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June 20, 2019

John Swartwout, P.E.
New York State Department of Environmental Conservation
625 Broadway, 11th Floor
Albany, NY 12233-7015

Subject:
Periodic Review Report
Willsboro Black Ash Pond – Site #516009
Order of Consent No: A5-0771-07-11

Dear Mr. Swartwout:

Please find enclosed the fourth annual Periodic Review Report (PRR) for the Willsboro Black Ash Pond Site (the Site) located in Willsboro, New York. This PRR is prepared in accordance with the Site Management developed for the Site and submitted to the New York State Department of Environmental Conservation in December 2014 as an appendix to the Final Engineering Report.

Please do not hesitate to contact me should you have questions or comments regarding the enclosure.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Paul A. Montney'.

Paul A. Montney, P.E.
Director, Field Operations
Georgia-Pacific LLC

Enclosure

ecc: Andrew Guglielmi, Esq., NYSDEC
Erin Burns, NYSDEC
Wendy Kuehner, NYSDOH
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Georgia-Pacific LLC

PERIODIC REVIEW REPORT

Willsboro Black Ash Pond Site

Willsboro, Essex County, New York

NYSDEC Site # 516009

June 2019

A large, solid orange geometric shape, resembling a stylized triangle or a section of a larger triangle, is positioned in the bottom right corner of the page. It is composed of two overlapping triangles, creating a complex, angular form that extends from the bottom edge towards the top right corner.

PERIODIC REVIEW REPORT

Willsboro Black Ash Pond Site
Willsboro, Essex County, New York

Prepared for:

Georgia-Pacific LLC

Prepared by:

Arcadis of New York, Inc.

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Syracuse

New York 13214-0066

Tel 315.446.9120

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Our Ref.:

B0066127

Date:

June 2019

"For each institutional or engineering control identified for the Site, I certify that all of the following statements are true:

- a) the institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by DER;*
- b) nothing has occurred that would impair the ability of such control to protect public health and the environment;*
- c) nothing has occurred that would constitute a violation or failure to comply with any Site Management Plan for this control; and*
- d) access to the site will continue to be provided to DER to evaluate the remedy, including access to evaluate the continued maintenance of this control."*

- (DER-10, 1.5(b) 5 Certification Statement)



Mark O. Gravelding, P.E.
Vice President

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CONTENTS

1	Introduction	1
2	Site Overview	2
2.1	Site Location and Description	2
2.2	Site History	2
2.3	Summary of Remedial Program	3
3	Remedy Performance, Effectiveness, and Protectiveness	4
4	IC/EC Plan Compliance Report	4
4.1	Institutional Controls	4
4.2	Engineering Controls	5
4.3	Evaluation and Status	6
4.4	Corrective Measures	6
4.5	Conclusions and Recommendations for Changes	6
5	Site Monitoring Plan Compliance Report	7
5.1	Components of the Site Monitoring Plan	7
5.2	Summary of Monitoring Completed During Reporting Period	8
5.3	Comparison with Remedial Action Objectives	8
5.4	Corrective Measures	9
5.5	Conclusions and Recommendations for Changes	9
6	Maintenance Plan Compliance Report	9
6.1	Components of the Maintenance Plan	9
6.2	Summary of Maintenance Completed During Reporting Period	10
6.3	Conclusions and Recommendations for Improvements	10
7	Conclusions and Recommendations	11
8	References	11

FIGURE

Figure 1 Site Plan

APPENDICES

- A NYSDEC Institutional and Engineering Controls Certification Form
- B Completed Site-Wide Inspection Forms

1 INTRODUCTION

Arcadis of New York, Inc. (Arcadis) has prepared this Periodic Review Report (PRR) in accordance with the requirements of the remedial program for the Willsboro Black Ash Pond Site (Site) administered by the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation. The Site, located in the Town of Willsboro (Town or Owner), Essex County, New York, was remediated by Georgia-Pacific LLC (Georgia-Pacific) in accordance with the Final Remedial Action Work Plan (RAWP; Arcadis 2012a). The RAWP was prepared in accordance with the requirements of the March 2007 Record of Decision (ROD; NYSDEC 2007), the August 23, 2011 Order on Consent and Administrative Settlement (AOC) Index No. A5-0771-07-11 (NYSDEC 2011a), and the August 2011 Explanation of Significant Difference (ESD; NYSDEC 2011b) issued by the NYSDEC for Site #516009. The RAWP was approved by the NYSDEC on September 6, 2012 (NYSDEC 2012a).

The Site was remediated in accordance with the NYSDEC-approved RAWP and Environmental Conservation Law Permit DEC No. 5-1552-00188/00001 dated September 17, 2012 (NYSDEC 2012b). A Final Engineering Report (FER) was prepared for the Site to describe the activities completed pursuant to the RAWP, and submitted to the NYSDEC in December 2014 (Arcadis 2014a). On April 15, 2015, the NYSDEC issued a Certificate of Completion (NYSDEC 2015) pursuant to 6 New York Codes, Rules, and Regulations (NYCRR) Part 375 (NYSDEC 2006) to Georgia-Pacific for the Site.

