



Inspection Report

To: Bill McGraw (Cheswick Generating Station)
From: Richard Southorn, P.E., P.G.
Re: Cheswick Ash Disposal Site – Annual CCR Unit Inspection Report
Inspection Date: November 12, 2020
Report Date: January 15, 2021

INTRODUCTION

Title 40 Code of Federal Regulations (CFR) Part 257 addresses, in part, the management of Coal Combustion Residuals (CCR Rule, or Rule) in regulated units, including landfills. Specific to §257.84(b) of the Rule, existing and new CCR landfills must be inspected on an annual basis by a qualified professional engineer. For the Cheswick Generating Station (operated by GenOn Power Midwest LP), this inspection requirement applies to the existing Cheswick Ash Disposal Site (Ash Disposal Site). In support of this obligation, Mr. Richard Southorn (a qualified professional engineer with Aptim Environmental & Infrastructure, LLC [APTIM]) conducted an on-site inspection of the Ash Disposal Site on November 12, 2020. The findings from this annual inspection are summarized in the remaining sections of this correspondence.

As required, this report will be placed in the Cheswick facility's operating record per §257.105(g)(9), noticed to the State Director per §257.106(g)(7), and posted to the publicly accessible internet site per §257.107(g)(7). Placement of the prior annual inspection report into the facility's operating record was accomplished on January 16, 2020. Per §257.84(b)(4), the current report will be entered into the facility's operating record no later than January 16, 2021.

BACKGROUND

The Ash Disposal Site is a captive landfill used for the disposal of CCR materials and other residual wastes generated at the Cheswick Station, and is operated/maintained in accordance with Pennsylvania Department of Environmental Protection (PADEP) Solid Waste Permit No. 300720. Active operations are ongoing in the South Valley (Phase I; 51 acres), while the North Valley (Phase II; 31 acres) remains as an unpermitted potential future phase within the Solid Waste Permit boundary. If ever constructed, the North Valley would be considered a new CCR Landfill per the Rule.

Construction of the South Valley commenced in 1980 and disposal of CCR materials began in 1982. When ultimate development conditions are reached, the final upper surface elevation of South Valley will be at approximately 1,200 feet mean sea level (ft. MSL).

The active fill area is generally level, with minor sloping to facilitate drainage. It is estimated that approximately two feet of CCR have been placed across the active fill area since the previous

annual inspection. The active fill area is currently estimated to have an approximate average elevation of 1,110-1,112 ft. MSL, based on visual observation.

With respect to the Ash Disposal Site, APTIM's evaluation has focused on the following items as outlined in §257.84(b)(1)(i-ii):

- *A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record; and*
- *A visual inspection of the CCR unit to identify signs of distress or malfunction.*

Specific to APTIM's preparation of the annual inspection report, and per §257.84(b)(2) (i-iv), the following aspects have been addressed:

- *Any changes in geometry of the structure since the previous annual inspection;*
- *The approximate volume of CCR contained in the unit at the time of the inspection;*
- *Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit; and*
- *Any other change(s) which may have affected the stability or operation of the CCR unit since the previous annual inspection.*

OPERATING RECORDS REVIEW

Principal items reviewed as part of this year's inspection included, but were not limited to: Design Drawings, 2019/2020 Weekly and Periodic Landfill Inspection Reports that have been completed since the 2019 Inspection, 2019 Annual Landfill Operations Report, and Solid Waste Permit No. 300720. During the site inspection, Mr. Southorn interviewed facility personnel (Mr. Bill McGraw) to verify the information contained within the operating record.

Environmental Control System Overview

i. Leachate Collection System

- a. The South Valley disposal area has a gravity underdrain system. This system consists of a below-grade piping network that facilitates leachate conveyance ultimately for treatment at the Monarch Mine Dewatering Plant (MMDP). Treated effluent from the MMDP is discharged to Little Deer Creek via Outfall 002 in accordance with the Cheswick Station's National Pollutant Discharge Elimination System (NPDES) Permit.

ii. Stormwater Management

- a. "Non-contact" stormwater from the South Valley disposal area is routed (via NPDES-permitted perimeter drainage channels) to the sedimentation pond located at the base of the landfill.

