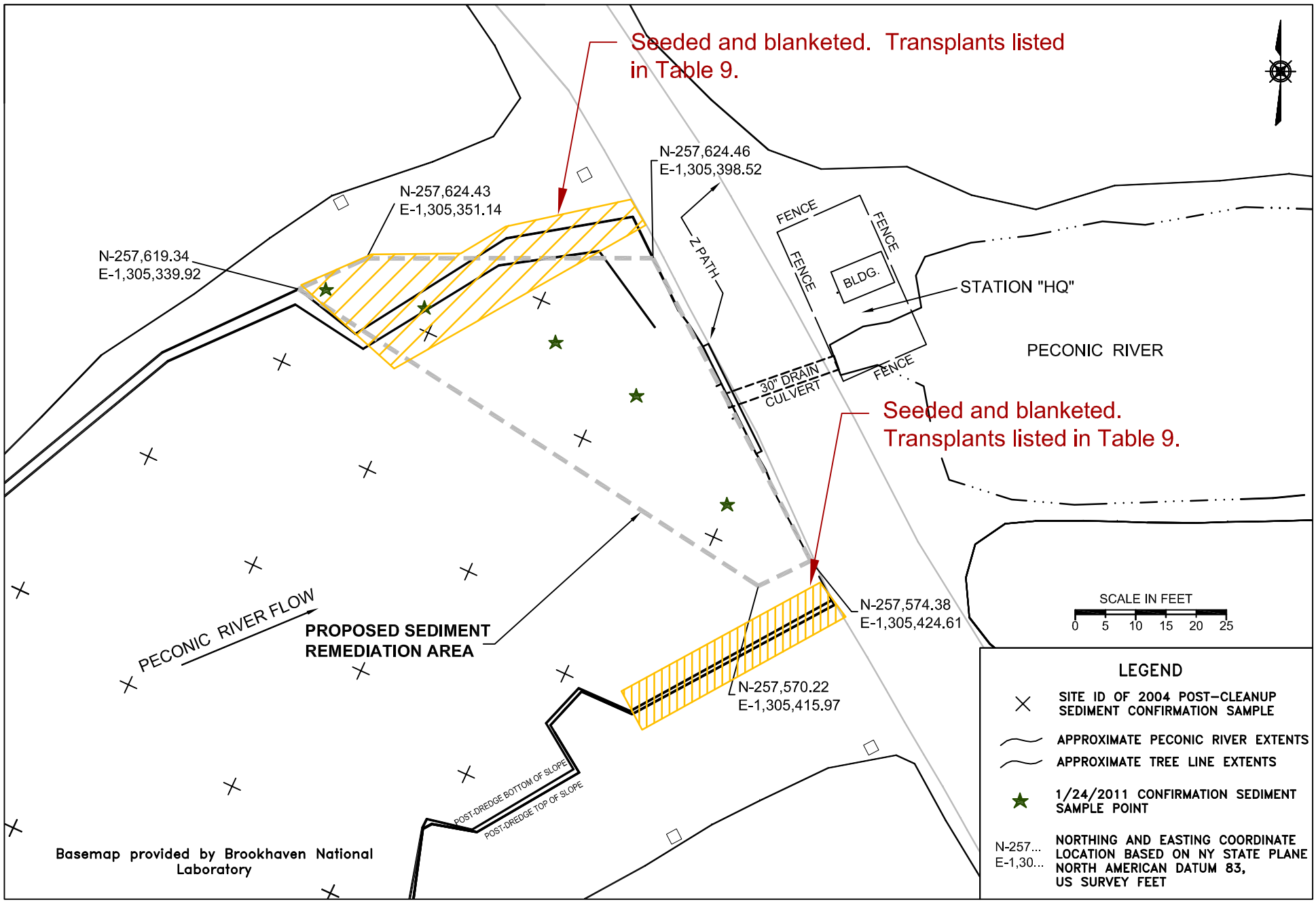

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ENVIRONMENTAL PROTECTION DIVISION
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TITLE:

SEDIMENT TRAP
Restoration Revegetation 2011

MERCURY SAMPLING PECONIC RIVER

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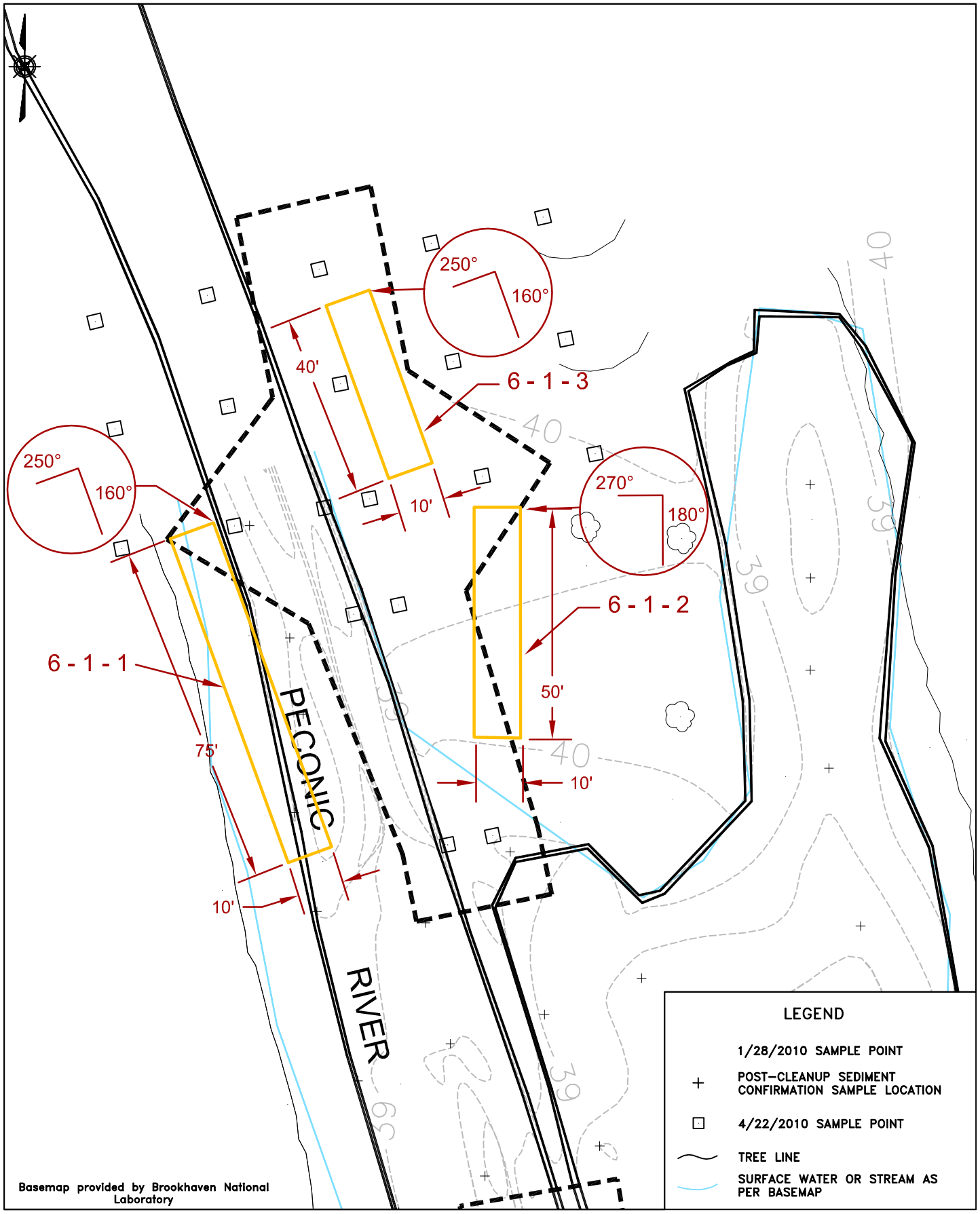

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BROOKHAVEN NATIONAL LABORATORY
ENVIRONMENTAL PROTECTION DIVISION
Cardno JFNew

TITLE:

PR-WC-06 1
Revegetation Assessment 2011

MERCURY SAMPLING PECONIC RIVER

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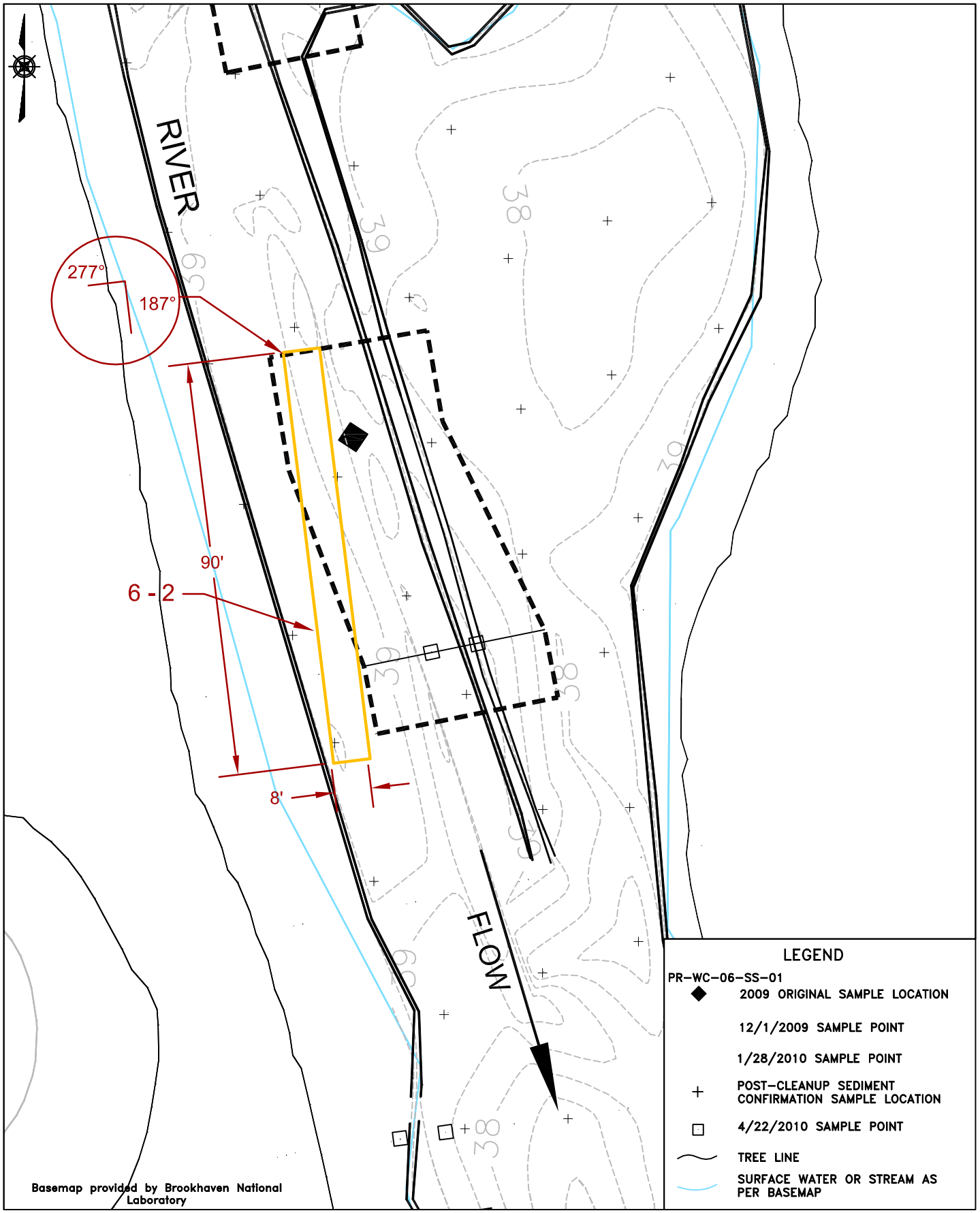
FIGURE 6



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ENVIRONMENTAL PROTECTION DIVISION
Cardno JFNew

TITLE:

PR-WC-06 2
Revegetation Assessment 2011

MERCURY SAMPLING PECONIC RIVER

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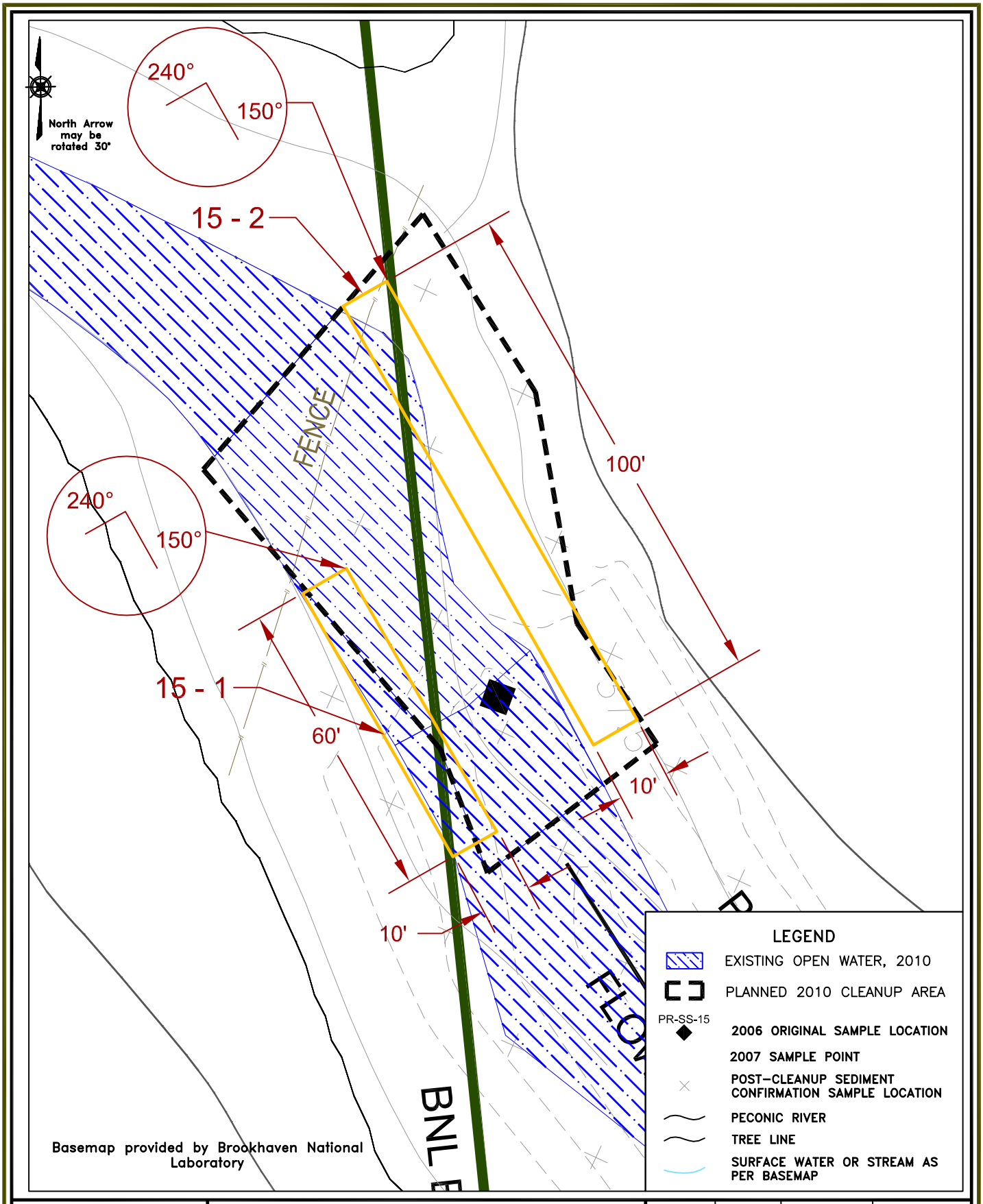
FIGURE 7



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ENVIRONMENTAL PROTECTION DIVISION
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TITLE:

PR-SS-15
Revegetation Assessment 2011

MERCURY SAMPLING PECONIC RIVER

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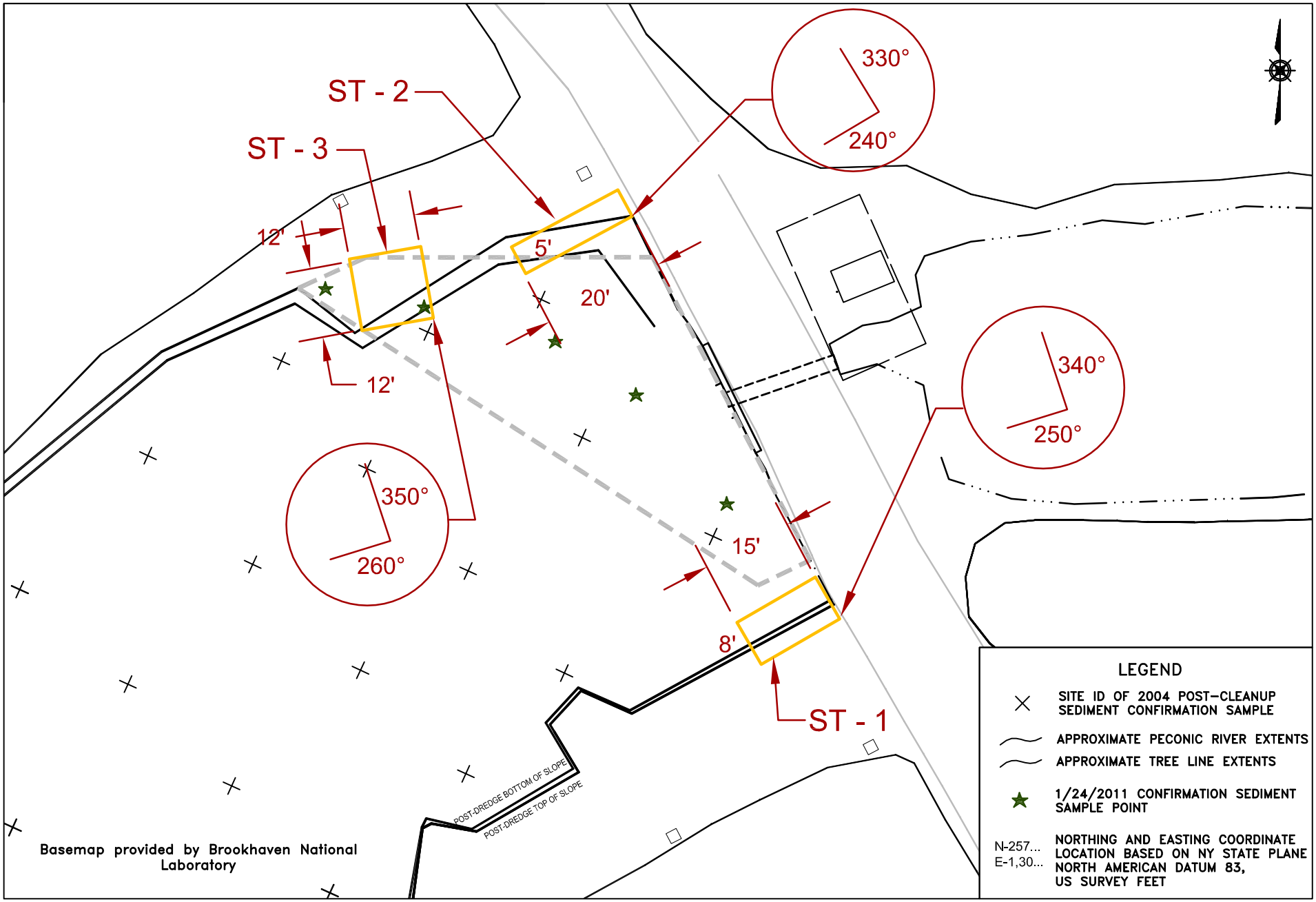
FIGURE NO.: FIGURE 8