Included as an appendix to the FER was a Site Management Plan (SMP) developed to identify and implement the institutional controls (ICs) and engineering controls (ECs) required for the Site, as well as monitoring and/or maintenance of the remedy (Arcadis 2014a, Arcadis 2014b). As described in the SMP, Georgia-Pacific is responsible for implementing the SMP for 4 years, and after 4 years the Town will be responsible for implementation and any required notifications as discussed in the SMP (Arcadis 2014b) and the access agreement between Georgia-Pacific and the Town. Georgia-Pacific is currently coordinating with the NYSDEC and the Town to transfer responsibilities for implementation of the SMP (Nixon Peabody 2018) effective upon receipt of NYSDEC's written approval.¹

As described in the SMP, a PRR is to be developed and submitted to the NYSDEC by a Georgia-Pacific representative for the first 4 years following the anniversary of the start of the SMP and, thereafter, by the Town, every year, until the ICs/ECs are terminated. In the event that the Site is subdivided into separate parcels with different ownership, a single PRR will be prepared that addresses the Site as a whole, as is done currently. This PRR has been prepared in accordance with Section 6.3(b) of DER-10 Technical Guidance for Site Investigation and Remediation (DER-10; NYSDEC 2010).

This PRR includes:

- A summary of the Site and remedial history;
- Results of the required annual inspection of the Site and severe condition inspection of the Site, if applicable;

¹ On November 27, 2018, Nixon-Peabody, on behalf of Georgia-Pacific, asked NYSDEC for a letter approving the transfer to the Town of on-going O&M responsibilities under the SMP. NYSDEC and the Town requested an on-site meeting in spring 2019 with representatives from Arcadis, Georgia-Pacific, the Town, and the NYSDEC to discuss and facilitate the forthcoming transfer. That meeting was held on June 5, 2019, at which the Town accepted the transfer of responsibility and NYSDEC indicated it would issue its approval letter following the submission of this PRR on June 21, 2019.

PERIODIC REVIEW REPORT

- Completed inspection forms and other records generated for the Site during the reporting period;
- A discussion of the overall conclusions regarding the effectiveness of the remedial program, and specifically, progress made during the reporting period toward meeting the remedial action objectives (RAOs) for the Site and the ultimate ability of the remedial program to achieve the RAOs for the Site;
- Identification of areas of non-compliance regarding the major elements of the SMP (Arcadis 2014b) and proposed steps to be taken and a schedule to correct areas of non-compliance (if applicable); and
- Recommendations regarding whether any changes to the SMP are needed, including changes to the frequency for submittals of PRRs (increase or decrease) and/or whether the requirements for discontinuing the Site management have been met.

The reporting period summarized in this fourth annual PRR is from April 22, 2018 to April 22, 2019, consisting of the fourth and final year of the required 4-year monitoring period.

2 SITE OVERVIEW

This section briefly describes the Site location, boundaries, significant features, surrounding area, and the Site's history leading up to remediation. Additionally, this section describes the components of the selected remedy, Site closure criteria, and any significant changes to the selected remedy that have been made since remedy selection.

2.1 Site Location and Description

The Site is located at the end of School Street in the Town of Willsboro, Essex County, New York and is identified as Section 31.9, Block 1, and Parcel 20.100 on the Essex County Tax Map. The Site is bounded by the Bouquet River on the north and west sides, to the east by lands owned by the Adirondack Nature Conservancy (ANC), and to the south by additional lands owned by the ANC and the Town. The surface at the Site is relatively flat with the topography slightly rising to the south and west. The Town wastewater treatment plant occupies a contiguous 2.7-acre parcel along the southern border of the property south of the Site.

The Site is located within the floodplain of the Bouquet River, approximately 2 miles west of Lake Champlain. A fishing access parking area is located to the west of the Site and along the river, and a boat launch is located on the Bouquet River to the east of the Site. The approximate coordinates of the Site location are N 44° 22' 8.4" latitude, and E -73° 23' 27.6" longitude. The boundaries of the Site are more fully described in the Land Title Survey provided in Appendix A of the FER for this Site (Arcadis 2014a).

2.2 Site History

From 1884 to 1964, the Champlain Fiber Company, later known as Willsboro Pulp Mill, operated a pulp mill on the north side of the Bouquet River, opposite from the Site, which is located on the south side of the River. In 1964, the mill property was purchased by Georgia-Pacific. In 1966, the Town acquired the property from Georgia-Pacific (Town of Willsboro 1966).

A settling basin/lagoon was created at the Site on the south side of Bouquet River by constructing a crescent shaped dike/berm, 12 to 15 feet high along the riverbank. Black ash materials were first trucked, then piped to the south side of the river and deposited within the lagoon, approximately 900 feet long and 400 feet wide. The black ash is the residue of spent black liquor combustion. Black liquor was used in the

PERIODIC REVIEW REPORT

making of paper pulp, and was a combination of soda ash, chemical lime, wood fiber, and soft coal. The black ash accumulated within the basin during the years of the paper mill operation and over time the berm that was constructed to retain the black ash material has eroded away in some locations and has exposed the black ash to the river.

To determine the nature and extent of black ash material at the Site, Earth Science Engineering (ESE) performed a Site investigation in November 2006 and reported results in a Site Investigation (SI) Report (ESE 2006). The investigation found that the black ash material varied in thickness from 4 to 20 feet below existing surface. Subsequently, Arcadis performed additional investigations to characterize the nature and extent of black ash materials at the Site. The results of the investigations were described in the Pre-Design Investigation Summary Report, submitted to the NYSDEC in January 2012 (Arcadis 2012b).

2.3 Summary of Remedial Program

The Site was remediated in 2012 through 2013 in accordance with the NYSDEC-approved RAWP (Arcadis 2012a), ROD (NYSDEC 2007), AOC (NYSDEC 2011a), and ESD (NYSDEC 2011b) issued by the NYSDEC.