- b. "Contact" stormwater from within the active disposal area is collected in the leachate underdrain system and routed for treatment in the MMDP as described above.
- iii. Cover System
 - a. The eastern slope and portions of the northern and southern slopes of South Valley have final cover and established vegetation. The final cover system on the slopes includes benches to dissipate energy build-up and reduce erosion from stormwater run-off.

Summary of Landfill Construction

It is estimated that approximately two feet of CCR have been placed across the active fill area since the previous annual inspection. The active fill area is currently estimated to have an approximate average elevation of 1,110-1,112 ft. MSL. Exterior slopes have a final cover in place along with well-established and properly maintained vegetation. Contact water and non-contact stormwater risers were being extended at the time of inspection to support future disposal lifts.

Review of Prior Inspections

- i. Weekly inspections: A review of weekly inspections has concluded that no significant deficiencies occurred at the facility that required remedial actions.
- ii. Annual inspections: A review of the previous annual inspection report has determined that there were no deficiencies or releases, actual or potential structural weaknesses, or concern to the stability of the land form. All environmental control systems were in good operating condition and functioning as intended.

CCR Disposal

Approximately 3,245,040 tons of CCR had been disposed in the landfill through December 2019. Approximately 46,700 tons of CCR were disposed in 2020, resulting in a total disposed quantity of 3,291,740 tons of CCR.

SITE INSPECTION

The site inspection was performed on November 12, 2020 by Mr. Southorn, during which time efforts were focused on identification of standard geotechnical signs of distress or malfunction. Specific aspects such as slumping at the toe of slope, tensile cracking, abnormal or excessive erosion on the side slopes, slope bulging, and groundwater/surface water seepage or ponding were assessed. If present, these readily visible signs are potential indicators of structural weakness of the CCR Landfill unit.

Visual Signs of Distress or Malfunction

No visual signs of distress or malfunction were observed during the inspection. Stormwater drainage features, slope appearance and stability, leachate conveyance mechanisms, and overall site conditions were assessed. Closed portions of the South Valley exhibited well established vegetative cover.

Review of Environmental Control Systems

With no evidence to the contrary, the environmental control systems at South Valley are believed to be in good operating condition and functioning as intended. At the time of the inspection, leachate and stormwater conveyance systems were operating as designed.

Review of Previously Recommended Actions

No corrective actions were required based on the findings of the 2019 Annual Inspection. Recommendations were limited to the continued operation and maintenance of the facility and maintaining access to closed portions of the landfill for inspection purposes. These recommendations were found to have been followed, based on site conditions and the review of weekly inspection logs.

CONCLUSIONS

Changes in Geometry

CCR material placement has progressed in the active disposal area throughout this year. As of the date of the inspection, fill elevations in the active disposal area were at approximately 1,110-1,112 ft. MSL. Changes in geometry are limited to the elevation increase of the active disposal area.

In-Place CCR Disposal Quantities

Approximately 3,245,040 tons of CCR had been disposed in the landfill through December 2019. Approximately 46,700 tons of CCR were disposed in 2020, resulting in a total disposed quantity of 3,291,740 tons of CCR.

Appearances of an Actual or Potential Structural Weakness of CCR Unit

At the time of inspection, there were no signs of distress or malfunction that would indicate actual or potential structural weakness at South Valley.

Changes that May Affect the Stability or Operation of the CCR Unit

There have been no changes to the South Valley area that pose a threat or concern to the stability of the land form.

RECOMMENDATIONS

1. Continue operation and maintenance in the active areas as currently performed.
2. Ensure adequate access to the closed portions of the landfill to maintain the ability to perform weekly visual site structural inspections.