BROOKHAVEN NATIONAL LABORATORY
ENVIRONMENTAL PROTECTION DIVISION
Cardno JFNew

TITLE:

SEDIMENT TRAP
Revegetation Assessment 2011

MERCURY SAMPLING PECONIC RIVER

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CHKD:	APPD:	REV.:	NOTES:
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FIGURE NO.: FIGURE 9

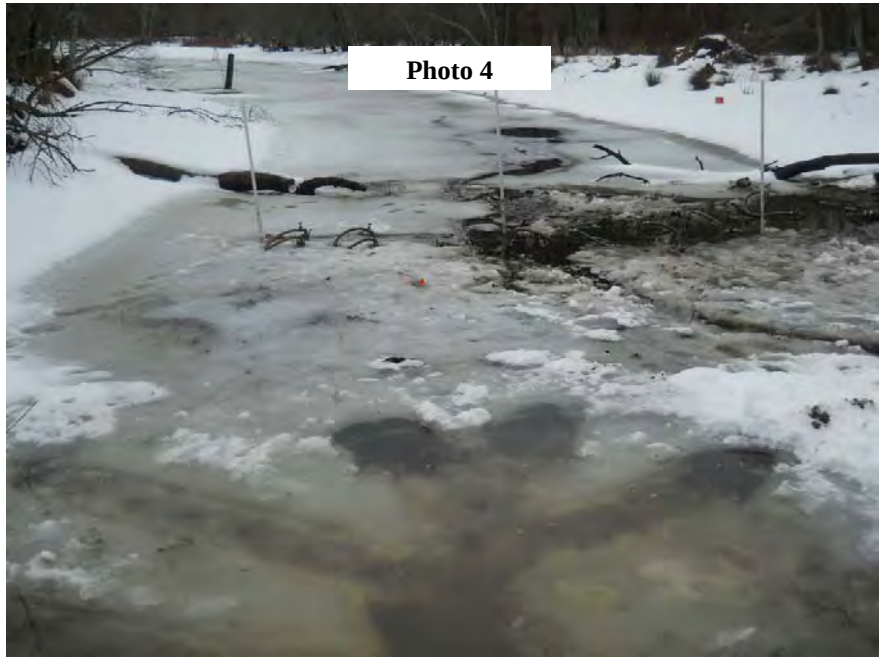
SITE PHOTOGRAPHS

WETLAND RESTORATION SUMMARY
BROOKHAVEN NATIONAL LABORATORY – CONTRACT 169473
PECONIC RIVER SUPPLEMENTAL SEDIMENT REMOVAL
SUFFOLK COUNTY, NEW YORK