The selected remedy implemented in 2012 and 2013 consisted of:

- Excavation of black ash material along the riverbank to reshape and stabilize the riverbank, and the consolidation of such material in the upland soil cover area.; Construction of stabilization features along a portion of the riverbank, and reinforcement of the riverbank with riprap underlain with a geotextile fabric;
- Grading of the Site to mitigate the infiltration of water by diverting stormwater flow around the black ash material and reducing the potential for ponding;
- Construction of an inlet/outfall structure to reconnect the floodplain to the Bouquet River;
- Construction and maintenance of a 1-foot thick soil cover system consisting of on-site fill material and topsoil to prevent erosion to expose and/or erosion of black ash fill remaining at the Site;
- Execution and recording of an Environmental Easement to restrict land use and prevent future erosion that could expose and/or erode black ash remaining at the Site (Town of Willsboro 2014);
- Development and implementation of an SMP for long-term management of the Site as required by the Environmental Easement (Town of Willsboro 2014), which includes plans for: ICs/ECs, monitoring of the ICs/ECs, and reporting;
- Installation of ICs as outlined in the SMP (Arcadis 2014b); and
- Periodic certification of the ICs/ECs listed above.

In-water work was completed at the Site on November 3, 2012. Riverbank reshaping, consolidation of the black ash materials, and placement of the soil cover system were completed at the Site in November 2012. Final restoration of the Site was completed in May 13, 2013. The SMP was submitted to the NYSDEC on December 15, 2014 (Arcadis 2014b) as Appendix C to the FER (Arcadis 2014a).

The remedial construction activities were implemented in accordance with the design presented in the RAWP (Arcadis 2012a) with some minor deviations based on field conditions. Each deviation from the approved RAWP (Arcadis 2012a) is summarized in the FER (Arcadis 2014a), including the original requirement, the action taken, the reason for the change, and the effects, if any, of the change.

PERIODIC REVIEW REPORT

As a result of the earthwork required to reshape the riverbank area at the Site, extra material that was not required for the reshaping was removed from the riverbank area and consolidated on the upland black ash pond area. A soil cover system consisting of topsoil from an off-site source was installed over the graded on-site material. As no black ash material was removed from the Site during remedial activities, the black ash material represented by the samples presented in the SI Report (ESE 2006) remains at the Site after completion of the remedial construction activities.

The SMP provides a detailed description of procedures required to manage remaining black ash material at the Site after completion of the remedial construction activities, including: implementation and management of all ICs/ECs, monitoring, maintenance of containment systems, and performance of periodic inspections, certification of results, and submittal of PRRs (Arcadis 2014b). To address these needs, the SMP includes three plans: (1) an Engineering and Institutional Control Plan for implementation and management of ICs/ECs; (2) a Site Monitoring Plan for implementation of site monitoring; and (3) a Maintenance Plan. Sections 4, 5, and 6 of this PRR document compliance with each of the three plans included in the SMP (Arcadis 2014b).

3 REMEDY PERFORMANCE, EFFECTIVENESS, AND PROTECTIVENESS

The main goal of the selected remedy was to eliminate or reduce the migration of or exposure to the black ash fill remaining at the Site. The construction and maintenance of a 1-foot thick soil cover system over the top of the black ash fill remaining at the Site, and execution and recording of an Environmental Easement to restrict land use and prevent future erosion to expose and/or erosion of black ash remaining at the Site have both effectively achieved the main remedial goal for the Site.

Additional details on the evaluation of the effectiveness of the remedy in achieving the remedial goals for the Site are found in Sections 4 through 6 of this PRR.

4 IC/EC PLAN COMPLIANCE REPORT

Because remaining black ash material exists at the Site, ICs/ECs are required to provide an additional level of safety in the protection of the environment. This section describes the ICs/ECs at the Site, including the objective of each control, procedures for their implementation, management, and evaluation, the status of each control, and as appropriate, the proposed steps to address any deficiencies of ICs/ECs.

4.1 Institutional Controls

The AOC (NYSDEC 2011a) requires a series of ICs be implemented at the Site to:

- Implement, maintain and monitor EC systems;
- Prevent future exposure to remaining black ash material by controlling disturbance of the cover material; and
- Limit the use and development of the Site to Restricted Residential uses only (as defined by 6 NYCRR Part 375-1.8(g)(2)(ii) [NYSDEC 2006]), which will include recreational activities.

PERIODIC REVIEW REPORT

The ICs are implemented at the Site under the SMP (Arcadis 2014b) and include:

- Comply with the Environmental Easement and the SMP by the Grantor (i.e., the Town) and the Grantor's successors and assigns;
- Maintain all ECs as specified in the SMP;
- Inspect ECs at the Site at a frequency and in a manner defined in the SMP (Arcadis 2014b); and
- Report all data and information pertinent to management of the Site at the frequency and in a manner defined in the SMP.

The Site currently has a series of ICs in the form of Site restrictions and adherence to the ICs is required by the Environmental Easement (Town of Willsboro 2014). ICs identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement with consent of the NYSDEC. Site restrictions that apply are:

- The property may only be used for Restricted Residential use provided that the long-term ICs included in the SMP are employed.
- The property may not be used for a higher level of use, such as Unrestricted Residential use without additional remediation by the Owner and amendment of the Environmental Easement, as approved by the NYSDEC.
- All future activities on the property that have the potential to disturb remaining black ash material must be conducted in accordance with the SMP.
- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use.
- Vegetable gardens and farming on the property are prohibited.
- For 4 years, Georgia-Pacific will submit to the NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Site are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and (2) nothing has occurred that impairs the ability of the controls to protect the environment or that constitute a violation or failure to comply with the SMP. The NYSDEC retains the right to access the Site at any time to evaluate the continued maintenance of any and all controls. This certification must be submitted annually. In subsequent years, the Owner will submit the certifications on a schedule specified by the NYSDEC.