There were no deficiencies or releases identified during the annual inspection that required the owner or operator to perform corrective actions per §257.84(b)(5).

PROFESSIONAL ENGINEER'S CERTIFICATION

In accordance with §257.84(b) of the Rule, I hereby certify based on a review of available information within the facility's operating records and observations from my personal on-site inspection (including the photographs contained in Attachment 2), that the Cheswick Ash Disposal Site does not exhibit any appearances of actual/potential structural weakness that would be disruptive to the normal operations of the South Valley CCR Unit. The unit is being operated and maintained consistent with recognized and generally accepted good engineering standards and practices.

Certified by:

Date:

RS
JANUARY 15, 2021



Richard Southorn, P.E., P.G.

Professional Engineer Registration No. PE085411

Aptim Environmental & Infrastructure, LLC

ATTACHMENTS

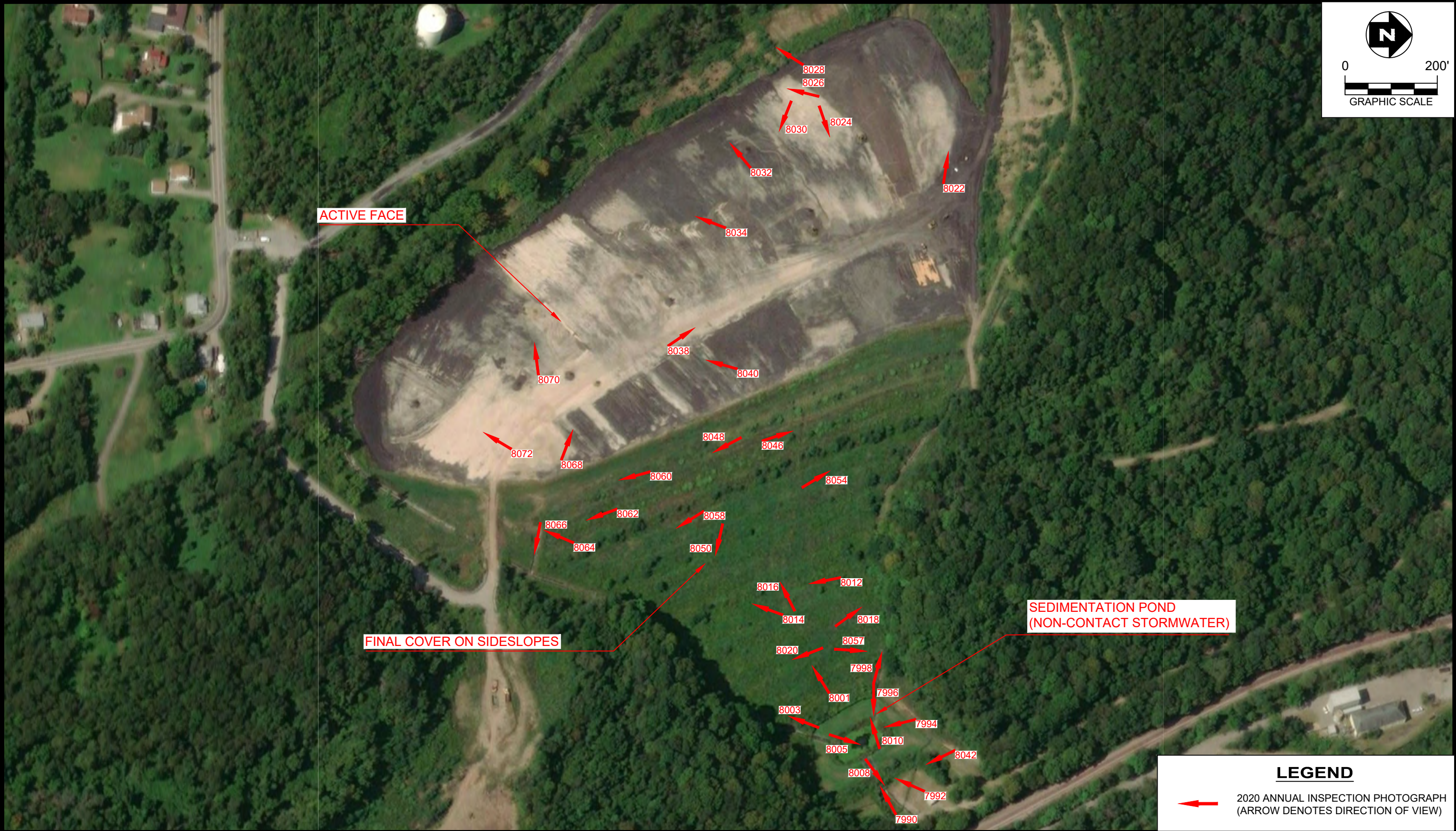
1. Site Map
2. Inspection Photo Log

REFERENCES

1. 2019 Cheswick Generating Station Annual Landfill Operations Report.
2. Weekly and Periodic Landfill Inspection Reports 2019/2020.
3. 40 Code of Federal Regulations, Part 257.
4. Solid Waste Permit No. 300720

Attachment 1
Site Map

C:\3DCivil\NRG\CCR-Annual Inspections\2020\Cheswick-PA.dwg, 11x17, 1/4/2021 12:59:15 PM



REV. NO.	DATE	DESCRIPTION



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CHESWICK GENERATING STATION SPRINGDALE, PENNSYLVANIA					
PHOTOGRAPH LOCATION MAP					
DRAWN BY:	BWM	APPROVED BY:	RDS	PROJ. NO.:	631011035
DATE:				DECEMBER 2020	

Attachment 2
Photo Log

Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn

Image: 7990
Date: 11/12/2020
Time: 7:06 AM
Direction: West

Description:

View of Sedimentation Pond spillway. Clear of debris. Landfill is in background.



Image: 7992
Date: 11/12/2020
Time: 7:07 AM
Direction: Southwest

Description: View of Sedimentation Pond spillway. Clear of debris.