PR-WC-06-1 January 19th, 2011

PR-WC-06-2 January 19th, 2011

PR-SS-15 January 19th, 2011



Sediment Trap January 19th, 2011

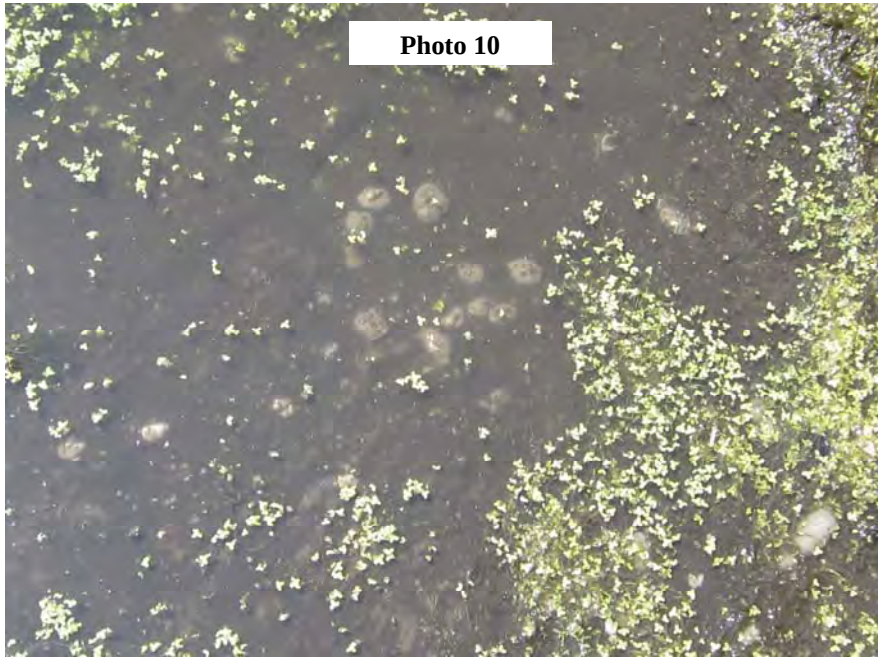
North American Green SC-150-BN Erosion Control Blanket