4.2 Engineering Controls

Exposure to remaining black ash materials at the Site is controlled by a 12-inch soil cover system placed over a portion of the Site, then mulched and seeded. The extent of the upland mulch and seed area is shown on Figure 1. The soil cover is a permanent EC and, per the SMP the quality and integrity of this system, is inspected annually for a minimum of 4 years after construction (Arcadis 2014b). Inspection activities include monitoring of the remedy for impacts related to the natural acts and performance of vegetation replacement for dead loss.

4.3 Evaluation and Status

In accordance with the SMP (Arcadis 2014b), Arcadis, on behalf of Georgia-Pacific, performed a site-wide inspection on October 8, 2018 to determine and document the following:

- Whether ECs continue to perform as designed and if these controls continue to be protective of the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial goals (included in the AOC [NYSDEC 2011a] and ESD [NYSDEC 2011b]);
- Observations made during monitoring events specifically regarding whether there are visual indications of subsurface work/excavation, significant soil erosion, as well as survival of vegetation installed as part of restoration activities;
- Whether site records are complete and up-to-date; and
- Changes, or needed changes, to the remedial or monitoring system.

A Site-Wide Inspection Form (Appendix B) was used to document these inspections. Additionally, Arcadis, on behalf of Georgia-Pacific, reviewed the Environmental Easement and site records. The site-wide inspections and review of the Environmental Easement determined that the ICs/ECs are functioning as intended.

Certification of the ICs/ECs is provided in the NYSDEC Institutional and Engineering Controls Certification Form (Appendix A).

4.4 Corrective Measures

No deficiencies of ICs/ECs were observed during implementation of the SMP in the fourth year after construction. As such, no corrective measures are proposed at this time.

4.5 Conclusions and Recommendations for Changes

As required by the SMP (Arcadis 2014b), the ECs were inspected once annually during the fourth year of implementation of the SMP, in the manner defined by the SMP, and the ECs were found to be maintained. In addition, representatives of Arcadis, Georgia-Pacific, the Town of Willsboro and NYSDEC visited the site in June, 2019, and verified the conditions after the winter of 2018. Compliance with the Environmental Easement and adherence to the ICs was found to be satisfactory during and at the end of the fourth year of implementation of the SMP.

To date, IC/EC monitoring indicates that the RAOs are being achieved. The inspections described herein are representative of the fourth and final year of the 4 years up to which Georgia-Pacific will implement this SMP. As discussed in Section 1, henceforth the Town will be responsible for implementing this SMP and any required notifications as discussed in the SMP (Arcadis 2014b).

During the June 5, 2019, site visit among representatives of NYSDEC, the Town, Georgia-Pacific, and Arcadis NYSDEC and the Town both stated that they have no objection to the Town assuming the SMP-related responsibilities following NYSDEC acceptance of this PRR and issuance of its approval letter.

5 SITE MONITORING PLAN COMPLIANCE REPORT

This section summarizes the components of the SMP, monitoring completed during the reporting period (April 22, 2018 to April 22, 2019), comparison of results with the RAOs for the Site, corrective measures taken (if any) and recommendations for changes (if any) to the plan for site monitoring.

5.1 Components of the Site Monitoring Plan

The Site Monitoring Plan contained in the SMP (Arcadis 2014b) describes the measures for evaluating the performance and effectiveness of the NYSDEC-approved remedy, including the installed soil cover system, stabilized riverbank (including the inlet/outlet structure), and seeded or planted vegetation. The components of the Site Monitoring Plan as outlined in the SMP are as follows:

- Stabilized riverbank monitoring – at a minimum, the area will be inspected for the following performance criteria:
 - Slope failure or evidence of erosion (e.g., ruts, gullies, washouts, or sloughing);
 - Movement or disturbance of riprap (that would cause exposure/disturbance of the remaining black ash material); and
 - Areas with undercut banks.
- Soil cover system monitoring – at a minimum, the area will be inspected for the following performance criteria:
 - Erosion (e.g., ruts, gullies, washouts, or sloughing);
 - Effectiveness of erosion controls in areas where vegetation has yet to establish;
 - Depressions and/or surface water ponding;
 - Areas where excessive settlement has occurred relative to the surrounding areas;
 - Drainage or growth problems;
 - Stressed or sparse cover;
 - Exposed remaining black ash material; and
 - Other conditions that could affect the performance of the completed remedial construction activities.
- Vegetation monitoring – at a minimum, the vegetation will be inspected for the following performance criteria:
 - Stressed or sparse cover; and
 - Survival and condition of plantings.
- Undisturbed Area monitoring – at a minimum the vegetation in the Undisturbed Area will be inspected for the following performance criteria:
 - Stressed or sparse cover.

PERIODIC REVIEW REPORT

A site-wide inspection for the features noted above will be performed a minimum of once a year for the first 4 years since completion of the remedial construction activities and implementation of the SMP. Site-wide inspections will also be performed after severe weather conditions (e.g., 25-year flood event) that may affect ECs. A Site-Wide Inspection Form will be completed during each inspection.

5.2 Summary of Monitoring Completed During Reporting Period

Arcadis, on behalf of Georgia-Pacific, visually inspected the stabilized riverbank for signs of erosion, removal, and/or modification since completion of the remedial construction activities and implementation of the SMP (Arcadis 2014b). As documented in the Site-Wide Inspection Forms included in Appendix B, with respect to the stabilized riverbank monitoring program, no slope failure or evidence of erosion, movement or disturbance of riprap (that would cause exposure/disturbance of the remaining black ash material), or areas with undercut banks were observed.