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn

Image: 7994
Date: 11/12/2020
Time: 7:10 AM
Direction: South

Description:

Sedimentation Pond.
Healthy vegetation on pond
sideslopes. No trash noted
on water surface or in
surrounding vegetation.



Image: 7996
Date: 11/12/2020
Time: 7:11 AM
Direction: East

Description:

Outfall 010 inlet to
Sedimentation Pond
looking downslope.
Functioning as intended.



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn

Image: 7998
Date: 11/12/2020
Time: 7:11 AM
Direction: West-Northwest

Description:

North non-contact water channel (at Outfall 010) inlet to Sedimentation Pond looking upslope. Some leaves are present in channel, which are regularly removed during autumn. Functioning as intended.



Image: 8001
Date: 11/12/2020
Time: 7:12 AM
Direction: West-Southwest

Description:

The toe of the landfill slope is located at the fenceline. No evidence of erosion, sloughing, or indications of stability issues. Vegetation is healthy and present across the entire sideslope.



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn

Image: 8003
Date: 11/12/2020
Time: 7:12 AM
Direction: Southwest

Description:

South non-contact water channel (at Outfall 011) inlet to Sedimentation Pond looking upslope. Clear of debris. Functioning as intended.



Image: 8005
Date: 11/12/2020
Time: 7:13 AM
Direction: North-Northeast

Description:

Outfall 011 inlet to Sedimentation Pond looking downslope. Concrete flume has minor leaves and autumnal debris, which are regularly removed. Functioning as intended.



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn

Image: 8008
Date: 11/12/2020
Time: 7:15 AM
Direction: Northeast

Description:

View of Sedimentation Pond spillway from above. Clear and in good condition.



Image: 8010
Date: 11/12/2020
Time: 7:15 AM
Direction: West

Description:

Overview of landfill. Vegetation is healthy with no identified distressed vegetation areas.