Erosion Control Blanket Installation

Dry Seed

Dry Seed Broadcast Density

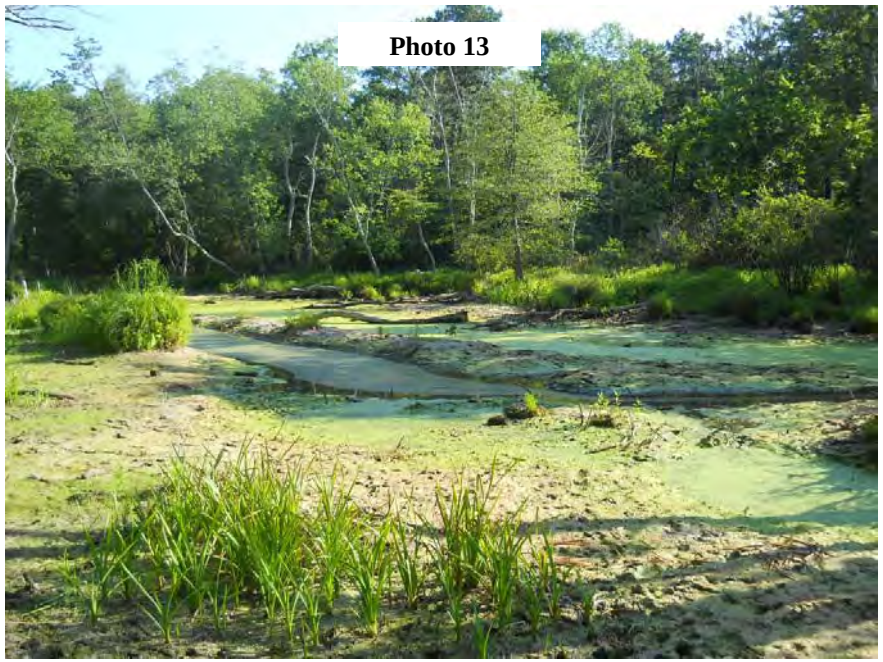
SubmerSeed



SubmerSeed Broadcast Density

Transplant Harvest and Splitting

Transplant Installation



PR-WC-06-1 July 15th, 2011

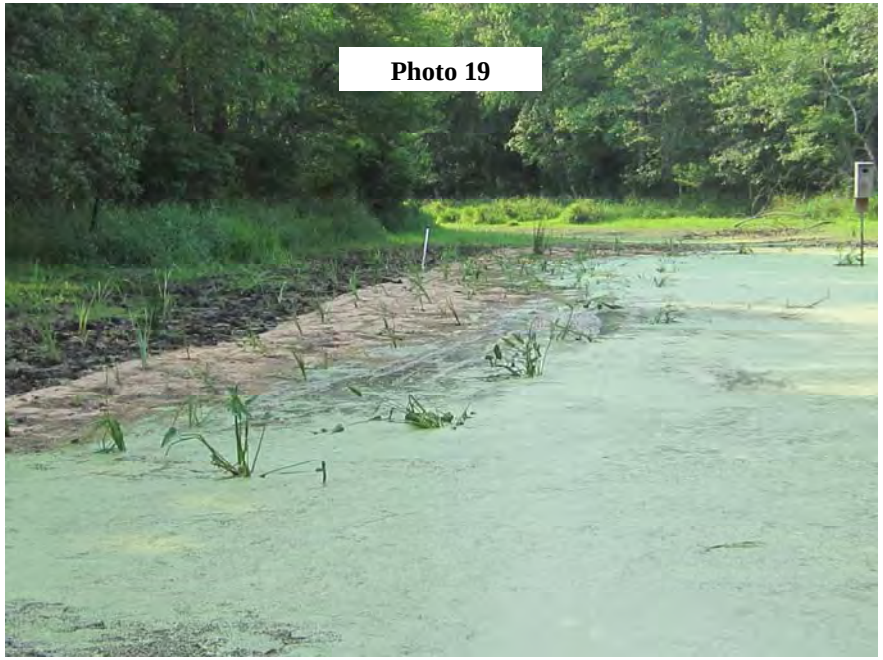
PR-WC-06-2 July 15th, 2011

PR-SS-15 July 15th, 2011

Sediment Trap July 15th, 2011

PR-WC-06-1 July 21st, 2011

PR-WC-06-2 July 21st, 2011



PR-SS-15 July 21st, 2011

Sediment Trap July 21st, 2011

PR-WC-06-1 August 11th, 2011

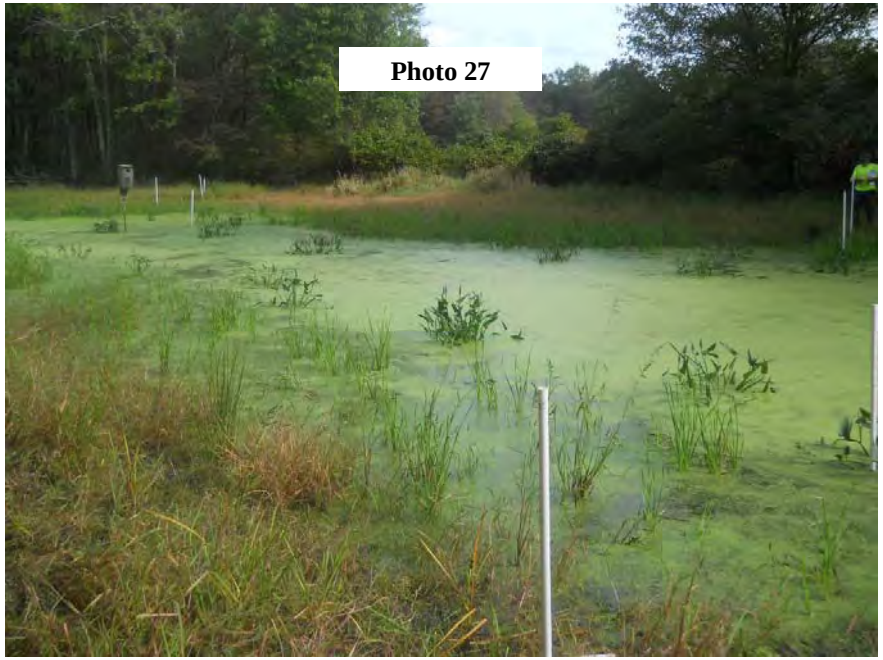
PR-WC-06-2 August 11th, 2011

PR-SS-15 August 11th, 2011

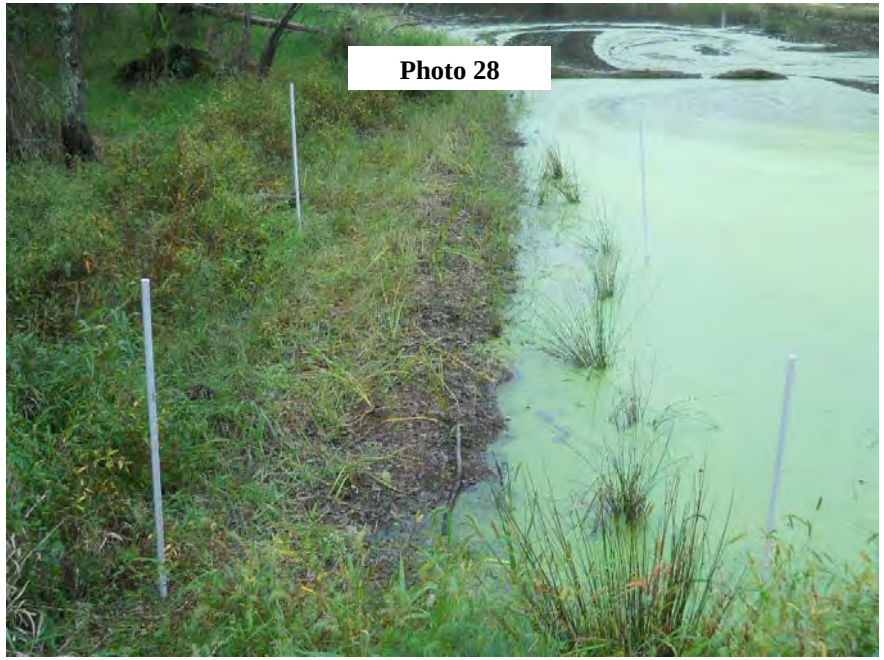
Sediment Trap August 11th, 2011

PR-WC-06-1 September 23rd, 2011

PR-WC-06-2 September 23rd, 2011



PR-SS-15 September 23rd, 2011



Sediment Trap September 23rd, 2011

MONITORING PLOT DATA

WETLAND RESTORATION SUMMARY
BROOKHAVEN NATIONAL LABORATORY – CONTRACT 169473
PECONIC RIVER SUPPLEMENTAL SEDIMENT REMOVAL
SUFFOLK COUNTY, NEW YORK

Plot 6-1-1

Species	Common Name	Quantity
Bidens comosa	Leafy-bract beggar's ticks	**9**
Carex comosa	Bearded sedge	**1**
Cyperus erythrorhizos	Red-root flatsedge	**3**
Cyperus esculentus	Yellow nut sedge	**10**
Leersia oryzoides	Rice cut-grass	**37**
Carex stricta	Tussock sedge	**8**
Polygonum punctatum	Dotted Smartweed	**56**
Sparganium americanum	American bur-reed	**204**
Triadenum virginicum	Marsh St. John's-wort	**3**

Plot 6-1-2

Species	Common Name	Quantity
Carex lurida	Shallow sedge	**1**
Carex stricta	Tussock sedge	**10**
Decodon verticillatus	Swamp loosestrife	**5**
Eleocharis erythropoda	Red-root Spike rush	**2**
Juncus effusus	Soft rush	**1**
Leersia oryzoides	Rice cut-grass	**18**
Polygonum punctatum	Dotted Smartweed	**6**
Sparganium americanum	American bur-reed	**142**

Plot 6-1-3

Species	Common Name	Quantity
Bidens comosa	Leafy-bract beggar's ticks	**8**
Carex stricta	Tussock sedge	**14**