Arcadis, on behalf of Georgia-Pacific, performed visual inspection of the soil cover system and vegetation one time during the reporting period, on October 8, 2018 and a Site-Wide Inspection Form was completed for the inspection. As documented in the completed Site-Wide Inspection Form (Appendix B), the following was observed:

Item	Summary of Observations
Soil cover system	<ul style="list-style-type: none">• The soil cover system was visually inspected for signs of erosion, removal, and/or modification since completion of the remedial construction activities and implementation of the SMP.• No evidence of erosion, depressions, ponding, excessive settlement, drainage or growth problems, stressed or sparse cover, or exposed remaining black ash material were observed.
Restored vegetation	<ul style="list-style-type: none">• The area seeded or planted during restoration at the Site was visually inspected for general survival since completion of the remedial construction activities and implementation of the SMP.• No evidence stressed or sparse cover or significant quantities of stressed or dead plantings were observed.
Undisturbed Area vegetation	<ul style="list-style-type: none">• The Undisturbed Area vegetation was visually inspected for general survival and growth since completion of the remedial construction activities and implementation of the SMP.• No evidence stressed or sparse cover was observed.• During the October 2018 inspection, as with the April 2018 inspection, some minor erosion (undercutting/sloughing) was observed between Stations 10+00 and 10+50.

5.3 Comparison with Remedial Action Objectives

The site-wide inspection of the above-listed components indicated the following:

- Compliance with all ICs;
- Good condition and continued effectiveness of the ECs, including no signs of subsurface work/excavation, no significant soil erosion, and general survival of vegetation installed as part of the restoration activities;
- Good Site conditions at the time of the inspection(s); and
- Up-to-date and complete site records.

PERIODIC REVIEW REPORT

Additionally, the Site management activities are being conducted as specified in the SMP (Arcadis 2014b), and the RAOs have been met.

5.4 Corrective Measures

No significant monitoring deficiencies were observed during implementation of the SMP in the fourth year after construction. As such, no corrective measures are proposed at this time.

5.5 Conclusions and Recommendations for Changes

As required by the SMP, the Site was inspected during the fourth year of implementation according to requirements defined by the SMP, and the applicable features were found to be maintained. The Site monitoring indicates that the RAOs are being achieved. The inspections described herein are representative of the fourth and final year of the 4 years up to which Georgia-Pacific will implement this SMP. As discussed in Section 1, henceforth the Town will be responsible for implementing this SMP and any required notifications as discussed in the SMP (Arcadis 2014b).

6 MAINTENANCE PLAN COMPLIANCE REPORT

This section summarizes the components of the maintenance plan, any maintenance completed during the reporting period (April 22, 2018 through April 22, 2019), and recommendations for improvements (if any).

6.1 Components of the Maintenance Plan

As noted in the SMP (Arcadis 2014b), the Site remedy does not rely on mechanical systems to protect the environment; therefore, the operation and maintenance of such components is not included as part of the Site management. However, a maintenance plan was prepared in accordance with Section 6.2.3 of DER-10 (NYSDEC 2010), is included as part of the SMP, and contains the components summarized in this section.

Now that the 4-year post-remedial SMP monitoring period is completed, going forward the Town of Willsboro is now the Site Manager and will implement the SMP following completion of the remedial construction activities. If future issues are noted with respect to the performance criteria noted in Section 4 for the soil cover area, stabilized riverbank (including the inlet/outlet structure), and/or vegetation, the Site Manager will evaluate the observations and propose appropriate corrective measures to the NYSDEC to ensure that the remedy continues to be effective based on the remedial goals for the Site. Upon approval by the NYSDEC, the Site Manager will implement such corrective measures.

Specifically, should the monitoring reveal significant movement of riprap, areas with undercut banks, slope failure, and/or evidence of erosion (e.g., slope failure, ruts, gullies, washouts, or sloughing) of the stabilized riverbank, or if such significant issues are otherwise identified by the Site Manager in coordination with the NYSDEC, the Site Manager will, upon NYSDEC approval, repair the areas. The obligation of maintenance of the area below the edge of water line is subject to provision of reasonable access to this area by the NYSDEC.

Similarly, if the performance criteria for the soil cover area related to erosion and/or issues with the performance of the soil cover itself are identified during the inspection or otherwise by the Site Manager in

PERIODIC REVIEW REPORT

coordination with the NYSDEC, the Site Manager will, upon NYSDEC approval, repair the areas. Such repairs may include, but are not limited to, placing additional soil cover material and/or erosion controls, as appropriate.

The maintenance activities for the vegetation on the soil cover area and other seeded or planted vegetation at the Site may include, but are not limited to, removal of vegetative species that appear to be adversely affecting the survival of the vegetation planted (for example, removal of vines growing on and affecting the survival of planted shrubs). Additionally, common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), reed canary grass (*Phalaris arundinacea*), Japanese knotweed (*Polygonum cuspidatum*), Tartarian honeysuckle (*Lonicera tatarica*), Eurasian water-milfoil (*Myriophyllum spicatum*), and/or other invasive species will be removed so that the areal coverage of such species is no more than a total of 5%, of the area restored. If there are signs of stress or sparse cover over more than 15% of the area restored, the Site Manager, in consultation with the NYSDEC, will evaluate the cause and the need to reseed and/or fertilize those areas, as appropriate. If more than 15% loss of shrubs is observed in the monitored areas, the Site Manager will replant the lost shrubs. Further, shrubs that are identified as stressed will be equipped with a tag identifying the date of the inspection and condition of the planting and will be subject to corrective measures (i.e., watering, fertilization), if appropriate.