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn

Image: 8012
Date: 11/12/2020
Time: 7:17 AM
Direction: South

Description:

Vegetation is healthy and present across the entire sideslope. No evidence of erosion, sloughing, or indications of stability issues.



Image: 8014
Date: 11/12/2020
Time: 7:17 AM
Direction: Southwest

Description:

Vegetation is healthy and present across the entire sideslope. No evidence of erosion, sloughing, or indications of stability issues.



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn

Image: 8016
Date: 11/12/2020
Time: 7:18 AM
Direction: West-Southwest

Description:

An animal burrow was found under an old silt fence line. Animal burrow is obscured from vegetation but is in center of picture. Animal burrows are repaired (filled in) when they are identified.



Image: 8018
Date: 11/12/2020
Time: 7:18 AM
Direction: Northwest

Description:

Vegetation is healthy and present across the entire sideslope. No evidence of erosion, sloughing, or indications of stability issues.



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn

Image: 8020
Date: 11/12/2020
Time: 7:19 AM
Direction: South-Southeast

Description:

Vegetation is healthy and present across the entire sideslope. No evidence of erosion, sloughing, or indications of stability issues.



Image: 8022
Date: 11/12/2020
Time: 7:32 AM
Direction: West

Description:

Contact and non-contact stormwater pipes were being extended at the time of inspection. Pipe to be used to extend a non-contact riser is shown. It will continue to be extended until reaching the final cover elevation and will accept stormwater after final cover is in place.



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn

Image: 8024
Date: 11/12/2020
Time: 7:34 AM
Direction: East-Northeast

Description:

Active area. Material is placed in even lifts that are spread and compacted. Top surface is well maintained, with no ponding water.



Image: 8026
Date: 11/12/2020
Time: 7:34 AM
Direction: Southwest

Description:

A junction box lid and riser are being fabricated to extend a non-contact stormwater pipe (see Image 8028 for location where this will be installed).



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn

Image: 8028
Date: 11/12/2020
Time: 7:35 AM
Direction: Southwest

Description:

A non-contact stormwater junction box is being installed.



Image: 8030
Date: 11/12/2020
Time: 7:37 AM
Direction: East-Southeast

Description:

Active area. Material is placed in even lifts that are spread and compacted. Some erosion ruts and rills have formed on the active face due to recent rains, but do not affect stability or safety of the landfill.



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn

Image: 8032
Date: 11/12/2020
Time: 7:38 AM
Direction: Southwest

Description:

A perforated contact stormwater (leachate) riser is shown. This riser is wrapped in filter fabric and surrounded with bottom ash. It will be extended prior to additional CCR material placement.