Cyperus erythrorhizos	Red-root flatsedge	**19**
Cyperus esculentus	Yellow nut sedge	**21**
Eleocharis acicularis	Least Spike rush	**7**
Eleocharis erythropoda	Red-root Spike rush	**11**
Juncus effusus	Soft rush	**1**
Leersia oryzoides	Rice cut-grass	**45**
Polygonum punctatum	Dotted Smartweed	**37**
Sparganium americanum	American bur-reed	**1**

Plot 6-2

Species	Common Name	Quantity
Carex stricta	Tussock sedge	**14**
Juncus effusus	Soft rush	**3**
Leersia oryzoides	Rice cut-grass	**15**
Polygonum punctatum	Dotted Smartweed	**3**
Sparganium americanum	American bur-reed	**317**

Plot 15-1

Species	Common Name	Quantity
Bidens comosa	Leafy-bract beggar's ticks	**14**
Cyperus esculentus	Yellow nut sedge	**20**
Eleocharis acicularis	Least Spike rush	**46**
Juncus effusus	Soft rush	**1**
Polygonum punctatum	Dotted Smartweed	**43**
Sparganium americanum	American bur-reed	**176**

Plot 15-2

Species	Common Name	Quantity
Bidens comosa	Leafy-bract beggar's ticks	**19**
Cyperus strigosus	Straw-colored flatsedge	**21**
Cyperus esculentus	Yellow nut sedge	**3**
Decodon verticillatus	Swamp loosestrife	**22**
Eleocharis acicularis	Least Spike rush	**321**
Hypericum mutilum	Slender St. John's-wort	**8**
Leersia oryzoides	Rice cut-grass	**20**
Polygonum punctatum	Dotted Smartweed	**2**
Sparganium americanum	American bur-reed	**371**

Plot ST-1

Species	Common Name	Quantity
Polygonum punctatum	Dotted Smartweed	**1**
Sparganium americanum	American bur-reed	**3**

Plot ST-2

Species	Common Name	Quantity
Juncus effusus	Soft rush	**8**
Cyperus erythrorhizos	Red-root flatsedge	**1**

Plot ST-3

Species	Common Name	Quantity
Carex stricta	Tussock sedge	**1**
Cyperus erythrorhizos	Red-root flatsedge	**3**
Cyperus esculentus	Yellow nut sedge	**1**
Cyperus strigosus	Straw-colored flatsedge	**1**
Decodon verticillatus	Swamp loosestrife	**1**
Juncus effusus	Soft rush	**2**
Polygonum punctatum	Dotted Smartweed	**2**