In addition, for the Undisturbed Area monitored during the routine inspections, if significant bare spots are identified during the inspection or otherwise by the Site Manager in coordination with the NYSDEC, the Site Manager will, upon NYSDEC approval, improve the area. Such improvements may include, but are not limited to, placing additional soil cover material and/or erosion controls and/or seeding the area, as appropriate.

6.2 Summary of Maintenance Completed During Reporting Period

No significant monitoring deficiencies were observed during implementation of the SMP in the fourth year after construction; however, as noted in the Site-Wide Inspection Form (Appendix B) and in Section 5.2, during the October 2018 inspection, as with the April 2018 inspection, some minor erosion (undercutting/sloughing) was observed between Stations 10+00 and 10+50 (within the Undisturbed Area). Additionally, a small area of bare soil / black ash was observed adjacent to the northern staircase by the western entrance, outside of the monitoring area (Fisherman Area).

In response, Georgia-Pacific contacted the Town to discuss the observations and arranged to perform preventive site maintenance in spring 2019. The preventive maintenance work was performed between April 16 and April 22, 2019. Specifically, Georgia-Pacific performed shoreline and riverbank maintenance between Stations 10+00 and 11+00 by stabilizing the area in a similar manner to the remedial program completed in 2012 through 2013 (i.e., with geotextile and rip rap). In addition, Georgia-Pacific constructed a timber frame around the area of bare soil / black ash observed near the Fisherman Area and filled that frame with stone to isolate the area from the potential for further disturbance.

6.3 Conclusions and Recommendations for Improvements

Although Georgia-Pacific performed preventative maintenance in April 2019, the results of the fourth year of the monitoring program indicate that the RAOs are being achieved and the selected remedy is still successful at eliminating or reducing the migration of or exposure to the black ash fill remaining at the Site.

PERIODIC REVIEW REPORT

This year marks the fourth and final year of the 4-year period during which Georgia-Pacific will act as the Site Manager and implement this SMP, and as discussed in Section 1 Georgia-Pacific is currently coordinating with the NYSDEC and the Town to transfer responsibility to the Town for implementation of the SMP. Maintenance activities to be considered after the initial 4-year period will be selected by the Town in consultation with the NYSDEC.

7 CONCLUSIONS AND RECOMMENDATIONS

The results of the inspection and site-wide monitoring event were evaluated as part of the IC/EC certification to confirm that the:

- ICs/ECs are in place, are performing properly, and remain effective;
- SMP is being implemented; and
- Site remedies continue to be protective of the environment and is performing as designed.

The requirements of the IC/EC Plan, Site Monitoring Plan, and Maintenance Plan were met during the reporting period. The performance of each component of the site remedy and the ability of the remedy to achieve the RAOs for the Site was confirmed.

At this time, no recommendations regarding any necessary changes to the remedy or the SMP are proposed.

8 REFERENCES

- Arcadis. 2012a. Remedial Action Work Plan. Prepared for Georgia-Pacific LLC. August.
- Arcadis. 2012b. Pre-Design Investigation Summary Report. Prepared for Georgia-Pacific LLC. January.
- Arcadis. 2014a. Final Engineering Report. Prepared for Georgia-Pacific LLC. December.
- Arcadis. 2014b. Site Management Plan. Prepared for Georgia-Pacific LLC. December.
- ESE. 2006. Site Investigation Report. Prepared for NYSDEC. November.
- Nixon Peabody. 2018. Letter from Jean McCreary, Partner, to Andrew Guglielmi, Associate Attorney and Section Chief, Office of General Counsel, NYSDEC re: transfer of Willsboro Black Ash Pond Site. November 27.
- NYSDEC. 2006. 6 NYCRR Part 375: Environmental Remediation Programs. Effective December 14, 2006. Available online at: http://www.dec.ny.gov/docs/remediation_hudson_pdf/part375.pdf.
- NYSDEC. 2007. Record of Decision for the Willsboro Black Ash Pond Site. Willsboro, New York. March.
- NYSDEC. 2010. DER-10: Technical Guidance for Site Investigation and Remediation. Issuance Date: May 3. Available online at: <http://www.dec.ny.gov/regulations/67386.html>.
- NYSDEC. 2011a. Order on Consent and Administrative Settlement for the Willsboro Black Ash Pond Site (Index #A5-0771-07-11, Site # 516009). August 23.
- NYSDEC. 2011b. Explanation of Significant Difference to the Final Record of Decision for Willsboro Black Ash Pond Site. Willsboro, New York. August.

PERIODIC REVIEW REPORT

NYSDEC. 2012a. Letter from C.B. Ng to Georgia-Pacific re: approval of the RAWP. September 6.

NYSDEC. 2012b. NYSDEC approval for Stream Disturbance – under Article 15 Title 5, Water Quality Certification – under Section 401 Clean Water Act, and Excavation and Fill in Navigable Waters – under Article 15 Title 5. September 17.

NYSDEC. 2015. Certificate of Completion. April 6.