Image: 8034
Date: 11/12/2020
Time: 7:38 AM
Direction: Southwest

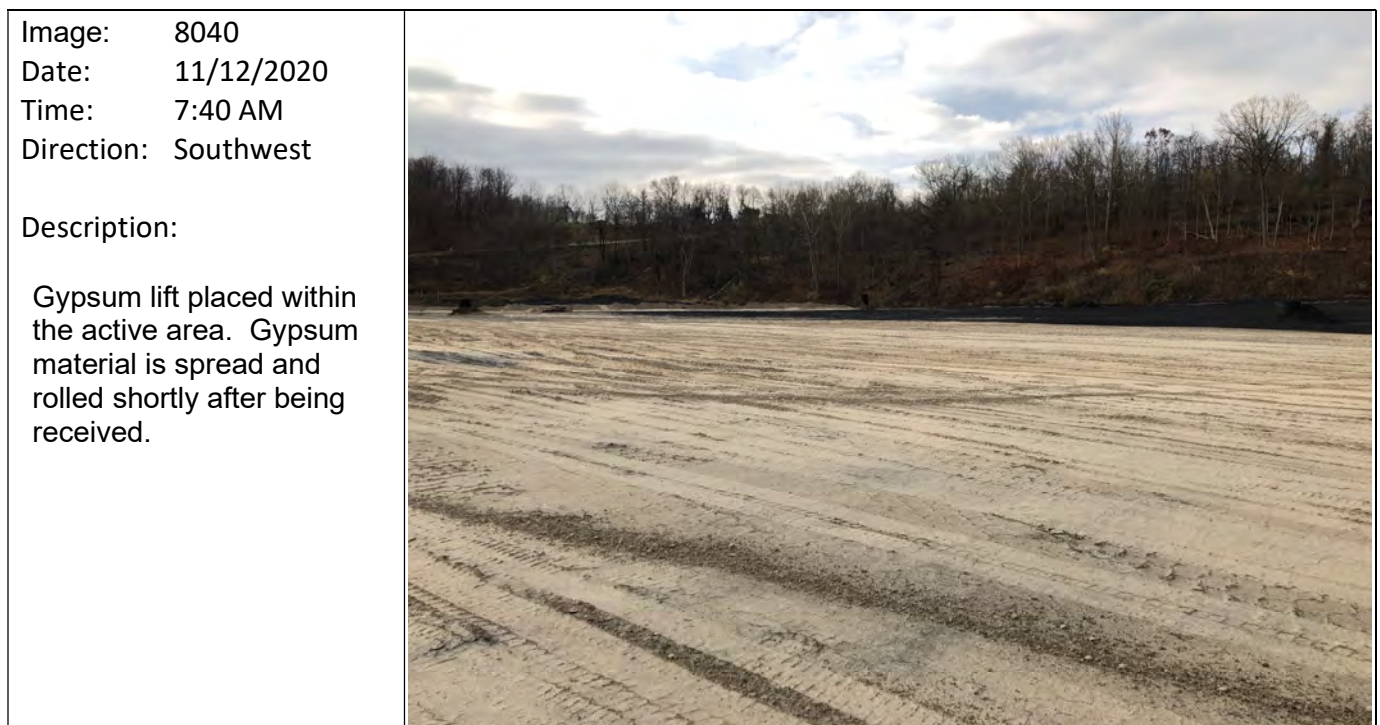
Description:

The active area is well maintained with no ponding water. CCR material is spread and rolled shortly after being received.



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn

Image: 8050
Date: 11/12/2020
Time: 7:41 AM
Direction: East-Southeast

Description:

Vegetation is healthy and present across the entire sideslope. No evidence of erosion, sloughing, or indications of stability issues. Some woody vegetation is present.



Image: 8054
Date: 11/12/2020
Time: 7:42 AM
Direction: Northwest

Description:

Vegetation on sideslopes is healthy and present across the entire sideslope. No evidence of erosion, sloughing, or indications of stability issues. Some woody vegetation is present.



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn

Image: 8062
Date: 11/12/2020
Time: 7:45 AM
Direction: South-Southeast

Description:

Vegetation on sideslopes is healthy and present across the entire sideslope. No evidence of erosion, sloughing, or indications of stability issues.



Image: 8064
Date: 11/12/2020
Time: 7:46 AM
Direction: Southwest

Description:

Recently installed revetment matting. This matting will be used to convey non-contact stormwater that falls on the closed landfill sideslope to Outfall 011.



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn

Image: 8066
Date: 11/12/2020
Time: 7:46 AM
Direction: East

Description:

Recently installed
revetment matting. This
matting will be used to
convey non-contact
stormwater that falls on
the closed landfill
sideslope to Outfall 011.



Image: 8068
Date: 11/12/2020
Time: 7:47 AM
Direction: West-Northwest

Description:

Active area with recently
received loads of gypsum.



Project: Cheswick Landfill 2020 Annual Inspection

Photographer: Richard Southorn

Image: 8070
Date: 11/12/2020
Time: 7:47 AM
Direction: West

Description:

Active area with recently received loads of gypsum.



Image: 8072
Date: 11/12/2020
Time: 7:47 AM
Direction: South-Southwest

Description:

Active area drains toward low area near treeline. No standing water is present.