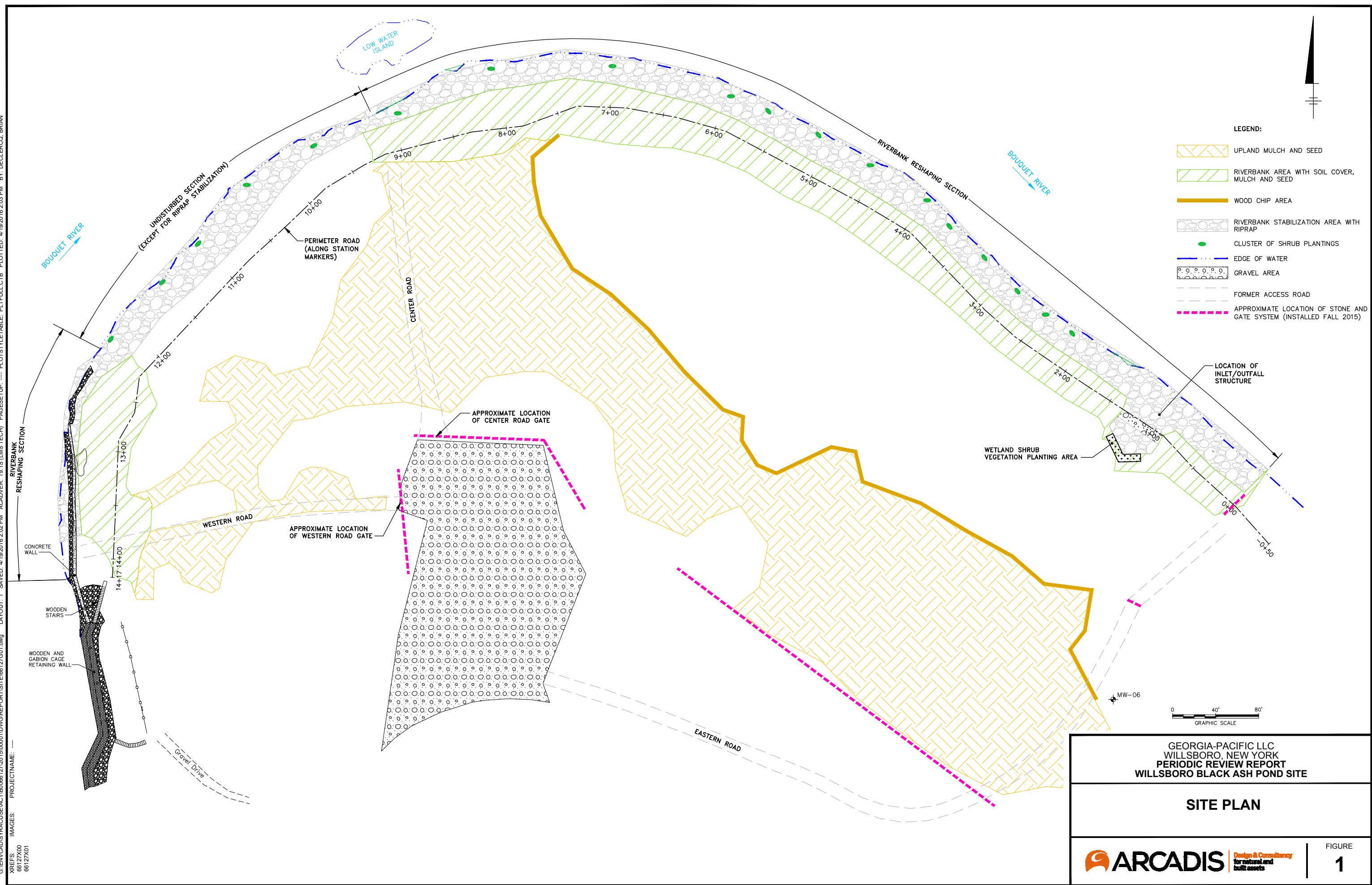
Town of Willsboro. 1966. Quit Claim Deed. Essex County Clerk's Office Liber (Book) 453, Page 570. December 20.

Town of Willsboro. 2014. Environmental Easement. Essex County Clerk's Office Book 1779, Page 228. Recorded by the Town on December 2.

FIGURE



CITY: SYRACUSE, NY DIV: GROUP: ENV/CAD DB: K SARTORI PIC: D COWIN PM/WM: D PENNIMAN LYN: ON* OFF= REF*
G:\ENV\CAD\SYRACUSE\ACT\B0066127\015\00001\DWG\REPORT\SITE\66127G01.dwg LAYOUT: 1 SAVED: 4/19/2016 2:02 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: PLT\FULL.CTB PLOTTED: 4/19/2016 2:03 PM BY: DECLERCO BRIAN
XREFS: 66127X00 66127X01
IMAGES: PROJECTNAME: 66127X01



APPENDIX A

NYSDEC Institutional and Engineering Controls Certification Form





Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form



Site Details

Box 1

Site No. **516009**

Site Name **Willsboro Black Ash Pond**

Site Address: School Street Zip Code: 12996
City/Town: Willsboro
County: Essex
Site Acreage: 24.830

Reporting Period: April 22, 2018 to April 22, 2019

YES NO

1. Is the information above correct?

☒ ☐

If NO, include handwritten above or on a separate sheet.

2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?

☐ ☒

3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?

☐ ☒

4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?

☐ ☒

If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.

5. Is the site currently undergoing development?

☐ ☒

Box 2

YES NO

6. Is the current site use consistent with the use(s) listed below?
Restricted-Residential, Commercial, and Industrial

☒ ☐

7. Are all ICs/ECs in place and functioning as designed?

☒ ☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

Description of Institutional ControlsParcelOwnerInstitutional Control**31.9-1-20.100**

Town of Willsboro

Ground Water Use Restriction
Landuse Restriction
Site Management Plan
IC/EC Plan

Monitoring Plan
O&M Plan

- Implement, maintain and monitor engineering control systems
- Prevent future exposure of black ash by controlling disturbance of cover material
- Limit the use and development of the Site to Restricted Residential uses only
- Any future activities with potential to disturb remaining black ash material must be conducted in accordance with the Site Management Plan
- Vegetable gardens and farming are prohibited

Description of Engineering ControlsParcelEngineering Control**31.9-1-20.100**

Cover System

- soil cover comprising a minimum of 12 inches of clean topsoil
- soil cover to be seeded with approved seed mix from the Town
- inspection of soil cover annually for a minimum of four years post construction
- Responsible Party can petition to end their involvement after four years, and hand control over to the Town

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and complete.

YES NO



2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

(a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

(b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

(c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

(d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

(e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES NO



**IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and
DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.**

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. 516009

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1, 2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Bryant T. Champion at Georgia-Pacific LLC,
print name print business address

am certifying as Remedial Party (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Bryant T. Champion
Signature of Owner, Remedial Party, or Designated Representative
Rendering Certification

6/13/19
Date

Remedial Party

IC/EC CERTIFICATIONS

Box 7

Qualified Environmental Professional Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Mark Gravelding at 110 West Fayette St. Syracuse, NY 13202,
print name print business address

am certifying as a Qualified Environmental Professional for the Remedial Party
(Owner or Remedial Party)



Signature of Qualified Environmental Professional, for
the Owner or Remedial Party, Rendering Certification



Stamp
(Required for PE)

6/20/2019
Date

APPENDIX B

Completed Site-Wide Inspection Forms



**ANNUAL SITE-WIDE INSPECTION CHECKLIST
WILLSBORO BLACK ASH POND SITE**

DOCUMENT REVIEW

Conducted By: Lauren Putnam

Representing: Arcadis

Review Start Date: May 16, 2019

1. ☒ Check here to confirm that the Environmental Easement (EE) has been reviewed.
2. ☒ Check here to confirm that the Plan of Restricted Area (as revised if appropriate) has been reviewed.
3. ☒ Check here to confirm that the description of this property in the Final Engineering Report and the as-built survey drawings covering this property included in the Final Engineering Report (and any alternative plan proposed for the comparison described in Item 8 on next page) have been reviewed.
4. Are there any recorded amendments to or releases from the EE, and/or any known conditional exceptions under the EE and of which the reviewing party has a copy, and/or any other documents in the Owner's possession relevant to the EE or the use of the property?
☒ No
☐ Yes – If yes, review those items for background information purposes and list them below (along with the book and page reference in the Registry of Deeds where applicable). (Note that the document reviewer has no obligation to verify the accuracy or completeness of any of these documents, either as of the time they were prepared or as compared to the current conditions.)

5. Review Completed Dat May 16, 2019

VISUAL ON-SITE INSPECTION

Conducted By: Kathryn Farris

Representing Arcadis

Inspection Start Date: October 8, 2018

1. Weather
50°F, overcast
2. List other individuals and their company/agency that were present during the visual on-site inspection.
None
3. Is there any visual evidence of activities and uses of the property since the last inspection that are potentially contrary to the restrictions of the EE?
☒ No
☐ Yes - If yes, describe below.

4. Is there any visual evidence of utility work or building construction, modification, addition, or demolition at the property since the last inspection?
☒ No
☐ Yes - If yes, describe below and show the location(s) of such activity on a plan.

**ANNUAL SITE-WIDE INSPECTION CHECKLIST
WILLSBORO BLACK ASH POND SITE**

5. Is there any visual evidence of soil excavation at the property that generated more than 10 cubic yards of soil since the last inspection?

☒ No

☐ Yes - If yes, describe below and show the location(s) of such activity on a plan.

6. Is there any visual evidence of significant soil erosion at the property since the last inspection, specifically in the soil cover area and/or the stabilized riverbank area?

☒ No

☐ Yes - If yes, describe below and show the location(s) of such erosion on a plan.

Although not significant and at the edge of the "stabilized riverbank area", a small area of exposed geofabric (less than 2 ft) was observed on the riverbank at Station 14+00.

7. Is there any visual evidence of significant pavement construction, disturbance, or excavations at the property since the last inspection?

☒ No

☐ Yes - If yes, describe below and show the location(s) of such activity on a plan.

8. Is there any visual evidence of significant disturbance to the vegetation installed during restoration in the upland Soil Cover Area or the Riverbank Area? Has more than 15% of the installed vegetation not survived (i.e., at least 85% has survived)?

☒ No

☐ Yes - If yes, describe below and show the location(s) of such activity on a plan.

9. Do invasive species account for more than a total of 5% of the restored area?

☒ No

☐ Yes - If yes, describe below and show the location(s) of such activity on a plan.

10. Is there any visual evidence of significant disturbance to or movement of the riprap installed to stabilize the Riverbank

☒ No

☐ Yes - If yes, describe below and show the location(s) of such activity on a plan.

Moderate vegetation covers the riprap, impeding ability to fully visual assess. No significant disturbances were identified.

11. Is there any visual evidence of significant bare spot(s) in the Undisturbed Area?

☒ No

☐ Yes - If yes, describe below and show the location(s) of such activity on a plan.

Although not significant, some undercutting and sloughing of soil was observed in the Undisturbed Area for approximately 25-30 feet of the bank between Stations 10+00 and 10+50. This area has not significantly changed since April 2018 inspection. Vegetation is present.

12. If any of the conditions listed in the response to Questions 4 through 11 appears likely to have significantly altered the surface grade of the property compared to the surface grade shown on the as-built drawings included in the Final Engineering Report (or an alternative, more recent plan proposed by the Owner), identify the approximate area/location(s) of such grade change on a plan and compare the new surface grade in such area(s) to the surface grade shown on the above listed drawing and/or plan. (If the Owner proposes use of an alternative plan for this comparison, include a copy of that plan and describe the rationale for its proposed use.)

13. Inspection Completed: October 8, 2018

Arcadis of New York, Inc.

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Fax 315 449 0017

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